Documentation for *Affordability and Availability of Rental Housing in the Third Federal Reserve District: 2012*

Community Development Studies & Education Department
Federal Reserve Bank of Philadelphia

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Data and Methodology

Data: Through the American Community Survey (ACS) program, the U.S. Census Bureau has surveyed roughly 3 million housing units every calendar year since 2005.[1] For each of these years, the Census Bureau has released demographic and housing estimates for the nation as a whole and for jurisdictions with a population of at least 65,000. Since 2008, estimates reflecting three years of data collection have been released annually for jurisdictions with a population of at least 20,000. And since 2010, estimates reflecting five years of data collection have been available for all standard census geographies. Estimates for smaller geographies require multiple years of data – three or five, depending on the size – because only about 2.5 percent of all households are surveyed every year; thus, one-year estimates for the least populous geographies would be based on only a handful of responses and would not be nearly as reliable as three- or five-year estimates.

In addition to releasing demographic and housing estimates derived from responses to the American Community Survey, the U.S. Census Bureau also makes an anonymized subsample of survey responses available to the public in the form of Public Use Microdata Sample (PUMS) files. Researchers use PUMS files, which include survey responses from roughly 1 percent of the nation's housing units each year, to explore issues of interest to them in more detail than the standard ACS estimates allow. Three PUMS housing files are released each year, one for each of the one-, three-, and five-year data collection periods.

This report on rental housing affordability in the Third Federal Reserve District is based on an analysis of one-, three-, and five-year ACS PUMS housing data sets.

Geography: Many precautions are taken to ensure that individual respondents to the ACS questionnaire cannot be identified in the PUMS files. One such precaution is that there is little geographic specificity associated with the records in the PUMS data set. Users can discern only the state and the Public Use Microdata Area (PUMA) for each record in the file. Developed after every census by state data centers in collaboration with regional, state, and local partners, PUMAs are geographic areas created for the sole purpose of disseminating census and ACS PUMS data.[2]

Because the minimum PUMA population is 100,000, very populous geographies (e.g., Philadelphia and Montgomery counties in Pennsylvania) include multiple PUMAs that often fit together within a larger geography like pieces of a puzzle. Some counties, such as Cape May County, New Jersey, have a population of roughly 100,000 and form their own PUMA, while smaller counties – or portions of counties – must be grouped together into a single PUMA in order to reach the minimum population.

Using information provided by the Missouri Census Data Center's MABLE/Geocorr2K application,[3] we were able to associate PUMAs with the counties they overlap and thus produce rental housing affordability estimates for counties (or groups of contiguous counties), MSAs,[4] the portions of states within the Third District, and the Third District as a whole.[5] (See the appendix for a list of PUMAs and the counties

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[1] Of the 3 million housing units selected into the sample each year, roughly 2 million interviews are routinely completed, in addition to 100,000-200,000 individuals living in group quarters. The ACS was under development and testing between 1996 and 2004, but until 2005, the sample size was much smaller, and before 2006, those living in group quarters were excluded. For more information on the ACS, visit http://www.census.gov/acs/www/.

[2] It is worth mentioning that this analysis uses PUMAs developed following the 2000 census. New PUMAs have been created based on 2010 census data, but the ACS data sets used in this report do not incorporate the latest PUMA definitions. For general information on the historic development of PUMAs, see U.S. Census Bureau, *History of Public Use Microdata Areas (PUMAS): 1960-2000* (Washington, DC: U.S. Census Bureau).

[3] http://mcdc.missouri.edu/websas/geocorr2k.html

[4] Consistent with those used in reporting the 2010 ACS data, this analysis incorporates the MSA definitions released by the Office of Management and Budget on December 1, 2009, in OMB Bulletin No. 10-02. In cases in which an MSA is primarily within the Third Federal Reserve District but includes counties in another District, estimates reflect data from Third District counties only.

[5] Visit http://www.census.gov/geo/www/maps/puma5pct.htm for maps that show the overlap of PUMAs and counties in each of the 50 states, the District of Columbia, and Puerto Rico.

and MSAs to which they belong.) Because of the way in which the PUMAs were constructed, estimates for the Third District deviate from its standard geographic definition in two instances. Jefferson County, Pennsylvania, is not part of the District but is included in this analysis because it is part of a PUMA that lies primarily within the District. In addition, a small part of Cambria County, Pennsylvania, is not included in the analysis because the PUMA that includes a portion of the county lies primarily outside the District.

