The Economic Importance of New Jersey's Food System in 2012

Bulletin E355





Cooperative Extension

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New Jersey's agricultural and food production, processing, and distribution industries support the continued accessibility to food for the state's 8.9 million residents. The importance of New Jersey's food system extends well beyond the state's borders, directly serving the needs of consumers in New York City, Philadelphia, and other major metropolitan centers along the East Coast. It also facilitates 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 not only serves a function vital for human subsistence, but also represents a critical component of New Jersey's economy. The size and complexity of the food system, however, is generally not well understood. Information on the composition and importance of the food system is useful in a variety of policy making contexts, including prioritizing sectors for state economic development assistance, workforce development and training initiatives, international trade development, and planning for food safety, defense and critical infrastructure protection.

This bulletin is therefore intended to inform policy making and industry leadership by measuring the composition, size, and economic significance of the state's food system. The impact of New Jersey's agribusiness and food firms on the State economy are quantified using measures of direct gross output (sales), employment, wages, and value added, as well as by assessing the economic linkages between the food system and other supporting industries.

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. These censuses enable analysis of changes in the size and structure of the national economy. All private sector businesses are required by law to participate in the censuses, data from which are classified under the North American Industry Classification System (NAICS) to support industry level analysis.

Data from the most recent (2012) Census of Agriculture and economic censuses were compiled to quantify the economic contributions of New Jersey's food system [Table 1]. The contributions of 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.

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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 2012, New Jersey had 9,071 farms with gross sales of just over $1 billion. During the same year, New Jersey farms employed 24,561 workers, including both family labor and seasonal and non-seasonal workers.[1] Total hired labor expenses were $267.5 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 2012, New Jersey had 1,913 food and beverage manufacturers, more than half (51%) of which were operations reporting no paid employees. Industry sales totaled $14.86 billion. Food and beverage manufacturing businesses employed 30,333 workers with wages of $1.34 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 2012, about 43 percent of New Jersey's 3,267 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 $72.00 billion. The 47,634 workers employed in the industry earned a total of $3.06 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, (e.g., "big box" retailers, pharmacies, price clubs, supercenters, etc.) are not included.

In 2012, New Jersey had 11,006 food retail establishments, more than 38 percent of which had no paid employees (small independent businesses often viewed as "mom and pop" stores). Food retailers generated sales of $24.50 billion and employed 104,425 workers earning wages of $2.46 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.

Sixty-three percent of all post-farm gate 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 32 percent of the 27,765 foodservice businesses operating in 2012 did not report paid employees. In total, foodservice firms posted sales of $14.42 billion and employed 233,932 workers. Industry payroll totaled $3.74 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 2012, the New Jersey food system comprised 9,071 farms and 43,951 post-farm gate food firms. Thirty-five percent of food businesses (15,510 firms) were classified as "non-employers." These operations tended to be small proprietorships and business partnerships, as well as small corporations without payrolls.

[1] Only hired employees are considered. Excluded from this count are the 14,152 farm proprietors (operators) responsible for day-to-day decision making (USDA-NASS, 2014). This count is conservative since the National Agricultural Statistics Service only collects information on a maximum of three operators per farm. Their omission is intended to make employment 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.

Table 1: Composition of New Jersey's Food System (2012).

	Production Agriculture	Food & Beverage-Manufacturing	Food & Beverage Wholesale	Food & Beverage Retail	Foodservice & Drinking Places	TOTAL Food System
Firms/Farms (Number)	9,071	1,913	3,267	11,006	27,765	43,951 firms 9,071 farms
Total Industry Output ($ billion)	$1.01	$14.86	$72.00	$24.50	$14.42	$126.79
Direct Value Added ($ billion)	$0.54	$4.24	$8.90	$5.01	$8.09	$26.78
Paid Employees* (Number)	24,561	30,333	47,634	104,425	233,932	440,885
Payroll ($ billion)*	$0.27	$1.34	$3.06	$2.46	$3.74	$10.87

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

The gross sales volume of New Jersey post-farm gate food firms totaled $125.78 billion in 2012. Coupled with the $1.01 million worth of agricultural products sold by New Jersey farmers, **the gross sales volume generated within the New Jersey food system amounted to $126.79 billion in 2012.** A more refined measure of an industry's true economic contributions is value added or, in other words, its contribution to gross domestic product (GDP). 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, 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 $26.78 billion to state GDP in 2012.**[2]

The food system also contributes substantially to New Jersey's employment base. **In 2012, New Jersey's farms and food businesses employed 440,885 workers earning wages of $10.87 billion.**[3] The foodservice and food retail sectors were by far the largest employers, accounting for 77 percent of the workers employed in the food system.

