Ripe for Investment: Refocusing the Food Desert Debate on Smaller Stores, Wholesale Markets and Regional Distribution Systems

By

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ABSTRACT

This thesis argues that food distribution systems must be strengthened in order to address the challenge of urban food access. The argument rests on a historical analysis of the supermarket industry and a comparative study of fresh produce sourcing in two Boston neighborhoods, North Dorchester and West Roxbury. Through a series of interviews with store owners, managers, distributors and wholesalers, the thesis illustrates the sourcing methods used by different store types (national supermarkets, local and regional supermarkets and small stores) in two neighborhoods of different incomes and different demographics.

The findings reveal that store type, not store location, determines the sourcing method, of which there are two distinct systems: one for supermarkets and a secondary system for small and midsize stores. The regional wholesale produce market and local distributors play an essential role in supplying fresh fruits and vegetables to these smaller food stores, which are particularly important in low-income neighborhoods that tend to have fewer supermarkets. The thesis recommends public investment in wholesale markets and regional distribution systems to ensure that residents of urban neighborhoods have access to fresh food.

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Chapter One: Introduction

Food access and health have recently come to the fore of critical urban issues. Though a long-standing concern of urban residents and activists, for many years the issue was on the sidelines of public sector community and economic development agendas. Today, however, there exists an abundance of studies and data demonstrating the lack of supermarkets in low-income urban areas as compared to higher-income areas, and the lower quality and lesser healthfulness of food often found in those neighborhoods. In addition, the connections between access to healthy food and public health, and the health disparities between poor and affluent neighborhoods, have been well established.

There is also a wealth of information in trade journals and business literature describing the supermarket industry. Its history begins with the urban public market and eventually transitions to the development of small grocers, chains and supermarkets, in large part thanks to technological innovations and the changing patterns of American population growth. More recent industry literature analyzes the shift toward consolidation and intensive supply chain management.

While these two areas have been examined independently in the literature, far less work has been done to connect them. In other words, there is little in the literature that analyzes the food environment and food access in relation to supply chains and product sourcing. This is also a weakness in practice, where food policy and advocacy have predominately focused on supermarket attraction. Though significant efforts have
been made to incorporate local food into regional food systems, less attention has gone
toward strengthening supply channels in an attempt to improve urban food access. And
for neighborhoods that cannot attract a supermarket, a gap remains. This thesis aims to
connect these issues by approaching the food access issue from the perspective of
sourcing and supply chains, components that I argue are critical to improving the urban
food environment.

National chain supermarkets have increasingly consolidated and adopted a
group of common practices, while independent retailers and smaller markets operate in
a very different, marginalized system. These differences not only impact the availability
and quality of food, but they can also help shape policy interventions. In order to
address food access issues in urban communities, it is critical to understand both the
national supermarket and the smaller store model.

In this thesis, I seek to answer three primary questions. First, what are the
central characteristics of the modern supermarket industry, and how does this structure
impact low-income urban neighborhoods? Second, how do urban food retailers source
their products and how do these supply chains vary among different types of retail
formats (national and regional supermarket, independent grocer, small store) and
different income demographics (low-income vs. moderate/middle income)? And third,
what opportunities exist to improve access to healthy food in low-income
neighborhoods through changes to supply chains?

This thesis attempts to illuminate and connect these issues by analyzing the
grocery store industry as a whole and the specific sourcing mechanisms used by
different urban food retailers in two very different Boston neighborhoods. Recognizing that supermarket attraction may not be a panacea for low-income urban neighborhoods, I present both the dominant food system of the supermarkets and the alternative system used by other, mostly smaller, food retailers. I analyze their similarities and differences, and in so doing, I hope to offer policy makers alternative approaches for addressing urban food access.

**Methodology**

The methodology I use is primary data collection through observation and interviews and secondary research drawing on health, social science and industry literature. The primary research I conducted was a comparison of retailers’ supply chains and sourcing in two different Boston neighborhoods through a series of interviews with store owners and managers. The two neighborhoods of focus are North Dorchester and West Roxbury, the former low-income and racially diverse, the latter middle income and predominately white. I selected these neighborhoods for their contrast in incomes, mix of food retail formats and approximately equivalent populations.

In both neighborhoods, I interviewed a store owner or produce manager at three different types of stores: a national chain supermarket, a regional supermarket and a small store. I used an interview script and asked a series of questions about fresh produce sourcing methods. I also interviewed several distributors and wholesalers at the Terminal Wholesale Market in Chelsea and Everett, Massachusetts, along with other industry experts. This methodology is discussed in further detail in Chapter Five.
Though these interviews provide valuable insight into the supply chains of different retail formats in different urban neighborhoods, they present several limitations. First, I only conducted eight store interviews, three in West Roxbury, four in North Dorchester, and one in South Dorchester, just beyond the North Dorchester Boston Redevelopment Agency boundary. While these interviews are likely representative, they are in no way exhaustive. Boston’s food retail environment may be different from other cities for two primary reasons. Because the regional produce wholesale market is located in Chelsea and Everett, just outside of Boston, food retailers in this city may access fresh produce differently from their counterparts in other cities without wholesale markets. Next, because Boston city government has prioritized grocery store development and retention, there are large supermarkets in many low-income neighborhoods in Boston. These factors, which could be unique to Boston, may have impacted my findings.

**Overview**

The structure of the document is as follows. Chapter Two presents the core issues related to food deserts. It reviews the literature demonstrating the associations among store type, store offerings, income and race, and it points to the importance of small stores in urban neighborhoods where supermarkets are scarce. In addition, it briefly describes the limited treatment of food policy by urban planners, which has often focused on supermarket attraction. Chapter Three traces the history of the American food retail establishment, from the early public markets and grocers to the spread of chain stores and the modern supermarket. Chapter Four then analyzes the major trends
in today’s supermarket industry: consolidation, supply chain management and the declining wholesale produce business. These changes have impacted cities differently from suburbs, raising important issues for urban planners and policy makers. Chapter Five examines the findings of the interviews conducted with store owners and produce managers in North Dorchester and West Roxbury, along with other industry professionals. These findings reveal that store type, not neighborhood, determines the produce sourcing method used by different retailers. Finally, Chapter Six offers a series of policy recommendations and conclusions based on the preceding analysis and interviews.
Chapter Two: Context and Literature Review of Food Deserts

Over the last several decades, many cities have experienced a decline in the number of supermarkets and grocery stores. This trend has left some neighborhoods without supermarkets, forcing residents to travel beyond their communities for basic food needs or to shop at nearby corner stores. Noting a connection between public health and access to healthy food, planners have termed these neighborhoods “food deserts,” areas that lack sufficient food retail.

The term “food desert” has been used loosely. Wrigley et al discuss its vague meaning, offering several definitions. It may refer to “areas of poor access to the provision of healthy affordable food where the population is characterized by deprivation and compound social exclusion” (2003). It may also describe areas that lack supermarkets or grocery stores completely, or those that have low quality grocery stores or small stores that sell minimal fresh foods.

Location of Food Stores

While terminology may vary, it is well established that fewer supermarkets are located in low-income urban neighborhoods than in their wealthier urban or suburban counterparts. The lack of supermarkets is part of a broader trend; low-income areas have fewer retail establishments overall than higher income areas and have more small stores and fewer large stores. These same areas tend to have fewer banks, fewer large drug stores and more liquor stores than do higher income areas (Alwitt and Donley 1997).
As demonstrated through multiple studies, chain supermarkets are less frequently located in poor urban areas (Chung and Myers 1999; Alwitt and Donley 1997). In a study of Mississippi, North Carolina, Maryland and Minnesota, researchers found that wealthier neighborhoods had three times as many supermarkets as the poorest neighborhoods. This difference also frequently corresponds to racial composition; this same study found that supermarkets are four times more likely to be found in predominately white neighborhoods than predominately black neighborhoods, and that the ratio is approximately one supermarket to 3,816 residents in white neighborhoods versus one supermarket to 25,582 residents in black neighborhoods (Morland et al. 2002).

Another study found that low-income neighborhoods have half as many supermarkets, but four times as many grocery stores. Small stores, including small grocery stores, tend to be more prevalent in low-income areas (Moore and Roux 2006; Horowitz et al. 2004). In addition, low-income neighborhoods and non-white neighborhoods have fewer fruit and vegetable markets (Moore and Roux 2006). Other studies have confirmed these findings (Franco et al. 2008). While the statistics vary, most studies verify that low-income areas have fewer supermarkets and more small stores than higher income areas. The following sections describe how these differences relate to price, healthy food availability and public health.

**Price Variations By Location and Store Type**

A primary concern about limited food access relates to price. While this area of the literature is inconclusive, some studies have found that prices are higher at small or
mid-size stores than at chain supermarkets, thus forcing the poor to pay more (Chung and Myers 1999). Small stores may charge higher prices because of less competition and smaller volume purchases. One study suggests that the presence or absence of a chain supermarket affects prices throughout the neighborhood, with the presence of a supermarket lowering prices in other stores (Bell and Burlin 1993). In another study conducted of low-income women in Massachusetts, the subjects reported that small stores are “very expensive” and should only be used “in emergencies” (Dubowitz et al. 2007).

Other reports contest these findings. Short, Guthman and Raskin demonstrate that the small stores in its San Francisco Bay area study had lower prices than chain stores (2007). Glanz et al reach a similar conclusion, finding lower prices in convenience stores in low-income areas (2007). Horowitz et al also demonstrate that prices were lower in East Harlem than on the Upper East Side, despite the prevalence of small stores in East Harlem (2004). While several authors speculate about the possible reasons for the low prices, these mixed study results indicate that there is additional research to conduct on this topic. As it is well-documented that the poor are most likely to live in areas with fewer choices of food retail, it is critical to understand how access affects price.

**Availability and Quality of Healthy Food**

In addition to concerns about price, the lack of supermarkets often translates into an inequality in healthy food availability. Small stores such as bodegas and convenient stores have a more limited selection of healthy foods, especially fresh
produce. And, because lower-income or minority neighborhoods tend to have more small stores and fewer supermarkets, healthy food availability in these neighborhoods is more limited (Glanz et al. 2007; Franco et al. 2008).

Different researchers define and measure healthy foods differently, but generally they emphasize fresh, canned and frozen fruits and vegetables, whole grains, low fat milk, and fresh meat and fish. One tool that has been adopted by researchers is the “Nutrition Environment Measures Survey in Stores,” (NEMS-S) which evaluates foods based on their nutritional value, such as those high in recommended nutrients versus those high in fat and calories, for example skim and low-fat milk versus whole milk, and lean versus regular ground beef (Glanz et al. 2007). Other studies have used more targeted definitions, for instance a diabetes-healthy diet, including diet soda and low-carbohydrate bread (Horowitz et al. 2004).

A 2007 study of several Brooklyn, New York neighborhoods found that “the availability and variety of fresh produce is associated with the racial composition of neighborhoods, where a greater number of stores in white areas carry fresh produce than in other racially segregated areas” (Morland and Filomena 2007). The authors of a study in Atlanta reached similar conclusions. This study found that stores in higher income neighborhoods had higher availability and quality of healthy foods (Glanz et al. 2007).

A study of two Manhattan neighborhoods, East Harlem and the Upper East Side, examined the availability of five diabetes-healthy foods, including diet soda, low fat or nonfat milk, high-fiber or low-carbohydrate bread, fresh fruits, and fresh green
vegetables and tomatoes. Stores that carried at least one item from each category were deemed “desirable.” Small stores and bodegas on the Upper East Side were five times more likely than their East Harlem counterparts to carry items from all five categories. While mid-size and large stores in both neighborhoods carried all five food types, East Harlem had fewer large stores, and fewer stores deemed “desirable.” Additionally, residents of East Harlem were significantly less likely to live on a block with a desirable store (Horowitz et al. 2004). This study demonstrates that residents of the lower-income neighborhood face greater difficulty in finding healthy foods than do residents of the higher-income neighborhoods.

