Economic Oases, Deserts and Mirages

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Abstract. In 2010, the United States Department of Agriculture (USDA) reported that 23.5% of Americans live in a “food desert”. This means that they don’t have easy access to fresh food and vegetables. The note embeds the chain-store paradox game in a monopolistic competitive environment to explain this confouding phenomenon, i.e., why certain areas of a country can become economic deserts, while other areas flourish as economic oases in the same country.

Keywords: Monpolistic Competition, Trade, Inequality

1. Introduction

With increasing returns to scale and reasonably low transport cost, the distance between the consumer and producers becomes almost irrelevant. Conversely, it create opportunities for retailers to abuse their market power in small markets. The objective of this note is to show that as the market power of retailer increases in the local market, it creates an economic strangehold on the economic activity in the area. This is posited as an explanation for the the confounding phenomenon of *economic desert*, where deprived rural communities in the developed world[1] are not able to sell a range of locally produced consumer goods at their local market due to the spatial market power exerted by the local supermarket and in what is a mirage of prosperity, exclusively consume products produced in oases elsewhere. This is a result of a larger spatial game the supermarkets play, best epotomised by Selten’s chain-store paradox (Selten, 1978). *Economic desert* is just the logical extension of the literature on

[1]This is also the problem being faced by developing countries. They import range of goods but struggle to export any domestically produced goods.

food desert, which documents the lack of availability of fresh food in some rural communities in the developed world.[2]

Review of Central Place Theory. The explanation in this note is complementary to the Central Place theory, which relies on perfectly functioning markets for land. Central place theory is able to explain the land prices around urban agglomeration once they emerge but is not able to explain why land prices do not fall in places where there are no urban agglomerations in order to create one. Or to stem the decline of previously vibrant cities like Detroit. There could be a number of possible conceptual reasons.

(1) *Zero-bound problem.* Prices in general are flexible upwards but downwardly rigid. They rise easily but tend to fall only when a large pressure builds up, hence creating a large measure mass at zero percent change. When the demand for land decreases, the volume in the land (property) market slows down as people wait for a better climate to sell. At this stage, land is no longer a factor input in the production process and becomes an *asset*, i.e., an asset they are holding on to for better returns in the future.
(2) In high *inflation* environments, when prices rise slower than the rate of inflation, the price fall in the real term thus creating downward flexibility. In low inflation rate regimes, prices are more likely to be downwardly rigid in real terms. Thus, successful low inflation targetting may be contribbuting to the problem of creating economic deserts in the developed world.
(3) As we will see below in the *Chain-store paradox game*, supermarkets have the incentive to use all possible resources at their disposal to intimidate their competitiors. Buying available land in the area the supermarkets to make it unavailable is one such strategy to exert market power. UK supermarkets have used *landbanks* frequently to thwart their competitors. This has the effect of keeping land prices high and thus making the price mechanism in effective in creating economic opportuinities for the local community.
(4) Central place theory assumes that space is a convex set. This is true in economically vibrant agglomeration where the high opportunity cost of land shapes the landscape, i.e., roads are built when needed and the planning permissions obtained for changing land use. In less economically vibrant areas, there may be more hysterisis in the system due to low opportuinity costs and lack of fiscal capacity to create local infrastructure.

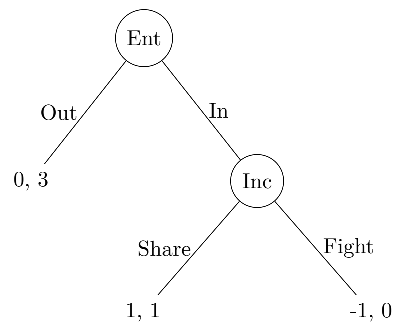
[2] Zenk et al. (2005), Cummins and Macintyre (2002) and Larson et al. (2009).

2. Chain-store Paradox

The chain-store paradox looks at the problem of a chain store that is the sole incumbent in various geographic location and is facing potential entrants that challenge its local monopoly. Let's start by analysing the interaction between the incumbent and the entrant (challenger) at one such location.

In the one-shot game represented below, the Entrant (Ent) moves first and decides whether to enter the market or not. The Incumbent (Inc) then decides whether to fight off the incumbent or share the market with the entrant. They payoffs are represented below in the normal form on the left and the extensive form on the right.

		Incumbent	
		Fight	Share
Entrant	In	0 -1	1 1
	Out	3 0	3 0



Let's find the Subgame perfect Nash equilbrium of this one shot game through the process of backward induction.

