

# Methodology

It is exceedingly difficult to measure the prices different individuals pay for the exact same product. Consider, for instance, the price of orange juice, long a staple on Americans' breakfast tables. To help consumers decide among all of the brands and types of orange juice, grocery stores advertise the sticker cost of the product: \$2.30 for concentrated orange juice, for instance, and \$3.50 for freshly squeezed. Less prominently, grocers also advertise the per-unit price, which is the cost of the same amount of juice across the different brands and types (e.g., \$0.44/ounce). This measure controls for a host of factors that can inflate or deflate the sticker cost, from the package size to the thickness of the container that the orange juice is contained in.

The difficulty for this analysis is that most surveys of consumer finances and expenditures measure sticker costs only. As a result, low-income consumers in these surveys appear to spend less on groceries than do higher income households. Lower income households, for instance, more likely buy generic brands instead of more expensive, freshly squeezed juice.<sup>18</sup> Over time, this means that they spend considerably less on orange juice than higher income households.

What this misses, though, is that per-unit price often varies from one community to another based on

median household income. The same amount of juice, for instance, often will cost more in a low-income neighborhood than in a higher income neighborhood. When considering orange juice, this difference might not seem significant—but as we demonstrate below, this pattern of price varying by household income holds true for nearly all basic necessities, from small items like a tank of gas or the cost of cashing a check, to much larger items like home mortgages and auto insurance. When we add up all of these higher prices, low-income households can end up pay-

ing hundreds, even thousands of dollars more every year to buy the exact same goods or services that higher income households consume. Eliminating this price difference will provide a great opportunity to help lower income families get ahead.

To document that opportunity for public and private leaders throughout the country, we marshal national evidence where it is available, supplemented with local data from 12 metropolitan areas. The breadth of this sample allows us to make a general case about the higher prices lower income families

pay, and to present the most comprehensive picture possible on prices. Data was not always available for individual consumers, so we supplement individual level data with evidence from lower income neighborhoods.

Since most readers will not be familiar with these data sources, and because the availability of data is uneven across the different items measured, we go into detail about each of these dimensions of the analysis below.

## ABOUT THE METROPOLITAN AREAS

To supplement and complement the analysis of national data we gathered information about 12 metropolitan areas that together account for about 23 percent of the entire U.S. population.<sup>19</sup>

The 12 metro areas provide geographic diversity but also represent diverse markets. Most importantly, the cost of living varies widely in our sample of metro areas. According to the 2005 ACCRA cost of living index, which measures 364

metropolitan areas, New York and San Francisco are respectively the first and second most expensive metros to live in throughout the entire country.<sup>20</sup> In contrast, Pittsburgh is ranked as the 217th most expensive metro.

The communities in our sample also cover a wide range of economic conditions. Real median wage growth in Indianapolis, Los Angeles, and Pittsburgh stood under 5 percent between 1998 and 2004.<sup>22</sup> On the other hand, San Francisco, New York, and Washington, DC all saw median wages grow by over 15 percent. Similarly, the poverty rate widely varies across our sample of metropolitan areas. Within the cities of Atlanta, Baltimore, Chicago, and Hartford more than one out every five people lives below the poverty line. In contrast, poverty rates in the cities of Indianapolis and San Francisco are both below the national rate. Such uneven opportunity across these metropolitan areas should account for the effects that the economy has on prices for necessities.

**This study's 12 metro areas range from being some of the most expensive to the most affordable areas in the U.S.**

Metro Area	Cost of Living Rank (of 364)
New York	1
San Francisco	2
Los Angeles	5
Washington, DC	12
Chicago	24
Hartford	30
Seattle	36
Baltimore	40
Denver	88
Indianapolis	110
Atlanta	145
Pittsburgh	217

*Note: Cost of living rank is based on quarterly average price data for basic living expenses basis over a one-year period.*

*Source: ACCRA Cost of Living Index, 2005*

## ABOUT THE BASIC GOODS AND SERVICES

In this analysis we focus on basic necessities for lower income families, including food, housing, utilities, transportation, and financial services. Together, these items account for about 70 percent of the spending in a typical American household. Other goods and services, like health care, entertainment, apparel, and personal insurance, account for the balance of what households spend; unfortunately, no comparative data is available to assess how prices for these goods and services vary across income categories.

