

Buying Local: An Economic Impact Analysis of Portland, Maine

Amar Patel
Bowdoin College

Introduction

As an intern at the Maine Center for Economic Policy (MECEP) in 2011, I was given the opportunity to work on many projects which exposed me to the variety of economic issues facing the state of Maine. One such project was commissioned by the Portland Independent Business & Community Alliance (PIBCA), a non-profit organization that supports locally owned, independent businesses in Portland, Maine. The goal of the project was to collect and analyze data on the economic impacts of buying from these types of businesses in Portland.

My work on the project started in the summer. During this time, I researched similar projects to develop a methodology and a survey which MECEP and PIBCA distributed. To continue work on the project, I enrolled in an independent study course during the fall semester of 2011. This article is the result of the independent study, which takes a more in-depth look at the data and offers greater analysis which was not possible for PIBCA due to time constraints. Throughout the semester, I met with MECEP to discuss the data and analysis as well as to receive general guidance. Through this collaboration, MECEP and I released a shorter report titled “Going Local: Quantifying the Economic Impacts of Buying from Locally Owned Businesses in Portland, Maine” (currently available at <http://www.mecep.org/view.asp?news=2003>). That report uses many of the results which are found in this research article and frames the analysis as a policy decision for Maine. This article takes a more academic approach on the issue of mom-and-pop shops versus big box retailers.

Spirited debate surrounds large national retailers when they target small towns as sites for expansion. More often than not, these debates center on the effects the large retailer would have on individually owned businesses in the downtown areas. Consequently, dozens of civic organizations have conducted or commissioned research attempting to demonstrate the economic advantages of purchasing goods and services from locally owned businesses instead of national retailers.

Their reasoning is straightforward: a greater share of expenses for local businesses will stay in the local economy because they do not remit earnings to corporate headquarters in a different economy. Local businesses must identify their own suppliers of goods and services such as legal counsel, advertising, and accounting; oftentimes these suppliers are in the same locality. To add to the effects, owners and employees of the local business tend to live in the same economy and are likely to patronize other local businesses, essentially recycling the money. In this model, very little money would leak out of the local economy, thus creating a greater impact for every dollar spent.

Typically, economic impact is analyzed using an input-output analysis, which yields three intermediate results. The direct effect is the effect that a consumer has when they spend money at a firm. The indirect effect is the effect that consumers have on the input suppliers. For example, a consumer that purchases goods at Firm B has an impact on Firm A because it supplied Firm B with some basket of goods and services to operate. The last result is the induced effect, which is the money put back into the economy when Firms A and B pay their employees

who are also consumers. The end result is a multiplier, which is the ratio of the total economic impact to the direct impact.

However, there is another side to the “buy local” debate. Economic theory tells us that consumers want to maximize utility. Large national chains are able to provide goods and services to consumers at a lower price because they face lower input prices. Consequently, with a fixed budget, a reduction in the price of good X will allow the consumer to either purchase more of good X or purchase the same quantity at a lower price. The latter result would allow the consumer to use the remainder of the budget on other goods, resulting in higher utility. In this sense, large retailers that can sell goods and services at a lower price would be better for the consumer.

Research conducted by civic organizations has concluded overwhelmingly that buying local has a greater impact on the economy and that is the policy path that should be adopted (Civic Economics 2004; 2002). However, academic literature examining the impacts of national retailers has yet to reach a consensus. Some have found that the entry of Wal-Mart into a county has a negative impact on employment (Neumark et. al 2007); while others have found that there is a small increase in employment (Basker 2004). Others have found that there are no impacts on the small business sector in the long-run (Hicks 2009; Sobel and Deane 2008).

This article seeks to add to the growing literature on the subject by examining the Portland, Maine economy. It will adopt the basic methodology of civic organizations by using input-output analysis but will also expand the analysis to include concepts from the academic literature. The greater sample size will allow for more precise results and will model how a *shift* in consumer spending will affect the economy. Lastly, the analysis will expand to include adjacent areas to calculate a *net* economic impact.

