

The Economic Importance of New Jersey's Food System in 2002

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About Us

The Food Policy Institute (FPI) is an academic research unit of Rutgers, the State University of New Jersey, that addresses food and agricultural policy issues. We inform public and private decision makers about issues affecting the increasingly interdependent processes of how food is regulated, produced, distributed, sold, and consumed.

Our mission is to bring the depth of academia's knowledge to bear on pressing issues and challenges facing the food system by providing timely and relevant research that is responsive to the needs of government, industry, and the consumer.

Synopsis

New Jersey's food system ensures access to food by the state's residents and facilitates the production and distribution of food products across the U.S. and world. The food system generated sales in excess of \$81.7 billion in 2002 and directly contributed \$19.30 billion to gross state product (GSP). When the economic linkages to supporting industries and induced consumer spending are considered, the state's food system accounted for 8.5 percent of New Jersey's 2002 private sector GSP.

The food system is also a large employer, providing jobs for 399,664 workers (as of March 12, 2002). These employment contributions swell considerably when linkages to other industries are measured, such that 15.2 percent of all private sector jobs in the state support – either directly or indirectly – businesses engaged in the production, processing, or distribution of food.

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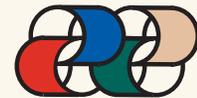
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New Jersey's food and beverage production, processing, and distribution industries are responsible for ensuring the continued accessibility to food for the state's 8.7 million residents. The importance of New Jersey's food system extends well beyond the state's borders, by directly serving the needs of consumers in New York City, Philadelphia, and other major metropolitan centers along the East Coast as well as by facilitating the production and trade of food items destined for other regions of the Nation and world.

The agricultural and food industries collectively constitute a system of interrelated activities that form a critical component of New Jersey's economy. This research brief focuses on quantifying the economic impacts of New Jersey's food system using measures of direct gross output, employment, and value added, as well as assessments of the economic linkages between agribusiness and food firms and other supporting industries.

A Snapshot of New Jersey's Food System

The United States Census Bureau and the National Agricultural Statistics Service conduct, respectively, a series of economic censuses and a Census of Agriculture every five years that allow for analysis of changes in the size and structure of the national economy. All private sector businesses are required by law to participate in the Census. Data collected as part of the censuses are classified under the North American Industry Classification System (NAICS), facilitating industry level analysis.

Data from the most recent (2002) Census of Agriculture and economic censuses were compiled to quantify the economic contributions of New Jersey's food system. The contributions of both firms with paid employees as well as non-employers were tabulated. For purposes of this analysis, the food system was defined broadly to comprise five major sectors:

- **Agricultural producers** (NAICS 111 and 112) – Farms are defined for census purposes as places “from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold.” Farms are typically classified based on whether they primarily produce crops for food and fiber or animals and animal products.

In 2002, New Jersey had 9,924 farms producing products valued at \$749.9 million. During the same period, New Jersey farms employed 22,718 workers, including both family labor and seasonal and non-seasonal workers.¹ Total hired labor expenses were \$186.9 million.

- **Food and beverage manufacturers** (NAICS 311 and 3121) – Manufacturers are defined as establishments that transform, through mechanical, physical, or chemical means, livestock and agricultural products into products for intermediate or final consumption. Also included are manufacturers of non-alcoholic, fermented, and distilled alcoholic beverages.

In 2002, New Jersey had 1,591 food and beverage manufacturers, roughly one-third of which were operations with no paid employees; many were small bakeries that were reclassified by the Census Bureau in 1997 from retail businesses. Industry sales totaled \$10.82 billion. Food and beverage manufacturing businesses employed 34,159 workers with wages of \$1.20 billion.

- **Food and beverage wholesalers** (NAICS 4244, 4248, 42512044, and 42512048) – Food and beverage wholesalers are defined as wholesale merchants, distributors, import/export merchants, agents, brokers, and other businesses that serve as intermediaries in the food distribution chain by selling goods for which they have assumed ownership or arranging the sale of goods owned by others.

In 2002, about 41 percent of New Jersey's 3,323 food wholesale and brokerage operations did not have paid employees, reflecting the presence of a large number of small distributors operating in the industry. The food wholesale sector generated sales of \$41.13 billion. The 41,059 workers employed in the industry earned a total of \$1.84 billion in wages.

- **Food and beverage retailers** (NAICS 445) – Food retailers are defined to include establishments that sell food at fixed points of sale for consumption off premises, including supermarkets, grocery stores, convenience stores, and specialty stores selling meats, fruits, vegetables, seafood, baked goods or other food items. Other retailers that primarily sell general lines of merchandise, which may include food, (i.e., “big box” retailers, pharmacies, price clubs, supercenters, etc.) are not included.