To measure how prices vary across basic necessities, we used a variety of data sources and methods. We summarize this information for each necessity below.



### Groceries

For our analysis of per-unit food prices, we needed to measure what households of different incomes pay for the same basket of groceries. In this way we could hold constant all other factors that affect the prices consumers pay for groceries, like different brands or product sizes.<sup>23</sup> To do this, we looked at two types of information.

In total, we analyzed nearly 21,000 grocery stores for this report, using two types of information. The first is a comprehensive database of all grocery stores in each of these markets, from the 500 square foot “mom-and-pop” corner store to the 150,000 square foot Wal-Mart super center. Importantly, this means that there is a substantial range in the a) the quantity of food items, b) the quality of food items, and c) the availability of other services, such as a pharmacy, across our population of grocery stores.<sup>24</sup> From the perspective of the U.S., Canadian, and

Mexican officials that jointly created this coding system, the common unifying good sold across all of these establishments is food. But, it is important to keep in mind that this is an otherwise very diverse group of establishments.

This database is maintained by InfoUSA, a private company that mines hundreds of resources to compile a comprehensive index of business establishments in America.<sup>25</sup> This database does not include data about grocery prices, but does contain information about each establishment’s location, size and annual revenue. Because store size is strongly correlated with the price of products, we can make inferences about prices based on store size.<sup>26</sup>

Our second source is a database maintained by AC Nielson to look directly at prices in a sample of 3,000 mid- to large-sized grocery stores. This database is not a comprehensive index of grocery stores in the metro areas in our sample, nor is it a random sample of stores: the database only includes grocery store chains that are customers of AC Nielson. Both of these characteristics are important limitations, because the smaller, mom-and-pop stores are the very

stores that we find are concentrated in lower income neighborhoods. Also, there is some evidence that suggests lower income neighborhoods have less access to chains.<sup>27</sup> Still, the stores in the AC Nielson sample do vary by size, which allows us to more closely examine the relationship between store size and food prices.

To develop a typical grocery cart of food items, we turned to the ACCRA cost of living index, which includes grocery prices.<sup>28</sup> Using their method as a guide, we examined prices for ground beef, chicken, canned-tuna, milk, eggs, margarine, processed cheese, potatoes, oranges, lettuce, sliced-bread, canned orange juice, coffee, sugar, cereal, frozen dinner, frozen corn, and soft drinks.

Within these food categories, we looked at the average per-unit price of the most popular products sold in these categories during the 12-month period between October 2004 and October 2005. We chose this method of comparison because we needed to compare the price of the exact same product across the 3,000 stores in our sample, and not all products are sold at every grocery store.<sup>29</sup> This yielded a total sample of 132 different food products sold across all of the stores in our analysis.<sup>30</sup> Since each participating store reports data every week, we then took the average price of each food item over the course of the 52 week period. Using this information, we were able to determine how the cost of these products systematically varied across each of the stores in our analysis.



### Transportation

More than nine of every 10 American households have access to at least one car, including more than seven out of every 10 lower income households.<sup>31</sup> We focus on three types of automobile costs: the price of purchasing a car, a car loan, and car insurance.<sup>32</sup>

To measure the price of buying a car, we relied on an analysis by Fiona Scott Morton, Florina Zettelmeyer, and Jorge Silva-Risso published by the National Bureau of Economic Research.<sup>33</sup> Using a unique national database of over 650,000 car purchases, these scholars were able to control for over two dozen factors that influence the price that different customers pay for the same automobile. This makes it possible to isolate the independent effect of buyer income on the price of a car, along with the effects of race, gender, and educational attainment. But, to calculate the total effects of income on the price of a car, one would have to add in many of the other effects in this model because these factors also systematically covary with income.<sup>34</sup> Using this

model, we can estimate the average mark-up fee lower income drivers typically pay.