Literature Review

Research on this area is divided into two sources: civic organizations and academic. Both sources provide insight into the issue of economic impact, but the results are not unanimous. Civic Economics (2002; 2004), the leading research group on this question, has conducted a myriad of studies that conclude buying locally is beneficial and big-box retailers are detrimental to local economies. Academic literature has approached this question in the context of big-box stores, and their effects on various indicators such as retail and commercial sales, employment, and the presence of other retailers. Given the variety of indicators, the overall theme of the academic literature is inconclusive at best.

The studies conducted by Civic Economics tend to use similar methodologies. Typically, samples consist of four to five firms from several sectors. These firms provide financial data that is run through an input-output matrix to ascertain how much money stays in the local economy. The first of these studies was conducted in Austin, Texas in 2002. Results showed that for every \$100 spent at a local firm, \$28-41 stayed in the local economy, as opposed to \$8 at a national chain (Civic Economics 2002). A similar study conducted in the Andersonville neighborhood of Chicago had a sample size of ten and compared that data to national competitors. The results of this study found that \$68 of every \$100 would remain in the local economy if consumers spent at a locally owned firm. The figure for a national retailer was \$43 for every \$100 (Civic Economics 2004).

These two studies provide some valuable insight, but do not provide a comprehensive analysis. The analysis demonstrates the validity of using an input-output model. The model allows us to capture how different sectors of the economy interact, which is crucial in

determining the impacts of consumer choices. However, the studies fail to account for a crucial policy implication. If consumers were to shift their spending to locally owned businesses, they could potentially deprive businesses in the surrounding economies that they may have previously patronized. Although the local economy in question would benefit, would the net benefit be positive?

Academic studies have attempted to answer similar questions, and done so with different approaches. The large national retailer of choice for researchers is Wal-Mart because of its sheer size. If there were to be any impact on an economy if a large national chain entered, it can be clearly demonstrated with a Wal-Mart entering. Contrarily, if one cannot observe an impact due to Wal-Mart, it is likely that other (smaller) national retailers will not have an impact.

Effects on employment are covered by Neumark et al. and Basker. Basker (2004) finds that when a Wal-Mart enters a county, approximately 100 jobs are initially created in the retail sector. However, the number decreases 50% in the subsequent five-year period as other retail establishments close. Numark (2007) analyzes county level data for retail employment and payrolls as a function of Wal-Mart stores per capita, total payrolls, and other scalar parameters. They find that the entry of Wal-Mart into a county reduces employment by approximately 150 jobs and reduces retail earning in the county by 1.5%.

While Numark and Basker hint at the impacts on locally owned retailers, they do not address that question specifically. Two additional studies conducted by Hicks and Sobel and Deane explicitly address the impact on small business sector, which is defined as firms with 1-19 employees. Using state level data on self-employment, Sobel and Deane (2008) demonstrate that there are no statistically significant impacts of Wal-Mart stores on small business activity. Similarly, Hicks (2009) uses county level data to model the impact of Wal-Mart on small businesses. His model does not find significant impacts that are attributable to Wal-Mart.

The previous two studies examine the question in a finer detail but fail to disaggregate locally owned businesses from other national small businesses. Haltiwanger et al. (2010) overcome this limitation by using data from the Longitudinal Business Database. The data covers all establishments and firms from 1976-2005 and includes payroll, employment, location, and industry data, as well as ownership structure (locally owned, small chain, and large chain). They find that small chains are impacted more than individual chains by the growth and entry of large chains. The locally owned firms that *are* impacted are usually in the immediate vicinity (1-mile radius) and the negative impact is mainly derived from the increase in the exit of firms from the area.

