

**The Automotive Aftermarket Industry Association**  
**Right to Repair Value Study**

**Methodology and Documentation**

**Prepared for**

**The Automotive Aftermarket Industry Association**  
**7101 Wisconsin Ave. Suite 1300**  
**Bethesda, MD 20814**

**By**

**John Dunham and Associates, Inc.**  
**32 Court Street, Mezzanine**  
**Brooklyn, New York 11215**

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# The Automotive Aftermarket Industry Association

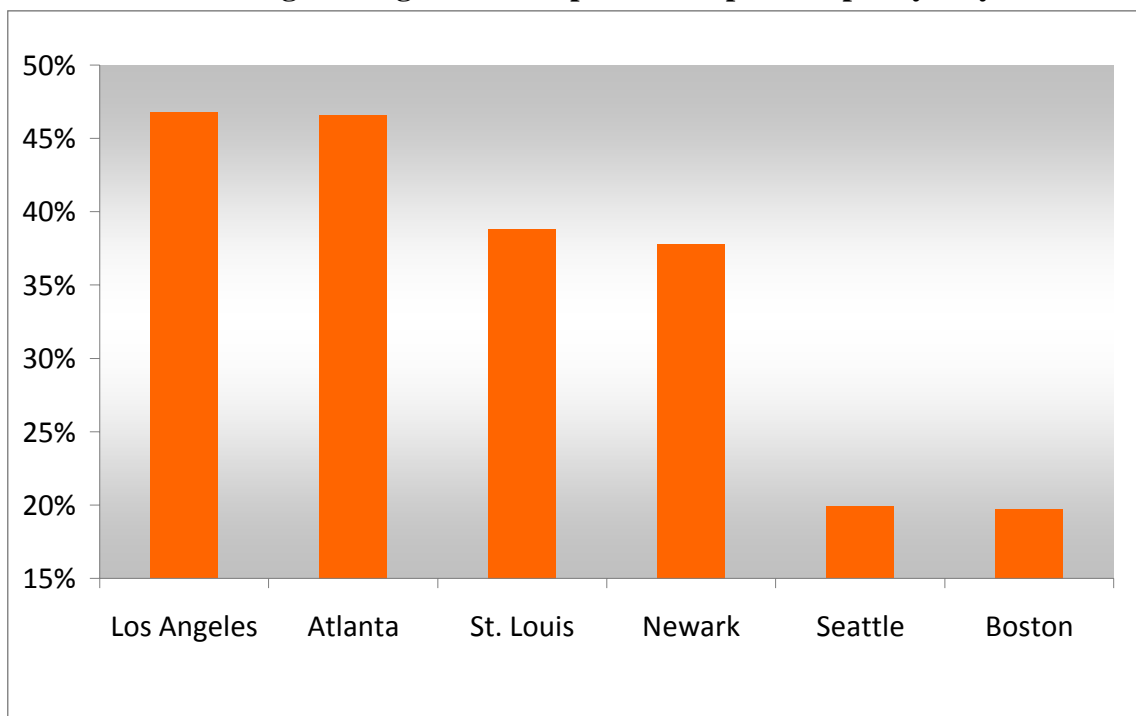
## Right to Repair Value Study

### Summary:

The Automotive Aftermarket Industry Association Right to Repair Value Study estimates the economic value of independently owned automobile repair shops in every state legislative district in the country. John Dunham and Associates (JDA) conducted this research, which was funded by the Automotive Aftermarket Industry Association (AAIA). This work used base data from an earlier study *Vehicle repair cost analysis: New Car Dealerships vs. Independent Repair Shops Data*,<sup>1</sup> as well as from industry sources, government publications and Dun and Bradstreet, Inc.

The analysis is based on detailed survey information of vehicle repair costs from 6 cities: Boston, Newark, Atlanta, St. Louis, Los Angeles and Seattle. These data, which examine average parts and labor costs for 10 standard types of repair on both foreign and domestic nameplates, provide a benchmark from which our estimates are derived.<sup>2</sup>

**Chart 1**  
**Percentage Savings from Independent Repair Shops: By City**



Based on these data, JDA conducted a detailed econometric analysis, analyzing a wide range of demographic, business, and economic variables to determine how each of these indices related to the average prices in each of the 6 markets. Based on the results of the econometric analysis, a series of 8 relational equations was developed. These final equations were used to predict the price differential in a

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<sup>1</sup> Automobile Aftermarket Industry Association, 2009.