To assess what different households pay to borrow the same amount of money for an auto loan, we used the 2004 Survey of Consumer Finances administered by the Federal Reserve. These data provide the only resource that we are aware of to assess how prices for auto loans vary by household income.<sup>35</sup> The Survey of Consumer Finances (SCF) is conducted every three years, and was based in 2004 on interviews with 4,522 families.<sup>36</sup>

Finally, we analyzed the price of insuring the exact same car and driver in each of the metropolitan areas included in this report. Because disclosure laws are so limited in the insurance industry, it is impossible to assess this issue with national data—such data just do not exist. We also cannot measure most of the factors considered by insurance companies in their insurance-rating models, some of which likely vary systematically by income.<sup>37</sup> But, we can look at data from the metro areas in our sample, and we can look at the effects of territories on prices—one impor-

tant variable used by insurance companies to set prices.

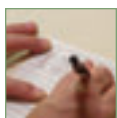
To do this, we looked at the websites of three large insurance companies—Geico, Allstate, and Progressive—that together account for about 23 percent of the auto insurance market.<sup>38</sup> On each of these sites, we entered a similar profile of a car and driver and obtained auto insurance premium quotes for the minimum amount of legally required insurance.<sup>39</sup> To make the estimate as conservative as possible, we selected an optimal set of characteristics for the driver: 35 years old, married, with a clean driving record, a short (five-mile) daily commute to work, and limited annual mileage (between 10,000–15,000 miles). The car that we used is a five-year-old Ford Taurus, which is approximately equal in value to the median value of automobiles owned by individuals in the lowest income quintile, according to the 2004 Survey of Consumer Finances.

We entered this car and driver profile for each of the ZIP codes in the metropolitan areas in our sample.<sup>40</sup> This research method was designed to yield over 10,000 dif-



ferent price quotes for car insurance, or one premium for every company and ZIP code in the analysis. With this data, we then used the Census 2000 survey to estimate the median income in each of these ZIP codes.<sup>41</sup> In this way, we were able to analyze the relationship between neighborhood income and the price of auto insurance.

While this analysis speaks to the powerful influence of where a driver lives on the price of insurance, it is not without important limitations. For one, it does not account for the credit or insurance score of the driver, and the role that this information can play in shaping auto insurance premiums.<sup>42</sup> The analysis also omits a number of other factors commonly believed to raise the price of auto insurance for lower income drivers, including the driver's occupation and educational attainment of the driver.<sup>43</sup>



### **Basic Financial Services**

We analyzed the four most prominent types of basic financial services: cashing checks, obtaining short-term loans, tax preparation, and wiring money. Together, these four services represent nearly all of the basic financial service products.<sup>44</sup>

Nearly all of the data for this part of the analysis is based on national surveys of consumer behavior and local information about prices. This reflects the gaps that exist in information today: We have very little information about how consumer behavior varies across types of markets, and we have very little information about