One-, three-, or five-year estimates: As mentioned above, three PUMS housing files are produced annually covering one, three, and five years of survey data. One of the most important decisions that a PUMS user must make is which data set to use for a given geography. The decision should be based largely on how populous the geography is, which has implications for the number of survey responses from the geography and subsequently for the reliability of the estimates produced from an analysis of the PUMS data set. In short, estimates for more populous geographies – many states and large MSAs, for example – can be produced using the one-year data sets. However, the three- and five-year data sets are more appropriate for smaller areas.[6]

After careful consideration of the estimates and their respective reliability, we have chosen to use the one-year PUMS data sets – covering the years 2005 through 2010 – to develop estimates for geographies with at least 200,000 renter households. These include the Third Federal Reserve District; the portions of Pennsylvania, New Jersey, and the Philadelphia-Camden-Wilmington MSA that fall within the District; and Philadelphia County. For geographies with 50,000 to 200,000 renter households, we have developed three-year estimates using the most current ACS PUMS files covering the years 2005-07 and 2008-10. For all others, we have used the five-year data set that includes information collected between 2006 and 2010.

Household income categories: In addition to providing an analysis of rental housing affordability in the Third Federal Reserve District for all renters, we have also developed estimates for renters in specific income categories. For most, a renter household's income is compared to the median family income (MFI) of the MSA in which the renter lives. For renters who do not live in an MSA, household income is compared to the MFI of the county or the PUMA in which the household is located.[7] (See the appendix for a listing of the MFIs used to categorize households in each PUMA.)

In this analysis, we have developed the following income categories to classify renter households in the District: 0-30 percent of the MFI, referred to in this report as extremely low income (ELI); 31-50 percent of the MFI, referred to here as very low income (VLI); and 51-80 percent of the MFI, referred to here as low income (LI). The income thresholds separating these categories reflect straight percentages of the MFI and thus are not consistent with HUD's official income limits, which are subject to a number of administrative adjustments.[8]

In determining whether a household falls within its area's ELI, VLI, or LI category, we adopt the methodology used by HUD to adjust for household size. In this analysis, an area's MFI is used to classify a four-person household into an income category; thresholds are reduced by 10 to 30 percent for smaller households (e.g., 70 percent of the MFI is used to categorize one-person households, 80 percent for two-person households, etc.), and the MFI is increased by 8 percent for each additional person over four that a household contains (e.g., 108 percent of the MFI for a five-person household, 116 percent of the MFI for a six-person household, etc.). The rationale underpinning this adjustment is that while a particular income may be more than sufficient to prevent financial hardship for a renter living alone, the same income may be inadequate for a larger family. Rather than applying

[6] To illustrate the increased reliability of multi-year estimates for counts of persons, households, or housing units, the standard errors for three- and five-year estimates are roughly 58 percent and 45 percent, respectively, of the standard errors for one-year estimates (Michael Beaghen, et al., *Research Report Series (Statistics #2012-03) Interpretation and Use of American Community Survey Multiyear Estimates* (U.S. Census Bureau, Center for Statistical Research & Methodology, April 2012).

[7] In the multi-year PUMS files, each household's income is inflation-adjusted to the most current year covered by the data set and compared to the multi-year median family income of the MSA, county, or PUMA (adjusted for inflation to the same year).

[8] HUD's income limits are subject to a number of adjustments. Official income limits can be adjusted upward where rental costs are particularly high or downward where incomes are particularly high. There is also a 5 percent cap on year-over-year growth. It is important to note that the 30/50/80 percent thresholds to which the household size adjustment is applied in this report are the actual MFI estimates from the American Community Survey and do not incorporate the other adjustments applied by HUD (see U.S. Department of Housing and Urban Development, Office of Policy Development & Research, *FY 2012 HUD Income Limits Briefing Material* (Washington, DC: U.S. Department of Housing and Urban Development, December 1, 2011).

the same 30/50/80 thresholds to all households, we adjust the MFI to account for household size to recognize this difference.

Table Descriptions

This section provides table-specific guidance on how estimates provided in Tables 1 through 6 should be interpreted. It also includes information on the methodology used for each calculation.