In 2002, New Jersey had 10,456 food retail establishments, more than one-third of which had no paid employees (often viewed as “mom and pop” stores). Food retailers generated sales of \$19.48 billion and employed 105,471 workers earning wages of \$2.07 billion.

- **Foodservice and drinking places** (NAICS 722) – Foodservice establishments prepare meals for on-premises consumption, take out, or delivery to a customer’s location, and include full- and limited-service restaurants, caterers, and foodservice contractors that provide meals in institutional and other settings.

More than half of all food businesses are engaged in some form of foodservice. They range from large chain quick-serve restaurants to small catering businesses and from institutional foodservice contractors to independent white tablecloth full-service restaurants. Roughly 28 percent of the 22,531 foodservice businesses operating in 2002 did not have paid employees. In total, foodservice firms posted sales of \$9.57 billion and employed 196,257 workers. Industry payroll totaled \$2.53 billion.

Table 1 aggregates data across these five sectors to provide a snapshot of the size and composition of the New Jersey food system. In 2002, the New Jersey food system comprised 9,924 farms and 37,901 post-farm gate food firms. Nearly one-third of food businesses (11,926 firms) were classified as “non-employers.” These operations tended to be small proprietorships and business partnerships as well as small corporations without payrolls.

The gross sales volume of New Jersey post-farm gate food firms totaled \$80.99 billion in 2002. Coupled with the \$749.9 million worth of agricultural products sold by New Jersey farmers, the gross sales volume generated within the New Jersey food system amounted to \$81.74 billion.

Total food system output increased between 1997 and 2002. Over that period, sales generated by New Jersey farmers and food firms rose by approximately \$13.9 billion, from \$67.92 billion to \$81.74 billion, an increase of 20.3 percent.² This translates into an expansion of 7.9 percent in real (inflation adjusted) terms.³ This rate of growth is somewhat slower than that experienced across the entire private sector economy in New Jersey (14.2 percent) over the same time period. However, this slower growth rate is not unexpected, as food and agribusiness is a “mature” sector, generally experiencing growth commensurate with the rate of population growth.

A better measure of an industry’s true economic contributions is value added or, in other words, its contribution to gross state product (GSP). The concept of value added allows the elimination of the multiple counting of economic activity that occurs when intermediate goods developed in one industry are utilized as inputs by another industry. For example,

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the sale of a tomato by a farmer to a tomato soup manufacturer contributes to output in the agricultural sector, but is again considered (double counted) when the output of the manufacturer is measured. New Jersey food firms and agribusinesses were found to directly contribute an estimated \$19.30 billion to GSP in 2002.⁴ This value added swells considerably, however, when inter-industry linkages in the state are considered.

The food system also contributes substantially to New Jersey's employment base. In 2002, New Jersey's food firms employed 399,664 workers earning wages of \$7.83 billion.⁵ The foodservice and food retail sectors are by far the largest employers, accounting for roughly three-fourths of the workers employed in the food system.

Table 1: Composition of New Jersey's Food System (2002)

	Production Agriculture	Food & Beverage Manufacturing	Food & Beverage Wholesale	Food & Beverage Retail	Foodservice & Drinking Places	TOTAL Food System*
Firms/Farms	9,924	1,591	3,323	10,456	22,531	37,901 firms 9,924 farms
Total Industry Output (\$ billion)	\$0.75	\$10.82	\$41.13	\$19.48	\$9.57	\$81.74
Direct value added (\$ billion)	\$0.50	\$4.44	\$5.75	\$4.04	\$4.57	\$19.30
Paid Employees**	22,718	34,159	41,059	105,471	196,257	399,664
Payroll (\$ billion)**	\$0.19	\$1.20	\$1.84	\$2.07	\$2.53	\$7.83

* Columns may not add to total due to rounding error.

** For production agriculture, hired farm labor (which includes paid family members, seasonal workers, etc.) is used as a proxy for "paid employees."

Economic Impact of the Food System on New Jersey's Economy

Economic systems are built upon inter-industry dependencies. Economic impact analysis is based on the premise that the expansion (or contraction) in economic activity in one industry will have ripple effects that reverberate throughout the entire economic system. The food system, for example, utilizes a wide range of business services (e.g., data processing and management, accounting, printing, advertising, maintenance, and legal services). Changes in the business volume conducted by food firms will impact these, and other, support industries. These are often referred to as "indirect effects". For example, industries producing goods and services utilized by a food manufacturer will expand their own output as the manufacturer's output increases. Industries serving these support industries also face increased demand for their goods and services, and so forth.

Economic activity in the food system also impacts other sectors of the economy through increased household spending. Wages paid by farmers and food firms are spent and re-spent throughout the economy. Thus, the food sector induces consumer spending on a variety of goods and services ranging from dental and medical care to real estate to restaurant meals. These "induced effects" ripple throughout the economy as these other industry sectors, in turn, expand sales and purchases and hire more workers.