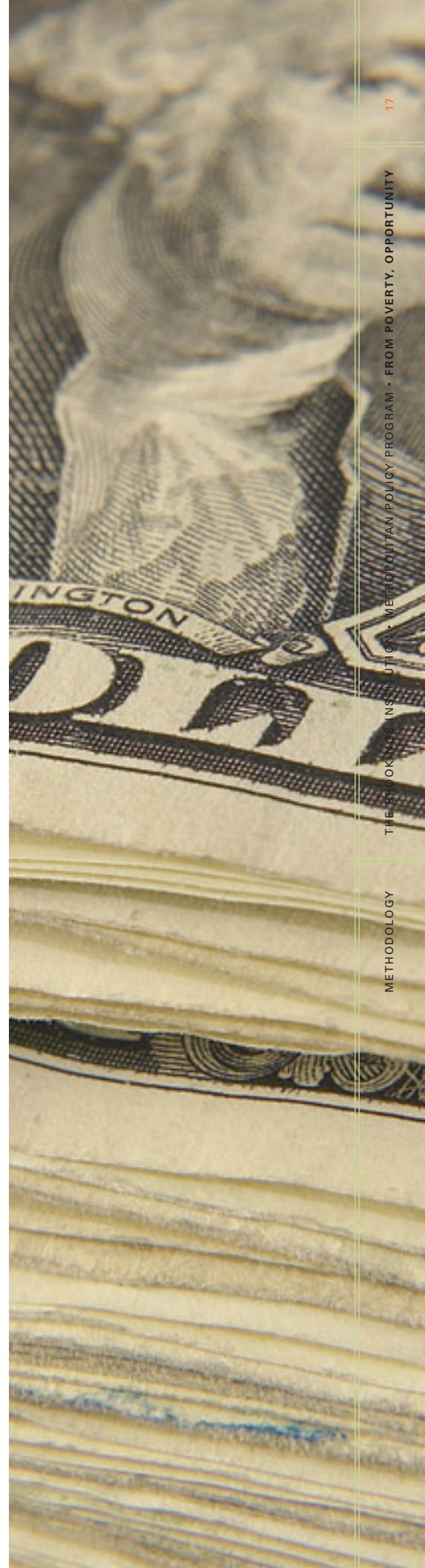
average prices paid across the country. Still, the available data do provide a powerful set of facts that point to the higher prices lower income families tend to pay for these services.

To determine what consumers typically pay for these services, we used three major sources of data. The first are a series of national surveys, which are covered in each section of the report.

The second data source is information collected from banking regulators in each of the states represented by the metropolitan areas in our analysis. Through an assessment of information collected from both conversations with representatives and information on state-maintained web pages, we were able to assess the maximum interest rates and fees associated with using these products.<sup>45</sup>

Our other major source of information to assess the price of basic financial services was the InfoUSA database, reviewed earlier.<sup>46</sup> In total, we looked at nearly 34,000 providers of basic financial services, from mainstream banks and credit unions to more fringe businesses, like check-cashing establishments and payday lenders. Using these data, we looked at the location and annual revenue of each establishment. We then used the Census 2000 survey to estimate the median income in the neighborhood where each establishment is located. With this information, inferences were made about how the price of basic financial services varies by neighborhood income.

Importantly, the InfoUSA data categorizes establishments by their primary and secondary business



service, but does not capture every type of commodity sold. This means, for instance, that a gas station that derives the largest portion of its revenue from the sale of gas, sells food as its second biggest revenue source, and cashes checks as its third source of revenue, will not be listed in the InfoUSA database as a check-cashing business. For this reason, we systematically undercount the number of businesses in each category.<sup>47</sup>

We supplemented these major sources of data with information about specific companies in our analysis. While not as generalizable as the information collected from the states or InfoUSA, this evidence offers some powerful examples of the higher prices lower income households often must pay for these basic financial service products.



### Housing

Our analysis of housing prices includes an assessment of the prices paid for mortgages, home insurance, and furniture and appliances. While this does not exhaust the list of important housing-related costs—such as maintenance, rent, and property taxes—there is no data to

suggest that prices for any of these necessities are higher for lower income families than other households.<sup>48</sup>

To examine how mortgage prices vary by household income, we looked at two different datasets. The first is the 2004 Survey of Consumer Finances administered by the Federal Reserve, which we reviewed earlier in this section. These data allow us to compare how the typical amount borrowed and the typical rate charged for mortgages varies across different income categories. The data provide an excellent, national assessment of these higher prices.