Table 1: Renter households by income category: Provides estimates of the number of renter households and the percent that fall into the ELI, VLI, and LI categories. Not shown is the percent of renter households that earn greater than 80 percent of the MFI, which can be calculated as 100 minus the share of renter households classified as ELI, VLI, or LI. For areas with one- and three-year estimates, we calculate whether the statistic is significantly higher or lower than in the prior period at the 90 percent confidence level.

Table 2: Percent of renter households spending more than 30 percent of income on gross rent (including utilities): Provides estimates of the percent of renter households that report a housing cost burden, which is commonly defined as spending in excess of 30 percent of income on gross rent. For areas with one- and three-year estimates, we calculate whether the statistic is significantly higher or lower than in the prior period at the 90 percent confidence level.

Table 3: Percent of renter households spending more than 50 percent of income on gross rent (including utilities): Provides estimates of the percent of renter households that report a severe housing cost burden, which is commonly defined as spending in excess of 50 percent of income on gross rent. For areas with one- and three-year estimates, we calculate whether the statistic is significantly higher or lower than in the prior period at the 90 percent confidence level.

Table 4: Ratio of affordable rental units for every 100 renter households & surplus/deficit of affordable rental units: Calculates the approximate alignment between the number of renter households in an income category and the number of units affordable to households within the income category. A ratio below 100 suggests a deficit of affordable units, and a ratio above 100 suggests a surplus. For areas with one- and three-year estimates, we calculate whether the ratio is significantly higher or lower than in the prior period at the 90 percent confidence level.

The methodology used to calculate "affordable" (Table 4) and "affordable and available" (Table 5) ratios and estimates is largely based on HUD's *Worst Case Housing Needs* series of reports to Congress.[9] Methodologically, the first step in producing these estimates is determining the income at which each rental unit – occupied and vacant – is affordable. This calculation assumes that gross rent should consume no more than 30 percent of income.[10] Under this assumption, a unit with monthly gross rent (rent plus utility costs) of $600 is affordable to a household with an annual income of $24,000 ($600/30% X 12 months = $24,000) or higher.

After we calculate the minimum income at which a unit is affordable, the next step is to determine the 30, 50, and 80 percent of MFI thresholds for the area in which a unit is located, taking into account the number of people likely to live in a unit based on the number of bedrooms it has. Following HUD's methodology, we assume that one person lives in an efficiency, a one-bedroom unit can accommodate 1.5 persons comfortably, and that each additional bedroom can comfortably accommodate an additional 1.5 persons (e.g., three persons can live in a two-bedroom unit, etc.). Thus, implicit in the calculation of the 30, 50, and 80 percent of MFI thresholds for each unit is an assumption about the household size that would occupy it. Using the same household size adjustments described above (i.e., 10 percent less than the MFI for each person fewer than four, and 8 percent more than the MFI for each person over four), we calculate income category thresholds for each unit and compare these thresholds with the income at which the unit is affordable. Assuming the $600 unit described above has two bedrooms and thus can accommodate three people, the calculation of income thresholds in an area with an MFI of $50,000 would be:

- 30% threshold = 30% X $50,000 MFI X 90% household size adjustment for a 3-person household = $13,500
- 50% threshold = 50% X $50,000 X 90% household size adjustment for a 3-person household = $22,500
- 80% threshold = 80% X $50,000 X 90% household size adjustment for a 3-person household = $36,000

[9] For the latest in the series, see Barry L. Steffen, et al., *Worst Case Housing Needs 2009: Report to Congress* (Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research, February 2011).

[10] This is the standard applied to many subsidized housing programs, which require tenants to pay 30 percent of their income – or of a given income threshold – in monthly rent. For information on the evolution of this standard, see Danilo Pelletiere, *Getting to the Heart of Housing's Fundamental Question: How Much Can a Family Afford?* (Washington, DC: National Low Income Housing Coalition, February 2008).

Based on these calculations, a two-bedroom unit with a monthly gross rent of $600 is affordable within the 51-80 percent of MFI range because the income at which it's affordable ($24,000) is higher than the 50 percent threshold ($22,500) but lower than the 80 percent threshold ($36,000).

After calculating the affordability category to which each rental unit is assigned, the next step is to calculate the ratio of affordable units for every 100 renter households. For example, if there are 100,000 rental units affordable to households earning no more than 30 percent of MFI and 200,000 such renter households, then the ratio is 50 (100,000 units/200,000 households * 100 = 50). In other words, there are only 50 rental units affordable for every 100 ELI renter households.

