

The Economic Impact of Independent Grocers: 2012

Methodology and Documentation

Prepared for

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Summary Results:

The Economic Impact of Independent Grocers Study measures the combined impact of independent supermarkets and independent grocery wholesalers. Independent grocers are defined as all privately owned or controlled grocery stores with annual sales between roughly \$2 million and \$5 billion. This definition is inclusive of grocery stores that are publicly traded but have controlling shares held by a family, and employee-owned cooperatives. The study excludes those large retailers with annual sales of over \$5 billion with the exception of members of the National Grocers Association (NGA). This reflects the fact that, according to the NGA, “the meaning of ‘independent retailer’ is more a question of ownership and philosophy of operation, rather than number of stores or type of format.”¹

The industry contributes about \$142.1 billion in total to the US Economy, or just under one percent of GDP and, through its supplier linkages, impacts businesses in 425 sectors of the US economy.² These economic impacts are the result of the retailing process itself, and do not include the impacts of the over \$131 billion in foods, beverage and other items that are sold through the stores. Rather, they are the result of the merchandising activities of the stores themselves, including stocking, and selling as well as those activities involved in promoting the sale of goods at retail, including displaying, sampling, demonstrating, shelving and pricing of items for retail. The 20,880 independent grocers in the United States employ 902,260 people.³

In addition to independent grocery operations, the analysis includes the economic impact of independent grocery wholesalers. This study includes the impact of 329 grocery wholesale locations from 60 companies identified by the NGA as independent wholesalers. We estimate that there are approximately 41,940 employees at these wholesalers whose jobs depend on the independent grocery industry.

Other businesses are related to the independent grocery industry as suppliers and service providers. These firms provide a broad range of products and services including shelving, equipment, heating, air conditioning and refrigeration systems, services such as legal, real estate, financial and human resources, as well as front-end systems and other technologies.. Finally, a number of people are employed in government enterprises responsible for the regulation of the independent grocery industry. All told, we estimate that the independent grocery industry is responsible for 147,250 supplier jobs and generates over \$22.7 billion in economic activity.

An economic analysis of the independent grocery industry will also take additional linkages into account.⁴ This includes the spending by employees of the industry and those of suppliers whose jobs are directly dependent on independent supermarket operations should surely be included. This spending on everything from housing, to food, to educational services and medical care makes up what is traditionally called the “induced impact” or multiplier effect of the industry. In other words, this spending, and the jobs it creates is induced by the merchandising and operations of independent grocers and grocery wholesalers. We estimate that the induced impact of the industry generates 422,130 jobs and just under \$61.0 billion in economic activity, for a multiplier of about 0.447.⁵

¹ National Grocers Association, *Who We Are*. Available at <http://www.nationalgrocers.org/who-we-are>

² Based on 2012 GDP of \$15.7 trillion. See: *National Economic Accounts: Gross Domestic Product*. US Department of Commerce, Bureau of Economic Analysis. Available at <http://www.bea.gov/national>. Economic sectors based on IMPLAN sectors.

³ Throughout this study, the term “firms” actually refers to physical locations. One grocer, for example, may have facilities in 5 or 6 locations throughout the country. Each of these facilities is included in the 20,880 count.

⁴ It is inappropriate to claim that suppliers to the supplier businesses are part of the industry being analyzed. These businesses would more appropriately be considered as part of the supplier firms’ industries.

⁵ Often economic impact studies present results with very large multipliers – as high as 4 or 5. These studies invariably include the firms supplying the supplier industries as part of the induced impact. John Dunham and Associates believes that this is not an appropriate definition of the induced impact and as such limits this calculation to only the effect of spending by direct and supplier employees.

An important part of an impact analysis is the calculation of the contribution of the industry to the public finances of the community. In the case of the independent grocery industry, this contribution comes in two forms. First, the traditional direct taxes paid by these entities and their employees provide over \$27.2 billion in revenues to the federal, state and local governments. In addition, independent grocery retailers collect millions of dollars in sales and excise taxes for state, local and regional governments.⁶

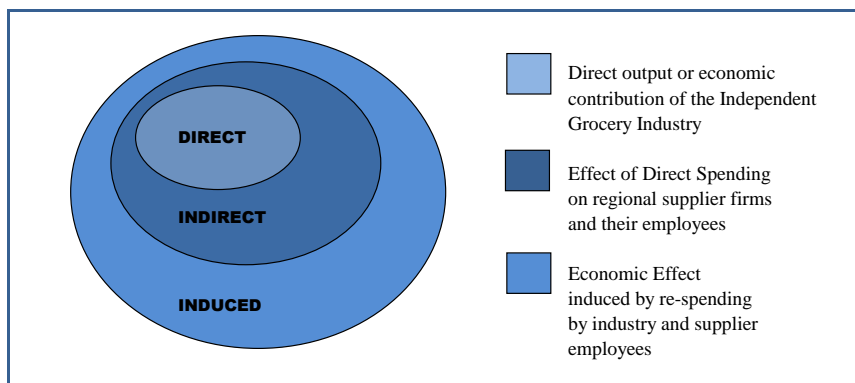
Table 1 below presents a summary of the total economic impact of the industry in the United States.