- If the *Incumbent* chooses to fight, she gets 0. If the *Incumbent* chooses to be accomodative and share the market, she gets 1. Given the payoffs, the *Incumbent* would choose to *Share* the market.
- Moving up the tree, the *Entrant* has a choice between choosing to remain *Out* and getting a payoff of 0 and choosing *In* and getting a payoff of 1. Given the payoffs, the *Entrant* will choose *In*.
- Thus, the *Entrant* choosing *In* and the *Incumbent* choosing *Share* is the Nash equilibrium of the game. Given this outcome, neither players have thw incentive to deviate from the equilbrium individually.

It is useful to note the basis on which this equilbrium rests. The *Entrant* believes that the *Incumbent* would not choose to *Fight* once she has chosen *In* and hence can ignore the *Fight* branch of the tree in her decision. It is important to pause her for a moment and think how the *Entrant* has folded the expected future into her current decision. We have made the extreme simplifying assumption that the *Entrant* has perfect foresight and knows the *Incumbent's* payoff with perfect certainty.

If the *Incumbent* commits to fighting the entrant (for the heck of it) and the *Entrant* believes it, then in the equilbrium where the *Incumbent* commits to *Fight* and the *Entrant* stays out. The *Incumbent* knows that she can keep the *Entrant* out by convincing her that she is going to fight.

The *Incumbent* realises that being irrational gets her a payoff of 3, which is greater than the payoff of 1 she gets for being rational. Actually, all the *Incumbent* needs to do is randomise between being rational and irrational.

If we assign the variable p to the probability that the *Incumbent* choose *Fight* and *Share* with probability $1 - p$. Looking ahead, the *Entrant* will play *Out* if she believes that the *Incumbent* will play *Fight* with probability $p > \frac{1}{2}$. In a realistic application of the game, the players Bayesian updated beliefs about what the other player will do are extremely important. The Nash equilbrium thus between a set mutually consistent stable beliefs (probability distribution over the range of available actions) where player have no reason to change their equilbrium beliefs.

Dynamic Chain-store game. Now, lets look at a scenario where the chain store is an incumbent at a number of distinct locations across the country. Let's assume that the chain store gets challenged in differnt locations sequentially, i.e., these challenges don't all happen at the same time. The important assumption we make is that each Entrant knows the history perfectly, i.e., whether the chain-store chooses to *Fight* or *Share* in the markets where it was challenged by the Entrant. There are two different possible equilbria in this game.

- The first equilbria is one where the chain-store *Shares* the market whenever there is a new entrant. This is the equilibria we would obtain through the process of backward induction. This equilbria, though possible, is highly unlikely.
- The second equilbria is one where the chain-store *Fights* and decimates the first Entrant in order to send a signal to all subsequent Entrants. As we have seen above, all the Incumbent needs to do is create sufficient uncertainity in the minds of the subsequent Entrants. As we have seen above, if each Entrant believes that the chain-store will fight in their market with probability $p > \frac{1}{2}$, they will choose to stay out.

Decentralised and Curated Market Places

The chain-store paradox has an important application in understanding the effect supermarkets have in creating economic deserts in certain areas. As far as I have read, the urban and regional geography literature has focussed on pinning down the location of the production and the location consumer. With low transport cost and increasing returns to scale, the location of production is less important. What is more important is the location and the nature of the market place.

My sense is that the real competion within the present day developed economies is between decentralised market places and the curated spaces that large retailers offer. Market places are places which faciliate the exchange between producers and consumers. These could be in the real or online world. To be very specific, a market place is a place where people are free to make decisions. The consumers can communicate their choices to the producers and producers and respond accordingly by offering a variety of products at price of their choosing in this market place. It is important to stress the only fully decentralised market place allow consumers and producers to communicate their choices to each other.

Supermarkets and large retailer present pre-curated choices for the consumers. The supermarkets don't present the full range of goods and services. They often negotiate with producers and take payoffs for product placements and prioritising certain products. Almost any producers can try to find consumers for her products in a decentralised market place. Conversely, getting a product placed on the supermarket shelf is a Herculean task for a small producer. Supermarkets and other large retailers are harmless when part of a larger choice in dense markets. It is in the sparse markets that their influence can be malign by restricting the choices available to the local consumers and producers.