It is important to note that this analysis likely overestimates the number of affordable units in the following two ways. First, the ACS does not include information on utility costs for vacant rental units, so the gross rent – and thus the income at which a unit is affordable – is underestimated for these vacant units (roughly 127,000 units, or 8.2 percent of the rental stock in the Third District, in 2010). Compared to their current classification, some number of these vacant units would likely be considered affordable to households in the next-highest income category if their utility costs were known. Second, during the study period, between 5.3 and 6.3 percent of all renter households in the Third District reported paying no cash rent, including anywhere from 0.6 to 1.0 percent who reported no gross housing costs at all. In this analysis, we assume that units with no reported gross housing costs are affordable for households earning no more than 30 percent of MFI. However, if the arrangements that make units rent free or entirely costless for the current occupant(s) would not be available to other renters in the broader housing market, then these units may overstate the supply of affordable housing for ELI renters. Together, these two issues likely make the affordability estimates in this report somewhat conservative.

It is also worth noting that the ratios provided in Tables 4 and 5 are based on the number of households and rental units that fall within income and affordability *ranges* relative to the median family income and are a good approximation of affordability when households and units are similarly distributed *within* these ranges. In instances in which household incomes and rents are unevenly distributed within these ranges, these ratios are less instructive. For example, when renter households are clustered at the bottom of the 0-30 percent income range and units are largely affordable only to households at the top end of the range, the stated ratio of affordable rental units for every 100 ELI households overestimates the degree of alignment between the supply and demand of affordable rental housing. Likewise, when units are affordable to households with incomes at the bottom of the 0-30 percent income range and the majority of ELI households have incomes at the upper end of the category, the ratio does not adequately capture the deep affordability of the rental stock.

In addition to the ratios described above, Table 4 also includes an estimate of the surplus (positive) or deficit (negative) of affordable rental units by income category. It is simply the difference between the number of rental units affordable to households in a given income category and the number of renter households in the same category. In the example above, the deficit is 100,000 rental units (100,000 units – 200,000 households = -100,000).

Note that we have provided surplus/deficit estimates for only the most recent period (2010, 2008-10, or 2006-10) rather than comparing them to earlier years. We do this because the most recent ACS data are "controlled" to the 2010 census, whereas earlier ACS data are predicated on population estimates calculated by the Census Bureau and based on the 2000 census. Differences between earlier totals and totals calculated from the most recent data may be attributable to this methodological shift rather than to any real change in rental housing affordability.[11]

Table 5: Ratio of affordable and available rental units for every 100 renter households & surplus/deficit of affordable and available rental units:
The methodology of assigning rental housing units to income categories described for Table 4, above, can be applied to Table 5 as well. The sole difference between Tables 4 and 5 is that while the former includes all units that are affordable to a particular income category, the latter identifies only units that are both affordable to households in a given income category and are either occupied by a household in the same income category or vacant. These units are considered both "affordable and available" to households in that income category.

The basic premise underpinning the calculations in Table 5 is that Table 4 overestimates the alignment of affordable units and renter households because it includes low-cost rentals that are occupied by

[11] U.S. Census Bureau, *American Community Survey Research Note: Change in Population Controls* (Washington, DC: U.S. Census Bureau, September 2011).

higher-income households and thus are not truly addressing the demand for affordable housing for those with lower incomes. By excluding rental units that are occupied by higher-income households, the ratios and surplus/deficit estimates are lower in Table 5 than in Table 4.

In the Table 4 example above, there were 100,000 rental units affordable to ELI renters and 200,000 ELI renter households. If 25,000 of these affordable units were occupied by renters with higher incomes, then only 75,000 would be both affordable and available for renter households in the income category. Subsequently, the ratio of affordable and available rental units for every 100 ELI renter households would be 37.5 (75,000 units/200,000 households * 100 = 37.5), and the deficit of affordable and available rental units would be 125,000 (75,000 units – 200,000 households = -125,000).[12]

For areas with one- and three-year estimates, we calculate whether the ratio is significantly higher or lower than in the prior period at the 90 percent confidence level.

