

Bonnie Gee Yosick llc

Economic and Policy Analysis

MEMORANDUM

TO: Clark Worth

FROM: Bonnie Gee Yosick

DATE: September 23, 2008 – Revised

SUBJECT: Economic Impact of Portland's Farmers Markets

The City of Portland's Office of Sustainable Development (OSD) supports the development of farmers markets to enhance the lives of its residents and promote local agriculture. To evaluate the potential to expand Portland's existing farmers markets and start new ones, OSD and partner agencies have commissioned a *Portland Farmers Markets / Direct-Market Economic Analysis*. To complete the study, OSD retained a consultant team known as the *Farmers Market Collaborative* led by Barney and Worth, Inc. with consulting partners Globalwise Inc., Farmers' Markets America, and Bonnie Gee Yosick LLC (BGY LLC).

One issue being analyzed is the impact of Portland's 14 farmers markets on the regional Portland metro-area economy (see box). Using data provided by five key markets (Hillsdale, Hollywood, Lents, Montavilla, and Portland PSU), we estimated the impact of these five markets and extrapolated the overall impacts of all existing markets in aggregate.

Portland's Farmers Markets – 2007		
Alberta	Lents International	People's
Hillsdale	Lloyd	Portland
Summer		Eastbank
Winter	Montavilla	Ecotrust
		PSU
Hollywood	Moreland	Shemanski
Interstate	OHSU	

Summary

Economic activity is typically measured in terms of output (which can be thought of as Gross Regional Product or sales), employment to create that output, and the resulting employee compensation or income. Farmers markets have an economic impact through several activities. The first and largest economic activity is the purchase of fresh product at the farmers markets. Second, there is the sale of prepared food intended for consumption at the market location. Finally, there is the fee paid by the vendors to the farmers market manager for organizing and administering the market.

Together, the three components of economic activity of the five farmers markets studied—the sale of fresh product at the markets, the sale of prepared food for consumption at the markets, and the management fees collected for the management and operation of the markets themselves—yield nearly \$12 million in total economic activity, including over 100 jobs, and over \$2 million in employee compensation. Extrapolating to the aggregated total of all 14 markets in Portland yields an estimated total economic impact of over \$17 million in output, more than 150 jobs, and nearly \$3.2 million in employee compensation as shown in Table 1.

Total Estimated Economic Impact of 14 Portland-Area Farmers Markets, 2007

	Direct	Indirect	Induced	Total Impact
<i>Output</i>				
Product Sales	\$10,757,603	\$2,994,949	\$1,886,048	\$15,638,600
Prepared Food Sales	\$438,030	\$131,996	\$96,273	\$666,299
Management Fees	\$515,436	\$191,682	\$126,454	\$833,572
Total	\$11,711,069	\$3,318,627	\$2,108,775	\$17,138,471
<i>Employment*</i>				
Product Sales	96.7	20.6	16.2	133.5
Prepared Food Sales	6.9	0.9	0.8	8.6
Management Fees	9.2	1.6	1.1	11.9
Total	112.8	23.1	18.1	154
<i>Employee Compensation</i>				
Product Sales	\$1,333,566	\$841,790	\$556,560	\$2,731,916
Prepared Food Sales	\$133,047	\$33,677	\$28,412	\$195,136
Management Fees	\$145,579	\$57,088	\$37,318	\$239,986
Total	\$1,612,192	\$932,555	\$622,290	\$3,167,038
<i>Total Value Added</i>				
Product Sales	\$4,880,840	\$1,628,146	\$1,137,365	\$7,646,351
Prepared Food Sales	\$195,199	\$68,432	\$58,054	\$321,685
Management Fees	\$282,692	\$107,665	\$76,255	\$466,612
Total	\$5,358,732	\$1,804,242	\$1,271,675	\$8,434,648

*Full-time and part-time employment

Source: *IMPLAN and Bonnie Gee Yosick, LLC.*

Note: Overall output is shown in the top panel of Table 1. The subsequent panels provide additional information on employment, employee compensation, and total value added – all elements of total output shown above. Total value added includes employee compensation, proprietary income, other property type income, and indirect business taxes.

