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INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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MICHIGAN STATE UNIVERSITY

IFPRI Discussion Paper 00752

February 2008

The Rise of Supermarkets and Their Development Implications

International Experience Relevant for India

Thomas Reardon, Michigan State University

and

Ashok Gulati, International Food Policy Research Institute

New Delhi Office

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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ABSTRACT

The Indian Council for Research on International Economic Relations (ICRIER) was invited by the Indian Ministry of Commerce and Industry to conduct a study titled "The Impact of Organized Retailing on the Unorganized Retail Sector." Because organized retail in India is still in its infancy, it was deemed critical to look at the experience of other countries, especially developing ones. Thus, ICRIER sought the assistance of Dr. Thomas Reardon and Dr. Ashok Gulati, co-directors of Markets in Asia, a joint program of the International Food Policy Research Institute (IFPRI) and Michigan State University. ICRIER asked Reardon and Gulati to help research and report on the international experiences in the growth and expansion of modern retailing in developed and developing countries and the implications for India. This report is a contribution to that effort.

This paper focuses on the emergence of modern retailing with respect to food and what implications it can have for various stakeholders in the food supply chain. While we briefly review the US and European experience, we focus on the developing countries of Latin America and East Asia (including China), where the supermarket revolution started in the early to mid-1990s. We looked at the patterns of the diffusion process in modern retailing in terms of "waves" that go from country to country, and within a country from first-tier cities to second-tier and then third-tier cities, and from processed to semiprocessed to fresh products. We also treat the challenges and opportunities that modern retailing has posed for various stakeholders in the supply chains, especially for traditional retailers, farmers, and consumers. We also looked at several instances when governments helped small retailers or upgraded wetmarkets by (1) establishing affirmative action policies to strengthen their competitiveness so they could also participate effectively in the transition to modern retailing, and (2) providing compensation to help them change their lines.

The paper concludes by surmising what lessons other countries' experiences in the supermarket revolution have for India which is on the threshold of a major structural change in retailing. The expectations and concerns are high. Accordingly, India must form its own model of retail development to meet its priorities, learn from challenges that others have faced, and successful examples of strategies for "competitiveness with inclusiveness" among traditional retailers, wholesaler, and farmers entering an era of rapid retail transformation and concomitant food system change.

Keywords: supermarkets, wholesalers, modern retail, small farmers, traditional retail, supply chain, India, Latin America, competitiveness, inclusiveness

1. INTRODUCTION

The focus of this paper is the retail dimension of the profound and rapid transformation of the food industry in developing countries—a key element of globalization—and its relevance to India.[1] A "supermarket revolution" has indeed occurred in developing countries since the early-to-mid-1990s. In many countries, supermarkets have gone well beyond the initial middle-class clientele to penetrate the food markets of the poor. This "shock" downstream in the food system has made an impact on traditional retailers; has set off ripple effects upstream in the food system, on the wholesale, processing, and farm sectors; and has incipient effects on trade.

This paper reports on the experiences of developing countries mainly elsewhere in Asia and in Latin America and Eastern Europe with respect to the supermarket revolution and strategic policy approaches taken in developing countries. We also touch on the most relevant experiences of developed countries. Section 2 discusses trends in the spread of supermarkets, with a brief comparative look at the U.S. experience (interestingly, in many ways the most relevant of the developed-country experiences for India) and then in developing countries. Section 3 analyzes the determinants. Section 4 examines emerging evidence of the impacts on consumers and traditional retailers (downstream in the agrifood system) and on processors, wholesalers, and farmers (upstream in the system). Section 5 discusses policy and program measures taken by government and nongovernment entities to promote "competitiveness with inclusiveness" among the various actors in the food system confronting the opportunities and challenges of the supermarket revolution. Section 6 concludes with lessons for India.

Note that throughout the paper, we use the term *supermarkets* as shorthand for the various segments of modern retail, and we distinguish the segments (hypermarkets and superstores, supermarkets and neighborhood stores, convenience and forecourt stores, and discount and club stores) only when necessary.

[1] While presenting substantial new material, this paper also draws selectively on Reardon and Berdegué (2007), Reardon et al. (2003), and Reardon and Timmer (2007).

2. THE SPREAD OF SUPERMARKETS

2.1. The U.S. Supermarket Story: Indigenous *Kirana* Stores Grow into Huge Supermarket Chains

Supermarkets started in the United States in the 1920s and 1930s and became dominant in the late 1950s. The traditional food retail system that dominated the country before supermarkets looked in essence the same as India's traditional retail system: (1) wetmarkets (similar to those in Asia, with many small stalls) for fresh produce, fish, and meats; (2) tiny "mom and pop" stores (man at the till taking orders, wife pulling down products from little shelves and measuring out and packing orders) with no self-service by customers; (3) street hawkers with pushcarts or shoulder or head burdens; and (4) home delivery of milk and mobile (cart) delivery of dry goods—for example, by the famous Jewel Tea Company horse carts.[2] Today, however, supermarkets have about 80 percent of food retail in the United States.

The advent of modern retail (i.e., chain stores) started in the late 1870s, long before the supermarket format emerged as large self-service stores in the 1930s. Several important trends in the development of modern retail over the past 130 years might interest Indian readers.

Three key demand-side socioeconomic changes occurred over a century. First, the United States was mainly rural in 1900 (the urban share was 40 percent) and mainly urban by 1990 (urban share, 75 percent). Second, few American women worked outside the home in 1900, and even by 1970 only 15 percent of married women were counted among the national workforce. A massive societal change occurred in just a few decades, and by 2000 the share of workingwomen was 75 percent. Third, incomes per capita increased substantially over the century. All three changes are taking place in India today, except they are happening much faster than they did in the United States.

Modern retail started with chains of stores that were about the size of *kirana* stores. Called "five and dime" or "five and ten cent" stores, they bought nonfood goods in volume and sold at discount. They further cut costs by moving to self-service. These chain stores were an innovation of the tiny shop owners. As a major format, they lasted into the 1950s. The most famous example was Woolworths, started in the 1870s in big cities in the boom zones. From one tiny store in 1878, a chain was born that built to the first global retail multinational of medium-sized nonfood shops, with 2,866 stores in five countries (including the United Kingdom) 50 years later.

The nonfood five-and-dime stores acted as an "idea spark" model for chain-store formation by food stores that were formerly just small stand-alone grocery shops. The owner of a little tea shop (selling the ingredients for the main beverage of the day) got an idea in 1878 to build a chain of stores in big cities

[2] We are grateful to Tom Reardon, father of Thomas Reardon, for augmenting this section with his memories of New York in the 1930s.

in boom zones and buy tea directly from Chinese plantations to cut the cost and beat the competition. That chain was A&P. From selling just tea in the 1870s, it grew to a grocery store format (dry foods) that opened as the first A&P Economy Store, the same size as a "neighborhood store" format in India today, and focused on oils, packaged foods, soap, and so on. A&P procured in large volumes, drove down costs, and standardized store layouts. By 1915 the chain comprised 1,600 stores, and by 1925 it had 13,961 stores; in the early 1930s, A&P was operating approximately 16,000 stores with a combined revenue of $1 billion (equivalent to $10 billion in 2000 dollars).

In 1936, A&P opened its first "supermarket" (just a few times larger than a neighborhood store). By 1950, A&P ranked second in sales in the world (after General Motors). In the mid-1950s, A&P was by far the number one food retailer and had moved from small-to-medium-sized supermarkets. However, by 2000, A&P had become a minor chain because its retailing and procurement strategic positioning had not kept up with chains that arose in the 1970s and 1980s, like Wal-Mart.

Sam Walton is an important example of a *kirana* man who used entrepreneurial spirit in a situation of opportunity. He started in 1950 with a tiny five-and-dime store in a rural Arkansas village, population 3,000. It was one of the most underdeveloped regions of the United States, bypassed by the boom development of the past 100 years. Walton started by building a chain of *kirana* stores in the surrounding towns and then states, and by 1962 he had decided to open a small supermarket called Wal-Mart. He hit on an idea to buy directly from suppliers and cut costs by building a distribution center network. While other chains had started in big cities in boom zones, Walton focused his effort on villages and small towns, considered an impossible strategy at the time. Walton opened large-format discount stores (big supermarkets with cheap nonfood items and dry foods) in the 1970s. In the late 1990s, he added small-format neighborhood stores. Wal-Mart grew from two *kirana* employees in 1950 to 1,500 in 1970, 21,000 in 1980, 200,000 in 1987, and 1,140,000 in 1999. By 2002, Wal-Mart had become the largest private employer in the world, with 2 million employees. The company's annual revenue totaled $350 billion in 2006.