<sup>2</sup> See *Vehicle repair cost analysis: New Car Dealerships vs. Independent Repair Shops Data*, Automobile Aftermarket Industry Association, 2009 for more detail on how these data were generated.

market area comprised of a given state legislative district (be it a state senate district or a lower house region.) The equations developed in this analysis estimate the average price differential in the 6 test markets to be 35.1 percent. In other words, the model predicts that on average, the cost of repairs in the baseline markets was 35.1 percent higher in dealer owned repair shops. This compares with an arithmetic average of 34.9 percent from the original study, a difference of just one-half of one percent.<sup>3</sup>

### **Economic Theory:**

The data available for this analysis is very limited and as such, the econometric methodology used to develop this model is a calibration analysis, or data mining exercise. Data mining is simply the process of extracting patterns from data. It is commonly used in marketing and consumer analysis; however, it differs for the standard scientific method of hypothesis testing that is generally used in economics. Unfortunately, since only limited data are available it is the only reasonable method available for uncovering patterns or correlations in the data. Based on the results of the analysis some economic assertions can be made.

#### The Supply Side: There are Different markets for dealers and independents:

While independent garages and dealers compete on some level, they actually appear to represent almost separate markets which have very different internal dynamics to one another.

The dealer market is characterized by weak competition. Some drivers exclusively choose to get their vehicles service by a dealer. They represent a consistent, relatively price insensitive source of demand for dealer networks. Franchised dealer-based garages belonging to the same vehicle manufacturer are located in separate market areas specifically so that they will not compete with each other. This means that each dealership garage faces little competition.

The independent market on the other hand is extremely competitive. Consumers who choose to get their vehicle repaired at an independent garage have the choice of any shop in their area. This means that demand is more price (and service) sensitive than in the dealer market.

It is this difference in market structure that drives the cheaper prices observed in independent garages. As the number of independent garages (per thousand people) increases prices in that market will fall leading to a larger differential with the dealer sector.

#### The Demand Side: Demographics Matter

Demographic, economic and social factors affect the type of vehicles that are being repaired, their age, the frequency of repair and the time that their owners will spend shopping around for a better deal. These factors all shape the competitive environment in which firms operate and hence the cost differences between them

For example, this analysis suggests that communities with larger family sizes and a higher proportion of children in elementary school had a higher divergences in costs between independent and dealer-owned repair facilities.. Perhaps large families with children are under such financial strain that they become extremely price sensitive thereby holding costs down in the independent sector, driving the price gap between them and the dealer garages.

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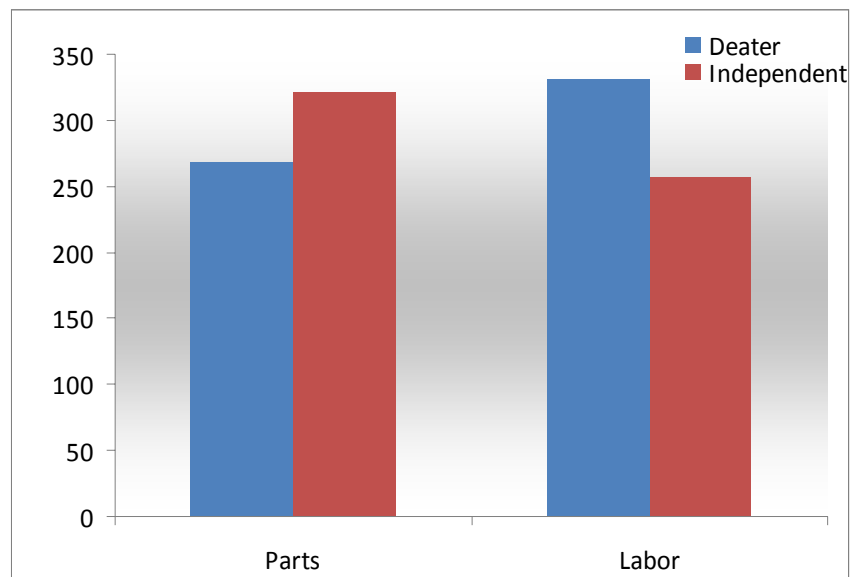
<sup>3</sup> Op. cit. Automotive Aftermarket Industry Association.

## The dynamics of parts and labor

Dealer-owned garages are by their very nature constrained as to which parts they use. Generally, they must source parts from a national marketplace in which price competition is weak. In contrast, independent garages can source their parts from anyone they choose. This flexibility will drive down costs but should also lead to a greater variability in costs between communities as more urban areas contain more options for sourcing parts.

In labor markets, on the other hand, both independent garages and dealers compete in a competitive local market. However there is a significant variability in labor costs across cities as wages are held down in more populated areas by the added supply of labor in those markets. Indeed, it could be argued that dealers would experience the greatest variability in the costs of labor as mechanics that specialize in their brand would be hard to obtain, and therefore demand higher wages, especially in smaller communities.