As a whole, the academic literature has found that there is either no impact or a negative impact on the local economy. However, these impacts have been measured in terms of employment, sales, and endurance of firms. Despite the various studies, none have explicitly analyzed the impact of purchasing goods and services from locally owned businesses as opposed to national chains. Civic organizations have attempted to fill this gap in the literature and have done so to an extent. However, the studies are limited by small samples and a lack of depth in the analysis.

This study is modeled on those of civic organizations but seeks to overcome the difficulties. The sample size is double those of previous studies, which will allow for a more precise result for the Portland, Maine economy. Additionally, previous studies only modeled an increase in consumer spending, which is essentially increasing the money in an economy. This study will model a *shift* in consumer spending, which will reallocate the money in the economy.

Lastly, the analysis will roughly calculate the *net* economic impact in Portland after accounting for impacts in adjacent economics to determine whether there is a true benefit to buying locally.

Model: Input-Output Analysis

Many “buy-local” studies have relied on a method called input-output analysis, or economic impact analysis, using IMPLAN software. Input-output models are detailed level accountings of transactions that occur in an economy among its industries, institutions, and households (Swenson 2006). The models are flexible and can be manipulated to demonstrate the impact of changes in spending patterns. The inputs are the goods and services a firm requires to operate, create goods, and provide services. The output is the market value of the goods and services produced. The standard input-output model offers a detailed view into the production and consumption components of an economy. However, it does not fully account for other transactions that occur between institutions, such as transfers, taxes, and savings. One method used to overcome the incompleteness is the Social Accounting Matrix (SAM) – an expansion of the normal input-output matrix. Two sub-matrices are added to account for factor disbursements and inter-institutional transfers. The expanded matrix makes it possible to trace income flows from income generation to consumption because it captures all account transactions in an economy (Alward 1996). The completeness allows for a detailed examination of economic impacts due to anything from household income change to industry spending pattern changes.

IMPLAN relies on a modified version of input-output analysis. The software allows users to create models of the economy based on custom data collected through surveys or estimated from other sources. The models are built around quantifying the interactions between industries within an economy and examining how one change in inputs affects output.

Harmston and Lund (1967) offer a concise conceptual approach to the input-output framework. If one were to isolate a geographic area and introduce firms, an economy would emerge. Firms with competitive advantages would operate, survive, and eventually specialize. The specialization forces firms to trade, both within and outside of the geographic area. This creates an interdependence of industries, since firms need inputs to create outputs, and the some economic entity must consume those outputs.

Additionally, Harmston and Lund assume that inputs must equal outputs, which does not allow for savings or debt. Furthermore, in the short run they assume that input patterns and sources are stable for different levels of output. That is to say, firms do not change their spending habits. As an aggregate, the economy is producing for two markets – the one located outside of the geographic area (exports) and one located within the geographic area (local). In order to model how economic activity changes given the assumptions discussed, Harmston and Lund use the following algebraic argument:

$$X_i = Y_i$$

Where

$$X_i = \text{Total input from the } i^{\text{th}} \text{ firm}$$

And,

$$Y_i = \text{Total output by the } i^{\text{th}} \text{ firm}$$

The total economic system then produces the following equation:

$$\sum X_i = \sum Y_i$$

Or,

$$X = Y$$

This equation represents the fact that total inputs into the economy equal the total output of the economy. Given the prior assumption that input patterns and sources are the same, we let a represent the input from within the economy or a local source. Therefore, aX represents the total input from the local system. It follows that

$$A = \frac{\sum_i a_i X_i}{\sum_i X_i}$$

With A representing the total local input coefficient for the local economy. Since it is a constant coefficient,

$$X - AX = \text{total nonlocal input}$$

And since

$$\begin{aligned} X &= Y \\ Y - AY &= \text{Total exports} \end{aligned}$$

If Z represents total exports,

$$Y - AY = Z$$

Then the relationship of exports to total output is

$$Y = (1 - A)^{-1}Z$$

The term $(1 - A)^{-1}$ is the Leontief inverse. The equation as a whole makes outputs a function of exports, or, in other words, the model is demand driven and can demonstrate the interdependency of an economy (Harmston and Lund 1967).