Several trends characterized the development of chain stores over the past century in the United States, with similar trends seen in the United Kingdom and France: (1) The trend was from nonfood chains to dry-food chains to full-line chains offering fresh foods. Supermarkets did not sell much fresh produce until the 1960s because it was considered impossible to move beyond the American tradition of buying in wetmarkets and tiny fruit shops. (2) The trend was from clerk service to self-service. (3) The format trend was from the traditional system described earlier to chain nonfood shops, to chain grocery shops, to small supermarkets and food sections in department stores, to medium and large supermarkets in towns, to hypermarkets in the suburbs, to convenience stores and neighborhood stores in dense inner-city areas and small towns. (4) The trend was from large cities and economic boom areas to second- and third-

tier cities and second-tier areas and to suburban areas when those developed in the 1950s. Wal-Mart's development in the opposite direction was a clear exception. (5) Individual chains and the overall supermarket sector underwent massive growth over seven decades, and that growth cycle eclipsed an earlier cycle of growth in self-service chain grocery stores. (6) Chain stores mimicking and then improving on the credit system that the small traditional shops had used for customers by developing credit cards, loyalty cards, and banking services. They also took on other services, such as health clinics and banks for poor consumers. (7) Chain stores modernized their procurement systems. Woolworths and A&P had historically focused on cutting costs through bulk buying, self-service, and efficiencies in inventory handling. As competition increased, the importance of modern logistics and cost cutting intensified, and from in the 1990s on, those strategies took center stage.

The remaining traditional retail sector (now about 20 percent of food retail) was in reality mainly a modernized small-shop sector. In remote areas, some small traditional groceries survive, but the mainstream is specialty shops (defendable niches) that are far more modern and upgraded than the general-line mom and pop store of years gone by. Also, many small stores themselves started chains (as previously noted) or became franchisees of larger chains.

Apart from a few cases, such as A&P into the 1960s and then Krogers and Wal-Mart today, most supermarket chains were regional rather than national. The trend, however, is toward establishing national-level chains and catching up with Europe on consolidation. It is important to keep in mind that the United States has a history of the strongest and longest antisupermarket regulatory history of any country in the world. Wrigley and Lowe (2002) concluded that the body of stiff regulations and competition laws enacted in the United States resulted in a significantly slower spread of supermarkets and national-level concentration from the 1930s to the 1980s than the United Kingdom experienced. This reversed first in the 1950s and then again in the 1980s. However, the result over the decades is similar to what happened in the United Kingdom (which had far laxer regulation of supermarkets). This suggests that underlying economic and social forces moved the modern retail sector toward dominance and concentration over time, whereas regulations mainly affected the transitional path.

As will become apparent later in the report, in many of their broad lines, the trends in the spread of supermarkets in developing countries and the evolution of their procurement systems bear many similarities to the recent experience of the United States; western Europe and Japan had broadly similar experiences in the rise of supermarkets. This suggests that the economic logic of the retail transformation is shared across regions, starting from a surprisingly similar shared tradition of traditional retail systems. The main difference between the retail transformations in developing countries and in the United States and western European is the extreme speed with which it is occurring in developing countries.

2.2. Supermarkets in Developing Countries

Supermarkets have been around for half a century in several developing countries, but the phenomenon was limited mainly to large cities, upper-middle-class or rich consumer segments, and domestic capital chains. In contrast, a supermarket revolution in developing countries took off in the early-to-mid-1990s. The patterns and determinants of that revolution are detailed in the following subsection.

2.2.1. Diffusion of Modern Retail over Regions and Countries

The spread of supermarkets has taken place in three established waves and continues in a fourth emerging wave.

The first-wave countries experienced supermarket sector takeoff in the early-to-mid-1990s. Included in that group are much of South America and East Asia (outside China and Japan, north-central Europe and the Baltic countries, and South Africa. In those countries, the average share of supermarkets in food retail went from roughly 10–20 percent in 1990 to 50–60 percent on average by the early 2000s (Reardon and Berdegué 2007). Comparing that to the roughly 75–80 percent share that supermarkets had in food retail by 2005 in the United States and western Europe, it appears a process of convergence was taking place. The first-wave countries saw supermarket diffusion in a single decade that took some five decades in the United States and the United Kingdom.

The second-wave countries are Mexico and much of Southeast Asia, Central America, and south-central Europe. In those areas, the share went from about 5–10 percent in 1990 to 30–50 percent by the early 2000s, with the takeoff occurring in the mid-to-late 1990s.

In the third-wave countries, the supermarket revolution started in the late 1990s or early 2000s, reaching about 5–20 percent of national food retail today. These areas include parts of eastern and southern Africa, some countries in Central and South America, "transition" East Asia (China and Vietnam), Russia, and India. It is somewhat anomalous that they are latecomers in the third wave, because their demand-side characteristics (income, absolute size of the middle-class population, urbanization rate, and share of women in the workforce) make them similar to many countries in the second wave, which had supermarket takeoff some five to seven years earlier. The main reasons for the lag were policies imposing severe constraints on retail foreign direct investment (FDI) that were progressively relaxed in China and Russia in the 1990s. Note that the growth rates of supermarket food sales and retail FDI are inversely correlated with the waves. Thus, the fastest growth occurred in the supermarket sector in China (about 40 percent a year), whereas the more mature, relatively saturated supermarket sectors in Brazil and Taiwan saw growth of only 5–10 percent.

Example: China. China ranked fourth, fifth, and third in the AT Kearney Global Retail Development Index in 2005, 2006, and 2007, respectively, and is a fascinating case of extremely rapid

supermarket diffusion. Modern retail in China comprises roughly 10 percent of the national retail and 30 percent of urban food markets (Hu et al. 2004). China had no supermarkets in 1989, and food retail was nearly completely controlled by the government. From its beginning in 1990, the supermarket sector climbed meteorically to about 15 percent of food retail nationally (some 35 percent in the big cities) by 2003, and today its annual sales are roughly $100 billion. Many of the driving forces for supermarketization were in place (e.g., rising incomes, urbanization), and all it needed to become a reality was the progressive privatization of the retail market and, even more importantly, the progressive liberalization of retail FDI that started in 1992 and culminated in 2004, as a provision of World Trade Organization (WTO) accession. FDI drove intense competition in investment among foreign chains and between foreign chains and domestic chains that even accelerated before WTO accession and thereafter with full liberalization of FDI.

2.2.2. Diffusion Trends within a Country over Space, Socioeconomic Strata, and Product Markets

Waves of supermarket diffusion also occur within a country over space, over consumer segments, and over product categories.

Diffusion over space within a country. Supermarkets tend to start in large cities, then spread to intermediate cities and towns, and then enter small towns in rural areas. The business strategy is the same as for chains, spreading in waves over countries: the richest and largest market is entered first because it offers the highest profit per capital invested; competition and saturation of the initial base drives investment by a given chain into the series of subsequent markets. While the gross return declines, cost savings result from economies of scale and the procurement system change discussed later in the report. Often the multinational chain acquires or joint ventures with the large domestic chain and both acquire smaller local chains operating in various regions of a country. Competition from larger chains in turn pushes intermediate-city-based chains to extend into the hinterland towns, seeking refuge from the increasing competition in its base market; this process accelerates the diffusion of supermarkets over space.

Diffusion over consumer segments and socioeconomic strata. Controlling for the pattern of spatial diffusion, similar waves of diffusion occur over socioeconomic groups and consumer segments. Obeying the same business logic as in spatial diffusion, supermarkets focus first on upper-income consumer segments (national and expatriate), move into the middle class, and finally enter the markets of the urban poor.

Format diversification with diffusion over space and strata. As modern retail spreads, format diversification tends to occur to facilitate the spatial and consumer segment differentiation. For example,

to penetrate the markets of inner cities and small towns where space is limited and product assortment can be narrow, chains use discount stores, convenience and neighborhood stores, and small supermarkets.

Diffusion over product categories. The penetration by supermarkets of food retailing has occurred in the following waves of food categories:

1. The first wave of product penetration is in processed foods (canned, dry, and packaged items such as rice, noodles, and edible oils). This is a result of the economies of scale in procurement as well as direct relations with processed-food manufacturers.
2. The second wave is in semiprocessed foods (with extensive or minimal processing such as dairy products) and minimal processing and packing (chicken, pork, beef, and fruit).
3. The third wave, by far the slowest and the longest in starting in developing countries, is into the vegetable market (particularly for leafy vegetables and bulk vegetables).

Example: China compared with Hong Kong. In a study of a random sample of 1,200 consumers in the six largest cities in China, Goldman and Vanhonacker (2006) found that modern retailers already have a retail market share of 94 percent in nonfood goods, 79 percent in packaged and processed goods, 55 percent in baked goods, 46 percent in meat, 37 percent in fruit, 35 percent in poultry, 33 percent in fish, and 22 percent in vegetables. Compare that to the more advanced case of Hong Kong, which likely represents the average Asian consumer sometime in the medium-term future. Hong Kong supermarkets have a 59 percent share in fruit retail and a 55 percent share in vegetables (thus, a share similar to supermarket penetration of produce retail in Brazil), 52 percent in meat, 39 percent in poultry, and 33 percent in fish (Coca-Cola Retailing Research Council Asia 2005). Evidence emerging from a large ACNielsen consumer survey in Asia suggests that younger consumers are "forsaking wetmarkets" and that in less than a generation the average produce buyer may well be substantially more supermarket oriented, which will accelerate the effects of the retail transformation on the horticulture sector (Planet Retail Daily News 2005).