Even when supermarkets are present in low-income urban areas, the selection and quality can differ from stores in higher-income locations. Franco et al examined healthy food availability by store type and income and found that the availability of healthy food in supermarkets in low-income or predominately black neighborhoods was lower than that in stores in higher-income or white areas (2008).

**Health Impacts of Food Deserts**

These differences in food retail location and healthy food availability translate into significant health disparities, especially for residents of low-income neighborhoods of color. Various studies demonstrate the correlation between access to healthy food, food retail establishments and consumption of healthy food. Wrigley et al studied a food desert in the United Kingdom before and after the opening of a large Tesco supermarket. Prior to the intervention, study respondents with the poorest diets were those who shopped at small, “limited-range/budget stores.” However, following the
intervention, the researchers found that people with the poorest diets significantly increased their intake of fresh produce with access to a large supermarket. In addition, respondents used the limited-range stores sixty percent less once Tesco opened (2002). Similarly, Laraia et al found that increased distance from a supermarket negatively impacted the diet quality of pregnant women, particularly for those women living more than four miles from a supermarket (2004).

Moving beyond diet quality, the California Center for Public Health Advocacy, PolicyLink and the UCLA Center for Health Policy Research developed a “Retail Food Environment Index” based on the number of fast-food restaurants and convenience stores relative to the number of grocery stores and produce vendors. The results of this 2008 study showed that California adults who live near the most fast-food restaurants and convenience stores compared to grocery stores and produce vendors experience the highest rates of diabetes and obesity. The prevalence of these diseases is also related to income; those who live in low-income communities suffer from higher rates of obesity and diabetes (2008).

Furthermore, Morland et al have demonstrated that obesity is associated with the availability of different store types. Researchers examined the correlation of cardiovascular risk factors and food store type, and found that the prevalence of obesity and overweight was highest in areas with grocery stores and convenience stores, but no supermarkets, and the prevalence was lower in areas with only supermarkets (2006). Coupled with the previously described disparity in supermarket
location, this conclusion highlights the health risks for residents of low-income areas underserved by diverse store formats.

**Beyond Supermarkets: Small Stores**

As already described, many neighborhoods that lack a full service supermarket have other food store formats. Corner stores, convenience stores, bodegas, ethnic stores and other variations of small markets play an important role in the local food system. An emerging literature suggests that previous studies may have overlooked the importance of small stores.

Short, Guthman and Raskin argued that health and policy advocates who have focused on “supermarket deserts” may have underestimated small store networks. In their analysis of stores in the San Francisco Bay area, they found a range of small stores selling a variety of foods in two of the three neighborhoods they examined. While quality varied, the authors concluded that small stores do in fact offer a variety of nutritious foods. In addition, they investigated the “cultural acceptability” of food items, and found many stores that carried Latino foods catering to the local Latino population. Moreover, stores in the Mission neighborhood, which is predominately Latino, sold these goods for lower prices than did local chain stores (2007). Their findings show that small stores play a significant part in providing healthy food to some urban neighborhoods.

Similarly, in an examination of Erie County, New York, Raja, Ma and Yadav found plentiful small stores in neighborhoods of color. The authors confirmed that these neighborhoods have fewer supermarkets, but they also found a wide variety of small
and specialty stores, including convenience stores, bakeries and grocery stores. Using a more narrowly defined neighborhood boundary than many other studies (neighborhood level instead of census tract) these researchers found more grocery stores, convenience stores and fruit and vegetable markets within a five minute walking distance of predominately black areas than in white areas. Extending the definition to include a five-minute driving distance, the authors found that all types of food retail other than supermarkets were more prevalent in the black neighborhood. While their findings are mostly consistent with prior literature reviewed herein, these authors highlight the importance of small store networks, particularly in neighborhoods of color, characterizing these neighborhoods as “specializing” in certain types of food establishments (Raja, Ma and Yadav 2008).

Bodor et al built on studies connecting the presence of supermarkets with health by examining the relationship between small stores and consumption. They found that small stores allocate relatively less fruit and vegetable shelf space to fresh produce (thirty-two percent as compared to seventy percent for supermarkets). Importantly, they found that respondents who live within one hundred meters of a small food store consumed significantly more vegetables and somewhat more fruit than residents who lived further from a small store. This study also found that shelf space for vegetables was positively associated with vegetable intake, though not for fruit. Unlike other study results, intake was not affected by the presence of a supermarket within the same proximity (2007).
Public Policy and Food Systems Planning

These studies demonstrate the importance of food access to communities and suggest that small stores play an important role in the local food environment. However, planners have not traditionally focused on food systems at all as a part of their planning work, let alone small stores, instead viewing food as outside of their domain or as a non-urban issue. In addition, there is a commonly-held perspective that the food system is a private sector issue, and not one that planners can or should address. (Pothukuchi & Kaufman 2000). When planners have worked to address food deserts, these efforts have often focused on supermarket attraction. Kameshawari Pothukuchi, who has written extensively on this disconnect, surveyed planners in thirty-two communities to gauge their involvement in grocery retail initiatives. Though the primary finding of her study was a lack of citywide grocery programs, she also found that more than half of cities had worked on grocery retail attraction in particular neighborhoods. These efforts included assistance with needs assessments, site assembly and zoning and permitting processes, along with financial incentives (Pothukuchi 2005).

Absent from this discussion, however, is planners’ involvement with smaller food stores or other aspects of food retail. Another survey Pothukuchi and Kaufman conducted showed that planners’ involvement with food stores most commonly included “location of supermarkets, grocery stores, fast food outlets, and food wholesaling” (Pothukuchi & Kaufman 2000). Support for small food stores and distributors did not appear on the list.
After decades of retail disinvestment in inner-cities, researchers in the 1990s adopted new approaches to demonstrate untapped market demand for supermarkets. These initiatives, including the work of Social Compact and the Initiative for a Competitive Inner City, helped spur interest in urban retail development by revealing the buying potential of underserved areas. Even with this data, however, supermarket attraction programs have met with varying degrees of success. While some cities have attracted new supermarkets to low-income areas, many communities have struggled to convince national food retailers to enter their markets (Policy Link and LISC 2007).

Often these efforts have centered around overcoming realities of the urban environment to fit the suburban supermarket model – adequate floorplates, parking and security – that many cities simply cannot accommodate. According to a survey by the International Center of Shopping Centers, retailers remain hesitant about entering underserved markets, citing crime, costs, and other obstacles as significant barriers to entry (2001-2). The Local Initiatives Support Corporation and PolicyLink have assumed a national role in providing guidance to local communities seeking to attract food retail, but they acknowledge the substantial challenges of these initiatives and the value of improving existing stores (PolicyLink 2005).

Though attention to food access has increased in recent years, food system planning remains peripheral to the field at large. Where attention has been paid, it is often to new store attraction, where significant barriers remain. This thesis suggests other areas of the food system that are worthy of consideration, including the
importance of small stores and the supply chains and distribution systems of urban food stores.
Chapter Three: A Brief History of American Food Retail

Many of the forces that influence the structure of the modern food industry have long defined the ways in which Americans get their food. The history of America’s grocery store is one of changing supply and distribution channels, urban and suburban growth and evolving technology. While today’s supermarket bears little resemblance to the markets that Americans shopped at two centuries ago, or even fifty years ago, its history helps to explain many of the challenges related to food access in urban neighborhoods.

The Public Market and the General Store

Prior to supermarkets, most food shopping was done at public markets and general stores. As early as 1634, there was a public marketplace in Boston, on today’s State Street, near Boston’s docks. These early markets were typically open air and on the street. In this era, markets were held several days a week so that farmers could travel from the country to the town center on designated days. Cities began to construct more permanent market houses in the mid-1800’s, first mid-street and then “in the block.” These new markets represented a more formal structure for commerce and corresponded with the growth and industrialization of America’s cities (Mayo 1993).

At the early colonial markets, farmers sold their goods directly to consumers, a practice which was partially continued at the market houses. In part because farmers could not travel to markets every day, food vendors gained strength in the market, until
they were the primary sellers at the market stalls (Mayo 1993). This shift represents an early separation of consumer from producer, a trend that persists.

General stores predated grocery stores, selling an array of goods, both wholesale and retail. By the eighteenth century, some shopkeepers had begun to specialize in non-perishable foods, creating early versions of grocery stores. In cities, these grocery stores were the primary alternative to public markets. At 800 square feet, they were small by today's standards, but offered significantly more space for inventory than a market stall (Mayo 1993).

As the urban population grew, so too did demand for food. By the mid-1800's, grocery stores were commonplace in cities, and their popularity increased, particularly as many old public markets fell into disrepair. Specialty markets and street vendors that served immigrants proliferated in ethnic neighborhoods. Department stores began selling food (Mayo 1993). The locations and formats of food retailers had expanded.

**Technological Transformation**

Throughout the nineteenth and twentieth centuries, advances in transportation, communication and refrigeration allowed food to travel greater distances and transformed the way food was bought and sold. Construction of the railroads dramatically shortened cross-country travel, reducing the trip from New York to Chicago from six weeks in 1800 to three days in 1857. It permitted the transportation of goods farther away and in larger volumes. Railroad companies supported the development of stores and warehouses located near railroads. Furthermore, the telegraph allowed long distance communication and more frequent ordering, and facilitated the replacement of
the local storekeeper with a commodity dealer as the primary buyer of farm crops.

Chandler describes this modernization in *The Invisible Hand*:

The transformation began, as might be expected, in the nation’s most important business – the marketing of farm crops. It came most dramatically in the distribution of the two great crops, grain and cotton. The railroad and telegraph not only accelerated the movement of those crops to market, but also, of equal significance, made possible the rapid growth of ancillary enterprises: grain elevators, cotton presses, warehouses, and most important of all, commodity exchanges. The exchanges, based on new telegraphic communication, permitted cotton, grain, and other commodities to be bought and sold while they were still in transit and indeed even before they were harvested. The standardizing and systematizing of marketing procedures carried out by the exchanges transformed the methods of financing and reduced the costs of the movement of American crops (Chandler 1977, 210).

These developments helped formalize many aspects of the food business (Mayo 1993).

Entrepreneurs seized on the opportunities presented by these new technologies.

For example, the canning process, originally developed during the Civil War, was expanded in the 1880s with the use of “automatic-line canning.” This new continuous process machinery permitted mass production of goods, such as Heinz and Campbell Soup. And, the development of refrigeration was soon applied to transportation, with refrigerated railroad cars used as early as 1850 (Chandler 1977, 289-99).

Advancements in refrigeration were key to the growth in produce distribution. In 1885, a Cape Cod sea captain and a Boston wholesaler became partners in a banana import company, Boston Fruit, known today as Chiquita. Needing refrigerated shipping to transport their perishable bananas from the Caribbean to cities throughout the United States, these entrepreneurs set up refrigerated warehouses and transportation vessels using ice blocks for cooling. Their primary ice supplier was Joseph Vaccaro, who later started Chiquita’s competitor, Standard Fruit, today controlled by Dole (Koeppel
2008). In another successful advance in cold storage, Clarence Birdseye created a series of successful technologies for frozen food, thereby allowing the long-term freezing of fish, meat, and fruits and vegetables (Kurlansky 1997; Sayres 1950). These developments are early representations of the modern cold chain that is critical to today’s distribution system.