Table 6: Renter households with incomplete kitchen/plumbing facilities or crowded: Provides estimates of the percent of renter households that have inadequate kitchen or plumbing facilities and/or are considered crowded. A unit has an incomplete kitchen if it is missing any one of the following: a sink with a faucet, a stove/range, or a refrigerator. Plumbing facilities are considered incomplete if the unit lacks any one of the following: hot and cold running water, a flush toilet, or a bathtub/shower. A unit is considered crowded if it includes more than one person per room.[13]

One- and three-year estimates are limited to the 2008-10 time period because according to the Census Bureau, changes to the ACS questionnaire in 2008 directly led to increases in the reported level of incomplete kitchen and plumbing facilities when compared with pre-2008 estimates.[14] In addition to different instructions, response options for the number of rooms were also changed substantially in 2008. Before 2008, survey respondents had to check a box on the questionnaire to indicate the number of rooms in the unit, with the largest option corresponding to "9 or more rooms." After 2008, the number of units had a fill-in-the-blank option. As a result, before 2008 it is impossible to know whether very large households were crowded because the number of rooms was top-coded at nine.

For areas with one-year estimates, we calculate whether the statistic is significantly higher or lower than in the prior period at the 90 percent confidence level.

Comparability with Prior Reports

In 2010, we published a special report titled *Affordability and Availability of Rental Housing in Pennsylvania*[15] that provided an in-depth look at rental housing in Pennsylvania. The 2010 report used both ACS data from 2005 and 2006 and Comprehensive Housing Affordability Strategy (CHAS) data sets from 1990 and 2000 produced by HUD in order to better understand housing affordability trends over the 16-year period.[16] In 2011, we provided updated estimates for Pennsylvania and its counties using CHAS data from 2005-07, which were based on ACS data collected during those three years.[17]

The estimates in these prior reports ***should not be compared*** to the estimates presented here for a number of reasons. First and foremost, regarding the 1990 and 2000 CHAS data sets, there

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[12] Although the results in this report are not directly comparable to those in the department's earliest rental housing report (described below), the latter publication describes this calculation in greater detail. See Appendix C in Erin Mierzwa, Kathryn P. Nelson, and Harriet Newburger, *Affordability and Availability of Rental Housing in Pennsylvania* (Philadelphia: Federal Reserve Bank of Philadelphia, Community Development Studies and Education Department, March 2010).

[13] Crowded units can be measured in multiple ways, but calculating the number of persons per room is the most common measurement. The delineation between crowded and not crowded varies in the literature and can range from 0.75 to 2.0. See Kevin S. Blake, Rebecca L. Kellerson, and Aleksandra Simic, *Measuring Overcrowding in Housing* (Washington, DC: Prepared by Econometrica for the U.S. Department of Housing and Urban Development, Office of Policy and Research, 2007).

[14] See "Comparing 2010 American Community Survey Data" at http://www.census.gov/acs/www/guidance_for_data_users/comparing_2010/.

[15] Mierzwa, Nelson, and Newburger (March 2010)

[16] HUD produced CHAS data sets following the 1990 and 2000 censuses in order to provide good local-level housing data to practitioners and researchers. HUD has also begun a program to create more current CHAS data sets based on the American Community Survey. For more information on CHAS data, visit http://www.huduser.org/portal/datasets/cp.html.

[17] Federal Reserve Bank of Philadelphia, Community Development Studies and Education Department, *New Rental Housing Data Based on the 2005-07 American Community Survey (ACS)* (Philadelphia, PA: Federal Reserve Bank of Philadelphia, 2011).

are material differences between estimates based on the long-form survey administered in conjunction with the decennial censuses, on which these data sets are based, and the ACS. Of greatest relevance to this report, differences have been observed in reported income levels and rents,[18] as well as in vacancy rates.[19]

Even the 2011 report update, which uses CHAS data based on the ACS, cannot be considered comparable to this ACS-based report. Methodological differences between this report and the construction of the CHAS data sets include the following, which can have noticeable impacts on the estimates produced:

- Current CHAS data sets do not classify renter households that report zero or negative household income with regard to their level of housing cost burden.[20] This report assumes that these households are in the ELI (0-30 percent MFI) category and, if they report rent or utility costs, that they spend more than 50 percent of their income on housing.

