Buy Local and Social Interaction*

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Abstract

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This study analyzes the buy local movement as a social interaction phenomena. While there may be various reasons that consumers prefer to buy locally produced products, we focus on the reasons that are subject to social interactions. Social interaction may arise when consumers exhibit a preference for local goods and services because they care about the amount or type of local production and the associated increase in local economic activity (e.g. output, employment, income). This increase in economic activity may be assumed to increase the economic well-being of the local producers while also creating benefits such as local amenities (e.g. farmers markets). Furthermore, consumer’s increases in utility from increased local production introduces the potential for another social interaction; an incentive on the part of a consumer with a preference for local production to convert other consumers. However, in the case where there are multiple goods and services produced locally and multiple competing communities, the welfare effects of converting other consumers to consumers with a preference for local production may be ambiguous.

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1 Introduction

Many previous studies have shown that some consumers have a strong preference for locally produced goods and services. This preference has, in many cases, moved beyond a simple change in tastes and has given rise to a movement comprised of consumers who advocate for increases in local production and evangelize the merits of local consumption. One of the most oft cited reasons proponents of “buy local” cite, is that local production increases the well-being of various segments of the local community, especially local producers; ostensibly arguing that increasing consumption of locally produced goods increases local economic activity and creates positive local economic impacts (Martinez 2010). Therefore, these consumers who advocate for the purchasing of local production over non-local production (i.e. “localvores”) exhibit a preference for local production not simply because they prefer to consumer local goods, but also because they think it provides benefits to others. As argued by Becker (1974), this introduces the potential for a social interaction effect where consumers may derive utility from benefits that accrue to other economic agents (e.g. local producers). Because of social interactions, consumers may derive utility from indirect non-use values from local production; such as a consumer deriving benefit from the increased output of local producers simply because they like to see these producers performing well. Therefore, consumers may be willing to pay more for local production because it creates local economic activity and fosters a notion of “community development”. In other words, it may be the case that “localvore” consumers see increasing local consumption as a way to foster a more vibrant local community or to increase employment in the area. This then creates another potential social interaction where consumers that prefer local products have an incentive to convince other fellow consumers to purchase local products.\footnote{For an example, see https://www.youtube.com/watch?v=GM1QDBvzm1Y} The benefits of these social interactions may depend on the exact preferences of the consumers and whether or not these social interactions occur on a local or global scale.

Whether consumers value factors such as output or jobs matters in terms of the impact
of the buy local movement on welfare. If the “localvores” simply want to create more output from their local community, then under certain conditions the buy local movement can be seen as a market failure since there is an incentive for all regions to put social pressure on consumers to buy local, but a global buy local movement simply reduces efficiency and welfare for all regions. However, if “localvores” are concerned with other economic factors such as jobs, then a global buy local movement may achieve these goals at the cost of economic efficiency. Another important factor to consider is the impact on any converted “localvores”. Our paper considers the possibility of changing the buying habits of some consumers and how the buy local movement may influence their welfare.

As there are a myriad of reasons as to why consumers prefer to buy locally, there are also many definitions as to what constitutes local. In practice, some definitions of local seem to imply goods for which a region is at a comparative disadvantage. While “local” may be a misnomer in this case, the issue may get conflated with small producers with a completely local supply chain, which often occurs for goods that are not produced efficiently (i.e. comparative disadvantage). In this case, it is possible that a region can help local production of these types of goods. On the other hand, it should be clear to economists that purchasing more goods with a comparative disadvantage is not the preferred way to economic growth. Similarly, if all regions focus on economic growth by buying locally, potentially a market failure could occur. If consumers care about the economic output of the regions, there is an incentive to buy locally and promote local products. However, when all regions engage in this behavior, it can lead to an increase in autarky and actually have the opposite of its intended effect.

If “localvores” define local as all local production, it is possible for all regions to increase total production, but there are important distributional effects to consider since trade-offs must occur. This paper shows that if consumers truly care about all local production, this this leads to an increase in demand for good with a comparative advantage, implying that a global movement in localism would actually cause an increase in specialization. In other words, it is possible for localism to increase the variety of local
products at the expense of total economic activity, or vice versa.

