

Vermont Food Industry Economic Impact Study

Prepared for

The Vermont Grocers' Association



By



John Dunham and Associates

New York

2011

The Economic Impact of the Food Industry in Vermont

	Direct	Supplier	Induced	Total
Economic Impact	\$ 3,003,788,200	\$ 541,591,200	\$ 391,771,000	\$ 3,937,150,400
Jobs	13,780	3,600	4,000	21,380
Wages	\$ 512,902,800	\$ 174,215,600	\$ 150,194,900	\$ 837,313,300
Taxes				\$369,274,550

Summary Results:

The food industry is important to Vermont's economy, creating as many as 21,380 jobs in the state when all of the economic linkages to suppliers are taken into account.¹ In addition, the food industry provides both large and small communities with a wide array of goods and products ranging from fresh produce to boxed cereals to other basic household necessities.²

The Food Industry is Important for Vermont's Workers:

The food industry accounts for roughly 21,380 jobs in the state of Vermont, including jobs with supermarkets and grocery stores, grocery wholesalers, and food manufacturers. These are good jobs, paying a total of \$837.31 million in wages - average of \$37,200 per employee.

The importance of the food industry extends far beyond these direct employees. About 3,600 people in Vermont work in firms supplying the state's food industry with a wide range of products from raw milk to packaging to legal and business services. Another 4,000 people in the State owe their jobs to the re-spending of food industry worker's wages. This does not even include the economic benefits of restaurants, bars, hotels and other on-premise food retail operations. All told, 7.2% of Vermont's workers are involved in the food and grocery industries.

The Food Industry is Important for Vermont's Taxpayers:

The food industry as defined here is responsible for about 15 percent of Vermont's overall economy, and as such is an important part of the fiscal picture of the state.³ The industry and its employees generate about \$202.85 million in state and local taxes and \$166.43 million in federal taxes. In addition, about \$20.6 million in state sales taxes are collected on taxable grocery store items sold through retailers in the state.⁴ This is equal to about 8 percent of total state and local tax revenues.

The Food Industry is Important for Vermont's Residents:

Nearly 700 food retailers operate in Vermont in communities both large and small. Residents depend on these local businesses not only for jobs, but for basic necessities ranging from fresh meat and produce to a wide variety of household goods.

¹ Restaurants and other on-premise food retailers are not included in this analysis.

² This study was conducted for the Vermont Grocers' Association by John Dunham and Associates, a New York City based economic research company. It reflects data from February 2011.

³ Based on a total estimated 2009 Vermont Gross State Product of \$25.44 billion. See State Gross Domestic Product: Fourth Quarter 2009, US Department of Commerce, Bureau of Economic Analysis, February 7, 2011, at: <http://www.bea.gov/regional/gsp/>

⁴ Note that this does not include sales taxes on non-food items sold in convenience stores. The analysis only examined grocery type items sold in these stores.

Vermont Food Industry Economic Impact Study

The food and grocery industry is an essential part of Vermont’s economy. Food manufacturers, ranging from producers of milk and other dairy products, to bakeries, to beverage manufacturers, as well as grocery wholesalers and off-premise food retailers provide nearly 21,400 jobs in the state and generate more than \$3.9 billion in economic activity.

Food producers, distributors, and retail food stores are an important part of both large and small communities which depend on them for jobs and basic household necessities.

The Vermont Grocers’ Association commissioned this analysis to better understand the economic benefits of the food industry in Vermont resulting not only from employment at retail grocery stores, but also from the effects of sales and employment for food manufacturers and suppliers located in The Green Mountain State.⁵