- The CHAS data sets do not calculate housing costs as a percent of income for households with no cash rent and positive household income, even if the households report utility costs. The concern is that these households may live "rent free" as a condition of their employment (e.g., a property manager or minister) but not include the value of their accommodations when reporting household income. In the CHAS data sets, such households are automatically classified as not burdened by their housing costs.[21] This report calculates housing costs as a percent of income for households with no cash rent, using the sum of all utility costs as the estimated gross rent.

- The CHAS data sets use 30, 50, and 80 percent income category thresholds that are subject to administrative adjustments (e.g., higher in areas with high housing costs, etc.), calculated for fair market rent (FMR) areas, and set at the state's nonmetropolitan median if it would otherwise be lower. This report calculates these thresholds as straight percentages, for standard MSAs, and imposes no state minimum.

Finally, there are even differences between this report and the original 2005-06 estimates included in the 2010 report that relied on tabulations of the ACS PUMS housing files. The original report used official HUD FMR areas and the associated income limits for counties in Pennsylvania as the threshold for the income categories, a methodology very similar to the one employed in the CHAS data sets described in the third bullet above. The original report also took a straight average of 2005 and 2006 estimates from the one-year PUMS files and applied the results to all counties or PUMA groups of counties. In this report, we use the standard ACS data sets produced and weighted by the Census Bureau and choose the most current – but still reliable – one-, three-, or five-year estimates to report for each geography. Last, none of the ACS estimates in this report cover the same time period as the original report (2005 and 2006).

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[18] For a discussion of the differences between the 2000 census and ACS data collected in the same year, see Gregg J. Diffendal, Rita Jo Petroni, and Andre L. Williams, *Meeting 21st Century Demographic Data Needs – Implementing the American Community Survey, Report 8: Comparison of the American Community Survey Three-Year Averages and the Census Sample for a Sample of Counties and Tracts* (Washington, DC: U.S. Census Bureau, 2004). See also Kirby G. Posey, Edward Welniak, and Charles Nelson, *Income in the American Community Survey, Comparisons to Census 2000* (Washington, DC: U.S. Census Bureau), presented at the American Statistical Association Meetings (August 2003).

[19] See Deborah H. Griffin, *Comparing 2010 American Community Survey 1-Year Estimates of Occupancy Status, Vacancy Status, and Household Size with the 2010 Census – Preliminary Results* (Washington, DC: U.S. Census Bureau, December 2011).

[20] Based on correspondence with HUD research staff

[21] Based on correspondence with HUD research staff

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Appendix. Relationship of PUMAs to Standard Geographies & Median Family Incomes Used in Analysis