2 Background

Our model is an extension of Winfree and Watson (2017) and analyzes the buy local movement through the lens of Becker’s (1974) Social Interaction theory. This paradigm allows for individuals to endogenize the utility of other individuals. Therefore, in addition to established motivations for preferring locally produced goods such as differences in quality between local and non-local products and a concern for externalities; people may buy local because of a concern of the benefits of local producers. The endogenizing of local producer’s utility also creates an additional and relates social interaction where “localvore” consumers have an incentive to convert traditional consumer into “localvore” consumers. However, this endogenizing of some costs (i.e. wages paid to local producers) creates modeling challenges and greatly complicates welfare calculations and policy prescriptions. To address these challenges, we present and evaluate a model that can analyze changes in welfare from these various drivers of the buy local movement.

The literature around the economics of social interactions has evolved a great deal since was introduced by Becker (1974). Social interactions in the economic literature has been used to explore a range of phenomenon including altruism (Becker 1976); (Samuelson 1993); (Fehr and Fischbacher 2005), social network interactions (Bouriès et al. 2017), and neighborhood effects (Pinto 2016). While an exhaustive treatment of previous literature is beyond the scope of this paper (see Manski (2000), Durlauf (2001), Ioannides and Datcher Loury (2004), and Durlauf and Ioannides (2010) for an introduction to the breadth of the literature), we will focus on the social interaction literature that is most closely germane to this research, namely 1) social environment effects such as concern for ones neighbors and altruism (Becker 1974) and 2) informational cascade effects such as “peer pressure” (Sacerdote (2001); Bursztyn and Jensen (2015); Bursztyn et al. (2017)) and a “herd mentality” (Banerjee (1992); Yanagizawa-Drott (2014); Lee et al. (2015)).
While the notion of altruism affecting economic behavior goes back to the beginnings of formal economic thought (see Fontaine (2000) for an early history of the economics of altruism), Becker (1974) is often credited with laying the economic foundations for how altruism (or perceived altruism) alters economic behavior through a social interaction. Becker (1974) describes the case where other people’s utility (in Becker’s example, family members) may enter into one’s own utility function, thus creating joint utility functions. Becker (1976) extends this line of research to show how this type of altruism conveys evolutionary success and provides a rationale for why altruism is beneficial in its own right. This early work has given rise to a broad and deep literature on the economics of altruism that often focuses on family behavior (Alger and Weibull (2010); Pollak (1988); Altig et al. (1993); Laitner (1992); Laitner and Juster (1996)).

Outside of familial transfers and joint utility functions within families, altruism has been shown to be potential advantageous within a herd mentality framework (Banerjee 1992). In this framework an individual’s survival (or prosperity) is linked to the success of their group. Therefore, doing what is best for the group will indirectly benefit the individual in the long run. Therefore, perceived altruism can be thought of as ultimately being in the best interest of the person engaging in altruistic behavior.

One way to prevent members of the “herd” from free riding on the perceived benefits of altruistic behavior is to peer pressure those individuals who are not behaving in accordance with the will of the community into also behaving altruistically. Peer pressure has been shown to alter behavior across a broad spectrum of settings including profit sharing within partnerships (Kandel and Lazear 1992), productivity of individuals in team projects (Barron and Gjerde 1997), and increasing the savings rate within a community (Kast et al. 2018). In our model we investigate the potential results of individuals using peer pressure to convert “omnivores” to “localvores” in an attempt to maximize perceived altruistic benefits to the community.

In the context of “buy local”, there are a growing number of consumers who are consciously sourcing their goods (especially food) from local producers (Thilmany and
While many reasons are cited by consumers for their buy local preference (for an extensive review of the literature see the annotated bibliography by Stickel and Deller (2014)), we focus primarily on the commonly argued motivation of "economic development" (O’Hara and Pirog 2016). In this argument buying locally produced goods is seen as preferred to purchasing non-local goods because local goods provide jobs to local (and often implicitly small) producers rather than outside (and implicitly large) producers. Under this framework, it is “better” to “buy local” because local production helps small local producers and has positive local economic impacts.