The Wholesale and Distribution System

For most of the nineteenth century, wholesalers dominated the food distribution system. Market vendors bought goods from wholesalers, or from “jobbers,” the middlemen who bought from wholesalers and delivered to their customers. In its 1913 study, The Mayor’s Market Commission of New York City described the system this way:

> The ways in which goods are collected and shipped to market vary greatly. Many of the farmers nearby drive in themselves with their goods and sell to jobbers and retailers in the few market squares provided by the city. Those who are too far away to do this may be in touch with some merchant in the city and ship to him...Recent years have seen the formation of a great many cooperative associations of producers. Where the farmers of a district all raise more or less of the same products they unite in an association to take charge of the grading, packing, shipping, and marketing of their goods...The largest receivers in the city are the commission merchants or wholesalers who receive foods on consignment or sale and sell to jobbers and sometimes retailers. There are something over 500 men engaged in the commission business in this city...It is impossible for the large wholesale dealers and commission men in the city to conduct their business on such a scale that they can divide up their goods into small enough lots to sell to the ordinary small retailers. For this reason an intermediate group of middlemen has arisen, known in the New York market as jobbers, who perform the next step in the dividing and distributing process. Goods sometimes pass through the hands of three or four such dealers before reaching the retailer (Miller, Mitchell and McAneney 1913, 12-13).

The wholesale system described above changed with technological developments. As Chandler wrote, “By the 1870’s nearly all wholesalers had become jobbers.” These
middlemen spread from the east to the west, bringing with them large businesses that could supply both small and large stores in urban and rural areas. By using the railroad and the telegraph, the wholesale business increased dramatically (Chandler 1977, 215-8).

In this same era of the late nineteenth century, public markets approached capacity due to the expanding urban populations and the increased flow of food (Mayo 1993). In New York City, public outrage grew as food prices reached between forty and sixty percent of a family’s income (Donofrio 2007). To investigate this problem, the Mayor’s Market Commission of New York City traced the flow of food and found a complicated web:

Food was delivered in bulk to 90 percent of all piers in the city. There, at the primary markets, middlemen worked to break bulk, that is, divide shipments arriving in railroad-car and steamship-size loads down to units manageable by horse cart or truck. Specialized middlemen known as jobbers then purchased a number of commodities from the primary markets, sorted them into standard grades and container sizes, and distributed them in small lots to a variety of secondary markets, such as hotels, passenger ships, restaurants, and grocery stores...In the worst case scenario, fruit from California that arrived at a pier in lower Manhattan would be transported through congested city streets more than 125 blocks, perhaps only to backtrack along the same route to its final point of sale at a grocery store in Greenwich Village, near its original point of entry. (Donofrio 2007, 34)

These inefficiencies added seventy to one hundred percent price increases to food (Donofrio 2007). While products were imported from around the world, local distribution systems were ill-equipped to feed the growing cities.

In response, city planners advocated for the construction of modern terminal markets, designated for wholesale and linked to multiple forms of transportation. This “New Way’ of food distribution would reduce or entirely eliminate
the function of middle-men, freeing the consumer from the economic burden inflicted on the system” (Donofrio 2007, 35). However, the food industry, defending the importance of middlemen, opposed the changes. Even after New York City built the Bronx Terminal Market, “more than two-thirds of New York City’s produce bypassed the Bronx Terminal Market and continued to pass through the ‘cramped streets lined by squatty, ramshackle, brick buildings’ of the Washington Wholesale Fruit and Vegetable Market, established by the city in 1812 as a public market for retail sale” (Donofrio 2007, 36). And while some other cities built their own terminal markets, many simply added a wholesale component to the existing retail market, creating mixed wholesale and retail operations (Mayo 1993).

**Chain Stores and Mass Production**

By the early 1900s, public markets and independent grocers that had been the mainstay in food retail and the wholesalers that had dominated distribution faced growing competition. Even with the spread of grocery stores, advances in retail had not kept pace with advances in food production and distribution (Mayo 1993). Several types of retail arrangements emerged to challenge the dominance of the independent grocers and wholesalers.

Mass retailers, such as department stores, responded to the consumer growth of American cities, most notably in New York. Many of these stores, such as Marble Dry Goods Palace and Macy’s, began as dry goods retail operations and then added other types of merchandise as they became larger department stores in the 1860’s and 1870’s. As their offerings increased, sales were based on increasing volumes, and not
profit per item. This new model of mass retail challenged smaller urban retailers who had trouble competing (Chandler 1977).

Chain stores first emerged in the grocery sector. Retailers and market vendors began to organize into buying cooperatives to take advantage of volume prices and to buy directly from producers and manufacturers instead of through wholesalers. (Mayo 1993). A&P, the Great Atlantic and Pacific Tea Company, was one of the first operations to employ this strategy. Begun in 1859, the company bought large volumes of tea and sold it at low prices on New York City’s waterfront. The company replaced this dockside system with retail stores and by 1865 operated twenty-six stores selling tea. By 1880, A&P had one hundred stores, and by 1900, A&P was the largest chain, with 198 stores. Other businesses followed soon after, including today’s Kroger Company (Mayo 1993; Chandler 1977).

The basic concept of the chain store was buying large volumes in order to minimize price. This system resulted in new organizational structures, with buyers, regional managers, and traveling sales staff, “inspectors” or “road men” that oversaw individual stores. Chains achieved economies of scale through the increased speed of transactions, faster turnover, centralized staff performing functions for multiple stores, and shared advertising and other overhead costs. (Mayo 1993, 78-9). In large part, these changes were possible due to the modernization of technology (Chandler 1977).

Mass producers of food and chain stores soon realized they could work together and began bypassing the wholesale system for certain goods. Mass producers needed a market for the volume of their production, and grocery chains were looking to reduce
costs. To this end, mass producers started to source their goods directly from farmers, instead of relying on middlemen for this service. To create sufficient storage space for these higher volumes of goods, chain stores built their own warehouses and distribution networks that began to replace the traditional wholesale system (Mayo 1993). These new relationships set the stage for later changes and further deepened the competition between chains and independent grocers.

Urban Growth and Suburbanization

As cities expanded beyond their urban cores, grocery stores followed the residential populations to the suburbs, often locating in the busiest area of a residential neighborhood. “It was undoubtedly in the suburbs where the notion of ‘corner’ grocery store gained its full meaning” (Mayo 1993, 74). The suburbs were hospitable locations for grocery stores, largely because of growing consumer demand.

After World War I, chain stores proliferated. From a few hundred stores in 1900, by 1920, A&P, American, First National, Kroger, Safeway and National Tea had 7,723 stores, and 30,453 stores by 1930 (Mayo 1993). While chain stores initially favored urban locations, they soon expanded to the suburbs where public markets, their chief competitors, were not located. Some independent grocers closed their urban locations and relocated to the suburbs to take advantage of this consumer demand.

The traditional grocery store was full-service, sold on credit, and regularly provided home delivery service. In 1910, A&P began “cash and carry,” and moved to an “economy store” model that could be easily replicated in multiple locations. In 1916,
Piggly Wiggly became the first self-service market, with customers choosing their selections from a shelf, instead of the traditional counter and wall system (Mayo 1993).

**Early Supermarkets**

Changes in food production and distribution, technology and suburbanization facilitated the advent of the modern supermarket. By the 1920s, volume buying was commonplace, as even independent grocers organized into “voluntary chains” to compete with corporate chains. Food manufacturers produced an ever-increasing number of goods, all needing marketing and additional shelf space within stores. And consumers, with novel access to cars and refrigerators, could travel farther, purchase more in one trip and store food for longer amounts of time (Mayo 1993).

Supermarkets first appeared in different forms on the east and west coasts. In Los Angeles, where land was less expensive, larger, freestanding stores were built in the 1920s. In Jamaica, New York in 1930, Michael Cullen started King Cullen, where the floor space was significantly greater than typical grocery stores, at 5,200 to 6,400 square feet as compared to five hundred or six hundred square feet of the typical chain. He expanded rapidly, to fifteen stores by 1935, and relied on high volumes instead of high markups. In the midst of the Great Depression, American consumers responded positively to the low prices, and the concept soon proved successful (Mayo 1993; Markin 1968).

Cullen called his stores “The Price Wreckers,” but others called them “cheapy” to describe their barebones settings in old factories. King Cullen sprouted imitations, including Big Bear which opened in New Jersey in 1932. This variety store was 50,000
square feet; food and groceries consumed 30 percent of the space, but represented fifty-six percent of sales (Markin 1968, 12).

The origin of the term supermarket is murkier. It may have first appeared in Hollywood, after the word “super” was popularized in the early twenties by Hollywood promoters, or it may have evolved to describe the new marketing methods being used in large stores. The term was first officially used in a store name in 1933 when Albers Super Mkts., Inc opened (Zimmerman 1955).

Initially, the new store type drew mixed reactions. The supermarkets threatened both chains and independents. Some viewed their arrival as a trend that would only succeed in urban areas. The editor of the Progressive Grocer voiced this sentiment in 1936, saying, “The super market in the popular sense is largely a city proposition. The large barny warehouse can operate only in congested areas - and can appeal only to a comparatively thin sector of our trade.” The Secretary of the New Jersey Retail Grocers Association echoed this idea, saying, “After the first few weeks of ballyhoo and low cost specials are over, the customers start to figure their extra expense in traveling to these markets and a large majority return to their former stores.” Others, like M.M. Zimmerman, were “more than ever convinced that the Super was more than merely a passing shadow or a novelty in distribution” (Zimmerman 1937, 19, 21, vii).

Zimmerman proved correct. By the mid 1930s, supermarkets had made significant inroads in food retail. They achieved higher sales than grocery stores. Chain grocers began to close individual stores and open supermarkets instead. A&P closed 933 stores and replaced them with 204 supermarkets; it closed three to four grocery
stores for each supermarket opened. Kroger and Safeway took similar actions (Markin 1968; Tillotson 2007). Gradually, chain grocery stores were becoming chain supermarkets.

The period during World War II saw further erosion of independent grocers, as the labor force diminished and small stores could not survive. 81,000 grocery stores closed in the first three years of the war. As food rations and prices limited retail growth, supermarkets introduced non-food items to maintain their profitability (Mayo 1993).

With the economic strength of the post-War years, the growth of supermarkets continued. Americans had more disposable income, which they increasingly spent on refrigerators, cars, and other household appliances. Supermarkets received much of this largesse; between 1946 and 1954, the sales volume of supermarkets increased by seventy-one percent. Small stores continued to close, and supermarkets continued to expand, particularly in the suburbs. Their size continued to grow as well, from 18,000 square feet in 1956 to 29,400 square feet in 1980 (Mayo 1993; Walsh 1993). Between 1946 and 1966, the number of items carried also doubled, from 3,000 to 7,250 (Markin 1968). Increasing in size, sales volume, and variety, the supermarket gradually came to dominate food retail.

From the general store and the public market to the independent grocery, the early chains and the supermarket, food retail underwent tremendous transformation in the past two centuries. Helped along by technology and demographic changes, the modernization of food retail accompanied a revolution in food production, distribution
and wholesale. Indeed, many of these early changes defined the industry that we know today. The development of supermarkets has not only altered the ways in which consumers access food, but has also led to further changes in food distribution and supply chains. The next chapter discusses how the food retail industry and its supply system have evolved in recent decades.
Chapter Four: The Supermarket Industry

“An army of middlemen are engaged in collecting, grading, shipping, and distributing the farm produce used in the city, and, though they have been accused of dishonest practices, and sometimes justly so, it is likely that a considerable evolution in marketing methods will have to take place before their services can be dispensed with” (Miller, Mitchell and McAneney 1913, 11-12).