Example: Indonesia. AC Nielsen (2007) undertook a survey of 1,300 consumers in the capital of Jakarta (capital) and in the second-tier cities of Bandung and Cirebon, focusing on consumers' buying habits in supermarkets versus traditional markets. The survey revealed that penetration of grocery retailing has occurred much more rapidly in processed, dry, and packaged foods and in household and personal care products, for which supermarkets gain a cost advantage as a result of economies of scale from centralized procurement and distribution. Savings are passed on to consumers, drawing them to the channel. The supermarkets' progress in gaining control of fresh-food markets has been slower because of procurement challenges, price, cultural habits, and perspectives regarding freshness; moreover, shoppers still purchase fresh produce mainly at wetmarkets and small vegetable stalls, where they get low prices, credit, and personal service.

3. DETERMINANTS OF THE DIFFUSION OF SUPERMARKETS IN DEVELOPING COUNTRIES

Before the takeoff of 1990, models of the diffusion of supermarkets in developing countries focused on the demand-side factors determining the emergence of supermarkets. For example, Goldman's groundbreaking work in the 1970s and 1980s emphasized factors such as incomes, urbanization, the opportunity cost of women's time, and other enabling conditions (Goldman 1974). Models developed after the takeoff, such as by Reardon et al. (2003), reiterate the demand-side factors as necessary but not sufficient and emphasize policy factors and retail supply-side factors—in particular, procurement system modernization (driving down prices) and massive retail FDI, as well as massive competitive (and anticipatory) domestic retail investment that emerged mainly in the 1990s.

3.1. Income Growth and Urbanization and Its Sequelae

Two sets of demand-side factors influence the demand for supermarket services in developing countries. They are similar to the factors driving the rise of supermarkets in the United States and western Europe.

First, urbanization since the 1960s, with the entry of women into the workforce, increased the opportunity cost of women’s time and their incentive to seek shopping convenience and processed foods to save home preparation time. This was reinforced by the rapid growth in the 1990s in ownership of refrigerators, which meant an increased ability to shift from daily shopping in traditional retail shops to weekly or monthly shopping. Growing access to cars and public transport in the 1980s and 1990s further supported this trend.

Second, real per capita income growth in many countries during the 1980s and 1990s, along with the rapid rise of the middle class, increased the demand for processed foods. The latter is the entry point for supermarkets, which could offer these products in greater variety and at lower cost than could traditional retailers because of economies of scale in procurement and concomitant actions of large processors.

3.2. Foreign Policy of Retail FDI Liberalization

Starting in the early 1990s and continuing into the 2000s, a series of partial or full liberalizations of retail FDI took place. Often FDI liberalization was included to some degree in structural adjustment programs and bilateral or multilateral trade agreements and then extended and deepened. That was what transpired in Mexico, Brazil, and Argentina, where FDI liberalization was part of NAFTA and MERCOSUR in the mid-1990s. Sometimes, however, liberalization of retail FDI occurred well after trade liberalization, as in Indonesia, the Philippines, and Thailand, where it was resisted as local retailers “geared up” for the

opening that then occurred in 1998 for Indonesia and in 2000 for the Philippines and Thailand (Cabochan 2005; Manalili 2005). In China, FDI liberalization started as partial liberalization in 1992 and culminated in full liberalization in 2004 as part of accession to the WTO.

Several types of retail FDI patterns have emerged. The dominant pattern is FDI from western European and U.S. global multinationals. A secondary but important pattern is FDI from regional multinationals (such as Dairy Farm, based in Hong Kong, entering other Asian markets). Moreover, retailers enter solely as a green-field investment or by acquiring a local chain, or enter as joint ventures.

Reasons for retailers to undertake FDI include the saturated and contested home markets that multinationals face and the higher profit rates that the new markets offer. Following are two examples of countries where FDI had a large impact on the retail sector.[3]

Example: Brazil. Of the top-seven chains with sales of $24 billion in 2006—including Casino (the leader), Carrefour, Wal-Mart, and Makro—*all* are foreign owned. The takeoff of the retail sector occurred in the late 1980s and early 1990s, with an intense period in the mid-to-late 1990s of mergers and acquisitions. A typical trajectory was that of CBD. Formerly a domestic chain, CBD became the lead chain in the 1990s and then entered a joint venture with Casino (France), which recently acquired it fully.

Example: Mexico. The Mexican case of supermarket development is similar to that of Brazil, but with a lag resulting from a later takeoff. In the early 1990s, nearly all the supermarket sales were by domestic chains. By 2002, 48 percent of the $24 billion dollars in sales by the top-seven chains in 2002 were by foreign chains (primarily Wal-Mart). By 2006, the sales of those chains had nearly doubled to $38 billion, and now 53 percent are by foreigners (again, primarily Wal-Mart).

In many cases, however, domestic investment is the main driver, which is particularly relevant to India. Several examples follow. It is instructive that, except in Brazil (where rapid multinationalization occurred), the supermarket revolution in the famous “fastest growers” quartet of Brazil, Russia, India, and China was led by domestic capital generated by the growth industries that have placed these countries in the fastest-grower category.

Example: China. In the 1990s, the bulk of investment in the leading chains was made by the Chinese government itself. The government used stock market financing at the end of the 1990s for its primary chains—Lianhua, Hualian, and Nonggongshan—with combined sales today of $10 billion. Although the lead chain in the country is Chinese and some 80 percent of total supermarket sales in China are by domestic chains, foreign chains made headway in the late 1990s. Sales of the top-10 chains in 2002 totaled $11.5 billion dollars, of which 18 percent was by two European chains and 28 percent by three chains from Hong Kong and Taiwan. By 2006, the sales of the top 10 (with some one-quarter to one-third of total supermarket sales) had reached $32 billion, of which similar shares were made by the foreign

[3] Data for the chains’ sales come from http://www.planetretail.net/.

chains. Part of the domestic chain response to foreign competition has been first-tier domestic chain mergers and acquisitions of local chains.

Example: Russia. The Russian supermarket revolution has occurred only in the 2000s. It is still a fragmented sector in a country with a population of 140 million. The growth rates are stunning: In 2002, sales by the top-15 chains totaled $2.7 billion; by 2006, sales by those chains had soared to $19.2 billion. The share of the top-3 chains was 40 percent in 2002 and 54 percent in 2006, with the lead domestic chains acquiring many small regional and local chains. The foreign share of sales was 33 percent in 2002 and 35 percent in 2006—only inching up and spreading over 8 foreign chains among the top 15. The two largest companies are Russian, but the origin of the capital, even of the Russian companies, is usually a mix of domestic and foreign. The Russian banking sector is awash in cash from oil, construction, and financial services.

Example: Chile. The Chilean supermarket sector is a fascinating case of a takeoff driven by domestic capital, followed by nascent multinationalization, followed by abrupt "demultinationalization." The supermarket sector in Chile was launched in the 1990s with the backing of domestic capital. Late in the 1990s, the number two and number three global chains entered: Carrefour and Ahold. By 2002, those two companies had 13 percent of the $4.6 billion in total sales of the top-eight chains. However, by 2006 their share had plummeted to zero percent of the $12.6 billion in total sales of the top eight (growing at a pace similar to China's); the Chilean subsidiaries of two foreign chains had been bought by the top-two Chilean chains in 2003. Today those top-two chains have 65 percent of the market. The three market leaders, all domestic, are expanding rapidly into other Latin American countries in mergers and acquisitions, becoming regional multinationals. The domestic capital was based in a combination of domestic bank credit and real estate, commercial, and financial services. These were the tertiary sector ripple effects of the fundamental boom in copper and wood products, and the fruit and fish boom.

Example: Indonesia. The takeoff of modern retail in Indonesia in the 1990s primarily involved domestic chains. The current leading chain, Matahari, is indicative. Matahari started as a small shop in 1958, grew into a chain of department stores, and then was purchased by a giant banking and real estate conglomerate, Lippo Group, in 1997, just before the crisis. The crisis created a sharp dip in modern retail sales, which began recovering in the 2000s. Matahari doubled its sales between 2002 and 2006, becoming a billion-dollar chain by 2006. The share of foreign chains (one European and one Hong Kong) in the top-seven chains is now 40 percent. However, because the sector is still fragmented, foreign chains do not have more than a 20 percent share, similar to the situation in China.

FDI combined with financing from either the competitive or leading local investors led to the rapid consolidation and multinationalization of the supermarket sectors in developing countries over the past decade, with the trend again correlated with the waves. The rapid consolidation of the sector in those

regions mirrors what is occurring in the United States and Europe. For example, in Latin America the top-five chains per country have 65 percent of the supermarket sector compared with 50 percent in the United States (although Kinsey [2004] reports that is rapidly increasing) and 72 percent in France.

3.3. Domestic Policies Concerning Retail

Domestic regulations of the commerce sector can either promote supermarket diffusion or hinder it. The overall body of regulations can push and pull both ways, with promotion or hindrance winning out in different phases of supermarket diffusion. Our perception is that the regulatory balance appears to favor supermarket diffusion in most developing countries today.