Table 1
The Economic Impact of the Food Industry in Vermont

	Jobs	Wages	Economic Impact
Direct Impacts			
Manufacturing	4,802	\$ 187,570,445	\$ 2,805,416,486
Meat and Poultry Products	150	\$ 3,790,774	\$ 58,898,022
Milk and Dairy Products	2,510	\$ 102,930,761	\$ 1,697,460,737
Canned Fruit and Vegetable Products	44	\$ 1,469,812	\$ 22,359,011
Baked Food Products	376	\$ 13,286,803	\$ 72,243,415
Pet and Animal Food Products	77	\$ 4,965,224	\$ 83,358,706
Confectionery Products	429	\$ 18,950,527	\$ 147,690,517
Food Preparation Products	169	\$ 6,460,792	\$ 59,391,456
Beverage Products	1,047	\$ 35,715,751	\$ 664,014,621
Wholesaling	2,390	\$ 152,249,051	\$ 76,467,045
Retailing	6,587	\$ 173,083,286	\$ 121,904,668
Total	13,779	\$ 512,902,781	\$ 3,003,788,199
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	Direct	Supplier	Induced
Economic Impact	\$ 3,003,788,200	\$ 541,591,200	\$ 391,771,000
Jobs	13,780	3,600	4,000
Wages	\$ 512,902,800	\$ 174,215,600	\$ 150,194,900
Taxes			\$369,274,550

The food industry in Vermont is defined as those businesses which generally manufacture and distribute food products, and which sell food products for off-premise consumption. These include food producers such manufacturers of maple syrup, dairy products, and meat packers, grocery distributors, and food retailers such as supermarkets, bakeries, fruit and vegetable markets. In addition, food jobs associated with warehouse club stores (like Costco) and convenience stores are included in the analysis.

⁵ This analysis was conducted by John Dunham and Associates, a New York City based economic research firm. It was commissioned by the Vermont Grocers Association.

As Table 1 on the prior page shows, the food industry directly provides residents of Vermont with approximately 13,780 jobs.⁶ These are good jobs, paying on average \$37,200 in wages. The industry directly generates about \$3 billion in economic activity in the state.

Table 2
Supplier and Induced Impacts of the Food Industry in Vermont

	Jobs	Wages	Economic Impact
Supplier Impacts			
Agriculture	512	19,493,470	42,410,460
Mining	7	288,360	2,404,110
Construction	95	3,885,420	9,037,120
Manufacturing	102	8,462,860	52,117,670
Wholesaling	633	40,314,150	107,131,080
Retailing	81	2,506,460	6,034,350
Transportation and Communication	593	37,417,360	134,093,260
Finance, Insurance and Real Estate	514	21,883,390	83,761,030
Business and Personal Services	792	30,368,100	77,548,340
Travel and Entertainment	174	3,380,680	9,133,700
Government	96	6,215,350	17,920,050
Other	0	0	0
Total	3,599	174,215,600	541,591,170
Induced Impacts			
Agriculture	14	602,560	1,181,630
Mining	2	67,500	627,360
Construction	46	1,826,390	4,185,560
Manufacturing	16	923,450	6,962,030
Wholesaling	110	6,994,150	18,586,300
Retailing	752	23,000,140	55,879,910
Transportation and Communication	148	8,917,350	40,783,190
Finance, Insurance and Real Estate	495	23,035,570	82,256,270
Business and Personal Services	1,760	68,751,040	135,200,470
Travel and Entertainment	591	12,064,390	34,224,180
Government	61	3,982,220	11,690,790
Other	1	30,160	193,350
Total	3,626	136,096,800	355,218,560

In addition to directly providing jobs to Vermont residents, firms supplying goods and services to food industry operations employ Vermont residents in sectors ranging from agriculture and construction to transportation and communication services. Supplier companies located in Vermont generate a total of 3,600 full-time job equivalents paying \$174.2 million in wages.⁷ In

⁶ Throughout this report, the term “jobs” means full-time equivalent jobs. Two half-time employees would count as 1 job.

⁷ Note that many jobs are only partly linked to the grocery retailing industry. In this case only the portion of the individual jobs linked to the grocery retailing industry is included in this figure. In addition, firms supplying manufacturers and grocers located outside of Vermont are not included in this number.

addition, the operations of supplier firms create \$541.6 million in economic activity in Vermont. Table 2 on the prior page outlines the supplier jobs, wages and output by economic sector.