In 1913, the Mayor’s Market Commission of New York City anticipated the considerable changes that would occur later in the century, changes that would in fact diminish the role of the middlemen. As already described, food retail and production underwent dramatic changes over the last two hundred years. With the solidification of the supermarket’s dominance over the grocery store in the 1950s, competition among retailers continued in the ensuing decades and then accelerated in the 1980s and 1990s. This chapter explores these changes in the modern supermarket industry, demonstrating how intricately connected the structure of the industry is to the local food environment. It focuses on three areas of development that are critical to this understanding: consolidation within the supermarket industry, an increased emphasis on supply chain management, and the decline of the produce wholesale business. And in so doing, it reveals the ways in which the supermarket industry is designed to support increasingly larger volumes of products and size of stores, and how that impacts the food environment in urban neighborhoods.

Fewer, Larger Retailers

Trends begun in the 1940s and 1950s continued through the 2000s. Store size and the variety of products continued to increase. In 2007, the median average store
size was 47,500 square feet, up from 39,260 in 1997 (FMI “Supermarket Facts” 2008). The number of items carried per store has more than doubled since 1970 (Messinger and Narasimhan 1995).

Consolidation in the supermarket industry has been crucial to the changes in urban food retail. The 1980s saw restructuring through leveraged buyouts, including that of Safeway in 1986 (Kaufman “Urge to Merge” 2000). These mergers and acquisitions continued in the 1990s; between 1996 and 2000, 3,500 supermarkets were purchased (Kaufman “Consolidation in Food Retailing” 2000). As a result of these mergers, the top twenty retailers captured fifty-two percent of sales in 1999 (Calvin et al. 2001). In the Northeast alone, 698 grocery stores were acquired between 1996 and 1999, including Stop & Shop which was acquired by Ahold and Hannaford which was acquired by Food Lion (Kaufman “Consolidation” 2000). While average sales per company have doubled, the number of public food retail companies in North America has dropped by almost half, from forty-five to twenty-four (Steidtmann 2005). The result of this consolidation is fewer, larger chains, as shown in Figures 1 and 2.
Figure 1: Food Retail Consolidation, 1992-2005

Source: Reprinted from USDA, ERS.

Figure 2: Top Food Retailers By 2007 Sales

<table>
<thead>
<tr>
<th>Retailer</th>
<th>Sales</th>
<th>Number of Stores</th>
<th>Examples of Acquisitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wal-mart Supercenters</td>
<td>$111,070,000,000</td>
<td>2,477</td>
<td>Fred Meyer, Kwik Shop, Ralphs, Food 4 Less</td>
</tr>
<tr>
<td>2. The Kroger Co.</td>
<td>$65,550,000,000</td>
<td>3,269</td>
<td>Vons, Pavilions, The Market, Dominicks, Tom Thumb</td>
</tr>
<tr>
<td>3. Safeway, Inc.</td>
<td>$42,286,000,000</td>
<td>1,738</td>
<td>Vons, Pavilions, The Market, Dominicks, Tom Thumb</td>
</tr>
<tr>
<td>4. Costco Wholesale Group</td>
<td>$35,329,056,560</td>
<td>520</td>
<td>Shaw’s, Star Market, Save A Lot, Bristol Farms, Albertson’s, American Stores (Lucky Stores, Jewel, Acme Markets)</td>
</tr>
<tr>
<td>5. SUPERVALU, Inc.</td>
<td>$33,000,000,000</td>
<td>2,512</td>
<td>Shaw’s, Star Market, Save A Lot, Bristol Farms, Albertson’s, American Stores (Lucky Stores, Jewel, Acme Markets)</td>
</tr>
<tr>
<td>6. Sam’s Club</td>
<td>$27,057,770,000</td>
<td>587</td>
<td>Giant Food, Stop &amp; Shop</td>
</tr>
<tr>
<td>7. Publix</td>
<td>$22,900,000,000</td>
<td>928</td>
<td></td>
</tr>
<tr>
<td>8. Ahold USA, Inc.</td>
<td>$21,200,000,000</td>
<td>721</td>
<td></td>
</tr>
</tbody>
</table>

Source: Food Marketing Institute, “Top U.S. Supermarket & Grocery Chains” and Phil R. Kaufman, “Grocery Retailers Demonstrate Urge to Merge.”
Much of this consolidation has been driven by supermarkets’ quests to increase profitability through greater market share. Growth in sales roughly tracks to population growth, and food stores operate on notoriously low profit margins. The after-tax net profit for fiscal year 2006 was just 1.46 percent (FMI “Supermarket Facts” 2008). These low profit margins have driven retailers to focus on increasing scale: larger stores, larger purchases and higher sales volumes. Through mergers and acquisitions, companies have sought to lower their operating costs by dispersing them around multiple stores. They also increasingly rely on centralized administration for decision-making instead of on individual store managers, a finding confirmed in the next chapter. Furthermore, low profitability discourages retailers from building new stores, when the acquisition of an existing store is likely a less risky undertaking (Kaufman “Urge to Merge” 2000). This situation certainly affects urban areas where there are fewer existing supermarkets.

The introduction and success of new retail formats have increased competition for supermarkets. In recent years, the number of non-supermarket retailers selling grocery items has proliferated. Convenience stores and drug store chains began to sell food. Warehouse clubs increased their food offerings, as did supercenters. As a result, consumer spending on food at grocery stores has declined as grocery stores have lost market share to the supercenter competitors; between 1992 and 2005 grocery stores lost almost twelve points of market share, while supercenters and mass merchandisers have increased their market share. In 2007, supercenters accounted for over twenty-six
percent of total food sales (Chanil and McTaggart 2008). And with greater competition over price, food retail margins have dropped (Steidtmann 2005).

Much of this change is attributable to Walmart’s success. Described as “Absolutely the biggest thing in [food] retailing in the last quarter century,” Walmart’s participation in food retail has had dramatic effects throughout the industry (Tillotson 2007, 177). In fact, Walmart sales account for one of every five dollars spent on groceries in the U.S. (Dunkley, Helling and Sawicki 2004). By 2007, Walmart had the highest sales of any food retailer, surpassing supermarket giants Kroger, Safeway and Supervalu. (FMI “Top U.S.” 2008).

In 1978, writing in the journal Food Retail, Gordon Bloom partially anticipated the future of the industry, predicting that “The major problem facing supermarket operators will not be keen competition among supermarkets, rather it will be competition with other forms of food distribution many of which will be able to serve the consumer more conveniently and at lower cost through effective application of the very principles which first gave rise to the supermarket” (14). In many ways, Walmart and other supercenters have fulfilled his prophesy.

Walmart has achieved its significant market share through aggressive pricing and procurement practices and innovative uses of technology. It eliminated many of the traditional relationships with middlemen and wholesalers and instead buys directly from manufacturers and producers. It prioritized technologies that can improve efficiency, including real time information exchange with suppliers. Its success has spurred even
greater competition in the retail industry which was already experiencing significant consolidation.

**Implications for Cities**

The success of Walmart and other supercenters has different implications for cities than for suburbs. The Walmart model, with its large floorplate and parking requirements, is much more easily accommodated in suburban and rural areas than in urban areas. Supermarket consolidation more generally poses unique challenges to cities. On the one hand, more concentrated ownership of supermarkets increases corporate control and further removes decision making from the local level. This detachment may negatively impact urban communities where even well intentioned store managers have minimal input into corporate decision making.

The consolidation and increased competition may, however, present an opportunity for urban neighborhoods. With low profit margins and intense competition, retailers are seeking ways to differentiate themselves. One strategy is an increased emphasis on produce as a distinguishing characteristic of a store (Guptill and Wilkins 2002). As consumers increasingly demand healthy foods and organics, retailers may respond with higher quality items. Another differentiation strategy is experimentation with store format, as retailers test the urban market with smaller or denser stores. Examples include Tesco, which has introduced the small format Fresh & Easy in California and Nevada, and Whole Foods, which has built several multi-floor outlets in New York City. And overall, urban neighborhoods may benefit from more
store formats selling food. These new strategies warrant further attention and research to determine their impact.

**Supply Chain Management**

With low profit margins and intense competition, food retailers have increasingly sought greater profits through supply chain management. Fundamentally supply chain management is about creating efficiencies within a system (Lummus 2004). It “represents a collection of the management of activities exercised between vertically related firms to improve efficiency, vertical coordination, and overall performance and competitiveness of the participating firms within an industry” (Ricks, Woods and Sterns 1999). With the high degree of competition in the food retail industry, supply chain management has become a primary focus for achieving greater efficiency.

The traditional supermarket distribution system in the early 1990s was the “supply push model” where wholesalers purchased large quantities from manufacturers and producers, and held them until delivery to retailers (Kinsey 2000). This system relied on daily communication between the supermarket and its warehouse. Staff at the warehouse estimated future orders and filled daily orders. The individual stores also maintained an in-house inventory. Though this type of system endured for many years, the lack of precision in ordering and inventory was problematic, resulting in slow turnover (Aghazadeh 2004).

Walmart challenged this industry norm. It applied its “Every Day Low Price” (EDLP) system to its nascent food business, relying on logistics and information technology to control costs. Using electronic data sharing, Walmart sent its suppliers
inventory information in real time. This level of information sharing allowed for the
continuous replenishment of inventory, with low levels of goods in storage. Coupled
with Walmart’s enormous purchasing power, its logistics system helped the chain
achieve its recognized cost savings (McCluskey and O’Rourke 2000; Aghazadeh 2004).

In part a response to Walmart’s growing domination, the food industry
developed a strategy called efficient consumer response, ECR, to strengthen supply
chain management among traditional food retailers and suppliers. Building on prior
analyses of the textile and grocery industries in the 1980s, ECR emphasized improving
coordination through the entire chain, from producer to consumer, and reducing the
amount of inventory held in stock by the retailers. The initial report on ECR estimated
industry cost savings of twenty-four to thirty billion dollars (Lummus 2004).

Initially only the largest firms adopted the proposed changes, but eventually ECR
was credited with “the re-engineering of the food supply chain” (Ricks, Woods, Sterns
1999). ECR technologies allow retailers to track sales much more closely and share that
information with their warehouses and distributors. Using information systems,
retailers can quickly evaluate the sales of specific items, track consumer spending
through club cards, and more carefully target price promotions (Guptill and Wilkins
2002). Despite a long history of animosity between retailers and manufacturers, ECR
encourages their coordination and cooperation.

However, local supermarket chains and small, independent retailers have not
adopted these technologies as quickly or successfully as the larger supermarkets and
supercenters. These systems require substantial financial investment and change the
way retailers interact with their vendors and suppliers. Not only does it force the retailer to transition to an electronic system, it requires specialty vendors to use the same system, raising compatibility and control issues (Aghazadeh 2004). The widespread use of these systems has favored large firms and vertical integration and has implications for each participant in the supply chain. While they may produce efficiencies and cost savings, these systems place greater strain on small chains and independent retailers – many who operate in urban neighborhoods - to compete in an increasingly structured and consolidated market.

The Produce Industry and the Decline of the Wholesaler

While the food retail industry has changed, so too has the produce industry. Imports and consumption of fresh produce have increased considerably over the past thirty years. In addition, increased competition within the industry led to an increased emphasis on supply chain management, a shift that has radically altered the way produce is bought and sold.

Between the 1970s and the 1990s, fresh fruit and vegetable consumption in the United States increased significantly. Fresh fruit consumption rose to 133 pounds per person in 1997 from 121 pounds in 1987. This growth has slowed in recent years, and even decreased slightly, but levels remain close to the highs seen in the 1990s (Economic Research Service, 2008). This increase is at least partially attributable to public nutrition campaigns, such as the Food Guide Pyramid, and greater awareness of health and diet issues in general (Kaufman et al. 2000).
The availability of fresh produce and the size of produce departments also grew during these years. In just five years, from 1994 to 1999, the average number of products in a produce department reached 431, from 312 (Hinson 2005). The international import and export of produce is now a major industry. Shipped to the U.S. from around the world, fruit and vegetables are expected and available year-round. Between 2000 and 2005, thirty-two percent of all fruit and nuts, and thirteen percent of vegetables were imported to the U.S. (Economic Research Service Amber Waves 2008).