As the chain-store paradox illustrates, in smaller markets the supermarkets and online retailers can exercise contol over what is available by getting rid of the competitors. In the language of the game above, the supermarkets can be rational in dense markets where the competitors are so numerous that it would impossible to exert any market power. Concommitantly, they can be aggresive in smaller markets where the competitors are less vulnerable and can be easily disposed off. [3]

In the following section we set up a of monopolistic competition model of the economy where the consumers have a preference for variety, the production has increasing returns to scale and the product market is imperfectly competitive as a result. The number of varieties available to the consumer is endogenous and result from the parameters of the model. We use this model to explore what will happen in markets where the supermarket can exert market power. The main result we obtain is that the supermarkets create economic deserts by exerting market power and getting rid of their competitors. This model is an extension of the monopolistic competition model of Dixit and Stiglitz (1977) and Krugman (1980). The chain-store paradox game that we embed in the model is from Selten (1978).

[3]The supermarkets, apart from being aggresive, can also try to change the payoff of the competitors they are trying to get rid of by aggresively under-cutting the prices and by creating landbanks.

The Model

We set up the model in this section by specifying the consumer's utility function and the firm's production function. We model the consumers as a person who inherently likes variety. The firms posess increasing returns to scale production functions.

Demand Side

Consumer's Taste for Variety. Individuals maximise their utility U over n variety of goods $(x_1, \ldots, x_n)$ given prices $(p_1, \ldots, p_n)$ and their budget m. Their utility function has a constant elasticity of substitution $\sigma = \frac{1}{1-\rho}$. n, the range of variety available to the consumer is an endogenous variable of the model and the parameter σ will play an important role in determining n.

$$\max \quad U = \left[\sum_i^n x_i^\rho\right]^{\frac{1}{\rho}} \qquad \text{s.t.} \qquad m = \sum_n p_i x_i$$

Deriving the Demand Functons. Setting up the langrangian.

$$\mathcal{L} = \left[\sum_i^n x_i^\rho\right]^{\frac{1}{\rho}} + \lambda\left[m - \sum_n p_i x_i\right]$$

First Order conditions with respect to x_j:

$$\left[\sum_i^n x_i^\rho\right]^{\frac{1}{\rho-1}} x_j^{\rho-1} = \lambda p_j \tag{1}$$

First order condition with respect to λ:

$$m = \sum_i^n p_i x_i \tag{2}$$

From (1) and (2) we obtain the demand for variety i.[4]

$$\hat{x}_j = \left[\frac{p_j^{\frac{1}{\rho-1}}}{\sum_i^n p_i^{\frac{\rho}{\rho-1}}}\right] m$$

[4]Given the nature of the objective function and the constraints, the second-order condition for maximisation would be easily satisfied.

The $\hat{x}$ derived above is the demand for variety j. We can recover back the indirect utility function by substituting back the demand curves for all varities in U.

$$\hat{U} = U(\hat{x}_1, \ldots, \hat{x}_n) = \left[\sum_i^n \hat{x}_i^\rho\right]^{\frac{1}{\rho}} = \left[\frac{\sum_i^n p_i^{\frac{\rho}{\rho-1}}}{\sum_i^n p_i^{\frac{1}{\rho-1}}}\right]^{\frac{1}{\rho}} m$$

$$\frac{\hat{x}_i}{\hat{U}} = \left[\frac{p_i}{\left[\sum_i^n p_i^{\frac{\rho}{\rho-1}}\right]^{\frac{\rho-1}{\rho}}}\right]^{\frac{-1}{1-\rho}}$$

The demand for i can be written as

$$\frac{\hat{x}_i}{\hat{U}} = \left[\frac{p_i}{P}\right]^{-\sigma} \tag{3}$$

where $\hat{U}$ is simply an index of $\hat{x}_i \, \forall \, i \in [1, n]$, $P = \left[\sum_i^n p_i^{\frac{\rho}{\rho-1}}\right]^{\frac{\rho-1}{\rho}}$ is an index of prices and σ is the elasticity of substitution.

Supply Side

Production Function. The economy has L units of labour. Variety x_i is produced using ℓ_i units of labour.

$$\begin{aligned} x_i &= h(\ell_i) \\ &= -\frac{\alpha}{\beta} + \frac{\ell_i}{\beta} \qquad\qquad \alpha, \beta > 0 \end{aligned}$$

It is more useful to write it in its inverse form.

$$\begin{aligned} \ell_i &= g(x_i) \\ &= \alpha + \beta x_i \qquad\qquad \alpha, \beta > 0 \end{aligned} \tag{4}$$

Each labour unit gets wage w. Firm's labour cost in producing x_i is given by $C = wg(x_i)$. At the margin, it costs the firm $\frac{dC}{dx_i} = wg'(x_i)$ to produce an additional unit of x_i.