3.3.1. Modern Retail Diffusion Encouraged by Domestic Policies

Several sets of policies are promoting supermarkets and hindering traditional retail in developing countries today.

Developing countries have a tradition of establishing policies promoting the development of supermarkets. In the 1960s and 1970s in Latin America, Malaysia, and Hong Kong, among other countries, governments were keen to promote the tiny supermarket sectors in the name of food sector modernization. Promotion programs were based on the previously described perception of the traditional retail sector as weak and inefficient, a drag on increasing overall competitiveness and efficiency. Most of these promotion programs were artificial and not yet consonant with overall economic transformation nor fed by private sector investment; thus, few succeeded.

In the 1990s and 2000s, many governments directly supported supermarket development as part of modernization policies, although at the same time those governments had policies limiting or regulating supermarkets and supporting traditional retailers (Goldman et al. 1999). An example is tax exoneration to supermarkets setting up in municipalities in Russia (Dries and Reardon 2005) or South Korea (Lee and Reardon 2005). Some governments have even directly invested in modern retail explicitly to modernize the food distribution sector as well as generate revenue for government. For example, in China the semipublic chains operate as profit-oriented enterprises and compete with private firms. State-sponsored companies get easy access to credit, cheap real estate, and other benefits (Hu et al. 2004).

Many governments have imposed regulations on wetmarkets that directly or indirectly constrain their development. The usual reasons for regulating wetmarkets are that they are part of the informal sector and do not pay taxes, can cause street congestion, can be unhygienic, and sometimes are considered drags on modernization of the commerce sector. Many governments impose strict zoning limits and hygiene regulations on wetmarkets. China has gone a step further with a program of converting wetmarkets to supermarkets (as discussed in Section 5).

The general commercial regulations of some developing countries in effect encourage supermarkets and discourage traditional retail, despite the regulations being formally neutral with respect to retail scale. These commercial regulations generically regulate retailers and are applied to any formal sector business category; examples are laws related to commercial zoning, labor, and taxes). Likewise, competition (antitrust) laws are applied to retailers just as they would be applied to any business sector. These commercial regulations are typically geared to developing the formal business sector. However, by failing to target small retailers, it is likely that these commercial regulations discourage the informal sector in general through tax payment requirements and commercial zoning laws, and by making commercial development incentives (such as subsidies, technical assistance, and so on) accessible mainly to firms in the formal sector. Examples of this "intermediate" approach are found in Mexico and Brazil, two countries in which supermarkets took off in the 1990s and now dominate food retail. Both countries provide little or no protection or support to traditional retailers, and modern retailers are only limited by local regulations; thus, these countries have effectively created "liberalized" contexts for modern retail diffusion.

Example: Brazil. Brazil does not have national policies regulating the spread of supermarkets, or protecting or supporting traditional retailers. Retail regulation is decentralized to the municipal level, at which foreign and national chains "bargain" with local governments about the terms and conditions of entry. Sometimes the terms and conditions are difficult, sometimes quite easy. Of course, the more than 5,000 municipalities in Brazil have established widely varying regulations, making it difficult to generalize about what those regulations are and what effects they have on competition among hypermarkets, local small supermarkets, and traditional retailers. Moreover, the Brazilian government applies a special tax regulation to small enterprises that essentially reduces their tax burden while reducing the administrative cost to the government of collecting taxes. Additionally, the government provides some subsidies to small enterprises via SEBRAE (the Brazilian Department of Support for Small Enterprises). Supermarket chains in Brazil feel that this makes the tax and subsidy systems biased in favor of small retailers and somewhat levels the playing field. Finally, the Federal Competition Commission regulates competition among formal sector firms but not between formal and small, informal firms. In that sense, no "protection" regulations apply specifically to traditional retailers attempting to compete with supermarkets (large chains or small independents and small chains) who are free (depending only on municipal rules) to choose the locations and operation hours they desire (E. Farina and R. Nunes, pers. comm., January 2008).

Example: Mexico. Like Brazil, Mexico has no national regulations controlling the locations and hours of modern retailers or protecting small retailers. Instead, the states regulate these areas. Moreover, the Federal Competition Commission regulates competition among formal sector retailers but not between

formal (modern) and informal (traditional) retailers. When conflicts arise (e.g., when local retailers accuse incoming modern retailers of local zoning infractions), they are handled at the municipal or state level. Finally, local regulatory agencies impose significant pressure on informal retail; for example, over the past five years, street vendors and hawkers have been barred from the central districts of Mexico City and Morelia. Traditional retailers have not formed any significant organization to influence regulations, except for sporadic efforts based on particular events, such as a large retailer entering a particular zone in a city ((A. Martinez, pers. comm., January 2008).

3.3.2. Promotion Partially Counterbalanced by Regulations on Modern Retail

Developing countries also have a tradition of imposing policies controlling the development of supermarkets. However, the regulation and constraint on modern retail in developing countries today appears to be far less than was historically the case in, for example, the United States.

Governments in developing countries may limit to some degree the power of modern retailers by restricting the locations (through zoning regulations) and hours (and thus convenience for consumers) of supermarkets. These limitations may be imposed to protect traditional retailers or to level the playing field between domestic and foreign modern retailers. Historically, such regulations were common in western Europe and the United States. The regulations are also a response to traditional retailers' concern that modern retailers have advantages in competition that need to be counterbalanced by regulation. Hypermarkets are often associated in the popular view with foreign chains, low prices, and competition with small stores. Thailand and Malaysia have regulations targeting hypermarkets.

The intensity of the policies in these "strong regulator" countries has varied considerably over the past five years (the emergent-regulation period). For example, in Thailand, such regulation first arose in 2003, relaxed in 2004–2005, and reemerged in 2006. Malaysia also experienced fluctuation in its regulation of supermarkets, first seeing a rise and then a relaxation (*CIES Food Business Forum* 2006a, 2006b, 2006c). This mirrors a similar regulatory fluctuation in the United States, although there it was a slow up and down motion lasting 80 years, while in Southeast Asia it has been a wildly dipping and rising roller coaster over less than a decade.

The evidence is mixed as to the impacts of regulations on modern retail diffusion. The key reason is that modern retail chains are very flexible and malleable in terms of company structure and store format. For example, if a regulation is imposed on hypermarkets, a chain can easily continue expansion with small-format stores, as Carrefour and Tesco are doing in Thailand today. In the popular imagination, "modern retail" means "big box," but in fact a modern retail chain can be a chain of kiosks, convenience stores, neighborhood markets, supermarkets, hypermarkets, and even a mail order outlets. Moreover, regulations are often debated for months or even years before becoming effective, and chains usually

accelerate their expansion before the regulations are implemented. That rush of new stores often changes the "policy mood" in municipalities and provinces that receive new stores and watch suppliers sign up and consumers queue up.

3.4. Modernization of the Procurement Systems of Retailers

As retail competition soared in developing countries over the past decade, success has demanded reducing costs to penetrate the mass market and raising quality to hold onto and deepen the market among middle-class clientele. A crucial instrument of reducing costs and raising quality is modernization of procurement systems to achieve efficiency gains, economies of scale, and coordination cost reductions.

A caveat to this discussion is that although procurement system modernization is steadily marching forward, its progress has been sharply uneven. Modernization started much earlier for processed and semiprocessed foods than for fresh fruits and vegetables, and for the latter it has occurred at very different rates for different products. The process of modernization also varied across countries and regions, closely mirroring the waves of diffusion of supermarkets. Moreover, the leading chains (foreign and domestic) undertook modernization earlier and faster than did second- and third-tier chains.

The following subsections describe the four key trends in retail procurement system change.

3.4.1. Extension and Integration of the Procurement Catchment Area into National, Regional, and Global Networks

As the number of stores in a given supermarket chain grows, the chain typically shifts from a fragmented, per-store procurement system to a distribution center serving several stores in a given zone or district and eventually across the whole country. The catchment area of one or a group of distribution centers usually starts as the zone of a country (such as northeast China) and then broadens to several distribution centers representing a centralized system for procurement over all zones in a country (such as Soriana's five distribution centers in Mexico). This defragments, or integrates and centralizes, the procurement system over the country. Defragmentation is accompanied by decreased use of procurement officers and increased use of centralized warehouses. Additionally, increased levels of centralization may also occur in the procurement decision-making process and in the physical produce distribution processes.

Centralization increases the efficiency of procurement by reducing coordination and other transaction costs, although it could increase transportation costs by requiring extra movement of the actual products. China Resources Enterprise (2002), for example, notes that it is saving 40 percent in distribution costs by combining modern logistics with centralized distribution in its two large new distribution centers in southern China. Similar figures appear in the few available studies from other countries (e.g., Costa Rica and Brazil).

The next, and economically logical, step is regionalization (internationally). Setting up a regional system of distribution centers allows coordinated procurement over a set of countries. In a sense, this means intrafirm trade coordinated over several countries. A logical extension is insertion into global procurement networks. This trend would mirror the trend seen over the past several decades in world trade toward increasing intrafirm trade over countries (see Reardon et al. 2007 for an exploration of the trade effects among developing countries that the new retailer networks encourage).