The produce industry has certain unique characteristics that impact the structure of the business. Agriculture includes innate risk, for uncontrollable weather or other natural phenomenon. The product is seasonal, perishable and extremely time-sensitive, and its availability cannot be perfectly predicted (Schotzko and Hinson 2000). It is labor-intensive, and requires extensive infrastructure, including the cool-chain, to get to market (Zuurbier 1999).

For most of its modern history, the industry has been composed of many producers on relatively small farms. However, in recent years agricultural producers have also become more concentrated. As retailers have grown, their buying practices have changed, forcing changes at the producer level. While some retailers report a preference for purchasing from both small and midsize suppliers, large suppliers appear to have an advantage in serving large retailers. Reasons for this preference include transportation savings with full truckload shipments, the ability of large suppliers to provide a broader product line, and retailer requirements for large bids. In interviews conducted with fresh produce suppliers, they report a greater pressure on prices and
increased competition to fill large orders from large retailers. They also describe having less personal contact with buyers, a change from the traditional relationship. Most importantly, as retailers accumulate market power, they gain greater negotiating power, demanding more of suppliers (McCluskey and O’Rourke 2000).

To offset this power, suppliers are growing larger and are relying more heavily on supply chain management and vertical integration. This general trend favors larger firms that can meet the demands of large retailers. These include the use of the retailers’ electronic information systems and the ability to source a full array of produce year-round, both of which require significant capital investments (Economic Research Service “Changing Dynamics” 2001). Working individually, smaller suppliers are less able to compete on scale and are excluded from the market (Zuurbier 1999).

Until recently, the standard supply chain for produce was composed of the growers, packers, shippers, wholesalers, retailers and consumers. The grower likely delivered its goods to a packer-shipper for assembly and packaging, or the grower-packer-shipper may be an integrated business performing both functions. Either way, after packaging the produce, the shippers transported them to the wholesaler, who was either a broker acting as an intermediary or a merchant wholesaler who actually owned the product he sold. The wholesaler then distributed the produce to its customers, including retailers and food service operators (Handy et al. 2000).

However, a shift has occurred in this process that has significant implications for the industry. Increasingly, large retailers buy directly from the source, rather than using an intermediary. With processed foods, this change has meant purchasing directly from
food manufacturers. With produce, this means bypassing the traditional wholesaler and the terminal wholesale market and buying directly from a grower or shipper.

This arrangement usually involves vertical coordination, where a firm coordinates over multiple stages of production, and the use of contracts. It differs from the “spot contracts” which traditionally were used. In the spot market, buyers and sellers interact through daily exchanges, including auctions and the open market. Daily transactions dominated produce sales as recently as 1994. Contracts, however, have transformed these arrangements into longer-term legal agreements, guaranteeing income to producers and a set amount of product to buyers (Lummus 2004).

While contracts have been used in various forms for decades, they have only recently become important within the produce industry (Economic Research Service “Changing Dynamics” 2001). As retailers require larger and larger volumes of product, they are choosing contractual agreements that mitigate the risk of daily fluctuations in availability and price. They are also choosing larger firms that can respond to the retailers’ requirements for inventory replenishment and information sharing, safety and quality standards, and country of origin labeling (Epperson and Estes 1999). Buying from the spot market, prices are likely lower, but retailers cannot trace specific products as easily, and products are not differentiated, as competitors have access to the same exact product. Contract transactions guarantee a stable price and a more consistent source, and they provide retailers with traceable products (Lummus 2004).

Wholesalers still play an important role, with sales to retailers their largest category of sales, even though large retailers often source directly and contractually,
(Hinson 2006). Moreover, small and midsize retailers continue to rely on produce wholesalers (Hinson 2005). Overall, however, wholesalers and the terminal markets have decreased in importance to the retailers who dominate sales. This trend is particularly concerning for cities, given the retail environment in urban areas with many small and midsize retailers and fewer large chain supermarkets.

Conclusions

Consolidation, supply chain management, and direct purchasing are trends in the modern food retail industry that favor large retailers and the large suppliers and intermediaries who serve them. These changes are deeply connected to the local food environment. As previously discussed, the adoption of larger stores and larger volumes is a trend much more easily accommodated in non-urban areas. And, the larger retailers have more quickly adopted intensive supply chain management strategies, including new coordination practices and new uses of technology while smaller stores have lagged behind. Smaller retailers continue to rely on wholesalers and spot contracts for produce purchasing, while large retailers are moving to contractual relationships that bypass wholesalers.

This arrangement has significant implications for small and independent stores. These non-chain stores, commonly found in cities, increasingly rely on a supply of fresh produce distinct from that of the large retailers. Their wholesale sourcing is an alternative to the direct sourcing of the large chains, raising questions about availability, quality and price across store types. The decline of food retailers’ reliance on wholesalers presents a challenge to small, urban businesses that cannot compete with
supermarkets on volume, nor can they access the same supply channels. These differences are discussed in further detail in the next chapter.
Chapter Five: Interview Findings

To understand the supply chains that different stores in different income neighborhoods use, I interviewed store managers and store owners in two Boston neighborhoods, North Dorchester and West Roxbury. I selected these neighborhoods using Boston Redevelopment Authority geographic boundaries, based on their comparable populations and difference in incomes. I also interviewed several wholesalers, vendors and distributors who operate in the region. Following is a description of the neighborhoods and the interview findings.

Local Context

By the early 1990s, Boston had lost hundreds of small food stores and many grocery stores and supermarkets. In 1992 and 1993 alone, four supermarkets, totaling 85,000 square feet, closed (Boston Redevelopment Authority 2002). Since then, approximately twenty-three new supermarkets have opened, while others have closed (BRA 2006). Despite the development of new supermarkets in the City, many low-income residents still struggle to access quality, affordable and convenient food (Thayer et al. 2008).

North Dorchester, the northern section of the area more generally referred to as Dorchester, borders South Boston, the South End, Roxbury and South Dorchester. Along with Roxbury and Mattapan, North Dorchester has the highest proportion of African-Americans in Boston. West Roxbury borders Roslindale and Hyde Park, and is a predominately white neighborhood.

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1 Raja, Ma and Yadav state that thirty-four supermarkets closed.
According to the 2000 census, North Dorchester has a population of 29,215. It has a poverty rate of almost twenty-one percent, with a median household income of $36,193, slightly below the Boston average. West Roxbury’s population is 28,663, similar in size to North Dorchester. However, at $53,607, its median household income is significantly higher than Boston’s, and it has only a six percent poverty rate.
The physical characteristics of the two neighborhoods are distinct. While North Dorchester’s population density per square mile is over 14,000, West Roxbury’s is just over 5,000. West Roxbury is suburban in style, with more single-family homes, while North Dorchester has more apartments and a rental rate twice as high as West Roxbury’s. The neighborhoods are also distinguished by different types of retail. North Dorchester has several distinct business areas, including clusters around Uphams Corner and the South Bay Mall, but with the exception of South Bay, most retail is small in scale, with few chain stores. West Roxbury’s main commercial streets are Center and Spring Streets, which contain a mix of restaurants, shops, chain drug stores and food retail.

Food retail differs between the two neighborhoods. While both neighborhoods have major supermarkets, they are situated differently, presenting issues of accessibility. North Dorchester has several big box stores, including Target, Home Depot
and Super Stop & Shop in the large South Bay shopping center. The plaza is located north of the main residential and commercial area of this neighborhood and functions as a regional retail attraction, serving the South End and South Boston along with Dorchester and its surrounding areas. There is also a Shaw’s supermarket on Morrissey Boulevard, another location that is beyond the dense residential core of the neighborhood.

West Roxbury, in contrast, has two large supermarkets on its main commercial stretch. Roche Brothers, a high-end regional chain, and Shaw’s, a national chain owned by Supervalu, operate full-size supermarkets within blocks of each other. Both have ample parking and are located on the neighborhood’s commercial corridor.

The two neighborhoods also differ in their non-supermarket food retail. North Dorchester has sixteen small stores, which are mostly bodegas, and an additional seven specialty and grocery stores, including fruit and vegetable markets and ethnic grocers. Unlike the supermarkets, these small and midsize stores are located throughout the neighborhood and are much more proximate to the residential population than the supermarkets are. West Roxbury, on the other hand, has only five small stores and one specialty market in addition to its supermarkets. These are largely convenience stores, including White Hen and Tedeschi Food Shops, and not bodegas or small markets. This relative absence of small and midsize stores suggests that West Roxbury’s residents rely much more heavily on supermarkets than on small stores for food shopping, especially when compared to the residents of North Dorchester.
Moreover, households in West Roxbury have much higher rates of vehicle ownership than households in North Dorchester. Thirty-seven percent of households in North Dorchester do not have a vehicle, compared to fourteen percent of households in West Roxbury. Though the public bus system serves the South Bay mall and parts of North Dorchester, this difference in private transportation options, coupled with the peripheral location of supermarkets North Dorchester, points to the greater importance of small stores for residents of that neighborhood. And if North Dorchester is at all representative of other low-income urban neighborhoods, these characteristics suggest that small stores play an important role in the urban food system, especially in low-income neighborhoods.
Figure 5: Food Retail Establishments in North Dorchester and West Roxbury

Source: Reference USA and Author.

Figure 6: Food Retail Stores By Neighborhood

<table>
<thead>
<tr>
<th>Type</th>
<th>North Dorchester</th>
<th>West Roxbury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience Stores/Bodegas</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>(less than 2,500 sq ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty Markets</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>(includes small ethnic stores, fruit markets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grocery Stores</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>(2,500- 9,999 sq ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supermarkets</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>(30,000 sq ft +)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Reference USA and Author.
Overview of Interviews

The goal of the interviews was to determine the different product sourcing methods that different stores in different income neighborhoods use. Prior to conducting the interviews, I hypothesized that differences in produce distribution and supply chains would vary both by store type and income of neighborhood. For that reason, I sought to interview three store managers in each neighborhood, at three store types: a national supermarket, a regional or local supermarket or independent grocery store, and a convenient store or bodega.

I conducted eight store interviews, three of which were in West Roxbury, four in North Dorchester, and one in South Dorchester just outside the North Dorchester boundary. For a more complete understanding of the supply chain, I interviewed personnel at several of the largest wholesale and distribution companies along with a non-profit wholesaler and produce sellers at the wholesale produce market in Chelsea and Everett, Massachusetts. For further context, I also spoke with several academics, policy makers, and other professionals who work in related industries.

In West Roxbury, I interviewed the Assistant Store Manager and Produce Manager of Roche Brothers, along with the Produce Manager of Shaw’s and a franchise owner of Tedeschi Food Shops. In North Dorchester, I interviewed the Produce Manager at Super Stop & Shop, the Produce Manager at Shaw’s, the Store Manager/Produce Buyer for Super 88, and the owner of a small bodega. In addition, I interviewed the owner of a tropical fruit store, Preparations, just outside the North
Dorchester boundary. I recorded seven of the interviews and asked a prepared set of questions, plus relevant follow-ups.