Methods and Data Sources

Working with the Farmers Market Collaborative and the City of Portland, five farmers markets provided detailed data to be used as representative case studies for markets in the Portland area. These five markets—Hillsdale, Hollywood, Lents, Montavilla, and Portland (PSU)—provided sales estimates and vendor fees totals for the 2007 market season. Portland (PSU) also provided detailed sales by product for traditional farmers

market product types and detailed sales information by vendor for prepared food. BGY LLC used STATA statistical software to tabulate these sales by product type, and applied the resulting distribution to disaggregate estimated sales for all markets by product type. Total estimated sales for each market were verified by market managers, and then disaggregated using the distribution of product at the Portland PSU market. Finally, BGY LLC used IMPLAN to approximate economic impacts of these estimated sales and vendor fees.

IMPLAN is an economic Input-Output modeling system developed by the U.S. Forest Service with the University of Minnesota. The IMPLAN modeling system combines the U.S. Bureau of Economic Analysis' Input-Output Benchmarks with other data to construct quantitative models of trade-flow relationships between businesses and between businesses and final consumers. The model captures the market transactions for consumption, in order to replicate the effects of a change in one or several economic activities to predict its effect on a specific state, regional, or local economy (impact analysis). The IMPLAN modeling system has been in use since the mid-1970s and is currently used by numerous consulting firms, university research centers, and government agencies, making the results generally acceptable in inter-agency analysis. IMPLAN data files are available by county, and because the relevant region for this project is of the City Portland, Multnomah County was selected as the study region for modeling purposes.

As with any analytic tool, there are limitations of the IMPLAN input / output analysis for this study. One such shortcoming is that the model assumes constant returns to scale and constant production functions for each participant in an industry / production sector. Every farmer is assumed to be equally efficient and productive – which may be true more often for traditional agricultural operations, but less applicable for small-scale growers participating in farmers markets.

Farmers Market Product Sales—Five Prototypical Markets

There were 14 active farmers markets in the Portland area in 2007. Of these, five were selected as the prototypical markets representing a range of market sizes and locations, and these markets provided more detailed information on their sales and vendors. These five markets were Hillsdale, Hollywood, Lents, Montavilla, and Portland (Saturday). Of these five, Portland was the largest in terms of dollar value of gross sales for 2007, accounting for over \$4.3 million in product sold in the 2007 season, as shown in Table 1.

Table 1
Estimated Annual Sales, 2007

	2007
Hillsdale (summer only)	\$1,820,000
Hollywood	\$1,740,000
Lents	\$40,000
Montavilla	\$207,000
Portland (PSU)	\$4,335,500
Total	\$8,142,500

Note: These totals include prepared food.

Source: Market Managers.

Portland also provided week-by-week sales reports filed by vendors for the 2007 season. These reports were optional and not submitted by all vendors. With sales of approximately \$1.65 million represented, these data represent approximately 38 percent of the Portland market's total of an estimated \$4.3 million. With an estimated \$440,000 in prepared food, the prepared food segment of Portland Farmers Market's Saturday market might be compared to a Food Court in a shopping center. Though the smaller markets also include some prepared food, the prepared food at Saturday Farmers Market at Portland State is separate from the rest of the market in terms of its administration and fee structure.

For the remaining categories of product provided by Portland Farmers Markets (PFM) sold at the market, the distribution of sales was shown as follows in Table 3.

Table 2
Portland Farmers Market Distribution of Sales, by Dollar Volume

Item	Percent of Dollar Volume Sold
Vegetables	32.0%
Fruit	13.8%
Baskets	0.1%
Nursery stock	2.6%
Cut flowers	6.2%
Eggs	0.0%
Bugs	0.0%
Seafood	4.8%
Nuts	1.3%
Dried fruit	0.1%
Jams/jellies	4.3%
Pickles	1.4%
Roasted chilies	0.1%
Butter	0.3%
Cheese	6.1%
Ice cream	0.0%
Meat	7.7%
Bakery	13.1%
Sauces	2.1%
Spices	0.0%
Fresh pasta	2.1%
Wine	1.9%
Total	100.0%

Notes: Totals exclude prepared food. Only categories with sales recorded in the 2007 season are shown; totals have rounded to the nearest one-tenth of one percent.

Source: Portland Farmers Market, tabulated by Bonnie Gee Yosick LLC.

