

ECONOMIC IMPACT OF MAINE'S MAPLE INDUSTRY

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This study shows the following:

- ⇒ Maine has the third largest maple industry in the United States, behind only Vermont and New York.
- ⇒ Maine's maple industry is characterized by a relatively small number of farms accounting for the vast majority of syrup that is produced.
- ⇒ Maine's licensed maple syrup producers have been in operation an average of 24 years, and many of the farms appear to span multiple generations.
- ⇒ Maine's maple industry—which counts the licensed producers, and sales at retail food stores and businesses impacted by Maine Maple Sunday—generates an annual direct contribution to the state's economy of an estimated \$27.7 million in output, 567 full- and part-time jobs, and \$17.3 million in labor income.
- ⇒ Maine's maple industry has an annual statewide economic contribution, including multiplier effects, of an estimated \$48.7 million in output, 805 full- and part-time jobs, and \$25.1 million in labor income.

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1. INTRODUCTION

Maple production is an important part of Maine's forest products sector, and it provides a source of food and other products that are "Made in Maine." Maine's maple producers make syrup and a wide range of related products (e.g., maple candy, taffy and maple coated nuts) and many participate in the state's annual Maine Maple Sunday. An estimated 120,000 people visited maple operations on Maine Maple Sunday in 2013, and the farms offered visitors activities such as syrup boiling demonstrations, free samples, farm tours and tractor rides.²

Maine is one of the top U.S. states for maple syrup production. According to the United States Department of Agriculture, Maine ranked behind only Vermont and New York in terms of the number of taps and overall syrup production in 2013.³ Among these top three states, Maine had the highest growth rate of production between 2011 and 2013 (25 percent), followed by Vermont (16 percent) and New York (2 percent).

² Since the visitation figures for Maine Maple Sunday come from the farms, and not the visitors themselves, some of the people (who visit more than one farm) could have been double counted.

³ USDA figures are from a June 2013 *Maple Syrup Production* "News Release" of the National Agricultural Statistics Service, United States Department of Agriculture.

The purpose of this study is to examine the statewide economic contribution of maple production in Maine.⁴ Economic contribution is defined as the output (i.e., revenue), employment and labor income (e.g., wages and salaries, proprietor's income) that are directly associated with maple production activities in Maine, as well as the multiplier effects that are supported by the spending of maple farms, other businesses that are part of the maple industry (including food retailers and companies impacted by the spending of visitors on Maine Maple Sunday), and their employees. The economic impact assessment accounts for the production and sales of syrup and other products by maple farms, retail sales at food stores, and the sales of "tourism-related" retailers (e.g., gas stations and restaurants) that are part of Maine Maple Sunday. The analysis uses information from a variety of sources, including a recent University of Maine survey of maple producers that are licensed in the state.

2. DATA COLLECTION

A survey of maple producers that are licensed in Maine was conducted to collect information about their operations. The first round of surveys took place in December of 2013, and replacement surveys were sent to non-respondents in January of 2014. The original target population consisted of 399 licensed maple farms, and this group decreased to 373 after removing "bad address" (i.e., surveys that were returned by the Postal Service) and producers that are no longer in operation. As of January 25, 2014, 128 surveys had been returned. This translates into a response rate of 34.3 percent.

⁴ A companion study, to be completed later this year, will examine issues affecting the growth of maple production in Maine.

Table 1 provides a summary of the size distribution, measured by number of taps in 2013, of Maine’s licensed maple farms. The sample of maple producers had an average of 4,109 taps, which is within two percent of an average of 4,021 taps calculated using data from the United States Department of Agriculture (i.e., USDA statistics show 1,500,000 taps in Maine, which translates into an average of 4,021 taps for the 373 operations). This means that, in terms of average size, the sample is very representative of the population of all maple producers that are licensed in Maine.

Table 1. Size Distribution of Maple Production Operations in Maine (n=124)

Number of Taps, 2013	Percentage of Operations
Less than 100	14%
100 to 249	23%
250 to 499	19%
500 to 999	16%
1,000 to 9,999	19%
10,000 or more	10%
	100%
Average Number of Taps	4,109

Notes. Information is from a University of Maine survey of maple producers that are licensed in Maine. Figures include taps on land that is owned and leased by the maple farms.

A closer look at Table 1, however, suggests that the size distribution of maple farms is characterized by a high percentage of small producers, and a relatively small number of large operations. Over 70 percent of the maple farms had fewer than 1,000 taps in 2013, which is equivalent to less than one-quarter of the average operation’s size. Furthermore, almost 40 percent of the producers had fewer than 250 taps. The ten percent of maple farms with 10,000

or more taps accounted for 86 percent of the total taps covered by the maple producers in the sample. These statistics are suggestive of a maple production industry that is dominated by a relatively small number of very large operations.