The model presented here helps to clarify this line of thinking and evaluate the extent to which “localvores” using these social interactions to convert “omnivores” creates economic benefits and introduced economic costs.

3 Model

We assume that there are two regions and each region produces one service and two classes of goods. Services are not traded across regions, cost one unit to produce, and compete under Bertrand competition. Each region has a competitive advantage in producing one of the classes of goods. $c_{jg}$ represents the cost of a good in class $g$ produced in region $j$. The regions are symmetrical so that the cost of goods produced in a class in a region is the same as the cost of a good produced in the opposite class in the other region, $c_{jg} = c_{j-g}$. Furthermore, goods produced in region 1 of class 1 may be imperfect substitutes for goods produced in region 2 of class 1. The same is true for goods in class 2; however, there is no substitution of goods across classes of goods. Each region has $N$ firms producing class 1 goods and $N$ firms producing class 2 goods.

Each region has their own separate market with $n$ consumers, and each consumer has a constant income $y$. There are three types of consumers in each region: localvores, fence sitters, and omnivores. There are $n^l$ localvores and they have a preference for local
goods because they gain utility from an increase in local production. There are $n^f$ fence sitters and they may be persuaded to buy more local goods via peer pressure. There are $n^o$ omnivores that have no preference for local goods over nonlocal goods and are impervious to peer pressure. For all consumers, goods within a class are both horizontally differentiated and vertically differentiated due to their location of production. Therefore, in region $j$, consumer $i$ has the following utility function

$$U_{i,j} = q_{js} + \sum_g \left( a \left( q_{jg} + q_{jgs} \right) - \frac{B}{2} \left( (q_{jg})^2 + (q_{jgs})^2 \right) - b q_{jg} q_{jgs} \right) + \sum_k \tilde{\alpha}_{ik}(\psi) Q_{jk} - \rho(\psi)$$

(1)

where $q_{js}$ is the service provided$^2$, $a$, $B$, and $b$ are parameters and $B \geq b$. If $B = b$, then the goods are not horizontally differentiated. $q_{jg}$ represents the amount consumed, by that consumer, of the the $g^{th}$ type of good in region $j$. Decreasing marginal benefits are exhibited with the consumption of goods, but not services.

$\tilde{\alpha}_{ik}$ represents the level of preferences given to locally produced goods and/or services ($k = S, 1, 2$), and it is a function of the level of social interaction, $\psi$. $Q$ represents the total amount produced in that region regardless of where it is sold. $\rho$ represents peer pressure to purchase local that some consumers may face due to social interaction with localvores. For localvores, $\tilde{\alpha}_{ik} = \alpha_{ik}$ and $\rho = 0$, so that they have a preference for local production and incur no peer pressure regardless of the social interaction. For fence sitters, $0 \leq \tilde{\alpha}_{ik} = \alpha_{ik}^f \leq \alpha_{ik}$, $\frac{d\alpha_{ik}}{d\psi} \geq 0$, $\rho \geq 0$ and $\frac{d\rho}{d\psi} \geq 0$ so that social interaction may cause them to prefer local goods and also suffer from peer pressure. For omnivores, $\tilde{\alpha}_{ik} = 0$ and $\rho = 0$.

The charitable description of this type of social interaction is that it allows localvores to inform fellow consumers about the benefits of the buying locally without any consumers incurring a cost ($\rho = 0$). In this case, the social interaction simply enlightens the fence sitters of the benefits of local production, thereby increasing their utility. The un-

$^2$The service acts similarly as a numeraire good.
Charitable case of this type of social interaction is that localvores apply pressure on other consumers, so that they purchase local products in order to alleviate or eliminate costs via peer pressure ($\rho > 0$). Regardless, we model the effects of an increase in this social interaction so that more consumers have a preference for local goods and/or services.