Representing nearly one-third of the value of all products sold, fresh vegetables are a primary driver of the farmers market, as shown in Table 2. Fresh vegetables were followed by fresh fruit, bakery items, cut flowers, and cheese in terms of dollar volume of goods sold. This distribution was used to estimate the appropriate sectors for total farmers market sales in IMPLAN.

The IMPLAN modeling system captures the trade-flow relationships between businesses, and between businesses and final consumers, to replicate the effect of a change in an economic activity to predict its impact on the local economy.

IMPLAN quantifies the effect on the local economy as direct, indirect, or induced contributions to economic activity. *Direct contributions* are defined as all 'first round' economic activities which contribute to output, income and employment. In this case, it is the customers purchasing products at the farmers markets.

Indirect contributions are defined as all 'subsequent rounds' of economic activities which contribute to output, income and employment. These activities are not directly associated with the purchase of the farmed product but are a result of the farmers market and farming activities. Examples would include seed and equipment needed to grow the fresh product. The investment in seed and equipment is a direct farming-related activity contributing to output.

Induced contributions measure the economic activity associated with the re-spending of wages paid in the direct and indirect activity. For example, it is personal spending done by the farmer, her farm helper, or her market worker.

Table 3

Economic Impact of Product Sales at the Hillsdale, Hollywood, Lents, Montavilla and Portland (PSU) Markets, 2007

	Direct	Indirect	Induced	Total Impact
Output	\$7,702,434	\$2,144,381	\$1,350,409	\$11,197,224
Employment*	69.2	14.8	11.6	95.6
Employee Compensation	\$954,832	\$602,721	\$398,496	\$1,956,050

Note: Excludes Portland (PSU) market's prepared food.

Source: IMPLAN and Bonnie Gee Yosick, LLC.

*Full-time and part-time employment

Again, because Portland (PSU) market accounts for prepared food separately from the rest of the market in terms of its administration and fee structure, we have separated it in the analysis of economic impact as well. The other markets do not separate out prepared food in this same way, so the other markets total may include purveyors of prepared food.

Excluding prepared food, the estimated \$7.7 million in sales which occur in the Hillsdale, Hollywood, Lents, Montavilla, and Portland (PSU) farmers markets translates to roughly 70 direct jobs and nearly \$1 million in employee compensation. These are not only the jobs related to the vendor's operation at the farmers market, but also employment related to growing, harvesting, and preparing the product for sale.

Farmers Market Product Sales—All 14 Farmers Markets in Portland

In 2007, the 14 farmers markets in Portland sold goods totaling an estimated aggregate of nearly \$11.2 million, as shown in Table 4.

Table 4
Portland Farmers Markets
2007 Market Sales

Alberta	\$4,000
Hillsdale	
Summer	\$1,820,000
Winter	\$650,000
Hollywood	\$1,740,000
Interstate	\$400,000
Lents	\$40,000
Lloyd	\$71,000
Montavilla	\$207,000
Moreland	\$280,000
OHSU	\$85,000
Peoples*	\$291,200
Portland	
• Eastbank	\$287,900
• Ecotrust	\$227,000
• PSU	\$4,335,500
• Shemanski	\$758,300
Total	\$11,196,900

**People's market sales estimated based on an average of 16 vendors per week, a 52-week season, and average per-vendor sales of \$350.*

Note: Totals include prepared food.

Source: Market managers, compiled by Barney & Worth., Inc. and Farmers Markets America

The estimated \$11.2 million in product sales in all 14 farmers markets in the Portland area includes approximately \$440,000 in Portland' prepared food "food court." Applying the proportions of goods sold at the Saturday Portland Farmers Market at Portland State to the estimated sales of the other markets allows the estimation of the impact of these sales to the region. As shown on Table 6, the direct impact after removing the prepared food sales is about \$10.8 million in output, just under 100 direct jobs (full-time and part-time) and over \$1.3 million in employee compensation.

Table 5
Economic Impact of Product Sales at All 14 Portland-Area Farmers Markets, 2007

	Direct	Indirect	Induced	Total Impact
Output	\$10,757,603	\$2,994,949	\$1,886,048	\$15,638,600
Employment*	96.7	20.6	16.2	133.5
Employee Compensation	\$1,333,566	\$841,790	\$556,560	\$2,731,916

Note: Excludes prepared food.

Source: IMPLAN and Bonnie Gee Yosick, LLC.