				Median Family Income Used to Classify Households					
State	County/Counties	PUMA Code	MSA (if applicable)	2005	2010	2005-07	2008-10	2006-10	Source of Median Family Income
DE	Kent	00200	Dover, DE MSA	$56,778	$63,962	$56,130	$62,831	$60,949	Dover, DE MSA
DE	New Castle	00101	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
DE	New Castle	00102	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
DE	New Castle	00103	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
DE	New Castle	00104	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
DE	Sussex	00300		$50,608	$54,069	$55,700	$58,265	$59,053	Sussex Co
NJ	Atlantic	00101	Atlantic City-Hammonton, NJ MSA	$61,240	$61,541	$64,812	$64,381	$66,920	Atlantic City-Hammonton, NJ MSA
NJ	Atlantic	00102	Atlantic City-Hammonton, NJ MSA	$61,240	$61,541	$64,812	$64,381	$66,920	Atlantic City-Hammonton, NJ MSA
NJ	Burlington	02001	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Burlington	02002	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Burlington	02003	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Camden	02101	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Camden	02102	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Camden	02103	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Camden	02104	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Cape May	00200	Ocean City, NJ MSA	$59,679	$72,075	$63,359	$69,632	$69,978	Ocean City, NJ MSA
NJ	Cumberland	02400	Vineland-Millville-Bridgeton, NJ MSA	$53,074	$64,583	$56,926	$61,557	$60,642	Vineland-Millville-Bridgeton, NJ MSA
NJ	Gloucester	02201	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Gloucester/Salem	02202	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
NJ	Mercer	02301	Trenton-Ewing, NJ MSA	$80,637	$85,547	$85,169	$89,891	$88,694	Trenton-Ewing, NJ MSA
NJ	Mercer	02302	Trenton-Ewing, NJ MSA	$80,637	$85,547	$85,169	$89,891	$88,694	Trenton-Ewing, NJ MSA
NJ	Ocean	01201	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	$67,419	$74,756	$73,088	$76,228	$76,709	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA
NJ	Ocean	01202	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	$67,419	$74,756	$73,088	$76,228	$76,709	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA
NJ	Ocean	01203	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	$67,419	$74,756	$73,088	$76,228	$76,709	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA
PA	Adams/Franklin	02801		$54,458	$63,528	$60,339	$64,610	$64,790	PUMA 02801
PA	Bedford/Fulton/Huntingdon	02700		$47,184	$50,592	$47,960	$51,474	$50,901	PUMA 02700
PA	Berks	03401	Reading, PA MSA	$60,206	$62,493	$61,446	$63,785	$63,724	Reading, PA MSA
PA	Berks	03402	Reading, PA MSA	$60,206	$62,493	$61,446	$63,785	$63,724	Reading, PA MSA
PA	Blair	02600	Altoona, PA MSA	$45,987	$53,448	$50,444	$52,637	$53,166	Altoona, PA MSA
PA	Bradford/Sullivan/Tioga	00500		$43,516	$52,044	$45,931	$50,097	$49,414	PUMA 00500
PA	Bucks	03901	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Bucks	03902	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Bucks	03903	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Bucks	03904	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Cambria (part)	02501	Johnstown, PA MSA	$43,126	$52,914	$46,249	$52,189	$50,900	Johnstown, PA MSA
PA	Cameron/Elk/McKean/Potter	00400		$46,814	$48,435	$49,460	$49,004	$50,086	PUMA 00400
PA	Carbon/Lehigh	03702	Allentown-Bethlehem-Easton, PA-NJ MSA	$62,379	$67,207	$66,012	$68,667	$68,935	Allentown-Bethlehem-Easton, PA-NJ MSA
PA	Centre	01300	State College, PA MSA	$55,240	$62,828	$62,306	$64,445	$65,121	State College, PA MSA
PA	Chester	04301	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Chester	04302	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Chester	04303	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Clearfield/Jefferson	01400		$42,368	$46,035	$44,074	$47,216	$46,864	PUMA 01400
PA	Clinton/Juniata/Mifflin/Snyder/Union	01200		$46,237	$49,096	$48,591	$49,892	$50,293	PUMA 01200
PA	Columbia/Luzerne	00903	Scranton--Wilkes-Barre, PA MSA (Luzerne)	$47,844	$55,185	$51,551	$54,808	$54,835	Weighted average of Scranton--Wilkes-Barre, PA MSA (Luzerne Co) and Columbia Co
PA	Cumberland	03101	Harrisburg-Carlisle, PA MSA	$62,658	$66,619	$66,778	$68,537	$69,389	Harrisburg-Carlisle, PA MSA
PA	Cumberland/Perry	03102	Harrisburg-Carlisle, PA MSA	$62,658	$66,619	$66,778	$68,537	$69,389	Harrisburg-Carlisle, PA MSA
PA	Dauphin	03001	Harrisburg-Carlisle, PA MSA	$62,658	$66,619	$66,778	$68,537	$69,389	Harrisburg-Carlisle, PA MSA
PA	Dauphin	03002	Harrisburg-Carlisle, PA MSA	$62,658	$66,619	$66,778	$68,537	$69,389	Harrisburg-Carlisle, PA MSA
PA	Delaware	04201	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Delaware	04202	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Delaware	04203	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Delaware	04204	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Franklin	02802		$52,286	$59,617	$58,969	$59,803	$61,410	Franklin Co
PA	Lackawanna	00801	Scranton--Wilkes-Barre, PA MSA	$49,623	$55,682	$53,337	$54,983	$56,045	Scranton--Wilkes-Barre, PA MSA
PA	Lackawanna/Wyoming	00802	Scranton--Wilkes-Barre, PA MSA	$49,623	$55,682	$53,337	$54,983	$56,045	Scranton--Wilkes-Barre, PA MSA

Appendix. Relationship of PUMAs to Standard Geographies & Median Family Incomes Used in Analysis