Table 2 presents information on the age distribution of the sample of maple production operations that are licensed in Maine. The maple farms have been in operation an average of 24 years as of 2013 (i.e., they started in 1989). About 50 percent of the maple farms have been around since at least 1989, which is far enough in the past such that the operation may have spanned multiple generations. About 30 percent of the operations began tapping trees during the 2000s, and 10 percent are only a few years old (i.e., started operations in 2010 or later).

Table 2. Age Distribution of Maple Production Operations in Maine (n=113)

Year that Operation began Tapping Trees	Percentage of Operations
Before 1970	13%
1970 to 1979	16%
1980 to 1989	18%
1990 to 1999	14%
2000 to 2009	29%
2010 or Later	10%
	100%
Average Age of Operation, as of 2013	24 years

Note. Information is from a University of Maine survey of maple producers that are licensed in Maine

3. ECONOMIC IMPACT ANALYSIS

Table 3 presents information on the annual statewide economic contribution of maple production in Maine. Impact figures are based, in part, on information collected from the survey of licensed maple farms, but the results are “scaled up” to represent the entire industry. The direct output of \$27.7 million is the estimated revenue generated by the production of maple syrup and other maple products, retail sales of maple syrup at food stores in Maine, and visitor expenditures related to Maine Maple Sunday. About 75 percent of the total direct output of \$27.7 million is revenue earned by the maple producers, either through the sales of syrup or other maple products. The rest of the direct output is accounted for by retail sales at food stores and the estimated spending of Maine Maple Sunday visitors on “tourism-related” items such as gasoline and meals.

Table 3. Economic Contribution of Maple Production in Maine, 2013

	Direct Contribution	Multiplier Effects	Total Contribution
Output	\$27,727,532	\$20,962,903	\$48,690,435
Employment	567	238	805
Labor Income	\$17,283,876	\$7,810,279	\$25,094,155

Notes: Direct contribution includes estimated economic activity associated with maple syrup production, production of other maple products (e.g., candy), retail sales of maple syrup, and visitor expenditures related to Maine Maple Sunday. Estimates of the direct contribution are based on information from a University of Maine survey of Maine maple producers, maple syrup production data from the United States Department of Agriculture, and visitor spending data from the Maine Office of Tourism. Multiplier effects are estimated using an economic impact (IMPLAN) model of the Maine economy.

The direct employment of an estimated 567 full- and part-time jobs includes people involved in the production of maple syrup and other maple products, as well as workers in food stores (that sell maple syrup) and businesses that serve Maine Maple Sunday visitors. The vast majority (i.e., over 90 percent) of the jobs counted in the direct impact are associated with the maple production operations, either as operators or paid employees. The United States Department of Agriculture defines a “farm” as a place that makes or sells \$1,000 or more of agricultural products. Using a cutoff of \$1,000 or more in sales to define a farm proprietor and information from the survey of licensed maple producers, we were able to estimate the total number of maple farm operators in Maine. Information from the survey was also used to estimate the number of (hired) workers involved in maple production.

The direct labor income of \$17.3 million includes proprietor's income received by the farm operators (based on information from the survey), wages and salaries paid to hired workers (also reported on the survey), as well as the estimated labor income associated with the workers at food stores that sell maple syrup and businesses that are impacted by Maine Maple Sunday (using information from an economic impact model of the Maine economy).

The multiplier effects, estimated by the Maine IMPLAN model, are the economic activity—that is, output, employment and labor income—supported by the spending of businesses and workers that are associated with the production of maple syrup and related products, as well as the economic activity generated by the retail sales of maple syrup and the sales associated with Maine Maple Sunday. The production and sales of maple products in Maine has an annual statewide economic contribution, including multiplier effects, of an

estimated \$48.7 million in output, 805 full- and part-time jobs, and \$25.1 million in labor income.⁵

4. SUMMARY

Maine has the third largest maple production industry in the United States—behind Vermont and New York—in terms of numbers of taps and syrup production in 2013. The maple production industry in Maine is characterized by a relatively small number of farms accounting for the vast majority of syrup that is produced. Maple production appears to be a “hobby” for a large percentage of the producers that are licensed in Maine. Maine’s licensed maple syrup producers have been in operation an average of 24 years, and many of the farms appear to span multiple generations. About 40 percent of the maple farms in our sample began tapping trees in 2000 or later.

The maple production industry in Maine—which counts the licensed producers, and sales at retail food stores and businesses impacted by Maine Maple Sunday—generates a direct contribution to the state’s economy of an estimated \$27.7 million in output, 567 full- and part-time jobs, and \$17.3 million in labor income. The direct employment and labor income figures include farm operators (i.e., one person for each maple farm that generated more than \$1,000 in sales) and estimated proprietor’s income. Maine’s maple industry has an annual statewide economic contribution, including multiplier effects, of an estimated \$48.7 million in output, 805 full- and part-time jobs, and \$25.1 million in labor income.

⁵ The employment figures in the IMPLAN model are based on a headcount and do not differentiate between full and part-time workers.