3.4.2. Shift from Exclusive Reliance on Traditional Wholesale Sector to Use of Nontraditional, Specialized, and Dedicated Wholesalers and Logistics Firms

Nontraditional players specialize in a product category and are dedicated to the supermarket sector as a primary client. These specialized and dedicated wholesalers cut transaction, coordination, and search costs and enforce private standards and contracts with suppliers on behalf of the supermarkets. An example from Central America is Hortifruti (in the same holding company as the Costa Rica–based chain CSU, which became part of Wal-Mart in 2006). Hortifruti undertakes contract farming and spot-market purchases to source produce for the CSU stores in Costa Rica, Nicaragua, and Honduras, following the private standards of that chain (Berdegué et al. 2005).

Moreover, specialized and dedicated wholesalers are expanding their operations beyond their points of origin to follow the expansion of supermarket chains they supply; this foments market integration. Examples include (1) Hortifruti, which multinationalized along with CSU as the latter moved from its Costa Rica base into Nicaragua and Honduras; and (2) Putri Segar, a specialized and dedicated wholesaler working closely with Carrefour that has been expanding from its base in west Java into other parts of Indonesia following Carrefour (Natawidjaja et al. 2007).

Finally, retail chains increasingly outsource logistics and wholesale distribution functions, entering joint ventures with other firms or outsourcing to a company in the same holding company as the supermarket chain. An example is Wu-Mei of China, which announced in March 2002 that it will build a large distribution center to be operated jointly with Tibbett and Britten Logistics, a British global multinational firm (*CIES Food Business Forum* 2002). Ahold's distribution center for fruits and vegetables in Thailand is operated in partnership with TNT Logistics of the Netherlands (Boselie 2002). These are important cases of "follow sourcing," where a foreign logistics company or other supplier follows their retailer client into a developing country market (see Reardon et al. 2007).

3.4.3. Incipient Shift from Spot Market to Implicit Contracts or Preferred Supplier Lists

There is mounting evidence of chains and their specialized wholesalers (acting as "channel captains") entering into preferred-supplier relationships, informal contracts usually in the form of memos of understanding (verbal or written) with processors and farmers. Chains and their specialized wholesalers

tend to move from spot markets to preferred-supplier lists when the need for quality and consistency is high and when farmers or processors are associated or are individually large (thus lowering transaction costs). Examples of the use of preferred-supplier lists are the Ahold chain in Thailand (Boselie 2002), Big R in the Philippines and Tesco in Chiang Mai (Manalili 2005), processed mangoes for chains in the Philippines (Digal and Concepcion 2004), fresh cuts (cut-up vegetables and fruit sold in packs) from Xincheng for the Lianhua chain in Shanghai (Hu et al. 2004), and Metro for dairy products in Russia (Dries and Reardon 2005).

These contracts with retailers sometimes include direct or indirect assistance for farmers to make investments in human capital, management, input quality, and basic equipment. Evidence is emerging that for many small farms, these assistance programs are the only source of such inputs and assistance, especially when public systems have been dismantled or coverage is inadequate.

3.4.4. Rise of Private Standards and Private Enforcement of Public Standards

These standards pertain to the quality and safety of food products (Reardon et al. 2001). In general, the standards function to coordinate supply chains by standardizing product requirements across suppliers that may cover many regions or countries. Standards specify and harmonize the product and delivery attributes, thereby enhancing efficiency and lowering transaction costs. The private standards of a particular chain may also be designed to ensure (at a minimum) that the public standards are met in all the markets in which the retail chain operates.

4. IMPACTS OF THE RISE OF SUPERMARKETS ON THE OTHER SEGMENTS OF THE AGRIFOOD SYSTEM

4.1. Impacts Downstream: Competition with Traditional Retailers and Competition for Consumers

The mirror image of the spread of supermarkets is the decline of the traditional retail sector that results primarily from competition with modern retailers. Goldman et al. (1999) summarize five decades of literature on the traditional food retailing system:

Stores typically are small, are family operated, and employ marginal labor. Retailers are passive and weak. They use simple methods and technologies, and they lack financial, management, and marketing skills. Stores are cluttered, dirty, and disorganized…. Many modernization researchers concluded that traditional retailing suffers from major economic disadvantages (e.g., high costs, shrinkage, inefficiencies, lack of scale economies), provide low output levels to consumers (e.g., low product quality, limited variety, frequent stock-outs, high prices, unpleasant shopping environment), and lack the abilities (e.g., financial, managerial, entrepreneurial) needed to change and develop. (127)

However, as the research we summarize attests, the rates of decline are widely varied, and the persistence of traditional retail, mainly differentiated by product category, is evident. (Contrary to popular belief, including in the research community, the patterns in this variation are similar across regions of the world and are not specific to Asia.) The fastest decline in the traditional sector is seen among small general stores selling broad lines, processed foods, and dairy products, while fresh produce shops and wetmarkets hold out longer (for instance, in the United States they continued to be dominant for the first 40 years, or half the history, of supermarkets). Sometimes these holdouts linger for long periods, depending on how they are able to adapt and modernize. Their modernization efforts are often supported by public and private sector programs, as described in Section 5.

Example: Indonesia. A survey of the effects of supermarkets on wetmarkets was undertaken recently in Java (Suryadarma et al. 2007). Five traditional markets were chosen as the treatment group (near supermarkets), and two traditional markets were chosen as the control group (far from supermarkets). On average, traders in both treatment and control markets have experienced a decline in their business over the past three years. Respondents revealed that the main causes for the decline were the weakened purchasing power of their customers resulting from fuel price increases and the increased competition with street vendors who occupy the parking spaces and other areas surrounding the markets, even blocking the market entrance. The survey revealed that the third cause of the decline in business for traditional market traders was supermarkets. This was especially true for traders in the treatment group (near supermarkets).

The researchers found mixed statistical results for various performance indicators of traditional markets, such as profits, earnings, and employee numbers. Out of these performance indicators, supermarkets only statistically impacted traditional markets by the number of employees hired by the traditional traders. The data indicated that traditional traders were willing to hire more employees the further they were located from the supermarkets, and vice versa. Traditional traders were competing in "an almost perfect competition," and their strategies to increase profits included adding to the amount and variety of products sold and reducing expenses, such as the cost of hiring employees.

The results of the survey were confirmed by the qualitative analysis findings that supermarkets were not the main cause of the decline among traditional markets. Traders, market managers, and representatives of the association of traditional traders (APPSI) all stated that the main steps to ensure their survival are the improvement of traditional market infrastructures, organization of the street vendors, and the implementation of better market management practices. The traders explicitly stated their confidence that supermarkets would not drive them out of business if those conditions were met.

Despite evidence that Indonesian traders have gone out of business during the past three years, the reasons are more complex than the entry of supermarkets alone. Most business closures are associated with the internal market and personal problems. In addition, traders who mainly sell to nonhouseholds and have maintained a good relationship with their customers over a long period are more likely to stay in business. In their report, Suryadarma et al. (2007) cite several success stories of wetmarkets competing with supermarkets; these wetmarkets are clean and safe and have ample parking space and sufficient amenities. This proves that a competitive traditional market is able to successfully compete with and exist near supermarkets.

Example: Chile and Argentina. In urban Chile between 1991 and 1995, 15,777 small shops went out of business, mainly in Santiago, a city of 4 million. This represented a decline of 21–22 percent in small general food, meat, and fish shops; 25 percent in deli and meat shops and dairy product shops; and 17 percent in fruit and vegetable shops (Faiguenbaum et al. 2002). Gutman (1997) notes that in urban Argentina from 1984 to 1993, during the most intense period of takeoff of supermarkets, the number of small food shops declined from 209,000 to 145,000, meaning that roughly 64,000 shops went out of business. She estimated that during the 1990s, 4 of 10 neighborhood shops turned into self-service stores, another 4 survived but with drastic drops in sales, and 2 closed. Rodríguez et al. (2002) note that while general-line small shops folded quickly, those in specialized niches—in particular, bakeries, fresh fish and meat, and fruit and vegetable shops—disappeared less quickly. These experiences in Argentina and Chile are coincident with the takeoff phase of supermarkets; of course, there are other confounding factors affecting small stores, as noted in the Indonesian case.