The result of the input-output model is a multiplier, which is a numeric summary that indicates the total change in economic activity due to a direct change in one or more economic activities in an economy. For example, a direct change can be an addition of a new factory, the closing of a business, or an increase in imported goods. As mentioned before, the term $(I - A)^{-1}$ is the Leontief inverse. A term in this inverse matrix can be multiplied by any size or composition of final demand to obtain the gross output for the corresponding industry (Richardson 1972). The focus of this study will be on output multipliers. The output multiplier for an industry i is the sum of direct and indirect requirements from all other sectors needed to produce an additional unit of output (Richardson 1972). Output can be defined in many different ways, but it is appropriate to measure output in monetary terms.

Input-output analysis has become an accepted method of examining the question of local economic impact. This study will follow the basic model used by civic organizations. It will also use input-output analysis to model a shift in consumer spending. Previous studies have modeled an increase in spending – an increase in the size of the economy. However, a shift in spending – modifying the allocation of money – may yield more insightful results. The analysis will also model the *net* economic impact. Previous studies have only focused on the impact on one

economy and disregarded the impact on surrounding areas. If buying locally has a deleterious impact on surrounding economies, then the net impact may be negative.

Data

The analysis is done at the county and zip code level in Cumberland County, Maine. A survey was sent out to local businesses that are a part of the Portland Independent Business & Community Alliance (PIBCA) in Portland, Maine by the Maine Center for Economic Policy. The survey asked business owners to detail financial information regarding labor costs, profits, cost of goods and services, and charitable contributions. Additionally, they were asked to estimate the portion of expenditures on inputs that was in the county, state, and elsewhere. In total, there were 28 completed surveys.

Additionally, comparable data for a national chain was needed to assess the claim that buying local is advantageous. After examining the data collected from local independent businesses, Dollar Tree was chosen as a comparable match based on sales and employment figures. Comparable data was derived from public Securities and Exchange Commission filings.¹ Lastly, this study relied on the U.S. Census Bureau's 2007 Economic Census to find figures for retail sales in Cumberland County.

Data Limitations

The data used in the analyses are comprehensive, but present two major challenges: representativeness of the entire Portland economy and consistency with definitions.

Portland is home to 2,962 businesses and over 300 members of PIBCA. The analysis relies on responses from twenty-eight businesses – a fraction of businesses. This presents a challenge because the respondents represent only twenty-one of the 215 industries present in Portland. Additionally, we do not know the market share of the industries and the businesses; therefore, we cannot make substantiated claims about representativeness of the sample.

Secondly, the survey given to businesses did not contain comprehensive definitions about the geography of the firms from which they purchased their inputs. The survey explained the distinction between a national and a local firm but did not explain the nuances. For example, a local business can buy from a wholesaler that is located next door and owned by a local family. However, the wholesaler would not technically count as a local firm because only the service is local not the products it sells. The distinction is very subtle but could have a large impact on subsequent analysis.

The Dollar Tree data also presents challenges. Primarily, data from 4,104 locations from the 2010 10-K report were averaged. It is impossible to determine if locations in Maine perform at or below the average without more detailed information. Additionally, Dollar Tree was chosen as a representative national chain based on average retail sales. Using criteria such as sector

¹ Dollar Tree, Inc. is a publicly traded company and therefore is required to file quarterly and yearly reports. Comparable data for sales, cost of goods sold, and charitable contribution was in the report. However, wages were not. In order to estimate wages using the data, we assumed that a location manager was paid \$9/hour and three retail employees were paid \$7.50/hour based on information provided by the 2010 10-K report. All annual wages were based on a 2000-hour year.

(restaurants, management firms, or grocery stores) would have yielded different data for revenue, cost of goods sold, and wages.