Table 1: Economic Impact of the Independent Grocers Industry

(\$ Millions)	Direct	Supplier	Induced	Total
Jobs	944,200	147,250	422,130	1,513,580
Wages	\$30,055.4	\$7,787.2	\$19,867.7	\$57,700.3
Output	\$58,445.9	\$22,712.0	\$60,982.3	\$142,140.2
Taxes				\$27,227.9

Impact Model Methodology:

The Economic Impact of the independent grocery industry begins with an accounting of the direct employment in the various sectors. Independent grocers are supermarkets with between about \$2 and \$5 billion in annual sales that are not publicly-traded. Independent grocery wholesalers encompass as many as 329 grocery wholesale locations from 60 companies. The data used in this analysis come from a variety of government and industry sources.



It is sometimes mistakenly thought that initial spending accounts for all of the impact of an economic activity or a product. For example, at first glance it may appear that consumer expenditures for a product are the sum total of the impact on the local

economy. However, one economic activity always leads to a ripple effect whereby other sectors and industries benefit from this initial spending. This inter-industry effect of an economic activity can be assessed using multipliers from regional input-output modeling.

The economic activities of events are linked to other industries in the state and national economies. The activities required to ship groceries to an independent retailer, stock shelves, merchandise products and provide a quality customer shopping experience generate the direct effects on the economy. Regional (or indirect) impacts occur when these activities require purchases of goods and services such as building materials, insurance or energy from local or regional suppliers. Additionally, induced impacts occur when workers involved in direct and indirect activities spend their wages in the region. The ratio between total economic and direct impact is termed the multiplier. The framework in the chart on the prior page illustrates these linkages.

This method of analysis allows the impact of local production activities to be quantified in terms of final demand, earnings, and employment in the states and the nation as a whole.

⁶ Since there are over 50,000 different taxing jurisdictions, many of which exempt certain grocery products from sales taxes it is extremely difficult to calculate the actual amount of sales taxes collected by independent grocers. However, considering that over \$131 billion in products were sold by these stores, even if the overall weighted average sales tax rate were just one-percent, the amount collected would be over \$1.3 billion.

Once the direct impact of the industry has been calculated, the input-output methodology discussed below is used to calculate the contribution of the supplier sector and of the re-spending in the economy by employees in the industry and its suppliers. This induced impact is the most controversial part of economic impact studies and is often quite inflated. In the case of the National Grocers Association model, only the most conservative estimate of the induced impact has been used.

Impact Model Description and Data:

The Economic Impact of Independent Grocers Model (Model) was developed by John Dunham and Associates based on data provided by the National Grocers Association, Hoovers subsidiary of D & B, Inc., Chain Store Guide, the US Department of Labor, the US Census Bureau, the Nielsen Company's TDLinX and the US Department of Agriculture. The analysis utilizes the Minnesota IMPLAN Group Model in order to quantify the economic impact of the independent grocery industry on the economy of the United States. The model adopts an accounting framework through which the relationships between different inputs and outputs across industries and sectors are computed. This model can show the impact of a given economic decision – such as a factory opening or operating a sports facility – on a pre-defined, geographic region. It is based on the national income accounts generated by the US Department of Commerce, Bureau of Economic Analysis (BEA).⁷

Grocery employment is based on data from both Hoovers and TDLinX, as well as from the National Grocers Association. Data were gathered on approximately 61,000 retail store locations, entered into a database, and physically located in a geographic analysis system. These data were then culled down to include only independent grocers of the size classification identified as members of the industry.⁸ All told, there were over 20,880 stores identified. These data provided the number of retail operations and the physical location as well as certain employment data.