The impacts of goods and services on marginal utility are given by,

$$\frac{\partial U_{ij}}{\partial q_{js}} = 1 + \tilde{\alpha}_{is}$$  \hspace{1cm} (2)$$

$$\frac{\partial U_{ij}}{\partial q_{ig}} = a + \tilde{\alpha}_{i,g} - Bq_{jg} - bq_{jg}$$  \hspace{1cm} (3)$$

$$\frac{\partial U_{ij}}{\partial q_{jg}} = a - Bq_{jg} - bq_{jg}$$  \hspace{1cm} (4)$$

Individual demand for all local goods is given by (assuming $p < \frac{a + \tilde{\alpha}_{ig}}{1 + \tilde{\alpha}_{is}}$ for local and nonlocal goods),

$$p_{ijg}^l = \frac{a + \tilde{\alpha}_{ig} - Bq_{jg} - bq_{jg}}{1 + \tilde{\alpha}_{is}}$$  \hspace{1cm} (5)$$

and for nonlocal goods it is

$$p_{ijg}^{nl} = \frac{a - Bq_{jg} - bq_{jg}}{1 + \tilde{\alpha}_{is}}$$  \hspace{1cm} (6)$$

Individual demand is such that the equilibrium price is equal to the ratio of the marginal benefit of that good and the marginal benefit of a service. If we sum up the individual demands for all consumers, aggregate demand for local goods is given by,

$$p_{jg}^l = \frac{na + \alpha_g - BQ_{jg} - bQ_{jg}}{n + \alpha_s}$$  \hspace{1cm} (7)$$

and for nonlocal goods it is
where \( \alpha_g = n'\alpha_g + n'^t\alpha' g \) and \( \alpha_s = n'\alpha_S + n'^t\alpha' s \). This illustrates that demand is higher for local goods than nonlocal goods, but the relationship between goods and services is not clear.

### 3.1 Bertrand competition in the goods market

In this section, Bertrand competition will occur so that prices equal costs and firms have no profit. In this case, the total output of local goods can be generated from equations (7) and (8) and are given by,

\[
Q_{Ljg} = \frac{(B - b)na + B\alpha_g - (Bc_{jg} - bc_{jg})(n + \alpha_s)}{B^2 - b^2}
\]

\[
Q_{NLjg} = \frac{(B - b)na - b\alpha_g - (Bc_{jg} - bc_{jg})(n + \alpha_s)}{B^2 - b^2}
\]

and total services is given by

\[
Q_s = nm - \sum_g \sum_j c_{jg}Q_{jg}
\]

Therefore, the impact of an increase in social interaction so that one more consumer has a preference for local goods and/or services causes the following changes in output,

\[
\frac{\partial Q_{Ljg}}{\partial \psi} = \frac{B\alpha'_g - (Bc_{jg} - bc_{jg})\alpha'_s}{B^2 - b^2}
\]

\[
\frac{\partial Q_{NLjg}}{\partial \psi} = \frac{-b\alpha'_g - (Bc_{jg} - bc_{jg})\alpha'_s}{B^2 - b^2}
\]

\[
\frac{\partial Q_s}{\partial \psi} = \frac{-(B - b)(c_{jg} + c_{jg})\alpha'_g + [2B(c_{jg}^2 + c_{jg}^2) - 4bc_{jg}c_{jg}]\alpha'_s}{B^2 - b^2}
\]
Table 1 shows the impacts of increasing social interaction on production for various definitions of local. With these effects, we consider three types of “buy local”. First, we consider that the local preference only pertains to the inefficient goods (i.e. goods with the higher cost). Second, we consider local preferences to be on all goods, $\alpha_g > 0$. Third, we consider local preferences to pertain to all goods and services, $\alpha_g = \alpha_s > 0$.

If we define localism as an increase in the willingness to pay of local inefficient products (goods with higher costs), then production of those products will increase as production of local services and the production of nonlocal efficient goods decreases. Since production of the local inefficient goods increases by $\frac{Ba'}{B^2 - b^2}$, the utility of the incumbent localvores increases by $\frac{Ba'a'}{B^2 - b^2}$, thus illustrating the incentive for localvores to recruit more consumers to buy locally.