**Figure 7: Summary of Interview Findings**  
*Ordered from largest to smallest store*

<table>
<thead>
<tr>
<th>Store</th>
<th>Neighborhood</th>
<th>Store Type</th>
<th>Approximate Square Footage</th>
<th>Primary Source of Produce</th>
<th>Frequency of Delivery (Days/Week)</th>
<th>Lead Time Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super Stop &amp; Shop</td>
<td>Dorchester</td>
<td>Large Supermarket Chain</td>
<td>115,000</td>
<td>Stop &amp; Shop Distribution Center</td>
<td>7</td>
<td>Less than 24 hours</td>
</tr>
<tr>
<td>Roche Brothers</td>
<td>West Roxbury</td>
<td>Regional Supermarket Chain</td>
<td>45,000</td>
<td>Terminal Wholesale Market</td>
<td>7</td>
<td>Less than 24 hours</td>
</tr>
<tr>
<td>Shaw's</td>
<td>West Roxbury</td>
<td>Large Supermarket Chain</td>
<td>42,000</td>
<td>Shaw's Distribution Center</td>
<td>5</td>
<td>2 days</td>
</tr>
<tr>
<td>Shaw's</td>
<td>Dorchester</td>
<td>Large Supermarket Chain</td>
<td>40,000</td>
<td>Shaw's Distribution Center</td>
<td>4</td>
<td>2 days</td>
</tr>
<tr>
<td>Super 88</td>
<td>Dorchester</td>
<td>Local Ethnic Supermarket Chain</td>
<td>30,000</td>
<td>Terminal Wholesale Market/ Hunts Point Terminal Market</td>
<td>4</td>
<td>2 days</td>
</tr>
<tr>
<td>Alves Market</td>
<td>Dorchester</td>
<td>Small Market</td>
<td>2,500</td>
<td>Terminal Wholesale Market</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td>Preparations</td>
<td>Dorchester</td>
<td>Tropical Fruit Market</td>
<td>2,500</td>
<td>Terminal Wholesale Market</td>
<td>4</td>
<td>N/A</td>
</tr>
<tr>
<td>Tedeschi Food Shops</td>
<td>West Roxbury</td>
<td>Convenience Store</td>
<td>2,400</td>
<td>Distributor, via Terminal Wholesale Market</td>
<td>1</td>
<td>1 day</td>
</tr>
</tbody>
</table>

*Source: Author.*
Interview Findings

My primary findings illuminate the distinctions in product sourcing between national chain supermarkets and other food retailers. While the previous chapter describes the changes in the supermarket industry and the supermarkets’ primary supply chains, less information is known about the supply chains of small and mid-size food stores. These interviews begin to reveal the two very different, though overlapping, food supply systems, one dominated by the consolidated supermarket chains, and another upon which most other food retailers rely. Following is a summary of these findings:

1. Similarities and differences among stores were greatest by type of store, rather than by location or income of neighborhood;

2. The supply chains of supermarkets do not vary by neighborhood and vary only minimally by store;

3. National chain store managers have less flexibility in store administration than do managers of regional chains and small stores;

4. Small and midsize stores share a similar produce-sourcing strategy that is almost, but not entirely, distinct from that of the large chain supermarkets.

First, type of store, not neighborhood, determined the differences in supply chains. Contrary to some frequently heard complaints, the supply chains of supermarkets did not vary by neighborhood. It is important to note, however, that the two neighborhoods have different types of food retail, with North Dorchester having many more small stores than West Roxbury. Other areas of variation include frequency of delivery and the ordering strategy of the individual produce manager. Chiefly due to more centralized corporate structures, managers of national chain stores demonstrated...
less independence and flexibility in individual store administration than do their counterparts at regional chains and small stores. Lastly, small and midsize stores source their produce very differently from the larger supermarkets. Understanding this secondary system suggests opportunities for improving the urban food environment. Taken in sum, these findings confirm much of the industry analysis presented in the previous chapter, while highlighting several areas of potential opportunity that will be discussed in Chapter Six.

All stores reported using one primary supply mechanism for produce. For the national supermarkets, produce arrives at the individual stores from the company-owned, regional distribution warehouse. In most cases, buyers for the corporate chain sourced the produce directly from growers-packers-shippers. The regional supermarkets and small stores sourced their produce from the Terminal Wholesale Market, the produce market in Chelsea and Everett, Massachusetts. Some of these stores used distribution companies to deliver their produce, while the owners of two of the smallest stores went to the wholesale market themselves to select and purchase their items.
**Figure 8: Key Variations by Store Type**

<table>
<thead>
<tr>
<th></th>
<th>SMALL STORE</th>
<th>REGIONAL SUPERMARKET</th>
<th>NATIONAL SUPERMARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager receives suggested order from Headquarters</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Manager can alter produce variety/selection</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Manager can alter quantity and rotation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Store works with independent distributor</td>
<td>Varies</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Store buys majority of produce from wholesale market</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Store relies on multiple distribution channels for produce</td>
<td>No</td>
<td>Varies</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Source: Author.*

**Large Chain Supermarkets: One System**

Despite anecdotal complaints that the quality of produce at chain supermarkets varies among locations, these interviews demonstrate that the core sourcing mechanisms are the same for all stores. The produce manager at Super Stop & Shop and the produce managers of Shaw’s in both North Dorchester and Roxbury confirmed that their produce arrives at their store from the chains’ regional distribution centers. Corporate buyers at company headquarters purchased the fruit and vegetables from large growers and packers-shippers in California, Latin America and elsewhere. Thus, the process for sourcing produce did not vary between Shaws’ two locations in two very different Boston neighborhoods. As one manager stated, “It’s an illusion! I hear that
(complaint) pretty much at every store...we have one warehouse. It’s not like we’re sending different products to different stores.”

To better understand the regional distribution process of the large supermarkets, I conducted a phone interview with an inspector at Super Stop & Shop’s regional warehouse in Freetown, Massachusetts. This facility has warehouse space totaling 1.5 million square feet, of which 650,000 square feet is refrigerated storage for perishable goods. While some of the large chains have outsourced the management of their warehouses to distribution companies, such as C&S, the second-largest grocery wholesaler in the country, this distribution center is managed by Stop & Shop. Freetown employees receive deliveries from all over the world, handle the inspection process, store the products and assemble orders for store delivery.

The interviewee described the procurement and transportation process for produce. As discussed in Chapter Four, buyers for the company work with large growers, or packers-shippers, to specify the exact standards that Stop & Shop desires for its produce. These standards may differ from the basic standards established by the USDA, defined as “measurable attributes that describe the value and utility of the product.” The USDA’s standards describe the quality and size of the product, and specify not only its grade, but also conditions after transit, packing requirements and color specifications.

Upon arrival in Freetown, the produce is checked again, for temperature, for sugar content, and for general quality, after which it is placed in the warehouse to await distribution. Thus, by the time the produce arrives at the local Super Stop & Shop, it has
been checked multiple times, and the produce manager must accept what arrives at the store. In fact, Stop & Shop assumed ownership of the item when it arrived at the distribution center. Shaw’s uses a similar distribution system.

An often overlooked element of the supermarkets’ supply chain is the “fill-in.” While the large chains purchase the vast majority of produce directly from growers or packers and shippers, they do not solely rely on these long distance deliveries. Several interviewees told me that the chains depend on the Terminal Wholesale Market to “fill-in” any shortages they may have due to inclement weather, delayed arrivals or any other reason. In fact, during both of my visits to the wholesale market, I saw several trucks from the large chains at the loading docks, presumably purchasing from the same vendors who sell to the small and midsize stores. Though this practice is not documented, interviewees confirmed it as a near daily occurrence. One of the supermarket managers also mentioned using a local distributor that works at the market in case of emergency. Despite the global infrastructure that the large supermarket chains have constructed, they still rely on the historic wholesale market, and thus regularly overlap with the food supply system of the smaller stores.

Large Chain Supermarkets: The Role of the Produce Manager

The role of the produce manager at supermarkets is significant, but limited, and the ordering process reveals much about this mixed role. The process begins when managers receive a suggested order, based on past sales, which was generated by a computer program at the corporate office. The produce manager then has the ability to modify the order within certain guidelines. Most produce managers noted that the
suggested order usually requires significant revision. One long-time manager told me, “I spend a lot of time doing my order...I don’t want anything sitting in my back room a week. I want it in and out.” This control over ordering can be an important factor in produce quality. The manager continued, “...It’s the produce manager – it’s the people that are running the store.... I think there are some people that just let the company generate the order. And it comes in, and it sits there a week.”

Several managers described the drawbacks of the automated processes, particularly their disconnect from the local conditions. “In the real world I know that my competition has that same item on sale, or doesn’t have it on sale, or that they’re forecasting a lousy week weather-wise...all of which affect the final sales numbers.” This comment speaks to the changes in supermarket management that accompanied consolidation. As the chains have moved to automated processes, traditional staff responsibilities have shifted from the individual stores to the corporate office. As supermarkets became larger, and competition stiffer, individual store control was relocated to central headquarters, to central buying and quality control staff, and to automated technology systems. As a result, store managers lost much of the control they exercised in the past.

Similarly, supermarket chains have reduced their individual store storage space, with the goal of having most products out on the shelves to increase turnover. The manager must predict how much of each item to order so that there is enough until the next delivery, but not too much so that it remains on the shelf when the new delivery arrives. A skilled produce manager makes accurate predictions and doesn’t rely solely
on the computer-generated order to keep the freshest produce on the shelf. One manager said, “One of the main functions of my job is to keep as little on hand as possible. Idea is to get a full sell-through. We try to carry as little as possible. Just enough to get me through... tomorrow.” Another produce manager told me “The idea is to keep the shelves looking full and the back room empty. I don’t have a crystal ball down there, but I’m getting there.”

In addition to order modification, the other significant role of the produce manager is the handling of produce once it arrives at the store. “We’re constantly going through what’s on the shelf, looking at it, putting our hands on it,” one said. In the stores I visited, the produce manager supervised a staff ranging from eight to twelve employees, all of whom participate in the unloading, shelving, and near round-the-clock monitoring. Skilled managers vigilantly rotate the produce and keep the shelves stocked, but without over-handling it. As one described, “I want it to be as fresh as it could be. I don’t want to handle it twice. I don’t want to handle it three times. I want it to come in and go out.” Due to the highly perishable nature of produce, handling must be kept to a minimum. The original quality of a fruit or vegetable from the grower can be maintained or lost based on the ordering and management skill at the store level.

The frequency of ordering and delivery is another important aspect of this process. Of the supermarkets I interviewed, delivery frequency ranged from seven days per week at the high end to four days per week at the low end. Presumably, the chains vary delivery frequency based on the size and turnover at each store, though other factors could be at work. One produce manager noted losing one delivery day as a
result of higher gas prices during the summer of 2008. Certainly, delivery frequency is related to quality, but there is not a clear distinction between the two neighborhoods I examined. While Shaw’s in North Dorchester receives deliveries four days per week, the much larger Super Stop & Shop receives deliveries seven days per week. Shaw’s in West Roxbury receives deliveries five days per week.

Though the produce manager can change the quantity of each item, he/she has limited ability to alter the product mix. The produce managers at the large stores acknowledged that different locations cater to the local demographic, though each refrained from identifying any particular specialty at his/her store. For example, several managers told me they carry “a little of everything at this store,” or “we’re a big ethnic store, especially during the week...But in this store, I have to carry everything. Some stores may not have mustard greens, like a suburban store, but at this store...I carry ninety-nine percent of the items offered in our computer.”

Each company has a standard list of products from which to order, and it is very difficult to deviate from that set list. As one produce manager told me. “It’s not as easy as it used to be (to order special items). The company is so big now...I used to be able to call the office and ask for a special type of apple that someone requested that they hadn’t had in years. Today, I can’t really do that – and often it’s just not worth trying.” Another manager at a different company said, “At store level it’s real hard to get something into the system that someone’s looking for. They have a distribution center that’s huge, and if I want three cases of kohlrabi...it’s hard to get.” Thus, while the
produce managers reported making adjustments to the automated suggested order, their flexibility is limited.