To identify all retail grocery stores in the United States and determine if they were independent according to the parameters of the study, a variety of sources were utilized. First, the member list of the National Grocers Association was utilized. Then, the list of those stores qualifying for the USDA's Supplemental Nutrition Assistance Program (SNAP) was identified. Second, the Nielsen Company's TDLinX retail trade channel data was merged with the SNAP data. All companies identified by Nielsen as having less than \$2 million or more than \$5 billion in sales were removed from the list. Then, using both the TDLinX and Hoovers as sources, all grocery stores and grocery store chains that did not fall under the definition of independent were removed from the list. TDLinX was utilized to determine the number of FTEs, or full time equivalent jobs, at each location. A total of 20,880 independent grocery store locations were identified in the 50 states plus DC.

Wholesale employment consists of the D & B, Inc. employment data for those grocery wholesalers who supply independent grocers. In all, a total of 329 independent wholesaler locations were identified. JDA consulted with NGA to determine the value of business accounted for by sales to independent grocers as a percentage of total business. Employment was then calculated as a share of total employment at each location using the independent sales percentages.

⁷ The IMPLAN model is based on a series of national input-output accounts known as RIMS II. These data are developed and maintained by the U.S. Department of Commerce, Bureau of Economic Analysis as a policy and economic decision analysis tool.

⁸ Independent grocers are defined as all privately owned or controlled grocery stores with annual sales between \$2 million and roughly \$5 billion. This definition is inclusive of grocery stores that are publicly traded but have controlling shares held by a family, and employee-owned cooperatives. The study excludes those large retailers with annual sales of over \$5 billion with the exception of NGA members. This reflects the fact that, according to the National Grocers Association, "the meaning of 'independent retailer' is more a question of ownership and philosophy of operation, rather than number of stores or type of format." See: National Grocers Association, *Who We Are*. Available at <http://www.nationalgrocers.org/who-we-are>

For those establishments where a no employment numbers were available econometric techniques were used to estimate an employee count.

Once the initial direct employment figures have been established, they are entered into a model linked to the IMPLAN database. The IMPLAN data are used to generate estimates of direct wages and output in each of the two sectors (retailing and wholesaling). IMPLAN was originally developed by the US Forest Service, the Federal Emergency Management Agency and the Bureau of Land Management. It was converted to a user-friendly model by the Minnesota IMPLAN Group in 1993. The IMPLAN data and model closely follow the conventions used in the “Input-Output Study of the US Economy,” which was developed by the BEA.

- **Wages:** Data from the US Department of Labor’s ES-202 reports are used to provide annual average wage and salary establishment counts, employment counts and payrolls at the county level. Since this data only covers payroll employees, it is modified to add information on independent workers, agricultural employees, construction employees, and certain government employees. Data are then adjusted to account for counties where non-disclosure rules apply. Wage data include not only cash wages, but health and life insurance payments, retirement payments and other non-cash compensation. It includes all income paid to workers by employees. Further details are available from the Minnesota IMPLAN Group at <http://www.implan.com>.
- **Output:** Total output is the value of production by industry in a given state. It is estimated by IMPLAN from sources similar to those used by the BEA in its RIMS II series. Where no Census or government surveys are available, IMPLAN uses models such as the Bureau of Labor Statistics Growth model to estimate the missing output.
- **Taxes:** The model includes information on income received by the Federal, State and Local Governments. The model produces estimates for the following taxes at the Federal Level: Corporate Income, Payroll, Personal Income, and Excise Taxes; and Custom Duties; etc. State and Local tax revenues include estimates of: Corporate Profits, Property, Sales, Severance, Personal Income Taxes; and Licenses; Fees; and certain Payroll Taxes.

Industry Sales Model Methodology:

The economic impact of the independent grocery industry comes about due to the value added by the sales and merchandising activities of grocers and wholesalers. It does not include the jobs created in the manufacture of the products that are sold via the stores.⁹ In order to calculate how many American jobs are created by the production of the products sold by independent grocery retailers, a separate study was conducted. In order to calculate the total sales across states, the number of retail outlets was identified for each state.

Data on sales by store type and trade class by state were gathered from the US Bureau of the Census, Census of Retail Trade for 2007.¹⁰ This is the latest year for which detailed data are available. Total sales by store in each state, class and for each product line were calculated by dividing the product line sales data by store counts in the Census data series. These sales were then inflated (or deflated) to 2012 dollars using data from the US Department of Labor, Bureau of Labor Statistics for each product line type.¹¹

⁹ Rather those jobs would be due to the economic impact of the canned food industry, the baking industry, the meat industry or the beer industry (see for example: Meatfuelsamerica.com, Beerservesamerica.com, Bakersenrichamerica.com and <http://www.mealtime.org/policy/economic-impact-data/>)

¹⁰ See 2007 Economic Census, *Retail Trade: Subject Series - Product Lines: Product Lines Statistics by Kind of Business for the United States and States: 2007*, at: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_44SLLS1&prodType=table

¹¹ US Department of Labor, Bureau of Labor Statistics, Consumer Price Index at: www.bls.gov/cpi/

Once sales per store for the 72 different product classifications used in the analysis were developed, they were multiplied by the number of stores (by type) in each state. When these data are aggregated together across all states they provide an estimate of \$131.160 billion in overall retail sales.