If we define localism as all locally produced goods, the effects are similar. More locally produced goods are produced and fewer nonlocal goods are produced as well as fewer local services. Again, localvores have an incentive to increase social interaction in this case. If we define localism as all goods and services, then the effects on each type of output are not clear and depend upon costs and substitutability of goods, but the amount of overall goods and services will increase. If the costs of goods are high and there is a low level of substitutability, then the production of local goods will go down and services will increase. In other words, consumers will move towards cheaper goods and/or services so they can consume a higher amount of locally produced goods and/or services.

Up to this point, we have only analyzed social interaction in terms of the effects in the local market. However, since firms are active in both local and nonlocal markets, a global increase in social interaction will have additional impacts on production from consumers in the other region. If we analyze the sum of all production, in both regions, this is the same as analyzing the effects if the increase in social interaction happens in both regions. For example, if both regions have an increase in social interaction, then the effect on efficient firms will be the sum of the effects on efficient firms of both regions, $\frac{B(1-2c)+b(2c-1)}{B^2 - b^2} \alpha a'$, in the case of the broadest definition of localism. This illustrates that
any benefits of social interaction are mitigated, or perhaps eliminated if the localism movement happens in both regions.

These results show that because more social interaction leads to an increase of the desired production, localvores have an incentive for more social interaction. However, the impact of social interaction on a fence sitter’s utility is ambiguous. If we divided the fence sitter’s utility into three sections (consumption value, localism, peer pressure), the influence of social interaction on utility from consumption is negative since that is no longer being optimized. Likewise, the impact of social interaction on any change from peer pressure is negative since peer pressure is defined as negative. Therefore, an increase in utility from a new found valuation in local production is needed for social interaction to increase the fence sitter’s utility. This, in turn, requires an increase in local production.

It is possible that an increase in local production large enough for social interaction to increase the utility of fence sitters. However, a global increase in social interaction only weakly increases output since \( (B - b)(2 - 3(c + c')) + 2B(c^2 + c'^2) - 4bc'c \geq 0 \). For example, if both regions increase social interaction and all costs are equal to 1, then \( \frac{\partial Q}{\partial \psi} = 0 \), implying that total output is unchanged. This means that a global rise in social interaction has no effect on economic output, but consumers are inefficiently consuming goods and there may be negative effects from peer pressure. In this way, a preference for local could be considered a market failure, since localvores have an incentive to increase localism via social interaction, but collective utility would be higher if nobody had a preference for local.\(^3\)

In the Bertrand case, there are no price effects and there are no profits. Therefore,\(^3\)The change in utility for the fence sitters is similar to the change in consumer utility from advertising and is not obvious as to how it should be calculated (Dixit and Norman 1978; Fisher and McGowan 1979). There is significant disagreement in the advertising literature as to whether modifying preferences toward specific goods that consumers “should” prefer actually increases the welfare of the respective consumer (Becker and Murphy 1993). Therefore, while it is conceivable to argue that the “buy local” movement increases welfare because consumers become happier when they consume local products, it is ambiguous as to whether this is a true increase in social welfare (Braithwaite 1928). Our model can include both an increase in utility due to enlightenment or a decrease in utility due to the peer pressure. However, this section points out that even if it is a true increase in utility due to the discovery of the benefits of local production and there is no negative peer pressure effects, social interaction can still decrease welfare since production only weakly increases and consumption utility decreases.
there are no impacts on omnivores or firms. This is not the case in the Cournot model.