Labour. The total total labour available in the economy is L.

The constraint $L = \sum_i^n \ell_i$ follows from the fact that the available labour needs to be divided amongst the various varieties being produced in the economy.

$$\begin{aligned} L = \sum_i^n \ell_i &= \sum_i^n g(x_i) \\ &= \sum_i^n [\alpha + \beta x_i] \end{aligned} \tag{5}$$

Marginal Revenue Curve. Using (3) we can write the revenue accruing from product i as follows.

$$R_i = p_i \hat{x}_i = \left(\frac{P}{U^{*\frac{-1}{\sigma}}} \right) \hat{x}_i^{1-\frac{1}{\sigma}}$$

Marginal revenue from product i can be given by

$$\begin{aligned} \frac{\partial R}{\partial \hat{x}_i} &= \left[P \left(\frac{\hat{x}_i}{U^*} \right)^{\frac{-1}{\sigma}} \right] \left(1 - \frac{1}{\sigma} \right) \\ &= p_i \left(1 - \frac{1}{\sigma} \right) \end{aligned}$$

Pricing decisions and σ. Each firm is a monopolist within their own niche, i.e., for their particular product i. Since Firm i only produces i, they have to concerned that if they raise their price too high, then consumer's will switch to an alternative product $j \neq i$. The consumer's ability to switch depends not only on the relative prices of i and j but also on how substitutable they are. This elasticity of substitution between each pair of i and j is captured by $\sigma = \frac{1}{1-\rho}$. The model assumes that elasticity of substitution between each pair is identical.

We are particularly interested is the range $\sigma \in (0, 1)$ where the consumer sees the goods as complements. The complementarity makes it difficult for the consumer to switch to another product and hence allowing firm i to exert it market power in its small niche. With $\sigma = 1$, the products have no complementarity. Hence the firms has no power and $\frac{\partial R}{\partial \hat{x}_i} = p_i$, i.e., the firm is becomes a price-taker. As σ increases, the market power the firm is able to exert increases.

It is important to clarify here that there are two distinct ways for a firm to exert market power. In the case above, the firm gets its market power from consumer's preferences, i.e., her unwillingness to subsitute one product for another.[5] Given increasing returns to scale in production no firms compete with each other in the same niche. In stead, they prefer to

[5] An example of this complementarity could be food, wine, bottled water and coffee.

create their own niche, which they can then exert market power over. Alternatively, a firm could also exert market power by eliminating its competition. This is the phenonmenon we discussed in the Chain-store paradox game and which we revist again below.

Economy with Monopolistic Competition

In this section, we will derive the number of varities that will be available to the consumers in the monopolistically competitive economy.

Firms. Profit for firm i is given by $\pi_i = px_i - g(x_i)w$ for all $i = 1, \ldots, n$. For our specific production function (4), this can be written as

$$\pi_i = px_i - [\alpha + \beta x_i]\, w$$

The pricing rule. Marginal revenue for firm i is given by $\frac{\partial R}{\partial \hat{x}_i} = p_i\left(1 - \frac{1}{\sigma}\right)$. The marginal cost of x_i is $\frac{dC}{dx_i} = wg'(x_i)$. Each firms produces till the marginal revenue and costs are equalised, resulting in the pricing rule $\frac{p_i}{w} = \frac{g'(x_i)}{\left(1-\frac{1}{\sigma}\right)}$. Using the production function (4), we can write it as

$$\frac{p_i}{w} = \frac{\beta}{\left(1 - \frac{1}{\sigma}\right)}. \tag{6}$$

The price of good i relative to wage is decreasing in both x_i and σ. Since the β and σ is identical for all producers and consumers in the economy, prices for all $i = 1, \ldots, n$ are going to be identical.

$$p_i = p$$

Zero profit condition. The positive profits gives firms incentive to enter and reduce the profits to zero. This would happen if the firm under-produces x_i in order to keep revenue high. Given the threat of entry, the firms will ensure that they produce till the profits are driven to zero.[6] Setting $\pi_i = 0$ gives us $\frac{p}{w} = \frac{g(x_i)}{x_i}$. Using the production function (4), we can write it as

$$\frac{p}{w} = \frac{\alpha}{x_i} + \beta \tag{7}$$

From (6) and (7), we have

[6]Profits is always a source of confusion because colloquially returns to capital is referred to as profits. This is conceptually problematic. Economics argues that it return on capital. Profit is surplus after all factor inputs are paid their dues.