In total, the industry is responsible for 21,380 jobs in the state, generating over \$837.31 million in wages, and a total of \$3.94 billion in economic activity. This represents about 15% of Vermont's overall economy.⁸

These employees and businesses contribute to the fiscal budgets of state and local governments throughout Vermont. All told, the food industry and its employees generate about \$202.85 million in state and local taxes and \$166.43 million in federal taxes.

Table 3
Fiscal Benefits from the Food Industry in Vermont

	Amount
Total Federal Tax	\$ 166,427,163
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State Taxes	
Income Taxes	\$ 14,640,723
Profits Taxes	\$ 11,853,886
Sales Taxes	\$ 63,587,660
Property Taxes	\$ 93,385,404
Excise and Other Taxes	\$ 5,664,781
Licenses, Fines and Fees	\$ 13,714,936
Total State Taxes	\$ 202,847,390
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Total Taxes	\$ 369,274,553

These figures do not represent the sales taxes paid by consumers on taxable items sold by grocery retailers. While it is very difficult to determine how much is specifically collected in sales taxes on these items (for example three doughnuts would be a taxable sale and six doughnuts would not be taxable), an estimate can be developed using data from the US Department of Commerce, Bureau of the Census. Based on the economic impact calculated in this study, approximately \$1.238 billion in grocery and other items are sold in food retailers in the state.⁹ Assuming a sales tax of 6 percent on only taxable non-food type items, it is estimated that the state would collect about \$20.6 million in additional sales taxes from consumers shopping in food retail establishments.¹⁰

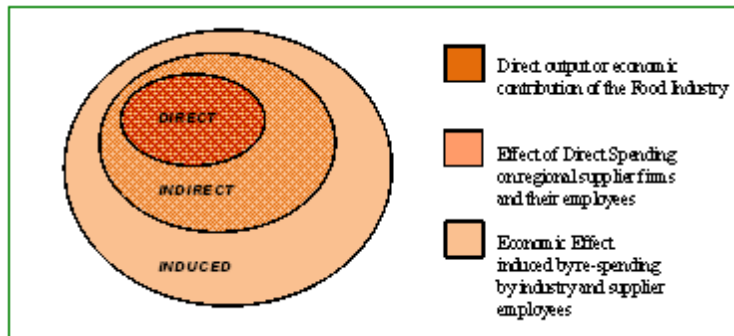
⁸ Based on a total estimated 2009 Vermont Gross State Product of \$25.44 billion. See State Gross Domestic Product: Fourth Quarter 2009, US Department of Commerce, Bureau of Economic Analysis, February 7, 2011, at: <http://www.bea.gov/regional/gsp/>

⁹ Note that this does not include sales taxes on non-food items sold in convenience stores. The analysis only examined grocery type items sold in these stores.

¹⁰ Retail sales estimates based on the U.S. Census Bureau, *2007 Economic Census, Advance Comparative Statistics for the United States, (2002 NAICS Basis): 2007 and 2002*, available on-line at: www.census.gov/econ/census07. Product sales by retailer come from the U.S Census Bureau, 2007 Economic Census, *Retail Trade: Industry Series: Preliminary*

Methodology:

The Economic Impact of the Vermont food industry begins with an accounting of the direct employment in the various sectors. The food industry encompasses all sectors contributing to the off-premise supply of food to the consumer including food production, distribution, and retailing. Food production includes the manufacturing of food products from raw materials such as maple syrup, dairy products, and meat packing. Distribution includes wholesalers and firms who transport, includes firms selling food products to consumers such as supermarkets, mass merchandisers, and farmers' markets as well as those employees working in food sales in warehouse club stores and convenience stores. Mass merchandisers and drug stores are not included in this analysis nor are retailers that generally sell products for on-premise consumption like delicatessens. The data comes from a variety of government and private 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 economy. The activities required to operate and manage a grocery store, to packaging and shipping generate the direct effects on the economy. Indirect impacts occur when these activities require purchases of goods and services such as building materials from local or regional suppliers. Additional, or induced, impacts occur when workers involved in direct and indirect activities spend their wages in the state. 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 state. 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 this model, only the most conservative estimate of the induced impact has been used.