In order to determine the direct economic impact of these retail sales, they must first be margined back to producer prices. This is done by removing the wholesale and retail margins (or overall markups) for each individual product type. Margin data are provided by the US Department of Commerce, Bureau of Economic Analysis.¹² In addition, since the models used in this analysis are US specific, the percentage of each product line made up by imports is also removed.¹³

These two adjustments taken together bring the US producer value of products sold through the independent grocery channel down by 48 percent to \$68.153 billion. It is these producer sales that then drive jobs, wages and output in manufacturing and service industries across the country. In the case of most grocery store items, the product is not produced in the same state as the store – for example, candy items tend to be produced in New York, Pennsylvania and Illinois and are then shipped to retailers in all 50 states. The economic impact of candy sales is therefore, tied to these producing states.

Sales data for each product type are split across producing states with the percentages based on the percentage of total jobs for each product type in that state. These job numbers are derived from zip code level data provided by D&B Inc. So for example, if 10 percent of the tomato jobs are in California, 10 percent of the tomato sales are allocated to that state. These employment numbers are then calculated by wage/employee ratios from the IMPLAN model to generate estimates of wages across each state and product category. The national results are displayed in Table 2 below.

Table 2: Economic Impact of Independent Grocers Industry Sales

	Sales	Producer Value	Jobs	Wages
Total	\$ 131,160,016,963	\$ 68,153,186,803	208,223	\$ 8,932,911,645
Agricultural	\$ 15,845,507,530	\$ 7,827,361,654	42,886	\$ 936,213,815
Foods	\$ 79,620,450,317	\$ 47,360,647,618	123,716	\$ 5,519,588,309
Other Products	\$ 35,171,424,539	\$ 12,944,694,813	41,388	\$ 2,472,512,903
Services	\$ 522,634,577	\$ 20,482,718	234	\$ 4,596,618

Capital Investment Model Methodology:

In addition to the economic impact of their operations, America’s independent grocery retailers create economic activity and jobs through their capital investment programs. Generally speaking, the capital life of a grocery store is estimated to be about 13 years. Over this period, stores need to replace their operating capital, be that heating, air-conditioning and refrigeration systems, shelving, cases, lighting, flooring, front-ends or other major store systems.¹⁴ All of this requires independent grocers to purchase equipment, building materials and services from local and regional contractors. In order to estimate the impact of these capital purchases, a separate model was developed.

The model is based on data from the sales model. According to this model, independent grocery retailers sell just over \$131 billion worth of goods and services annually. Grocery depreciation and amortization in the grocery store industry is about 1.4 percent of sales.¹⁵ In other words, about 1.4 percent of overall

¹² Stewart, Ricky, et. al, *U.S. Benchmark Input-Output Accounts: 2002*, US Department of Commerce, Bureau of Economic Analysis, October 2007.

¹³ Estimated by calculating the ratio of imports by value to overall output for 2012 using the Department of Commerce, Bureau of Economic Analysis NIPA tables. See:

¹⁴ Based on conversations with staff at the National Grocers Association.

¹⁵ *Understanding the Grocery Industry*, The Reinvestment Fund, September 30, 2011.

sales of capital wears out each year. Multiplying the \$131 billion by 1.4 produces an estimate of \$1.836 billion annually or just under \$87,900 per store. Multiplying this by 13 suggests that each of the 20,884 independent grocers will spend \$1.143 million in a replacement cycle.

This figure was compared to an estimate derived from the US Department of Commerce, Bureau of the Census, 2011 Capital Expenditures Survey.¹⁶ Based on these data, about \$6.3 billion was spent on renovations by food stores in 2011. This was divided by total food store sales, and then divided by the number of independent grocery retailers and the resulting figure suggested that each store would spend \$1.134 million in a capital replacement cycle – a figure very close to the first calculation.