### 3.2 Cournot competition in the goods market

If goods are in markets with Cournot competition, there will be price and profit effects. The profit equation for firm $m$ is given by,

$$
\pi_{jgm} = q^L_{jgm} \left[ \frac{na + \alpha_g - BQ_{jg} - bQ_{jg}}{n + \alpha_s} \right] + q^{NL}_{jgm} \left[ \frac{na - BQ_{jg} - bQ_{jg}}{n + \alpha_s} \right] - c_{jg} \left( q^L_{jgm} + q^{NL}_{jgm} \right)
$$

since the firm sells in both regions. The complementary slackness conditions are given by,

$$
q^L_{jgm} \geq 0, \frac{na + \alpha_g - B(Q_{jg} + q_{jgm}) - bQ_{jg}}{n + \alpha_s} - c_{jg} \leq 0 \tag{16}
$$

and

$$
q^{NL}_{jgm} \geq 0, \frac{na - B(Q_{jg} + q_{jgm}) - bQ_{jg}}{n + \alpha_s} - c_{jg} \leq 0 \tag{17}
$$

If we assume symmetry for all firms, the equilibrium quantities are as follows,

$$
q^L_{jg} = \frac{B(N+1) [na + \alpha_g - (n + \alpha_s) c_{jg}] - bN [na - (n + \alpha_s) c_{jg}]}{(B(N+1))^2 - (bN)^2} \tag{18}
$$

$$
q^{NL}_{jg} = \frac{B(N+1) [na - (n + \alpha_s) c_{jg}] - bN [na + \alpha_g - (n + \alpha_s) c_{jg}]}{(B(N+1))^2 - (bN)^2} \tag{19}
$$

$$
q_{is} = \frac{ny}{N} - \sum_g \sum_j p_{jg} q_{jg} \tag{20}
$$

and prices are given by
\[ p^L_{jg} = \frac{B^2 (N + 1) (na + \alpha_g) - BbNna}{(n + \alpha_S) \left[ (B (N + 1))^2 - (bN)^2 \right]} + \frac{N \left[ Bbc_{jg} + (B^2 (N + 1) - b^2N) c_{jg} \right]}{\left[ (B (N + 1))^2 - (bN)^2 \right]} \]  

(21)

\[ p^{NL}_{jg} = \frac{B^2 (N + 1) na - BbN (na + \alpha_g)}{(n + \alpha_S) \left[ (B (N + 1))^2 - (bN)^2 \right]} + \frac{N \left[ Bbc_{jg} + (B^2 (N + 1) - b^2N) c_{jg} \right]}{\left[ (B (N + 1))^2 - (bN)^2 \right]} \]  

(22)

The effects on quantity from increasing social interaction are given by.

\[ \frac{\partial q^L_{jg}}{\partial \psi} = \frac{B (N + 1) \left( \alpha'_g - c_{jg} \alpha'_S \right) + bNc_{jg} \alpha'_S}{(B (N + 1))^2 - (bN)^2} \]  

(23)

\[ \frac{\partial q^{NL}_{jg}}{\partial \psi} = \frac{-B (N + 1) \left( c_{jg} \alpha'_S - bN \left( \alpha'_g - c_{jg} \alpha'_S \right) \right)}{(B (N + 1))^2 - (bN)^2} \]  

(24)

Therefore the total effect of an increase on all local imports is given by,

\[ \frac{\partial Q^{NL}}{\partial \psi} = N \left[ \frac{\partial q^{NL}_{jg}}{\partial \psi} + \frac{\partial q^{NL}_{j-g}}{\partial \psi} \right] = N \left[ \frac{-B (N + 1) \left( c_{jg} + c_{j-g} \right) \alpha'_S - bN \left( 2\alpha'_g - \left( c_{jg} + c_{j-g} \right) \alpha'_S \right)}{(B (N + 1))^2 - (bN)^2} \right] < 0 \]  

(25)

So, a regional increase in social interaction will decrease production in the other region, under any of the previous definitions of localism. However, the effect of social interaction on local production of goods cannot be signed. It may be the case, if goods are expensive, that an increase in localism causes consumers to purchase more services at the expense of local goods.