IMPLAN, a widely used input-output modeling system, provides a model of the New Jersey economy and was used to measure the economic linkages of the state's food system. The results of the analysis show that for every one dollar of value added created by New Jersey food firms, roughly fifty cents of value added is created through indirect and induced activity in other New Jersey industries. The value added created by food firms through backward linkages to supporting industries and

through increased household spending amounted to nearly \$9.60 billion in 2002 (Table 2). Therefore, the total impact on New Jersey's gross state product attributed to the food system was on the order of \$28.90 billion, including its direct \$19.30 billion impact and all indirect and induced value added. This translates into 8.5 percent of private sector GSP. In other words, roughly 1 out of every 12 dollars of economic activity in New Jersey was linked to the production, processing, or distribution of food.

The food system's employment impacts are also significant. Directly employing nearly 399,664 workers in 2002, the food system was among the largest employers in the state. Analysis shows that an additional 117,919 jobs were created in other industries as a result of the economic activity stimulated by food businesses, bringing the food system's total employment impact to 517,583 jobs. To place this in context, approximately 1 out of every 6 or 7 private sector jobs (15.2 percent) were linked to the food system in 2002.

Table 2: Total Economic Impacts of New Jersey's Food System (2002)

Direct Value Added	\$19.30 billion
Indirect and Induced Value Added	\$9.60 billion
Total Value Added	\$28.90 billion
New Jersey Private Sector GSP	\$340.42 billion
Food System % of Total Private Sector GSP	8.5%
Direct Employment	399,664 jobs
Indirect and Induced Employment	117,919 jobs
Total Employment Impact	517,583 jobs
NJ Private Sector Employment (March 2002)	3,394,500
Food System % of Employment	15.2%

Conclusions

This research brief examines the economic impacts of the food system on New Jersey's private sector economy and employment base. The food system comprises a complex set of business activities that involve the production, processing, and distribution of food and beverage products destined for consumption within the state and elsewhere. However, these activities are inexorably linked to a large number of other business sectors within the state.

Economic impact estimates show that food firms and agribusinesses generated 8.5 percent of private sector gross state product and 15.2 percent of jobs in 2002. These data demonstrate the vital economic importance of the food system to the state's economic health. They also suggest the value of understanding the opportunities and challenges that will impact future growth and performance of this industry sector.

References

Minnesota IMPLAN Group, Inc., IMPLAN System (2002 data), Stillwater, MN.

New Jersey Department of Labor and Workforce Development, Labor and Planning Analysis. Gross State Product for New Jersey by Industry, 1997 – 2004. (Available online, updated: July 26, 2005).

New Jersey Department of Labor and Workforce Development, Labor and Planning Analysis. Trends in Employment and Wages in New Jersey, 2002. April 2004.

Schilling, B. J. and K. P. Sullivan. "The Economic Importance of New Jersey's Food and Beverage Distribution Industry in 2002." Food Policy Institute Research Brief No. FS05-01 (January 2006).

United States Census Bureau. 2002 Economic Census, Manufacturing – New Jersey (Geographic Area Series), Washington DC, September 2005.

United States Census Bureau. 2002 Economic Census, Wholesale Trade – New Jersey (Geographic Area Series), Washington DC, September 2005.

United States Census Bureau. 2002 Economic Census, Retail Trade – New Jersey (Geographic Area Series), Washington DC, September 2005.

United States Census Bureau. 2002 Economic Census, Accommodation and Food Services – New Jersey (Geographic Area Series), Washington DC, September 2005.

Notes

- 1 Excluded from this count are the 15,339 farm operators responsible for day-to-day decision making. Their omission is intended to make data for the farm sector more comparable with employment figures in the post-farm gate sectors, which do not report the number of proprietors or self-employed individuals.
- 2 The Food Policy Institute previously reported that New Jersey food firms (excluding production agriculture) had sales of \$63.4 billion in 1997 (see, Schilling and Sullivan 2003). The revised 1997 figure of \$67.92 billion used here reflects the inclusion of alcoholic beverage distributors (NAICS 4228) as well as market value of farm products sold in 1997, making it comparable to the industry composition presented in this research brief.
- 3 Sales were deflated using the consumer price index for all urban consumers (all items) provided by the U.S. Department of Labor, Bureau of Labor Statistics.
- 4 IMPLAN Professional® Version 2.0 was used to estimate the direct value added impacts of the New Jersey food system. Data for 2002 were used.
- 5 Employment in the post-farm gate food firms is as of March 12, 2002. This figure excludes individuals that operate firms with no reported payroll (i.e., sole proprietors and partners operating their own businesses), farm operators, and contract farm workers.