Therefore, taking the 1.4 percent figure, it is estimated that the independent grocery sector spends about \$1.836 billion annually on capital improvements. This includes spending on all types of equipment as well as on building materials and various contracting services. The types of products and services in the analysis come from the Bureau of Economic Analysis, and its capital flow tables for the retail industry.¹⁷ These data are allocated by product and service type across each of the states based on the estimated total sales of the independent grocery industry. As with the sales model, the data are aggregated and then split across producing states based on the relative level of employment in each sector in each state, except for services which are allocated 100 percent to the state where the store is located.

As with the sales model, the wages in each industry are calculated by multiplying the resulting job figures by wage per employee ratios taken from the IMPLAN model, and output is calculated by multiplying output per employee statistics and jobs. The analysis shows that capital investments by the independent grocery industry generate 7,42- jobs nationally, that pay nearly \$378.8 million in wages. Table 3 below outlines the national impact.

Table 3: Economic Impact of Independent Grocers Industry Investment

	Jobs	Wages	Output
Total	7,421	\$ 378,798,729	\$ 1,836,240,237

IMPLAN Methodology:

Francoise Quesnay one of the fathers of modern economics, first developed the analytical concept of inter-industry relationships in 1758. The concept was actualized into input-output analysis by Wassily Leontief during the Second World War, an accomplishment for which he received the 1973 Nobel Prize in Economics.

Input-Output analysis is an econometric technique used to examine the relationships within an economy. It captures all monetary market transactions for consumption in a given period and for a specific geography. The IMPLAN model uses data from many different sources – as published government data series, unpublished data, sets of relationships, ratios, or as estimates. The Minnesota IMPLAN group gathers this data, converts it into a consistent format, and estimates the missing components.

There are three different levels of data generally available in the United States: Federal, state and county. Most of the detailed data is available at the county level, and as such there are many issues with disclosure, especially in the case of smaller industries.. IMPLAN overcomes these disclosure problems by combining a large number of datasets and by estimating those variables that are not found from any of

¹⁶ US Department of Commerce, Bureau of the Census, *Table 4a. Capital Expenditures for Structures and Equipment for Companies With Employees by Industry: 2011*, at: www.census.gov/econ/aces/xls/2011/full_report.html

¹⁷ The data in the CFT was prepared by the Industry Benchmark Division (IBD) of the Bureau of Economic Analysis (BEA), part of the United States Department of Commerce. Methodology, coverage of data, and data definitions are noted in the article “The Capital Flow Table for 1997,” published in the November 2003 issue of the *Survey of Current Business*.

them. The data is then converted into national input-output matrices (Use, Make, By-products, Absorption and Market Shares) as well as national tables for deflators, regional purchase coefficients and margins.

The IMPLAN Make matrix represents the production of commodities by industry. The Bureau of Economic Analysis (BEA) Benchmark I/O Study of the US Make Table forms the basis of the IMPLAN model. The Benchmark Make Table is updated to current year prices, and rearranged into the IMPLAN sector format. The IMPLAN Use matrix is based on estimates of final demand, value-added by sector and total industry and commodity output data as provided by government statistics or estimated by IMPLAN. The BEA Benchmark Use Table is then bridged to the IMPLAN sectors. Once the re-sectoring is complete, the Use Tables can be updated based on the other data and model calculations of interstate and international trade.

In the IMPLAN model, as with any input-output framework, all expenditures are in terms of producer prices. This allocates all expenditures to the industries that produce goods and services. As a result, all data not received in producer prices is converted using margins which are derived from the BEA Input-Output model. Margins represent the difference between producer and consumer prices. As such, the margins for any good sum up to one. If, for example, 10 percent of the cost of retailing is the result of the purchase of electricity, then the electricity margin would be 0.1.

Deflators, which account for relative price changes during different time periods, are derived from the Bureau of Labor Statistics (BLS) Growth Model. The 224 sector BLS model is mapped to the 440 sectors of the IMPLAN model. Where data are missing, deflators from BEA's Survey of Current Businesses are used.

Finally, one of the most important parts of the IMPLAN model, the Regional Purchase Coefficients (RPCs) must be derived. IMPLAN is derived from a national model, which represents the "average" condition for a particular industry. Since national production functions do not necessarily represent particular regional differences, adjustments need to be made. Regional trade flows are estimated based on the Multi-Regional Input-Output Accounts, a cross-sectional database with consistent cross interstate trade flows developed in 1977. These data are updated and bridged to the 440 sector IMPLAN model.

Once the databases and matrices are created, they go through an extensive validation process. IMPLAN builds separate state and county models and evaluates them, checking to ensure that no ratios are outside of recognized bounds. The final datasets and matrices are not released before extensive testing takes place.