The effects on prices are given by,

\[ \frac{\partial p^L_{jg}}{\partial \psi} = \frac{Bn \left[ B (N + 1) \left( \alpha_g - a\alpha_S \right) + bNa\alpha_S \right]}{(n + \alpha_S)^2 \left[ (B (N + 1))^2 - (bN)^2 \right]} \]  

(26)

and
\[
\frac{\partial p_{ij}^{NL}}{\partial \psi} = \frac{Bn \left[ -B (N + 1) a \alpha_s + bN (a \alpha_s - \alpha_g) \right]}{(n + \alpha_s)^2 \left[ (B(N + 1))^2 - (bN)^2 \right]} \tag{27}
\]

This implies that if localism includes services, \( \alpha_s = \alpha_g \), then prices for local goods could increase or decrease, but the magnitude of that change will be smaller than the decrease in prices of nonlocal goods. Since omnivores purchase more nonlocal goods than local goods due to price differences, this type of localism is unequivally good for omnivores. This shows that omnivores have an incentive to increase social interaction if localism means a preference for all local goods and services. However, if localism only refers to goods, \( \alpha_s = 0 \), then the price of local goods will increase more than the price for nonlocal goods will decrease. This will decrease the welfare of omnivores if their consumption of local and nonlocal goods is close to even, which will be the case at low levels of localism (\( \alpha \) is small) or social interaction. Yet, it is possible that if social interaction is prevalent enough, omnivores will consume so much more nonlocal goods due to price differences, that they will be more impacted by small decreases in prices for nonlocal goods than larger increases in prices for local goods, that their welfare could be increased.

If we make no assumptions about the costs of goods, then very little can be said of profits and output of firms. However, if we make the assumption that efficient firms can produce one unit of a good for the same cost as one unit of a service so that \( c = 1 \) for efficient firms, more can be said. In this case, if \( \alpha_s = 0 \) then localism increases profits for local firms producing goods. However, if \( \alpha_s = \alpha_g \) then localism can not only decrease profits for nonlocal producers of goods, but it might decrease profits for local producers of goods as well. This is true even though either type of localism will increase production of efficient local producers of goods. This illustrates the tension between the goods and services market. Producers of goods have an incentive to promote localism in their region if localism only applies to goods, this may not be the case is localism includes all goods and services.
The incentives for more social interaction and more localism is not always clear. While producers always want a higher demand for their goods, if localism includes everything produced in that region, it may decrease profits. It is possible that social interaction decreases demand for firms in both their home region as well as other regions. Also, while localvores may have an incentive to put pressure on fence sitters to increase economic output, in some cases, omnivores have the same incentive. If localism means less demand for firms with more market power, omnivores would benefit through lower prices for goods that they consume in large quantities.

4 Conclusion

Consumers showing a preference for local production has been discussed in the literature for decades (Whalley and Xin (2009); Armington (1969)). This preference for local production could arise from consumers valuing the real or perceived benefits of increasing local production. In this case consumers could be valuing local goods and services as an implicit way to internalize an externality by paying more for the goods which are thought to produces the external benefits they receive.

Often “buy local” promotion is focused on developing industries that are not predominate in the region and where that type of production does not have a natural comparative advantage (e.g. an infant industry argument (Krueger and Tuncer 1982)). However, if this type of promotion is done to bolster national economic development, there is a potential for it to have the opposite effect. If all regions pursue inefficient production, then definitionally this will come at the expense of efficient production, thereby decreasing total production. So, the “buy local” movement can foster inefficient industries in the region, or it can increase total production, but it cannot do both. Therefore, if localism is sold on increasing local output, it should do so by promoting industries with a comparative advantage in the region.

In addition to contributing to the “buy local” and trade literature, our model provides
a theoretical platform to reconcile endogenous interactions between economic impact analysis and economic benefit/cost analysis; with the former concerned with estimating changes in economic activity (output, jobs, income) and the later concerned with measuring economic welfare (surpluses). Formal models that explicitly allow for changes in economic impacts (i.e. increases in economic activity) to, ceteris paribus, yield changes in welfare are not common in the extant literature.