Outliers

Four responses had markedly high figures for gross receipts and wages compared to the sample, but they were not removed for two reasons. First, in any given economy there will be firms that outperform others by a wide margin. Additionally, the responses with high numbers were the only ones from their respective sector. One sector of the economy may have just a few firms that serve all consumers, which would lead to higher sales. Other sectors may have many firms, which serve just a few consumers and have lower sales. Since market shares of firms are unknown, it was best to keep all data points.

Results

Three different analyses were conducted. The first compared local Portland businesses to the average Dollar Tree establishment using the entire Cumberland County geography. As an extension, this study grouped the responses based on NAICS-3 (North American Industry Classification System) digit codes to do a detailed analysis. The second analysis used retail sales figures from the U.S. Census to approximate what a 10 percent shift in household spending would mean for Portland. Based on previous reports done by civic organizations, families spend about 60 percent of their budget at national retailers and 40 percent at local retailers; this analysis attempts to model the shift to 50-50. The last analysis was a proxy multi-region analysis. Using information from the previous analysis, this study attempted to calculate the effect of the 10 percent shift in household spending on the six adjacent zip codes.

Survey Results

The survey results support what advocates of “buy local” campaigns posit – that locally owned firms spend more of their money locally. Table 1 demonstrates that on average the twenty-eight firms isolate 60.01 percent of their spending in Cumberland County, 23.2 percent in the state of Maine, and 16.7 percent of their spending out of state.

Table 1: Distribution of Expenses (N=28)

Expenses	Cumberland County	Elsewhere in Maine	Out of State
Goods	27.6%	13.7%	58.8%
Salary and Wages	69.6%	27.3%	3.1%
Repairs and Maintenance	88.9%	7.7%	3.4%
Advertising	60.1%	30.1%	9.9%
Employee Benefit Programs	70.5%	26.5%	3.0%
Vehicle Costs	77.0%	20.0%	3.0%
Utilities	52.9%	40.6%	6.5%
Equipment and Supplies	41.6%	33.9%	24.5%
Professional Services	81.1%	16.5%	2.5%
Other Operating Expenses	60.0%	0.0%	40.1%
Insurance	44.0%	10.9%	45.1%
Charitable Contributions	48.0%	51.5%	0.6%
Average	60.1%	23.2%	16.7%

It is difficult to approximate a similar breakdown for a national chain, but one can draw conclusions from publicly available financial statements. As mentioned earlier, the key components of economic impact are wages, profits, cost of goods, and charitable contributions. Assuming that 100 percent of wages stay in the local Portland, Maine economy, the average wage cost for an average Dollar Tree location is only \$63,000. Profits are remitted to the headquarters in Chesapeake, Virginia. According to the business model of Dollar Tree, only 40 percent of their goods sold are manufactured in the United States; virtually all of these are produced outside of Maine. Lastly, as reported on their website, charitable contributions are only made to the communities surrounding the corporate headquarters and distribution centers, none of which are in Maine.

Portland v. Dollar Tree, Inc.

The level of data provided by the surveys stopped at the county level and did not break down spending within the county. Therefore, analysis was done using Cumberland County as the geographic level and the Portland data as a representative sample.

Table 2 displays the results from the IMPLAN model. The model is set up to assess the impact of a business or a group of businesses in an economy. Specifying how the business spends its money allows the model to analyze how the money recirculates. The direct impact is the initial effect of consumer spending, and it is larger for the Dollar Tree store. This is because national chain stores tend to have higher revenues since they can sell goods at a lower price and attract a greater number of costumers. However, the indirect and induced effects of the local businesses are larger in proportion to the direct effects.