$$x_i = \frac{\alpha}{\beta} \cdot (\sigma - 1) \tag{8}$$

$$g(x_i) = \alpha\sigma \tag{9}$$

The constraint that total labour in a economy at a point in time is fixed and has to be distributed amongst the products can be written as $L = n \sum_i^n \ell_i = n \sum_i^n g(x_i)$. Using (5) and (9), we obtain the equilbrium value of the total number of products in the economy.

$$n = \frac{L}{\alpha\sigma}$$

From the supply side, α measures the extent of increasing returns to scale. As α increases, the number of varieties goes down. From the demand side, σ measures the lack of substitutability between products. As σ decreases, the number of products increase.[7] This is because as σ decreases, the goods becomes more complementary and hence give greater opportuinity to the produces to find niches for their distinct product.

The Supermarket Economy

As we discussed above, the supermarkets can capture and eliminate competition in the rural areas by eliminating competition by fighting tough and changing the payoff of the competitors.[8] The supermarkets can eliminate competition by under-cutting the local shops till they are are driven out of the market. They can also do this by buying land and creating landbanks. In this situation, since the supermarket controls the market place, the distinction between the supermarket and producer is no longer important. [9][10]

In this section, we will solve for the variety a monopolist will choose to produce once they have captured the market place and exert full control over it. We will first solve for the variety offered in an autarkic rural area and then open it up to trade to other areas of the country.

[7] When products are neither subsitutes or complements, we get $\sigma = 1$. With $\sigma = 1$, $n = \frac{L}{\alpha}$. That means infinitesmally small amounts of each product is produced.

[8] This is analogous to what the colonial powers did in their colonies. The early Colonial companies acted like monopolist and used military power to establish control over trade in and out of a colony. There is scope for arguing that similar processes are in play between the rural and urban agglomerations in the developed world.

[9] They could be one or different entities where the producer has no option but to coordinate with the supermarket since that is the only way to sell.

[10] This is well captured by the widespread phenonmenon of "food desert" in US, where there there is no fresh food available in these rural tracts. One would think, fresh food would be the easiest thing to produce and sell locally.

Let the rural area have population $\breve{L}$. Since $\breve{L}$ has to be spread across the n products that can be produced in the area are given by $\breve{n} = \frac{\breve{L}}{g(x_i)}$. The monopolist's profit function $\Pi = \breve{n}\pi_i$ for $i = 1, \ldots, \breve{n}$ is given by

$$\begin{aligned}\Pi &= \frac{\breve{L}}{g(x_i)}\left[px_i - g(x_i)w\right] \\ &= \breve{L}\left[\frac{px_i}{g(x_i)} - w\right]\end{aligned}$$

Differentiating with respect to x_i gives us the profit maximising condition $\frac{\partial \Pi}{\partial x_i} = \breve{L}p\left[\frac{g(x_i)p - pg'(x_i)}{g(x_i)}\right] = 0$, which can be written as

$$\frac{g(x_i)}{x_i} = g'(x_i)$$

For the normal production function with decreasing marginal product of labour, i.e.. $g''(x_i) > 0$ and increasing returns to scale, i.e., $g(0) > 0$, this condition is only satsified if $x_i \to \infty$. With $x_i \to \infty$, the number of variety will hit its lower bound, i.e., $n = 1$.

In an autarkic rural economy, either the supermarket will set $n = 1$ or some other value low value $\underline{n}$ that does not threaten its pre-eminent position locally. $\underline{n}$ is low enough that it creates large profits for the supermarket but not so low that it creates resentment and leads to reprisals or regulatory action.

$$n = \max\left[1, \underline{n}\right] \tag{10}$$

Let's assume for now that $\underline{n}$ is small and $\underline{n} > 1$.

Two Regions: Core and Periphery

Let's take an economy with two types of area. We can call them core and periphery. What is important is that both core and periphery have a boundary that clearly defines them and there are no overlapping areas.

Autarky. The "*core*" area has a population of L^c. In internal dynamics of this area is such that it is impossible for the supermarket to exert power by eliminating competiton. The supermarket decides to accomodate other players and becomes just one of the participants in the core.[11][12] Before trade opens up, the number of variety in the core areas is given by $n^c = \frac{L^c}{\alpha\sigma}$.