Model Description and Data:

This Vermont Food Industry Economic Impact Model (Model) was developed by John Dunham and Associates based on data provided by Dun and Bradstreet (D & B, Inc.). In the case of the

food industry, establishments and employment is based directly on data provided to John Dunham and Associates by Dun & Bradstreet, Inc. as of February 2011. 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.¹¹ 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 store, warehouse and sales office would have three facilities, each with separate employment counts.

The analysis utilizes the Minnesota IMPLAN Group Model in order to quantify the economic impact of the Vermont food industry on the state economy. 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).¹²

In order to estimate employment, data were gathered from Dun and Bradstreet for companies that reported a primary SIC codes related to the food industry including food manufacturing establishments described as food manufacturing dairy farms, slaughterhouses, sausages and other prepared meats, butter, cheese, and other dairy products, canned foods such as soups and canned fruits, seasonings and sauces, doughs and batters, cereal breakfast foods, dog and cat food, prepared feeds, bread, cake, and related products, food product distribution and warehousing, and food product retailers such as supermarkets, grocery stores, meat and fish markets, fruit and vegetable markets, dairy product stores, and bakeries.

Data on the retail sectors are all based on data from Dun & Bradstreet as of February 2011. Data on total employment by zip code was obtained from Dun & Bradstreet's Zapdata system for establishments with the following primary SIC codes:

- 2011 Beef products
- 2013 Sausages and other prepared meats
- 2015 Poultry slaughtering and processing
- 2021 Creamery butter
- 2022 Cheese
- 2023 Baby formulas
- 2024 Nondairy based frozen desserts
- 2026 Fluid milk
- 2032 Canned specialties
- 2033 Canned fruits and specialties
- 2035 Pickles, sauces, and salad dressings
- 2041 Doughs and batters

¹¹ 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.

¹² 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.

- 2043 Cereal breakfast foods
- 2045 Doughs and batters
- 2047 Dog and cat food
- 2048 Prepared feeds
- 2051 Bread, cake, and related products
- 2052 Cookies and crackers
- 2053 Frozen bakery products
- 2062 Cane sugar refining
- 2064 Candy and other confectionery products
- 2066 Chocolate and cocoa products
- 2077 Animal and marine fats and oils
- 2079 Margarine and margarine oils
- 2082 Malt beverages
- 2084 Wines, brandy, and brandy spirits
- 2085 Distilled and blended liquors
- 2086 Bottled and canned soft drinks
- 2087 Flavoring extracts and syrups
- 2095 Roasted coffee
- 2096 Potato chips and similar snacks
- 2098 Macaroni and spaghetti
- 2099 Food preparations
- 5141 Groceries
- 5142 Packaged frozen goods
- 5143 Dairy products
- 5145 Confectionery
- 5146 Fish and seafoods
- 5147 Meats and meat products
- 5148 Fresh fruits and vegetables
- 5149 Groceries and related products
- 5411 Grocery stores
- 5421 Meat and fish markets
- 5431 Fruit and vegetable markets
- 5441 Candy, nut, and confectionery stores
- 5451 Dairy products stores
- 5499 Miscellaneous food stores

Employment data for warehouse and convenience stores were adjusted to account for the percentage of employees involved in food retailing. This is done by multiplying the total number of employees by a factor derived from the 2007 Economic Census.¹³

Once the initial direct employment figures have been established, they are entered into a model linked to the IMPLAN database.¹⁴ The IMPLAN data are used to generate estimates of direct

¹³ US Department of Commerce, Bureau of the Census, 2007 Economic Census, Retail Trade: Industry Series: Preliminary Product Lines Statistics by Kind of Business for the United States: 2007, September 29, 2009. Sales of *Groceries & other foods for human consumption off the premises* divided by total sales in each retailer type. On premise food sales in these establishments are not included.

¹⁴ Implan Input/Output Tables are for 2008.

wages and output in each of the retail sectors. 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, Estate, Gift, and Excise Taxes, Customs Duties, and Fines, Fees, etc. State and Local tax revenues include estimates of: Corporate Profits, Property, Sales, Severance, Estate, Gift and Personal Income Taxes, Licenses, Fees, and certain Payroll Taxes.