Table 2: Local Portland Establishments v. Dollar Tree

Effect Type	Local Portland Firm	Dollar Tree
Direct	\$937,579.82	\$1,500,000
Indirect	\$327,887.25	\$145,064
Induced	\$216,182.14	\$356,396
Total	\$1,481,649.21	\$2,001,460
Multiplier	1.58	1.33

The indirect effect is the additional activity supplying firms create in economy when they produce and sell their goods, pay employees, and their other inputs. This second iteration of spending has a smaller effect than the direct because the initial dollar spent has been reduced to about sixty cents in the local economy. Those sixty cents go towards paying for inputs but do not cover the full cost. As Table 1 demonstrated, local firms spend locally; therefore, Portland’s indirect effect is higher. Dollar Tree has almost no local input; therefore, the indirect impact is smaller.

The induced effect is the additional economic activity that occurs when the two sets of firms (direct and indirect) pay their employees who consequently purchase goods and services. The higher indirect and induced effects reflect the fact that local businesses rely on other local

businesses and, combined, their wages stay local. Dollar Tree’s 10-K demonstrates that many employees are paid near minimum wage and not many employees work full time at the locations. Employees at the local firms earn about twice as much, on average. The higher wages paid contribute to the higher induced effect.

A multiplier ties together the components of impact. The multiplier is calculated by dividing the total effect by the direct effect, which yields a multiplier of 1.58 for local businesses and 1.33 for a representative national chain.

The multipliers demonstrate that there is a .25 differential in the two different locations. This represents a 74 percent local advantage. The local advantage calculates how the induced and indirect effects differ – that is, the additional economic activity generated per dollar spent. Every dollar spent (direct effect) at a local establishment generates an additional fifty-eight cents (indirect and induced effects) in economic activity. On the other hand, every dollar spent at a national chain generates an additional thirty-three cents in economic activity.

An additional model was run after categorizing the businesses based on the NAICS-3 digit system. The results are presented in Table 3. Note that restaurants are analyzed separately. They belong in the NAICS 7 group, but the revenue from the restaurants and the other establishments were extremely different. They were separated to reduce distortion on the impact.

Table 3: Multipliers by Industry

Industry	Multiplier	N
NAICS 3 Manufacturing	1.464	2
NAICS 4 Wholesale and Retail Trade	1.591	9
NAICS 5 Information, Finance and Insurance, Real Estate, Professional, Scientific, and Technical Services	1.425	8
NAICS 7 Arts, Entertainment, and Recreation	1.642	2
NAICS Restaurants	1.424	4
NAICS 8 Other Services	1.565	3

The table shows how different industries impact the economy and which industries provide the most “bang for the buck.” The NAICS 7 group has the highest multiplier and that is most likely because they are simple service oriented businesses. They tend to be very cost effective meaning they require little input for great output. Consequently, they have a large direct effect, and the ratio of the direct effect to the total effect is large.

Table 3 also shows that restaurants have the least impact of the group. Restaurants tend to be input-intensive, as they require a lot of labor, goods (namely ingredients), and equipment (kitchen and dining). As a result, the indirect and induced will increase disproportionately to the direct effect, thus diluting the ratio of direct to total impact.

A 10% Increase in Local Spending

Buy local campaigns also consider the benefits of the effect of a shift in consumer spending. Increasing local spending increases demand for local goods. Based on previous studies, 10 percent was selected as a benchmark for a shift in consumer spending. To reiterate, a shift on consumer spending means consumers will change the amount of their budget spent at a local or non-local shop – the size of the pie stays the same but the proportion of the slices change. To answer the question of “what would the impact be if consumers spent 10 percent more of their budget at local establishments and 10 percent less at national chains,” the study uses a model to reflect a change in household spending. Based on information from the 2007 Economic Census, if consumers spent 60/40 at chain/local shops, a 10 percent change (to 50/50) would amount to \$127 million. That shift would increase output by \$113 million dollars in the local economy, with approximately \$14 million leaking out.