Previous literature has used general equilibrium models for the simultaneous estimation of both economic impacts and welfare (Watson et al. 2012), previous models do not investigate how changes in economic activity (i.e. economic impacts) can endogenously also create changes in welfare. Traditional benefit/cost analysis would treat increases in employment solely as a cost to producers and wages paid as income to consumers where the marginal benefits and costs would be equilibrated at the margin. We allow for a more complicated relationship where these measures of economic impacts can partially be both benefits and costs. Additionally, there may be heterogeneity in preferences for different types of local production. For example, a consumer may have an explicit preference for local goods but not services or vice versa. Because of budget constraints there is likely an interaction between different local purchases and as consumers buy, for example, more local goods, it could be that they must purchase less local services. It could be the case that a consumer who purchases more (and presumably cheaper) imported goods might have relatively more disposable income for local services (e.g. local restaurants). This introduces a theoretical case where one segment of local producers would be harmed by increasing local consumption from other producers. The model developed here allows for heterogeneous preferences for different types of local production and allows for the interactions between these different types of local production to be explored.

The model also shows incentives for consumers to influence other consumers via social interaction. Committed consumers, whether they are committed to valuing local production or not valuing local production, may have an incentive to convince other consumer to buy local. This is because more consumers buying locally will increase local production
(helping localvores) and at the same time decrease prices for nonlocal goods (helping non-localvores).

However, an increase in buying locally will certainly have losers. Given budget constraints, an increase in local purchases causes fewer purchases of other goods and/or services. This can create a tension between industry types to differ on the definition of “local”. Furthermore, even if localvores care about all local production, a global increase in buying local via social interaction only weakly increases overall production. So, while they may be an increase in production, it may not offset the negative impacts of decreasing the consumer utility via a change in consumption. In other words, there is a tradeoff between generating more local production and consuming fewer nonlocal goods. These tradeoffs should be considered when promoting local production.
References


Table 1. Effect of social interaction in Bertrand

<table>
<thead>
<tr>
<th>Firms</th>
<th>$\alpha_{meff} &gt; 0$</th>
<th>$\alpha_{eff} = 0$</th>
<th>$\alpha_k &gt; 0$</th>
<th>$\alpha_s = 0$</th>
<th>$\alpha_k = \alpha_s &gt; 0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/efficient</td>
<td>0</td>
<td>$B$</td>
<td>$(b - B)(\bar{c} + \xi)$</td>
<td>$B(1 - \xi) + b\bar{c}$</td>
<td></td>
</tr>
<tr>
<td>Local/inefficient</td>
<td>$-B\bar{c} + b\xi$</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-B\xi + b(\bar{c} - 1)$</td>
<td></td>
</tr>
<tr>
<td>Local services</td>
<td>$B$</td>
<td>$(b - B)(\bar{c} + \xi)$</td>
<td>$2B + (b - B)(\bar{c} + \xi)$</td>
<td>$2B + 2(b - B)(\bar{c} + \xi) + 2B(\xi^2 + \xi^2) - 4b\bar{c}\xi$</td>
<td></td>
</tr>
<tr>
<td>Non-local/efficient</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-B\xi + b(\bar{c} - 1)$</td>
<td></td>
</tr>
<tr>
<td>Non-local/inefficient</td>
<td>0</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-B\xi + b(\bar{c} - 1)$</td>
<td></td>
</tr>
<tr>
<td>All local</td>
<td>$B(1 - \bar{c}) + b\xi$</td>
<td>$2B + (b - B)(\bar{c} + \xi)$</td>
<td>$(B - b)(2 - \bar{c} - \xi)$</td>
<td>$(B - b)(2 - 3(\bar{c} + \xi)) + 2B(\xi^2 + \xi^2) - 4b\bar{c}\xi$</td>
<td></td>
</tr>
<tr>
<td>All non-local</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-b$</td>
<td>$-B\xi + b(\bar{c} - 1)$</td>
<td></td>
</tr>
<tr>
<td>Total production</td>
<td>$B(1 - \bar{c}) + b(\xi - 1)$</td>
<td>$(B - b)(2 - \bar{c} - \xi)$</td>
<td>$(B - b)(2 - 3(\bar{c} + \xi)) + 2B(\xi^2 + \xi^2) - 4b\bar{c}\xi$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All values are multiplied by $\frac{\alpha}{B^2 + \beta^2}$.