Example: Hong Kong. In the 1970s, supermarkets outcompeted (based on price, quality, and variety) traditional outlets in the packaged- and processed-food markets. For example, supermarkets quickly displaced rice stores (after the 1974 deregulation of rice sales by supermarkets, which addressed pubic concern about the profiteering of the traditional rice stores; Ho 2005) and other general-line grocery stores. Between 1974 and 1985, the number of small grocery shops selling general provisions dropped by 30 percent. In 1986, the supermarkets' share of staple and dry foods (noodles, rice, oil, and packaged goods) was 68 percent, and by 1995 their share was 90 percent (Goldman et al. 1999; Ho 2005). By contrast, only 11 percent and 6 percent of vegetables and fruit, respectively, were bought in supermarkets in Hong Kong in 1995 (Goldman et al. 1999). Starting in 1996, the supermarket sector (then in a mature phase) began to challenge the wetmarkets. The sector saw a diversification into superstores with large fresh-food sections that mimicked wetmarkets, and so a "supermarket-cum-wetmarket" format emerged (Ho 2005). In 2000, the government changed the zoning laws to favor supermarkets, allowing supermarkets, not just hypermarkets, to operate in-store wetmarkets and to locate in public rental or subsidized government estate buildings (for lower-income consumers). As a result, many supermarkets in the poorer areas were converted to superstores. By 2004, supermarkets in Hong Kong had a 59 percent share in fruit retail and a 55 percent share in vegetables (Coca-Cola Retailing Research Council Asia 2005). Although that left a substantial share still in the hands of the wetmarkets, it meant that a substantial challenge to and displacement of wetmarkets occurred over a decade, which spurred the wetmarket modernization programs described in Section 5.

4.2. Impacts Upstream: Relations with Product Suppliers (Processors and Farmers)

The modernization of procurement systems by supermarkets (which traditional retailers generally do not undertake because they continue to source only from the spot wholesale market), combined with the demands of the formal sector such as formal registration and invoicing from suppliers, translates into increasingly demanding requirements from suppliers with respect to volumes, consistency, quality, costs, and commercial practices. These represent threshold investments and relation maintenance costs for supermarket suppliers.

Supermarkets tend to source from a combination of wholesale markets, specialized and dedicated wholesalers, and farmers and processors. Most supermarket sourcing is from processors (directly or indirectly) because roughly 65 percent of what supermarkets sell is processed and packaged, another 20 percent is semiprocessed (dairy and meat products), and only 10–15 percent is raw or fresh (mainly fresh produce). Thus, farmers are mainly affected by supermarkets' sourcing of processors and processors, which in turn imposes cost and quality demands on farmers.

Several patterns are emerging empirically (in recent studies) regarding the kinds of suppliers from which supermarkets source. First, supermarket chains tend to source from medium-sized and large suppliers when they are available; this typically means a tendency toward sourcing from larger meat and dairy producers and other processed food companies. Second, when possible, supermarket chains tend to source fresh products from medium-sized and large farmers; however, this is rarely possible in most developing countries, except for a few products (which vary by country) and other export sectors where medium-sized and large farms have developed in produce. Third, supermarket chains usually source from small farmers only indirectly, through wholesalers and processors. These small farmers tend to be in the upper stratum in terms of capital assets (organization, equipment, and training), infrastructure access, and size (Reardon and Timmer 2007). Fourth, when small farmers are bereft of the needed assets but the channel still relies on them, sometimes the proximate intermediary or even the retailer assists with training, credit, and so on (for an example from dairy farmers in Poland, see Dries and Swinnen 2004; for an example from produce farmers in Central America, see Berdegué et al. 2005).

Several summary points are important with respect to the impact of supermarkets on farmers, particularly those marketing fresh products. We summarize the key points of seven recent farm household surveys (drawing on Reardon and Berdegué 2007) comparing horticultural product producers participating in modern domestic market channels (in which supermarkets are key downstream actors) versus traditional market channels. The nine surveys were conducted in Guatemala (tomatoes), Indonesia (tomatoes and potatoes), and Nicaragua (tomatoes); Kenya (kale); Guatemala (lettuce); Mexico (guava and strawberries); and China (tomatoes and cucumbers). While the evidence is still limited and very recent, the papers summarized are the bulk of extant research on this issue and have surprisingly similar findings. The findings presented here focus on horticulture (about 10–15 percent of the sales of a typical supermarket) because in the case of other farm categories (dairy, grain, and so on), the farmers sell to processors who on-sell to retailers. Thus, the issue for those farmers becomes whether the medium-sized-to-large processors, from whom supermarkets usually source, exclude or include small farmers; that issue is beyond the scope of this paper.

First, in all regions, small farmers are not excluded from being supermarket sources on the basis of the size of their landholdings or land tenure, except when those factors affect the farmers' capacity to implement certain technologies that in turn have an impact on quality, productivity, costs, or the ability to plant or harvest at the necessary times during the year.

Second, farmers' other assets appear to play a much bigger role in their participation as sources than does land. In particular, those included have more education, more access to transport and roads, greater prior holdings of irrigation infrastructure, and other physical assets, depending on the product, such as wells, cold chains, greenhouses, and good-quality irrigation water (free of contaminants).

Third, in the rare instances when small farmers sell direct to the supermarket, they have a very good rural producers' organization. Most excluded farmers, such as most of the traditional tomato farmers in West Java (Natawidjaja et al. 2007), lack those assets.

Fourth, we find exceptions to the "exclusion of the asset poor" rule. The first occurs when procurement modernization is not yet significant, farm size is capped, and/or asset distribution is relatively even. In our set of eight studies, we found that set of circumstances for example in China (Wang et al. 2006) and in Indonesian potato sector (Natawidjaja et al. 2007b). The second exception is when nongovernmental organizations have assisted (i.e., implicitly or explicitly subsidized) the participation of the asset-poor small farmers (in fact by alleviating that asset poverty).

Finally, farmers in the supermarket channel tend to earn substantially more (10–200 percent) in net terms, so the payoff to making the "threshold investments" is substantial.

In sum, those who sell to the supermarkets tend (often, but not always) to be the asset elite among small farmers. However, in the early stages of supermarket penetration, the impact of excluding asset-poor small farmers should be assessed in the context of typically only 10–30 percent of all the farmers selling through modern channels. That number will continue to grow (from being nearly zero only a decade ago), thus increasing the market challenge for the asset poor.

Further, once the supermarket–supplier relation is established, several tensions tend to emerge over time based on the behavior of retailers and suppliers. On the one hand, suppliers complain about the supermarket chains we encountered in many developing countries: Supermarkets often pay with a substantial lag, unlike traditional wholesalers who pay "on the spot." Supermarkets impose a series of regular fees on suppliers, such as slotting allowances and promotion fees, as well as fees and discounts for special events such as store openings. Supermarkets require a range of postharvest services from suppliers (e.g., special packaging, product delivery). Supermarkets require suppliers to meet stringent quality and sometimes safety standards which can demand a high degree of asset specificity. Suppliers also occasionally accuse supermarkets of changing the standards when it suits them commercially. Supermarkets in developing countries usually use only implicit (unwritten) contractual relations (called listing) in most of the produce categories, although large companies occasionally enter into formal contracts with suppliers. In these implicit contracts and relations, suppliers complain about the scope for ambiguity that acts to transfer risk to the supplier.

On the other hand, supermarket chains in developing countries complain about their suppliers' practices. Chief among the complaints are the following: Suppliers often do not comply with contracts, selling to brokers who visit the farms at harvest and offer better prices or immediate payment or both; quality and volumes are inconsistent; and counterpart investment in supply chain logistics, such as cold

chains and vehicle and package design that can efficiently interface with the distribution system of the retailer, is lacking.

The tensions, charges, and countercharges between suppliers and supermarkets have cost the system. As competition among chains heats up, typically a contradiction occurs, with supermarket chains trying to cut costs in their supply chains to lower consumer prices, create a “war chest” for competition with other retailers, lengthen the delay in payment, and increase fees but at the same time expecting more from suppliers in terms of quality, packaging, and services. Suppliers begin to see less profitability in selling to the modern market channel, and though the set of buyers is shrinking (because of retail consolidation), suppliers are expected to make more investments. This can be considered a crisis point for both suppliers and retailers. Brom (2002) describes a situation in Argentina in which many suppliers began to go bankrupt, and supply chains to retailers began to fail. It is at that crisis point that governments and retail and supplier associations turn to regulations and codes of conflict to address the issues.

5. POLICIES AND STRATEGIES TO SEEK "COMPETITIVENESS WITH INCLUSIVENESS" IN AN ERA OF RAPID RETAIL TRANSFORMATION

Policymakers, civil society, and the private sector in developing countries have an interest in identifying policies and programs that can both address the challenges to retailers and grasp the opportunities for suppliers emerging from the trends discussed in Section 4. This section discusses policy and program options primarily suggested by the experiences of developing countries but also taking the experiences of developed countries into consideration.

The two basic sources of conflict between the supermarkets on one side and the traditional retailers and supermarket suppliers on the other are (1) inequality of power based on supermarkets' greater concentration and scale and greater access to technologies and commercial practices because of that scale; and (2) the practices and strategies through which supermarkets wield their power, magnifying their initial advantages through pricing, quality, location, payment, and contracting.

The conflicts have assumed various manifestations based on the perception of inequality of power among segments or subsegments of retail in developing countries. As noted in previous examples from Indonesia, the Philippines, and Thailand in the 1990s, significant conflict existed within the modern segment itself, with domestic supermarket chains lobbying against retail FDI liberalization in the late 1990s. Between the modern retail segment and the traditional retail segment, conflict and tension has emerged regardless of whether the modern retail is foreign or domestic, as in Indonesia today. Some countries, like Thailand, have experienced tension between foreign hypermarket chains and traditional retailers. Perceiving that foreign hypermarkets are the most extreme example of inequality of power between retail segments, the traditional retailers have focused their lobbying on them.