**Local and Regional Supermarket Chains**

In contrast to the highly centralized model that the larger chains use, regional supermarkets, the second store type in this analysis, rely much more heavily on the regional wholesale market. Two of the stores I interviewed fall into this category. Super 88 is a Boston-based Asian supermarket with three locations around Boston and another three stores that closed in the fall of 2008. Roche Brothers is a family-owned, second-generation supermarket business with fifteen stores, plus an additional three under the name of Sudbury Farms. The first Roche Brothers opened in Roslindale in 1952, followed by Needham in 1959 and West Roxbury in 1967. Though Super 88 and Roche Brothers have a niche, both stores compete with the national retailers on mainstream products.

Super 88 and Roche Brothers use the Terminal Wholesale Market in Chelsea and Everett as their primary supplier of fresh produce. Super 88 uses a broker at the market who compiles all the stores’ orders from multiple vendors, and then a third party transportation company delivers the order to each store. In addition, it purchases specialty Asian produce through a different broker at Hunts Point, the New York City Terminal Produce Cooperative Market.

Similarly, Roche Brothers works with a Boston-based supplier, James Kilduff, who sources all of its fresh produce at the Terminal Wholesale Market. This relationship between Roche Brothers and its distributor is unique among the stores I interviewed in
that the chain has relied on a single supplier for its entire history. According to the employees I interviewed, the relationship began with a handshake fifty years ago and has remained the primary distribution mechanism for all eighteen stores. Instead of Roche having a regional warehouse to maintain, Kilduff has its own warehouse where it unloads purchases from the market and then sends its trucks out to the stores.

Roche Brothers in West Roxbury receives produce deliveries seven days a week after staff places the order the night before. Like the national chains, Roche’s lower volume stores receive less frequent delivery, the minimum being five days per week. At Super 88, managers place orders four times per week, two days in advance. Though the distribution channels differ, this ordering and delivery frequency is roughly equivalent to the rates found at the national supermarkets, as described previously.

Like their counterparts at the national chains, the managers at the regional stores play an important role in the ordering process. With minimal in-store storage space, managers must accurately assess inventory and predict sales. They must also carefully monitor the produce for sale, “rotating and turning what’s on the shelf.”

However, if Super 88 and Roche Brothers are representative of regional chains, they suggest that smaller chains allow each store more independence and control than do national chains. The produce manager at Roche Brothers described requesting special products, such as lychee nuts, from his supervisor, “I can say something to my director and it can get sent just to my store.” To the extent that atypical items are accessible at Chelsea or Hunts Point, buying from the wholesale market allows stores greater flexibility in their product mix. Unlike managers at the national chains who
reported little flexibility in ordering, the produce manager at Roche Brothers claimed to have the ability to place special orders, including small quantities of new or unusual products. This was somewhat less true of Super 88 which had recently reduced its product mix, but as an ethnic store, it already caters to the specific needs of its Asian, Haitian and Jamaican customers.

The ordering process for the regional stores appears to be more cumbersome and less technologically advanced than that of the national chains. Whereas the larger supermarket chains monitor inventory through the use of handheld computers and computer generated orders, Super 88 faxes or emails its orders to a central manager. Roche Brothers uses a computerized system, but sends its order daily through its computer system. As described in Chapter Four, even smaller chains have adopted new technology as a way to increase their efficiency and competitiveness, but it appears they have integrated technology into the business to a lesser degree.

**Small Stores: Bodegas, Convenience Stores and Small Markets**

Small stores, including bodegas and convenience stores, are a third category of store that I examined. I interviewed a franchise owner of a Tedeschi Food Shops in West Roxbury, the owner of a bodega, Alves Market, in North Dorchester, and the owner of a tropical fruit store, Preparations, just outside the Boston Redevelopment Authority North Dorchester boundary in South Dorchester. The stores vary greatly in the quantity and variety of produce carried and offer a useful picture of the varied role that small stores play in urban neighborhoods.
As previously discussed, there is an important difference in small food retailers in the two neighborhoods. As seen in Figures 5 and 6, North Dorchester has many more small bodegas than does West Roxbury. West Roxbury has multiple full service supermarkets and several chain convenience stores, but very few bodegas or small produce markets. This difference in type of store and how the stores are used by residents of the two neighborhoods also affects the types of products small stores sell, as revealed in the interview results described below.

Each of the small stores sources its produce from the New England Produce Market. While one of the stores uses a broker/distributor for delivery, two store owners visit the market themselves to select and purchase fruits and vegetables each week. In contrast to the larger stores, the small stores do not use a computerized inventory system, do not project sales information for produce and do minimal advanced ordering. But like the managers at the supermarkets, these stores have limited storage space and their owners play an important role in maintaining the quality of their perishable products.

Small stores, like independent stores and even regional supermarket chains, do not source directly from growers like the large national chains. One wholesaler told me a rule of thumb is that with twenty-five stores or more, a retailer will have its own distribution center and source directly. Consequently, smaller chains and stores must source themselves or rely on distributors who have minimum delivery requirements and drop off fees. A distributor described the more intensive needs of smaller stores and supermarkets, requiring “higher touch service” because they likely do not have
sophisticated management systems, consumer research or other structures in place. As a result of these greater needs, distributors make higher margins on smaller retailers. For many of the smallest stores, like the two North Dorchester markets previously described, these financial costs may be prohibitive. On the other hand, these businesses incur costs as a result of their owners’ time away from the store.

Tedeschi Food Shops is the only chain convenience store I interviewed, and the only one that uses a distributor. Located within a few blocks of Shaw’s and Roche Brothers in West Roxbury, Tedeschi Food Shops is a franchise convenience store that focuses on snack food, sodas and other beverages, and limited grocery items. The product mix is largely determined by the chain’s list of required items for each franchise. However, according to the owner I interviewed, each manager is allowed to add items to that list. Fresh produce is not on the required list, but this owner chose to carry fruit in addition to the standard items. The small perishables section of the store includes sandwiches, cheese and pre-packaged deli meats, oranges, apples and bananas.

A Massachusetts-based distributor, Garber Brothers, delivers the majority of the store’s groceries. A broker at the New England Produce Market supplies the produce once a week. The franchise owner calls his broker to place the order, and it is delivered the next day. He reported being generally satisfied with the distributor he uses, though he once switched the service due to delivery issues.

The quantity and variety of produce at the convenience store was by far the most limited of the stores I visited. Oranges, apples and bananas were also higher priced than at the other stores. The owner called produce sales “alright,” mentioning
that summer sales are higher. He also said that he used to carry a wider variety of produce, including lettuce, tomatoes and cucumbers, but they did not sell well.

The other two small stores placed a greater emphasis on fresh produce. Preparations, a small fruit market that sells a limited amount of West Indian dry goods, and Alves Market, a bodega that offers two full shelves of produce, both sell a variety of fruits and vegetables that cater to Dorchester’s ethnic population. The two store owners reported visiting the wholesale produce market to personally select the fruits and vegetables. Like the convenience store that receives produce once per week, the bodega owner visits the market once per week to purchase that week’s supply. The owner of Preparations, however, goes to the market three to four times a week, buying only enough to last for two days. These owners play the combined role of the distributor and produce manager of the regional chain stores.

Each owner said they buy from six to ten different suppliers at the market. While buying at the market is time consuming, both owners indicated that using a broker or distributor lowers the quality of the produce delivered, since it cannot be selected before purchase. The owner of Alves tried using a distributor but said, “...if I ask them to bring here, they bring me sometimes not the best. When I go there, I like to pick my own, the best ones. What they bring, the quality is different...” The owner of Preparations voiced a similar sentiment: “You got to shop. I get there by eight a.m., for three to four hours...I go through the palette and switch it up. If you’ve been there long enough, they let you do that. All the palettes don’t come perfect.” These comments demonstrate the importance of the market to small stores who have none of the
bargaining power that supermarket chains have. These owners rely on their knowledge of the market and its vendors, their own ability to evaluate quality through sight, taste and smell and the competition among vendors that allows for negotiation and flexibility.

The Terminal Wholesale Market

To augment the information I gathered from retailers, I also interviewed six New England-based wholesalers and distributors. Of these, two are wholesalers who operate in the wholesale market, three are distributors, and the sixth is a Massachusetts-based non-profit that acts as a local distribution company. The findings from these interviews confirmed much of what the retailers explained.

Boston’s wholesale produce market, commonly referred to as “Chelsea Market,” is located on the border of the cities of Chelsea and Everett Massachusetts. Relocated from downtown Boston in the late 1960s, today the wholesale market is composed of two separate markets, located side by side but independently operated. The New England Produce Center, in Chelsea, and the Boston Market Terminal, in Everett, are privately owned and managed. To the public, they appear as one market entity, referred to in this document as the Terminal Wholesale Market.

Both markets are run by ownership groups composed of wholesalers. They have outsourced management to third party entities who provide maintenance and security services. The Boston Market Terminal is owned and operated by three large wholesalers: DiMare Fresh, Community Suffolk Incorporated and Condakes Company. The New England Produce Center operates as a condominium association, with each bay
owner also owning a share of the company and contributing to ongoing maintenance
costs.

The wholesalers described serving a range of customers, including restaurateurs,
small stores and brokers for large and small operations. One local distributor, based in
the market, said his firm continued to serve “mom and pops” but that these were
mostly long-term relationships, and that new clients tend to be larger. The other two
distributors also described serving larger clients, mostly supermarkets. Their operations
mirror that of the large supermarket chains; they buy large quantities directly from
growers.

The wholesalers I spoke with described a history of changes within the market.
One said that the market is “less busy” overall, with fewer people and fewer buyers
“walking the market.” He also described reduced competition from other distributors,
as a result of the supermarkets having switched to direct buying practices.

Despite these changes, the New England Wholesale Market and its related
wholesalers, distributors and brokers continue to play a critical role in the region’s food
system. Each wholesaler and distributor I interviewed emphasized the importance of
the market to the smaller retailers and the restaurateurs who rely on it as their primary
source of produce. As previously stated, it is also a near daily source of supply for some
of the large supermarkets and the largest distributors.

For example, Bozzuto’s, a major New England wholesale and distribution
company, purchases produce directly from growers, packers and shippers all over the
country and then transports it to its facilities in Connecticut. Like the supermarkets,
Bozzuto’s uses the New England Wholesale Market and the Hunts Point Terminal Market to “fill-in” when demand for a particular product exceeds supply. It is the twentieth-largest wholesaler in the country, with 2007 sales of over 1.1 billion dollars (FMI “25 Top” 2008). Even at its size, and at the volumes it deals in, Bozzuto’s needs the wholesale market; “When product is tight, we know we’re able to get it.”

**Conclusions**

Taken in sum, these interviews demonstrate that the determining factor in produce distribution for these stores is store type, rather than store location. Shaw’s in West Roxbury sources products nearly identically to Shaw’s in Dorchester; if there is any difference, it is likely due to the skill of the manager and his/her ability to accurately order, as well as standard product turnover and delivery frequency, both of which are driven by demand.

In addition, the interviews suggest that national chain retailers have less flexibility to adapt to their local environment and are less connected to an individual location. Though regional chains may resemble national chains in terms of store size and layout, their managers exhibit greater autonomy and their product sources are more similar to those of small stores. Just like the small neighborhood bodega, Roche Brothers, a high-end regional supermarket chain, relies on the wholesale market for produce. However, the use of distributors versus individual market buying distinguishes the larger, or perhaps better financed, stores from the smaller markets.