**Full-time and part-time employment*

As shown in Table 6, total impacts are estimated at over \$15.6 million and 130 jobs. Again, these are the jobs related to growing, harvesting, preparing the product for sale as well as the vendor operations at the farmers market itself. These estimates of employment are based on output-per-worker estimates derived by IMPLAN from the Census of Agriculture.

Prepared Food Sales

As noted earlier, PFM collects the vendor fees related to prepared food separately from the other vendors. Its vendor fees collected from prepared food sales included detailed information from its 10 hot food vendors:

Table 6
Fees from Prepared Food Vendors,
PSU (Saturday) Market, 2007

Vendor	Fees, 2007
A	\$1,923.95
B	\$1,878.00
C	\$1,717.40
D	\$2,805.15
E	\$3,419.80
F	\$7,714.90
G	\$8,568.71
H	\$2,377.90
I	\$11,061.68
J	\$2,461.86
Total	\$43,929.35

Source: Portland Farmers Market.

These fees were calculated at 10 percent of gross revenue at those vendors' stations. Using this proportion, we are able to extrapolate the total sales of prepared food. The resulting economic impact of the prepared food sales are shown in Table 7 below.

Table 7
Economic Impact of Prepared Food Sales at Portland Farmers Market (PSU), 2007

	Direct	Indirect	Induced	Total Impact
Output	\$438,030	\$131,996	\$96,273	\$666,299
Employment	6.9	0.9	0.8	8.6
Employee Compensation	\$133,047	\$33,677	\$28,412	\$195,136

Source: IMPLAN and Bonnie Gee Yosick, LLC.

Difference in Economic Impact—Farmers Markets vs. Traditional Grocery Stores

One concern about trying to quantify the economic impact of farmers markets is that this spending might merely be replacing spending on food at home that would otherwise

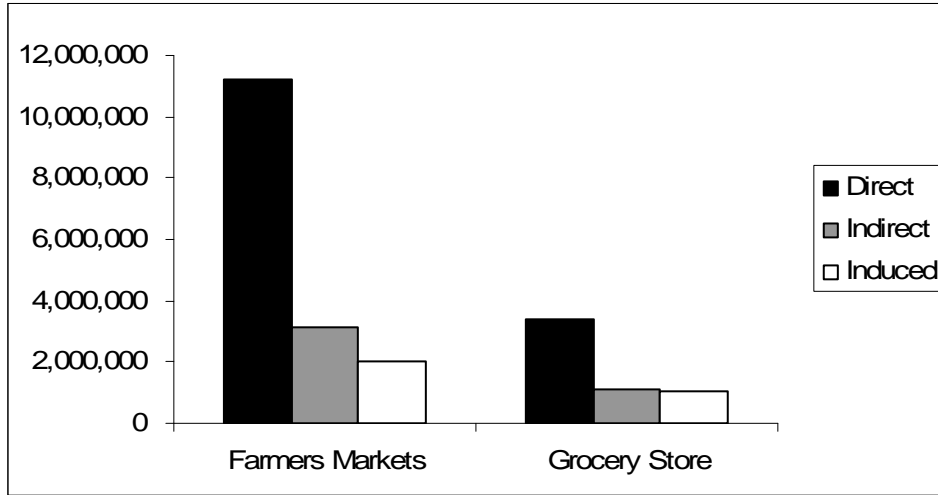
occur in traditional grocery stores. The substitution effect is indisputable: a household has regular produce needs and will not purchase an item again at a grocery store if it has already been purchased at the farmers market. However, the economic impact of a dollar spent at a local farmers market is not the same as the economic impact of a dollar spent at a traditional grocery store.

One key distinction is that most of the economic impact of purchases made at grocery stores is not retained locally. Not only are most grocery stores owned by large chains headquartered elsewhere, the items which line their shelves are produced, packaged, and marketed outside of the region. As such, the economic impact of that production "leaks" out of the region.

IMPLAN is able to quantify the difference in economic impact between purchases at farmers markets and purchases at traditional grocery markets with a concept known as household margins. Because the trade-flow relationships in the Input-Output model are based on producer prices, transactions generally occur at wholesale prices. At the retail level, transactions between businesses to final consumers are subject to household margining, an adjustment to translate the sales figures from retail prices to wholesale costs. This adjustment occurs for any analysis which employs retail sales figures in any final retail category, from general retail stores, drug stores, department stores, sporting goods stores, and food and beverage stores, such as traditional grocery stores.