The basic source of conflict—unequal power or assets exploited by one group of actors to dominate another group—translate into a mission statement for policies and programs: to alter the power or the uses of power of one group either directly by limiting some action or providing some asset, or indirectly by seeking another objective. For example, when a government institutes hygiene regulations meant to help consumers, it also indirectly (as an intended or unintended action) limits or reduces wetmarkets.

Setting aside for a moment unintended consequences (usually related to indirect effects), it is important to note that it is definitely not a foregone conclusion that developing-country governments (and much less market actor collectives or individual actors) want a "pro-traditional" or "pro-small" retail and supply chain system. In fact, as previously discussed, many developing countries are rushing to embrace supermarkets and modern wholesale systems; well-known examples include China and Russia at present and South Korea a decade ago. The situation becomes more complex, however, when we consider indirect measures, like food-labeling or hygiene laws, that are not enacted to affect market structure but

end up making a massive impact. One example is the U.S. Food Law of 1908. Although its focus was promoting safe food for consumers, it resulted in putting many thousands of small processing firms and retailers out of business and quickly consolidating sectors like dairy processing and retail. Many U.S. cities saw a massive drop in the population of the dairy hawkers that were ubiquitous before the 1920s (Levenstein 1988).

Thus, we cannot assess policies and programs by looking only at those directly related to retail or supply chain relations. At any given moment, the total of forces pushing toward modernization or maintaining the traditional system can be ascertained only by "adding up" the measures at four levels, or axes: (1) macro-level policies that affect all businesses (without specifying "retailers" or other types of businesses) versus policies specific to retailers and their suppliers; (2) meso-level (industry or sector) public policies and programs; these include retail pricing regulations and programs to upgrade farms and firms that are specific to the retail–retail, retail–consumer, and retail–supplier relations; (3) meso-level private sector collective measures, such as codes of conduct and competitiveness programs for retailers or wholesalers; and (4) micro-level private sector actions (performed by large-scale private actors and thus often leading to quite important results), such as a cash-and-carry chain with a business measure of helping to upgrade the small shops that compose its main clientele. In turn, our analysis focuses on three categories of supply chain actors: retailers, wholesalers, and producers (processors and farmers).

5.1. Macropolicies to Improve Overall Competitiveness with Inclusiveness

Generic business practices and policies regarding contracts, business registration, competition, interstate commerce, labor and land market regulations, and the trade regime, among others, affect the development of formal sector businesses operating at every level (retail, wholesale, product-producers). Additionally, the overall FDI regulations previously discussed affect the ability of these businesses to create market relations, such as interstate sourcing networks formed by chains of retailers and wholesalers, or supply networks formed by processors. Lack of contract regulations and "red tape" in business registration can affect whether retailers contract directly with suppliers or work through traditional brokers, for example. Examples of "umbrella" regulations covering businesses in various sectors of the United States are the Federal Trade Commission Act of 1914, the Clayton Antitrust Act of 1914, and the Robinson-Patman Act (or Anti–Price Discrimination Act) of 1936. Another example is the competition commissions established in most large developing countries (e.g., Brazil, Indonesia, Mexico).

5.2. Public Policies and Programs to Upgrade Traditional Retail

Of the many good examples of programs designed to upgrade traditional retail, those presented here are particularly relevant for India. Taiwan, Singapore and Hong Kong, China, and the Philippines employ

similar approaches and have done so in historical sequence, with Taiwan first (in the 1970s and 1980s), Singapore and Hong Kong second (in the 1990s and 2000s), China third (in the 2000s), and the Philippines (beginning in 2004). These examples have three elements in common: (1) They allow supermarket development; (2) they accept the social and market role of wetmarkets and hawkers and small traditional shops but encourage them to locate in uncongested areas and improve their physical infrastructure, sedentarize them (for hygiene and tax payment) into fixed sites, and train the operators in business skills and food safety and hygiene; and (3) some countries (such as Hong Kong and China) experiment with privatizing wetmarket management.

The following examples deal mainly with municipal policies (with the exception of the Philippines, which has a national program), because they are typically used to regulate wetmarket and small-store competitiveness and upgrading programs internationally. Note that the Hong Kong and Singapore cases are relevant (because of city scale) as examples of "municipal programs"; indeed the two are similar to several first-tier Indian cities.

Example: Taiwan's Nanmen Wetmarket Modernization Program. In 1979, the Taipei city government modernized its 105-year-old Nanmen wetmarket and turned it into a clean "shopping emporium" with standardized signboards, refrigeration, and other amenities. In 1998, the national government launched a five-year program to upgrade traditional food and vegetable markets (and solve the problem of illegal markets) throughout Taiwan, using the Nanmen program as a model.

Example: Singapore's Hawker Centres Upgrading Program and SPRING Program to upgrade hawkers and small shops. In the 1970s the center of Singapore was experiencing massive congestion and dilapidation, and the streets were clogged by traditional retailers. Thus, in the 1970s and 1980s, the government instituted a major land use policy that provided incentives, mixed with zoning rules, for hawkers, small shops, and wetmarkets to move to the suburban areas and supermarkets to grow in the central areas. They provided cash grants for traditional retailers who were not profitable to transition to other employment (Ooi 1991).

Today the Singapore government views small shops and hawkers as integral parts—along with supermarkets and wetmarkets—of the Singapore food economy. The essence of the government's strategy is "cherish but upgrade and modernize." In 2001, the government launched its 10-year Hawker Centres Upgrading Program. By 2005, 71 hawker centers had been selected for upgrading: 35 had been upgraded and 36 were in progress. Temporary markets are built to maintain the hawkers while the original hawker areas are razed and rebuilt into areas with better comfort and ambience: new tables and chairs, wider passageways, drier and cleaner floors, improved ventilation, refurbished toilets, better lighting, and improved layouts. Consumers responded strongly to the upgrading.

The Singapore government also has a program called SPRING Singapore; the acronym stands for the Standards, Productivity, and Innovation Board, and the program is designed to promote modernization among clusters of small retail shops. The government sees the retail sector as a breeding ground for entrepreneurs that can extend into other business lines. However, most of Singapore's 17,000 retailers are tiny shops, operating on tiny margins and without capital to invest in marketing and management. They found the value added per worker was less than 30 percent of that of a worker in manufacturing because of rising costs, lack of training, lack of "differentiated strategies," and poor alignment of strategies among actors within retail clusters. The Singapore view is that poor retail reduces the competitiveness of nonretail businesses and of the overall economy.

In 1992, the Singapore government launched a program to upgrade small retailers by offering financial assistance and training programs and encouraging small retailers to form shop-owner associations (buying cooperatives) and to purchase products in bulk to lower costs. In March 2001, the government launched a 10-year strategic plan aimed at transforming the retail sector in Singapore. Called Retail 21 and managed by SPRING Singapore with a consultative group of retail association members, the program offers logistics and other support services considered part of a competitive cluster: product design, advertising, transportation (including home delivery), real estate, financial services, information technology, supply chain, suppliers, tourism, and manufacturing.. The program pursued three strategies: (1) improve operational efficiencies by forming collaborative business alliances among the key players in the value chain (e.g., better aligning retailers and suppliers); (2) foster differentiated strategies to move beyond traditional retailing and price competition toward product innovations and marketing; and (3) minimize rules and regulations to reduce business costs. To pursue these strategies, the government set up the Retail Academy of Singapore that focuses on encouraging retailers to be innovative, to raise their standards of professionalism, and to develop a cluster-development approach.

Despite having these programs in place, the Singapore government has not found upgrading small-to-medium-sized retail enterprises an easy task. The government took a further step in March 2007 when it opened the Singapore Institute of Retail Studies, which offers small retailers a large training and certification program to foster true strategic positioning and professionalism. In a speech at the official opening of one campus of the institute, Dr. Ng Eng Hen (2007), minister for manpower and second minister for defense, stated that Singapore is highly motivated to modernize and upgrade its smallest retailers because it wants to be competitive with the future New Delhi.

Example: Hong Kong's Wetmarket Modernization Program. Hong Kong's wetmarkets continue to be an important part of the fresh food retail system, but their share has trended down gradually over time, from nearly 100 percent of fresh food retail in the 1960s to around 50 percent by 2006. The policy of the government has been "retain but modernize," allowing supermarkets and

wetmarkets to compete freely, leading both to reduce costs and improve service to consumers, and prompting wetmarkets to improve their standards. Like Singapore, Hong Kong had a policy in the 1970s and 1980s of moving the ubiquitous hawkers off the streets and into covered wetmarkets (to relieve traffic congestion and raise health, and hygiene standards). The second part of that policy was to modernize the covered wetmarkets. Starting in the 1990s and continuing into the 2000s, the Hong Kong government has established policies to upgrade the physical infrastructure of the wetmarkets, outsource management of selected wetmarkets (in experimental fashion) to private companies, and offer training in food safety (Goldman et al. 1999; Ho 2005). Although the policies led to some improvement of infrastructure, the impact on sales was modest. Moreover, some upgrades, like air-conditioning (to compete with supermarkets) were costly, and vendors agreed to pay only the recurrent costs, not the capital costs. Thus, financing modernization became a policy issue by the mid-2000s (Ho 2005). The Consumer Council recommended that, rather than leaving the wetmarkets to merely flounder and collapse, the government should manage and facilitate change, a process that should involve reengineering the wetmarket sector and retraining the workforce. The Consumer Council's recommendations are similar to the approaches taken in Hong Kong, Singapore, and China in the past decade.