				Median Family Income Used to Classify Households					
State	County/Counties	PUMA Code	MSA (if applicable)	2005	2010	2005-07	2008-10	2006-10	Source of Median Family Income
PA	Lancaster	03301	Lancaster, PA MSA	$60,767	$61,760	$63,499	$63,807	$64,672	Lancaster, PA MSA
PA	Lancaster	03302	Lancaster, PA MSA	$60,767	$61,760	$63,499	$63,807	$64,672	Lancaster, PA MSA
PA	Lancaster	03303	Lancaster, PA MSA	$60,767	$61,760	$63,499	$63,807	$64,672	Lancaster, PA MSA
PA	Lebanon	02900	Lebanon, PA MSA	$55,588	$60,842	$60,588	$61,334	$62,174	Lebanon, PA MSA
PA	Lehigh	03600	Allentown-Bethlehem-Easton, PA-NJ MSA	$62,379	$67,207	$66,012	$68,667	$68,935	Allentown-Bethlehem-Easton, PA-NJ MSA
PA	Lehigh	03701	Allentown-Bethlehem-Easton, PA-NJ MSA	$62,379	$67,207	$66,012	$68,667	$68,935	Allentown-Bethlehem-Easton, PA-NJ MSA
PA	Luzerne	00901	Scranton--Wilkes-Barre, PA MSA	$49,623	$55,682	$53,337	$54,983	$56,045	Scranton--Wilkes-Barre, PA MSA
PA	Luzerne	00902	Scranton--Wilkes-Barre, PA MSA	$49,623	$55,682	$53,337	$54,983	$56,045	Scranton--Wilkes-Barre, PA MSA
PA	Lycoming	01000	Williamsport, PA MSA	$47,164	$49,997	$48,929	$51,629	$52,124	Williamsport, PA MSA
PA	Monroe	00700		$57,661	$62,944	$62,833	$64,463	$64,763	Monroe Co
PA	Montgomery	04001	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montgomery	04002	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montgomery	04003	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montgomery	04004	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montgomery	04005	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montgomery	04006	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Montour/Northumberland	01100		$47,417	$49,652	$49,744	$48,949	$50,066	PUMA 01100
PA	Northampton	03801	Allentown-Bethlehem-Easton, PA-NJ MSA	$62,379	$67,207	$66,012	$68,667	$68,935	Allentown-Bethlehem-Easton, PA-NJ MSA
PA	Northampton	03802	Allentown-Bethlehem-Easton, PA-NJ MSA	$62,379	$67,207	$66,012	$68,667	$68,935	Allentown-Bethlehem-Easton, PA-NJ MSA
PA	Philadelphia	04101	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04102	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04103	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04104	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04105	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04106	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04107	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04108	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04109	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04110	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Philadelphia	04111	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	$67,830	$74,506	$73,536	$76,710	$77,000	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
PA	Pike/Susquehanna/Wayne	00600	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA (Pike)	$53,796	$62,052	$58,375	$63,115	$62,205	Weighted average of New York-Northern New Jersey-Long Island, NY-NJ-PA MSA (Pike Co), Susquehanna Co, and Wayne Co
PA	Schuylkill	03500		$45,782	$49,664	$49,145	$53,264	$53,083	Schuylkill Co
PA	York	03201	York-Hanover, PA MSA	$56,459	$66,964	$63,291	$67,820	$67,624	York-Hanover, PA MSA
PA	York	03202	York-Hanover, PA MSA	$56,459	$66,964	$63,291	$67,820	$67,624	York-Hanover, PA MSA
PA	York	03203	York-Hanover, PA MSA	$56,459	$66,964	$63,291	$67,820	$67,624	York-Hanover, PA MSA

Note: Some counties are listed both individually and in conjunction with another county (see Franklin, PA, and Adams/Franklin, PA). In these cases, at least one PUMA is wholly contained within the individual county (Franklin), and another PUMA overlaps both counties. Note that in this particular example, different incomes are used to categorize households into income categories: Franklin County for the former and the two-county PUMA for the latter. In other instances, where both PUMAs are contained within the same MSA, the same income is used (see Lackawanna, PA, and Lackawanna/Wyoming, PA). Within the report, statistics are reported for the combined counties.

Source: 2005-10, American Community Survey, Table B19113 for median family incomes; Missouri Census Data Center's MABLE/Geocorr2K application for information on the relationship between Public Use Microdata Areas and standard census geographies (http://mcdc.missouri.edu/websas/geocorr2k.html).