Assuming that all goods sold at a traditional grocery store are imported to the region (to simplify the analysis), IMPLAN estimates that nearly three-quarters of the direct impact leaks outside the region with the estimated \$11.2 million in spending at farmers' markets equivalent to approximately \$3.4 million in economic impact in a traditional grocery market, because of the household margins associated with retail sectors.

Figure 1
Comparison of Relative Economic Impact:
Estimated 2007 Spending at Farmers Markets Compared to the Equivalent Amount of Spending at Traditional Grocery Stores



Source: IMPLAN and Bonnie Gee Yosick, LLC.

It should be noted that some Portland groceries make efforts to procure and sell local products, particularly during peak growing season. However, local food distributors and retail experts who were contacted estimate that five percent or less of fresh produce purchased in a typical grocery store throughout the year is locally grown (within 100 mile radius).

Farmers Market Management Fees

Another area of economic activity generated by farmers markets is the payment of market management fees by vendors. The five farmers markets assisting with this analysis range in budgets from very modest amounts for markets just getting started to substantial sales for well-developed and more mature markets, as shown in Table 8.

Table 8
Vendor Fees Collected, 2007

Market	Estimated Vendor Fees
Hillsdale	\$75,868.00
Hollywood	\$66,600.00
Lents	\$2,136.00
Montavilla	\$8,721.00
Portland (PSU)	\$236,812.00
Total	\$390,137.00

Source: Market Managers.

These fees represent another economic activity, specifically jobs and output associated with the operation of the markets, separate from the farm activity required to produce the crops and other products sold at farmers markets. Management fees were modeled separately at the guidance of the Minnesota IMPLAN Group, creators and supporters of the IMPLAN software. Though the management fees might seem an indirect impact of the purchase of goods, for the purpose of this analysis the farmers markets – and associated management fees – are shown as a separate direct impact.

At \$390,137, these fees total about 4.8 percent of the total estimated sales of \$8.1 million for the five prototypical farmers market. Using this proportion and the estimated aggregate sales of \$11.2 million in 2007, we estimate total aggregate fees for the 14 Portland-area markets as approximately \$515,400 for 2007. The estimated employment, and employee compensation associated with this economic activity are shown below in Table 9.

Table 9
Economic Impact of Farmers Market Management Fees, 2007

	Direct	Indirect	Induced	Total Impact
Output	\$515,436	\$191,682	\$126,454	\$833,572
Employment	9.2	1.6	1.1	11.9
Employee Compensation	\$145,579	\$57,088	\$37,318	\$239,986

Source: IMPLAN and Bonnie Gee Yosick, LLC.

These fees represent the economic activity of managing, coordinating, and administering the markets themselves. The total impacts of these fees translate to about 9 direct jobs, which seems consistent with observed employment patterns of the markets.

Summary

Using detailed data provided by five prototypical markets, the overall impact of the 14 farmers markets operating in the Portland area were estimated. The three components of economic activity of farmers markets studied include the sale of fresh product at the markets, the management fees collected for the management and operation of the markets themselves, and the sale of prepared food for consumption at the markets. Together, these components yield nearly \$17.2 million in total economic activity, including over 150 jobs (full-time and part-time), and nearly \$3.2 million in employee compensation, as shown in Table 10 below.

The economic impact analysis has been limited to the specific farmers market activities. The consultant team did not analyze the economic impact of farmers markets on adjacent areas; however, Metro commissioned a study to analyze the effect of various urban amenities on adjacent home prices. The Metro analysis found several urban amenities (including cinema/movie theatre, wine bar/shop, garden/yard art, and specialty grocers) which demonstrated statistically significant positive home price premiums. Customer

surveys and anecdotal evidence suggests that farmers markets also encourage commercial activity and benefit businesses near the market sites.

Table 10
Total Estimated Economic Impact of 14 Portland-Area Farmers Markets, 2007

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<i>Total Value Added</i>				
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Notes: Overall output is shown in the top panel of Table 11. The subsequent panels provide additional information on employment, employee compensation, and total value added – all elements of total output shown above. Total value added includes employee compensation, proprietary income, other property type income, and indirect business taxes.