**Chart 2**  
**Standard Deviation in Total Costs Across The Six Baseline Cities**



### **Model Description and Data:**

The analysis is based on detailed survey information of vehicle repair costs from 6 cities: Boston, Newark, Atlanta, St. Louis, Los Angeles and Seattle. These data, which examine average parts and labor costs for 10 standard types of repair on both foreign and domestic nameplates, provide a benchmark from which our estimates are derived.<sup>4</sup>

Based on these data, JDA conducted a detailed econometric analysis, analyzing a wide range of demographic, business, and economic variables to determine how each of these indices related to the average prices in each of the 6 markets. Well over 100 separate potential independent variables were

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<sup>4</sup> See *Vehicle repair cost analysis: New Car Dealerships vs. Independent Repair Shops Data*, Automobile Aftermarket Industry Association, 2009 for more detail on how these data were generated.

examined from a variety of sources including, the US Department of Commerce, Bureau of the Census, the US Department of Commerce, Bureau of Economic Analysis, the US Department of Labor, Bureau of Labor Statistics, the US Department of Transportation, Bureau of Transportation Statistics and Dun & Bradstreet. Of these, 32 were selected for further screening based on the robustness of the correlations derived from univariate regressions. Based on the results of the econometric analysis, a series of 8 relational equations was developed containing 19 separate independent variables.<sup>5</sup> These final equations were used to predict the price differential in a market area comprised of a given state legislative district (be it a state senate district or a lower house region.)

Data gathered from Dun and Bradstreet's Zapdata system in August 2009 was used to determine the number of dealer-owned and independent repair shops in each legislative district. Dun & Bradstreet data is recognized nationally as a premier source of micro industry data. The D&B database contains information on over 15 million businesses in the United States.<sup>6</sup> It is used extensively for credit reporting, and according to the vendor, encompasses about 98 percent of all business enterprises in the country. This data is gathered at the facility level; therefore, a company with a garage, warehouse and sales office would have three facilities, each with separate employment counts and sales data. The D&B data do not identify whether or not a particular garage is dealer owned, however, they do indicate whether or not the particular facility is a garage or repair shop, a new/used vehicle dealer, or both. Facilities that identified themselves as primarily a new/used vehicle dealer, and those that identified their secondary function as a new/used vehicle dealer were all classified as dealer owned, with the remainder being classified as independent repair shops. While this may overestimate the number of manufacturer-franchised repair shops, it is impossible with the data available to disaggregate this any further. Based on this data, there are about 135,700 dealer affiliated repair shops nationwide, and nearly 250,000 independent facilities.

**Table 1**  
**Repair Shops and Revenues by Type**

	<b>Dealer</b>	<b>Independent</b>
Shops	135,748	247,888
Revenues	\$ 56,750	\$ 62,205
Average Revenue	\$ 418,053	\$ 250,939

Average revenues for each shop type were also derived from the Dun & Bradstreet data; however, since these are total revenues, the dealer owned shops also include revenues from vehicle sales. Data from the Input/Output Accounts of the United States were used to determine the percentage of revenue due to vehicle sales for these establishments.<sup>7</sup>

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<sup>5</sup> Based on our analysis, the price differential in a given market can be calculated by examining: Average family size, college population, elementary school age population, non-citizen population, owner occupied homes worth between 300k and 450k, average size of renter occupied households, percent of renters paying less than 15 percent of their income on rent, percent of households with an income of \$75,000 and \$100,000 and between \$100,000 and \$150,000, Per capita family income, the percentage of workers that drive to work alone, percentage of families with income below the poverty level, percentage of white population, percentage of people of Chinese origin, percentage of population 21 years old or older and between 10 and 14 years old, total population, number of garages (total) per capita, and number of auto parts distributors per capita.

<sup>6</sup> The D&B information database updates over 1 million times a day, over 350 million payment experiences are processed annually, and over 110 million phone calls are made to businesses. In addition, D&B uses a patented matching technology and over 2,000 information computer validations to ensure a high standard of data quality.

<sup>7</sup> Input-Output models use equations known as multipliers to generate what are known as Use and Make matrices. These are used to determine the components that go into each dollar of a product or service produced – and as such,

Based on these data, the overall average revenues for dealer-owned and independent repair facilities in each legislative district is calculated based on the zip code of each establishment. Were the independent repair shops to charge the same rate as dealer-owned facilities, then the overall revenues would rise from the existing per shop average to a new rate equal to the old average multiplied by 1 plus the differential.

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the percent of the product or service comprised of that component. For example, the multiplier for vehicles in auto dealers is 0.86, therefore vehicles make up 86 percent of auto dealer sales.