These findings reveal the profound importance of the wholesale market and local distribution systems. All stores, including supermarkets and bodegas rely on the
wholesale produce market for fresh fruits and vegetables. Thus, even though two primary sourcing mechanisms exist, the wholesale market is essential to both systems. However, unlike supermarkets, small stores rely exclusively on the wholesale market, and it is these small stores that are most important to residents of a low-income urban neighborhood like North Dorchester, where large supermarkets are often fewer in number or located farther away.
Chapter Six: Recommendations and Conclusions

Despite the global nature of food sourcing and distribution, this thesis demonstrates that food retail remains deeply connected to the region. By illuminating the different supply channels that different types of stores rely upon, it suggests an alternative perspective for strengthening the local food environment.

This thesis offers four primary conclusions. First, trends in the larger industry have profoundly impacted the local food environment. Second, store type determines the produce sourcing method, of which there are two distinct systems: one for supermarkets and another for small and midsize stores. Third, regional wholesale markets continue to play a critical role in supplying produce to food stores. Last, small stores are particularly important in low-income urban neighborhoods that tend to have fewer supermarkets and more small neighborhood stores than higher income areas.

The growth of supermarkets and consolidation within the industry have shaped the modern food system. In an environment of intense competition and tight profit margins, supermarkets have consolidated into fewer, larger stores. This change in physical format, generally a suburban model, has presented a challenge to dense urban areas. Supermarkets’ requirements for large floorplates and substantial parking are difficult if not impossible to accommodate in a densely developed city. Providing such sites often requires land assembly and demolition, or even environmental remediation and relocations, all of which prove costly investments for municipalities with competing economic development priorities.
Along with this consolidation, supermarkets purchased products in larger volumes that small farms could not supply. To meet these needs, supermarkets began buying directly from growers, or growers-packers-shippers, who consolidated in turn. As a result, today the large supermarket chains largely bypass the wholesale market that they historically relied upon for the majority of produce purchases. They use the regional wholesale market as a secondary source, a fill-in when other supply channels have fallen short. Smaller chains, independent stores, and small markets that deal in lesser quantities cannot participate in the direct buying system. These smaller and independent stores depend on the wholesale market to meet all of their produce needs. Therefore a bifurcated system exists, one of supermarkets that source directly and the other of smaller chains and stores that continue to depend on the wholesale market and regional distribution system.

Understanding the nature of this dual system is critical to improving the urban food environment. This thesis reveals the challenges that small stores face as they relate to volume and scale, as well as the declining supply channels they must rely upon. Even as their sourcing mechanisms are limited compared to larger supermarkets, their importance in low-income neighborhoods remains great. As seen through this analysis, the low-income neighborhood of North Dorchester, where fewer households have access to a vehicle, has many more small markets located throughout the area than the higher-income neighborhood of West Roxbury has. At the same time, large national chains exhibit much less flexibility at the individual store level, a finding that lends support to the importance of small and regional stores that are located in, and
connected to, urban neighborhoods. Prior research, described in Chapter Two, confirms the importance of small grocers to urban residents. It is imperative to acknowledge the essential role of small stores in neighborhoods that lack supermarkets and have limited transportation options.

**Recommendations**

The relationship between the public sector and the food system should be revised and broadened. While certain components of the food system are currently regulated by a public entity, these are mostly confined to health, safety and nutrition. There is a strong public interest in an adequate and safe food supply, and this interest can be better achieved by recognizing the importance of food distribution. Progress has been made to recognize the public interest in food retail, but should encompass wholesale and distribution as well.

Though food distribution has traditionally been viewed as a private enterprise, this thesis demonstrates the public importance of a strong distribution system. As previously described, small stores, prevalent in low-income areas, already face limited options in procuring fresh produce. With supermarkets’ heavy reliance on direct buying, business at the wholesale market has declined. If these trends continue, the market’s future is in doubt. Thus, it is incumbent upon government to intervene in the food distribution system in order to guarantee that small and midsize stores, and the neighborhoods they serve, have access to fresh produce.

Currently, the Chelsea/Everett wholesale produce market, as a private entity, is regulated for compliance with health and safety standards, but no public agency seeks
to strengthen or support its business activities. As a private enterprise, the wholesale market possesses no allegiance to the region. Wholesale markets are regional in nature, serving entire metropolitan areas. As revealed in the previous chapter, Boston’s stores rely on the wholesale market in Chelsea and Everett. But because the market sits beyond its boundaries, the City of Boston plays no role in the market’s activities. This is true for many wholesale markets that serve regional areas and are often located beyond a city’s official borders. This regional character of wholesale markets complicates the public sector’s ability to interact with them on a local level.

A recent headline in an online industry newspaper read, “Recession could end up closing Boston terminal market businesses” (Nelson 2009). Presumably the market will survive this economic downtown, but its future is uncertain. If the market were to close, many stores and neighborhoods would lose their primary source of produce. Therefore, the public sector must work to ensure the continued existence of Boston’s and other cities’ wholesale markets. Like utilities that are regulated at the state level, food is critical to the public interest. And due to the regional nature of food systems, state government is best positioned to support food wholesale and distribution activities.

Accordingly, the public sector should adopt the following policies to ensure the ongoing viability of the wholesale distribution system and its capacity to serve the range of stores that supply food to all communities:

1. Invest in the infrastructure of wholesale produce markets
2. Support wholesale market vendors by providing technical assistance and small business development services

3. Strengthen local and regional distribution systems that serve smaller stores

   First, a state-level agency must be charged with ensuring the market’s long-term presence. As part of this mission, targeted investments should be made in the infrastructure of the wholesale market. The physical condition of Boston’s produce market has deteriorated, and the market requires renovation in order to meet health and safety standards. If regulations were more vigilantly enforced, many vendors would be out of compliance. With some vendors already struggling to survive, and basic infrastructure lacking, the future of Boston’s wholesale market is jeopardized.

   State government should offer financial incentives that improve the market while solidifying its place in the region. In recent years wholesalers have discussed various plans for new facilities, but none have come to fruition. The public sector should direct investment to new infrastructure that facilitates compliance with regulations and better showcases the market’s offerings. This type of investment helps to ensure that small and independent stores have a quality source of produce and supports the local and regional economy. As revealed through the interviews, every store relies on the produce market. Though the national supermarkets source the majority of their goods directly from producers, they too depend on the wholesale market. And for small stores, it is the only reliable source of fresh fruit and vegetables.

   This thesis also points toward the importance of supporting the market’s vendors, especially since fewer market vendors exist than in the past. While some
closures and failures are a natural result of market competition, it is important to maintain a variety of vendors who can serve different clients, particularly smaller vendors willing to cater to small businesses. According to several wholesalers with whom I spoke, these vendors need technical assistance to adapt to increasingly tight security regulations. Methods of support should include small business development services to provide training, business planning, and assistance accessing different incentive programs. In addition, state government should work closely with the market’s operators to better understand their needs and improve their ability to serve small grocers. Armed with a more specific understanding of their challenges, state economic development officials may be able to assist vendors with a range of small business, infrastructure, and other regulatory or land use issues. Like other high priority industries, the wholesale market should be invested in as a regional priority.

To broaden access to fresh produce, new connections must be created among the producers, wholesalers and retailers that represent the primary components of the food supply system. In the current system, large retailers work with both producers and wholesalers, but small retailers rely only on wholesalers. Small store owners are less able to afford produce distributors and less satisfied with the quality of distributors they can access. Both are significant obstacles for small businesses, and likely act as disincentives for business owners to sell fresh produce in small stores. Those owners who are intent on selling fresh produce must either go to the market themselves, which uses valuable time, or they must find a way to pay for the cost of a distributor.
To address this problem and support smaller retailers’ access to produce, a solution must include strengthening the distribution network. One intervention is to offer incentives to existing private distributors to serve targeted neighborhoods at reduced cost or to eliminate minimum order requirements. If private distributors were incentivized to work with smaller clients, small stores could gain reliable, efficient access to fresh produce. Alternatively, a new non-profit distribution entity could be created specifically to serve bodegas and other small stores. The new organization could act as a distributor that deals in small quantities for small urban stores. Buying in bulk could achieve cost savings for small clients and may help small stores compete with larger stores on price.

A model for this type of entity is Red Tomato, a Massachusetts-based non-profit that provides wholesale services for regional farmers, centralizing local farm products and selling them to multiple retailers, including Whole Foods and Trader Joe’s. Red Tomato also sells to local distributors that service small chains, and the organization has proven to be a successful model for introducing locally grown produce from small farmers into the supply chain. There are several examples of related organizations around the country that have been successful at providing specialized wholesaling and distribution activities. While a new non-profit entity may not solve the problem of eliminating the costs of distribution, it may be a more suitable organization for meeting the needs of small urban stores.

An additional option for improving distribution channels is to strengthen the relationships between small retailers and small growers. Many organizations are
engaged in this type of work, especially related to the incorporation of local food into the supply chain, and these efforts could be built upon to target small retailers. For example, a direct online ordering system could be created that connects regional farmers to independent store owners. Alternatively, the new distribution entity could work with local growers to provide a more direct link between growers and retailers. Whereas small farms cannot meet the demands of large supermarket chains, they may be able to better serve smaller retail outlets.

Even with a stronger wholesale and distribution system, many small and independent urban food retailers will struggle to survive because of basic challenges including a lack of capital and capacity. Their presence is crucial, however, to improving food access in low-income urban neighborhoods, and they must be supported and strengthened. Community development corporations (CDCs) and other small business development service providers can help support food retailers through targeted small business development work. Many small stores need technical assistance which CDCs and other business service agencies are best equipped to provide. In conjunction with the primary recommendations previously described, strengthening the core businesses of small food retailers will improve access to fresh foods in low-income urban neighborhoods.

Areas for Further Research and Final Conclusions

These recommendations are intended to expand the approach to the problem of food deserts. As seen through this examination of two Boston neighborhoods, it is not always the presence of supermarkets that defines the local food environment. In North
Dorchester, the large supermarkets lie on the periphery of the neighborhood whose center is dotted with small bodegas and specialty stores that play an important role in serving residents.

In addition, as demonstrated in the industry analysis and store interviews, despite their size, supermarkets are in many ways less connected to local places than are independent or smaller stores. With centralized buying and distribution, supermarket managers have less control over ordering. This reality of large chains—that decision making is centralized and does not happen in the store—is another factor to encourage policy makers to look beyond supermarkets.

This thesis illustrates the sourcing mechanisms of a discrete number of stores in two neighborhoods and offers recommendations based on these findings. To refine these ideas requires additional research in several key areas. First, it is important to understand more about the strength of small food retailers and their capacity to improve access to fresh produce over the long term. Some advocates have begun efforts to “transform” small stores through the introduction of healthy foods, and it is important that these efforts, along with other policies to expand the supply of fresh food to low-income neighborhoods, be closely tracked to determine their effectiveness.

Next, building on the findings of this document that show the importance of store type in sourcing methods, the typology should be refined to better distinguish among independent and small stores, examining variation among ethnic markets, specialty shops, bodegas, convenience stores and others. In addition, significantly more research is needed regarding the workings of produce wholesale markets and their long-term
viability. An important next step is an analysis of the network of U.S. wholesale produce markets, the regions they serve and their implications for food access in different cities.

After years of struggling to attract new supermarkets to urban neighborhoods, it is time to reevaluate that approach and focus instead on the existing businesses—retailers, wholesalers and distributors—that form an alternative food system for neighborhoods without national chain supermarkets. Support for wholesale produce markets guarantees a source of produce for retailers that cannot buy directly from growers. Strengthening regional distribution networks and small and independent retailers ensures that this produce can be supplied and sold at the neighborhood level. Together, these interventions bolster regional and local food infrastructure and fill a critical void in neighborhoods with limited access to fresh food.
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