Recent Growth in the Size of the Food System

Comparison with a 2007 economic impact assessment (Schilling and Sullivan, 2011) shows that total food system output (sales) increased in New Jersey by approximately $21.42 billion from 2007 to 2012 (an increase of 20.3 percent). This translates into an expansion of 8.7 percent in real (inflation-adjusted) terms. The direct value added to New Jersey's economy by the food system similarly increased by 25.7%, from $21.31 billion to $26.78 billion. This equates to a real economic expansion within the industry of 13.5% and stands in stark contrast to the 1.9% real decline in New Jersey's private sector GDP economy in this five year period.[4] Direct employment also rose from 431,765 workers to 440,885 workers over the period (a 2.1 percent increase). This growth in food sector jobs compares to a 4.4 percent decline in total (non-farm) private sector employment between 2007 and 2012.

Economic Impact of the Food System in New Jersey

Economic impact analysis is based on the premise that a regional economy is built upon inter-industry dependencies and that the expansion (or contraction) of economic activity in one industry will have ripple effects that move throughout the entire economic system. The food system, for example, utilizes a wide range of business services (e.g., data processing and

[2] IMPLAN Professional® Version 3.0 (2012 data) was used to estimate the direct value added of the New Jersey food system.
[3] Employment in the post-farm gate food firms is as of March 12, 2012. 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.
[4] 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.

Table 2: Total Economic Impacts of New Jersey's Food System (2007).

Direct Value Added	$26.784 billion
Indirect and Induced Value Added	$21.592 billion
Total Value Added	**$48.376 billion**
New Jersey Private Sector GDP[a]	$464.158 billion
Food System % of Total Private Sector GDP	**10.4%**
Direct Employment	440,885 jobs
Indirect and Induced Employment	209,334 jobs
Total Employment Impact	**650,219 jobs**
NJ Private Sector Employment (March 2012)[b]	3,272,300
Food System % of Private Sector Employment	**19.9%**

[a]Source: New Jersey Department of Labor and Workforce Development (gross domestic product, current dollars, for private industries).

[b]Source: New Jersey Department of Labor and Workforce Development (nonagricultural wage and salary employment, seasonally adjusted – total private sector).

management, accounting, printing, advertising, maintenance, and legal services). Changes in the business volume of 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. These multiplier effects tend to diminish over time because each round of spending is reduced by the amount of money directed outside of the economic system being studied. These "leakages" include, for example, payments to social security, income taxes, personal savings, and payments for imported goods and services.

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 value added created by food firms through backward linkages to supporting industries and through increased household spending amounted to $21.59 billion in 2012 [Table 2]. Therefore, the total impact on New Jersey's gross domestic product attributed to the food system was on the order of $48.38 billion. This translates into 10.4 percent of New Jersey's private sector GDP. **In other words, when the indirect and induced economic impacts of the food system are considered, roughly 1 out of every 10 dollars of economic activity in New Jersey was linked to the production, processing, or distribution of food.**

Food firms and agricultural operations are also a substantial part of the state's employment base. Directly employing 440,885 workers in 2012, the food system was among the largest employers in the state. IMPLAN analysis shows that an additional 209,334 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 650,219. **To place this in context, nearly 1 out of every 5 private sector jobs (19.9 percent) were linked to the food system in 2012.**

Conclusions

This bulletin 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. The gross sales volume generated within the New Jersey food system totaled $126.79 billion in 2012.

A more refined measure of an industry's true economic contributions, however, is its contribution to gross domestic product. Further, the activities of farms and food businesses are inextricably linked to a large number of other business sectors within the state. Economic impact analysis is also useful for measuring the size of these economic linkages.

Economic impact estimates derived from the 2012 economic censuses and IMPLAN modeling show that food firms and agribusinesses—and their linkages to other industries—accounted for 10.4 percent of New Jersey's private sector gross domestic product and 19.9 percent of jobs in 2012. These data demonstrate the vital economic importance of the food system to the state's economic health and suggest the value of understanding the opportunities and challenges that will impact future growth and performance within this sector.

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