The "*periphery*" area has a population of L^p. The periphery is the generic area where the supermarket has captured the market, i.e., goods can only be sold within the market. The supermarket has done that by either by previously sending a signal that it is going to fight hard or by using deep pockets to eliminate the competition. Before the trade opens up, $n^p = \underline{n}$ is the number of goods produced in the periphery areas (10). We will analyse the trade between one core and one periphery area below. This can be generalised further by adding more core and periphery.

Trade between core and periphery. Let's assume that trade opens up between the two areas. Let's also make the following assumption.

Assumption 1 (Transport costs)**.** We assume that that the *cost of transporting goods between the two areas is negligible for the supermarket and exorbitant for the producers.*

The assumption if taken literally is a bit stark, but transport cost here represent a broader phenomenon of large initial fixed cost. These costs are advertising, meeting regulatory approval, health and safety inspection, labelling, identifying allergens in food etc. These costs are high for small producers but low for large corporations or supermarkets.

Lets take a specific example. It is not easy for an entreprenuer in Merthyr Tydfil or Caunton Village (Newark and Sherwood) to create a market in London for their homemade jam. Conversely, it is easy for supermarkets to sell Geeta's pickle or Innocent drinks in Merthyr Tydfil and Caunton, where it competes with locally produced condiments. Incidently, Geeta's pickle was started from a kitchen in London 20 years ago. Simiarly, Innocent drinks was started from a stall at a music festival in London in 1998. Local markets are critical for modest startups.

The broader idea transport cost represents that for small producers, the cost of selling locally is low and cost of crossing boundaries into another area is high. For supermarkets, cost of

[11] We have not modelled the reason for this at this stage, but it is could either be the size of the market or proximity to the regulatory authorities. It would be useful to model how small markets can be monopolised by acting tough, but it may be more difficult in larger markets. On way of doing this is modelling how deep the pockets need to be to drive your competitior, i.e., big markets require deeper pockets to bear the short-term losses to drive out the challengers. Thus, given the resources of the firms, they can only monopolise smaller markets.

[12] Another way to model this is to think of the supermarkets playing a strategy of dominate some markets and accomodate in others so that regulatory authorities are never able to get inconvertible proof of market abuse.

crossing boundaries is low if they are able to attain a certain volume due to the scale of their operation.

If transport and advertising (creating a brand) has increasing returns to scale, given the scale of operation, the supermarket can bring the average cost to negligible levels with large volumes. Conversely, the independent producers have to bear the fixed transport (and other fixed costs) and thus only sell their good locally in their own area. The small producers can change locations by bearing a fixed cost, but we assume that L^c and L^p are steady state values and those moves have already be accounted for.

Table 1. Effect of trade on varieties available locally

	Number of varieties		Fraction of income
	Autarky	*With trade*	spent on local varieties
Core	n^c	$n^c + \underline{n}$	$\frac{n^c}{n^c+\underline{n}}$
Periphery	$\underline{n}$	$n^c + \underline{n}$	$\frac{\underline{n}}{n^c+\underline{n}}$

Before trade, there were $n^c = \frac{L^c}{\alpha\sigma}$ varieties available in the core and $n^p = \underline{n}$ available in the periphery. With trade, everyone irrespective of where they live have $n^c + \underline{n}$ varieties available to them. Given $n^c \gg \underline{n}$, the proportion of income spent on local varieties is high in the core area and low in the periphery. Given that $\underline{n}$ is insensitive to L^p, the inequality in the society will increase as the proportion of people living in the periphery area increases $\frac{L^p}{L^c+L^p}$. Even though trade has a beneficial impact in terms of the variety of things available to the people living in the periphery, the supermarkets strangle the economic activity by exerting their market power locally.

Local Infrastructure and level playing field. This is where local governments can be very helpful in creating infrastructure that reduce the fixed cost of selling locally and levelling the playing field vis-a-vis the supermarkets and online retailers. Further, learning what works and what does not work locally requires capacity building within the local government (Hausmann and Rodrik, 2003).

The local government does not have to make decisions about what will be produced locally. It just has to ensure that the choice of the local consumers and producers is not restricted. Further, local infrastructure can facilitate strategic complementarity in the actions of the local entreprenuer. Facilitating the pattern of strategic complementarity is likely to have a far greater impact than simply focussing on spillover effects or externalities. Role models firms plays a crtical role in the starting the process. Early successes pave the way for others to emulate.

Farmer's markets is an excellent platform for local business to experiment and create strategic complementarities. The makeshift Pop Brixton market has changed the culinary landscape of London. Local markets have existed for centuries before they have slowly been were snuffed out in the last over the last half century.

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