Net Impacts

Although a shift in consumer preferences increases local economic activity by \$113 million, it is important to take into account the loss in other communities that would have otherwise benefited from the spending. To do this, a new model demonstrated the impact on the five towns surrounding Portland. The analysis assumes that the shift in spending increases local goods consumption in Portland and decreases chain consumption only from the surrounding areas. However, that this zip code level analysis has a significant flaw. Certain zip codes from neighboring towns spill over into Portland, therefore blurring boundaries. For example, the zip code 04105 contains parts of Portland as well as Falmouth, so the Portland economy cannot be strictly separated from its surrounding economies. By examining the membership of PIBCA, it was determined most of the member businesses were not in the zip codes in question. Therefore, the following results are a fair approximation.

The five towns adjacent and surrounding Portland are: South Portland, Cape Elizabeth, Scarborough, Westbrook, and Falmouth. The IMPLAN database had detailed records of household spending patterns, which allowed for the creation of a new model that reflected a total decrease of \$127 million. There was also a control for the relative size of the economies. If a certain economy accounted for 33% of output, the model attributed 33% of the decrease to that area. An IMPLAN analysis demonstrated that shifting \$127 million out of those economies would result in a total loss of \$109 million in economic output.

The previous analysis demonstrated that shifting consumer spending by \$127 million into Portland would result in a total economic impact of \$113 million with \$14 million leaking out. The above analysis demonstrates that \$127 leaving the five adjacent economies reduces output by \$109 million, leaving \$18 million unaccounted. The fact that Portland gains more than the surrounding areas lose provides some insight into those communities. It demonstrates that Portland imports less and the surrounding areas import more. This conclusion makes sense because Portland is a larger economy with more industries that produce goods, so local spending should be slightly higher by default. For example, Portland has a non-upholstered wood household furniture manufacturing industry and the surrounding areas do not. This is just one of the many examples.

Due to the complicated inter- and intra-economy relations, it is difficult to account for every dollar and its impact on the economy. However, the critical point that warrants discussion is the fact that the loss in the five towns is not dollar for dollar. For every dollar the leaves those

economies, local output is reduced by only \$0.85. For every dollar that comes into the Portland economy, local output increases by \$0.89. Hughes et al. (2008) proposed the net impact of a shift is two-thirds of the gross shift. He reaches this conclusion by examining the impact of buying from farmers markets, then examining the cost benefit of not buying from farmers markets. He accounts for the transportation costs of getting goods to the market, the wages, the cost of the building and materials, and almost every other cost associated with operating a retail establishment. This is an extreme analysis that accounts for almost every cost and represents the extreme minimum of net impact.

Policy Implications

Policy makers focus on recruiting and retaining businesses that lead to an inflow of dollars and jobs, as signified by Maine's recent "Open for Business" motto. However, the question then becomes about quality over quantity. Dozens of big-box stores can come to the economy, create jobs, and provide affordable goods and services. To achieve a similar economic impact, only a handful of local businesses would be needed. Jobs would abound directly with both types of businesses, but locally owned businesses in Portland, Maine have stronger indirect and induced effects.

The results of this study point to a preference in supporting local businesses, as they can produce greater economic impacts in a more efficient manner. Additionally, we see that Portland gained more economic activity than its surrounding economies lost when \$127 million was shifted. This is contrary to what Neumark et al. (2007) found – the entry of Wal-Mart into a county reduces retail earnings by 1.5%, a net loss for the county. Perhaps investing in and fostering locally owned businesses may be a more efficient way, dollar per dollar, to increase economic activity.

Conclusion

This article examined whether buying locally in Portland, Maine had a greater economic impact than buying from big box retailers. Different analyses using IMPLAN software show that dollar for dollar, there is more economic impact if consumers buy from locally owned firms. Beyond that, the net impact, accounting for surrounding economics, is not negative. This suggests that policy makers in the region should consider focusing on locally owned businesses to help the local economy.

The study seeks to add to the growing literature on the local versus big-box debate. Future studies would do well to have greater sample sizes for rigorous results. Every economy is different, resulting in potentially conflicting conclusions. However, this methodology provides insightful trends and a fine level of detail.

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