We supplemented this analysis with data from the 2004 Home Mortgage Disclosure Act (HMDA), which provides information about a large proportion of the mortgages originated in the 12 metropolitan areas of our geographic sample. These data include a variable that flags whether an originated loan has a high price. The Federal Reserve Board defines high-price loans as those that have an annual percentage rate (APR) three percentage points above comparable Treasury notes for first liens and five percentage points above for junior liens. With this definition,

the Board estimated they would capture over 95 percent of the sub-prime market.<sup>49</sup> Although, recent comparisons of the HMDA data with private data suggest that the Board's definition of "high cost" captures a substantially smaller share of the sub-prime market.<sup>50</sup>

To analyze the price of home insurance, we used a method similar to the consideration of auto insurance prices described above. The major difference is that only one of the three selected insurance companies makes home insurance quotes available, and does so for nine of the 12 metropolitan areas. For each of the ZIP codes in these nine metropolitan areas, we entered a similar profile of a house worth approximately \$75,000, and requested the minimum amount of insurance required by the state. We then used the 2000 Census to estimate median income in each of these ZIP codes, then analyzed the relationship between neighborhood income and the price of home insurance.

To assess the price of furniture and appliances, we used two different resources. The first is survey data collected by the Federal Trade Commission, which analyzed various characteristics associated with 12,000 customers of rent to own stores.<sup>51</sup> The second resource is the InfoUSA database described in greater detail above. Using these data, we were able to build a profile of rent-to-own customers, while also illustrating where these establishments are geographically concentrated within each of the metropolitan areas studied.



## ABOUT OUR DEFINITION OF LOWER INCOME FAMILIES

We used numerous data resources that estimate household income, including Home Mortgage Disclosure Act data, the Survey of Consumer Finances, a Federal Trade Commission Survey, Census Bureau surveys, and J.D. Power and Associates, among others. Because these data are in many different forms, we needed to establish a common definition of “lower income” across each of these different data resources. This was no small challenge, because there is no commonly accepted definition of lower income or poverty.<sup>52</sup> Some analyses use the federal poverty line as the point of demarcation, while others use some percentage above the poverty line. Still others use some measure of a “sufficient income” or receipt of some type of public benefit, like the Earned Income Tax Credit, as a definition.

The results presented in this analysis do not depend on choosing from one of the many available measures of lower income. In general, we find that prices decrease linearly or curvilinearly as household income or neighborhood income increases, where quantitative income information is available.

But, because we needed some way to illustrate these findings, and talk about the differences between lower income borrowers, neighborhoods, and everyone else, we needed to select a measure. Given the lack of agreement about the term “low-income” and “poor” and in light of the diverse measures of income in our datasets (and lack of a poverty measure), we elected to use increments of \$30,000 as the common yardstick to assess the relationship between income and prices. We then elected to measure “lower income” as any neighborhood with a median income less than \$30,000, or any household that earns less than \$30,000—depending on the dataset in use.<sup>53</sup> In current dollars, this represents about half of the estimated value of

the median family income in 2006.<sup>54</sup>

But, like any measure of “poverty” or “low-income” it is important to keep in mind the unique limitations of this particular measure. First, cost of living variance among the metro areas means that equal income in two cities does not mean equal purchasing power or quality of life: an annual income of \$30,000 goes much farther in Pittsburgh than in San Francisco. Second, not all surveys measure the same units. A family with children making less than \$30,000 is certainly less well-off than an individual living alone with the same income. Unfortunately, the data do not allow us to make these distinctions. Similarly, we would have ideally been able to distinguish between individuals, households, and families,

but that type of specific data was not available across all of these diverse datasets.

Still, like a lot of these academically minded (unresolved) issues with a measure of “low-income” or “poverty,” the importance of these limitations lays at the margins: at worst we are talking about lower income and very moderate-income households, instead of just “low-income” households. For all of these reasons, we refer to “lower income” households, consumers, and neighborhoods throughout the results section of this analysis, and contrast these units to “higher income” households, consumers, and neighborhoods. ■