Example: China's Wetmarket Modernization Program. The Chinese government is taking four approaches to wetmarkets. The first two are similar to the general approaches taken by Taiwan, Singapore, and Hong Kong. The third and fourth approaches, which are in the experimental and rollout (or in some cases, rollback) stages, are unique to China.

1. **Zoning restrictions on wetmarket development in inner cities**. In 2002, the central government decreed that new wetmarkets could not be developed inside cities but had to be located in the periphery areas (similar mandates were made by the governments of Hong Kong and Singapore). Moreover, in the past five years, municipal governments in several large and medium-sized cities have banned "morning street wetmarkets" (*zao shi*) to reduce severe congestion.
2. **From outdoor wetmarkets to indoor clean markets**. Various cities in China have launched wetmarket-upgrading programs similar to those established over the past several decades in Taiwan, Singapore, and Hong Kong. For example, in Hangzhou, Zhejiang Province, the city started in 2006 to bulldoze or move the 54 informal (small) wetmarkets and to upgrade the 103 formal wetmarkets. A wide range of soft and hard infrastructure improvements were initiated better lighting and ventilation; fire-fighting equipment and security; clearly marked exits; paved ground and tiled walls; improved bathrooms; rest areas, information booths, weights and measures offices, and a pesticide residuals inspection office; a number and name on each stall and maps of the market; standardized meat and fish tables, tap water, electrical systems, and cold chambers; a garbage cleanup system; standard market signage; and separation of cooked and uncooked foods for hygiene.
3. **From markets to supermarkets.** Although Hong Kong has been experimenting with having private companies manage public wetmarkets, few countries have gone as far as China in experimenting with fully privatizing wetmarkets either by auctioning them off to supermarket chains or other agrifood companies to run, or by providing private managers to public markets. The experiment, under way since 2002 in several large cities, perceives the

modernization of food markets as a way to give a "modern face" to a city and attract domestic and foreign investment, to expand domestic supermarket chains into the fresh category to be more competitive, and to raise hygiene and municipal tax revenues (Hu et al. 2004). The program varies in its application. Sometimes it is similar to the Hong Kong model of having a private company manage an existing wetmarket. Sometimes it is more "complete," as it was in Hangzhou and Fuzhou in 2003, where the wetmarkets were sold to supermarket chains (in Hangzhou, to a national chain, and in Fuzhou, to a local chain) and turned into produce supermarkets.

4. **Rural supermarket or village market program.** The Ministry of Commerce launched a program for 2005–2008 to establish 250,000 rural "supermarkets," which are actually chains of small (about 100 square meters) dry-good stores in neighborhood store format. The objective is to reduce the prices of basic nonfood goods for farmers, encouraging them to begin spending more and thereby "unlocking" consumption spending.

Example: The Philippines' Wetmarket Modernization Program. In the past five years, the Philippines has innovated with two programs. In 2006, the Department of Agriculture started the Neighborhood Food Terminals program by opening 40 terminals in Metro Manila at which farmers can sell directly to consumers, thus raising margins to farmers and reducing prices to consumers. The terminals are only in the experimental phase and have not been systematically evaluated. However, farmers in the vegetable areas of northern Luzon told us that it is difficult to use the terminals because it requires significant time and assets (e.g., a truck). Likewise, consumers do not appear to be making substantial use of the terminals. In 2004, the Department of Agriculture started the Model Wetmarket National Competition. Each year, wetmarkets are judged on consumer protection, prices, and hygiene and infrastructure. The five winning wetmarkets win program funds. This appears to be an attractive approach and has generated competitive enthusiasm among wetmarkets (PIA 2006).

5.3. Wholesale Segment Modernization to Benefit Traditional Retailers

Small shops and wetmarket stall operators typically source food products from wholesale markets as well as alternatives offered by the private sector. These product sources are discussed in this section in terms of the various ways that traditional retailers can reduce their costs of products and transactions to be more competitive.

5.3.1. Wholesale Market Modernization to Support Traditional Retailer Competitiveness

Improvements in wholesale markets as well as other commercial infrastructure are important (1) to increase market alternatives to small farmers and make them more competitive; (2) to improve the efficiency of the main source of fresh products for traditional retailers and thus control costs for traditional retailers; (3) to help the traditional wholesale markets compete with the emerging specialized wholesalers used by supermarkets; and (4) to help the wholesale markets continue, for as long as possible, to be a viable and competitive sourcing base for supermarkets.

The need for upgrading the performance of wholesale markets was emphasized even before the "takeoff" of supermarkets, primarily to reduce food prices for urban consumers and to improve the markets that farmers faced. These points were made in the food markets literature in the 1960s and 1970s, such as Abbott (1967, 370), who called for "public provision of market information and advice, credit institutions, and local warehousing facilities, or by reducing barriers to the entry of new trading enterprises and fostering the growth of alternative marketing channels, as through cooperatives."

The call for investment in upgrading wholesale markets has been revived in the era of supermarkets by researchers like Reardon and Berdegué (2007). We consider this extremely important, because many supermarket chains and nearly all traditional retailers still source the majority of their produce from wholesale markets. Thus, in most cases, the wholesaler is still the interface between the farmer and the market.

Although it is beyond the scope of this paper to analyze wholesale market upgrading programs in themselves, it is germane here to acknowledge that several new and important wholesale market-upgrading programs engage modern retailers as partners. For example, the 200 Markets Upgrading Program launched in 2006 by the Ministry of Commerce in China targets the 100 leading wholesale markets and couples them with 100 leading food firms (including foreign firms like Metro) to act as "modernization anchors" in the wholesale market by improving the physical premises and the logistics of the wholesale markets to make them more efficient for the retail sector and more accessible to farmers.

5.3.2. Private Sector Alternatives to Public Wholesale Markets to Support Upgrading of Traditional Retailers

The private sector (wholesale and retail) uses several business models that potentially affect the competitiveness of traditional retailers.

Cash-and-carry chains are alternatives to wholesale markets for traditional retailers. These chains typically sell food and nonfood products at wholesale prices to small shops; independent supermarkets; and hotels, restaurants, and caterers. To be an attractive alternative to traditional suppliers and wholesale markets, the cash-and-carry chains must have one or more competitive advantages: (1) lower costs, achieved by buying in bulk from suppliers; (2) quality, attained through supply chain management and sorting/grading; (3) variety (in breadth and depth) from large stores and many stock-keeping units (SKUs) and (4) added services, such as assembling and delivering packs or sets of products to small stores, and training and advising small shops on product selection and merchandising to enable small shops to strategically position themselves.

One example of a cash and carry is the global chain Metro. In Poland, the Metro Cash and Carry has an Aro brand program (Aro is one of Metro's private labels). Metro and a small shop sign an agreement with a minimum of sales and SKU requirements. The shop gets a discount on promoted Aro

brand products and agrees to stock the brand. In return, the shop receives merchandising consultation and support (advice on assortment, merchandizing, equipment, and layout) from Metro small-retail advisors, outside decoration (signage), loyalty program discounts, Aro mailings, and various marketing tools. The shop gains visibility, quality standard branding, a mass marketing program, product price discounts, and special procurement deals with suppliers (Metro Group 2007). Similar operations are being run in India by ITC, Carrefour, and Wal-Mart (with Bharti).

A close relative of the cash-and-carry chain is the wholesale company with franchisees or a network of small shops as clients. For example, SPAR started in the Netherlands in 1932 and has become a global chain, with operations in China, Africa, and eastern Europe, among others. It functions essentially as a wholesaler/manufacturer (with private-label products) with franchisees (which can be member stores or member chains) in its network. In that sense, it is similar to the cooperative model except that the sourcing hub is the parent company and the retail units (of a variety of formats from small to large) are franchise units owned by franchisees, with broad similarities to the other approaches previously discussed in terms of support services to members.

Retail or consumer co-ops are alternatives for organizing sourcing either directly from suppliers or from wholesalers. In the United States and western Europe, this is a minor part of modern retail (e.g., co-ops have only 5 percent of retail in the United Kingdom), but co-ops have an important history in the formation of modern retail. An example is the Cooperative Group established in 1863 in the United Kingdom. Legislation enacted the previous year gave coops corporate status. The Co-operative Wholesale Society (CWS), established in 1863, became involved in tea plantations, insurance, manufacturing, and banking, as well as retail. In 1942, CWS opened its first self-service shop. By the 1950s, the golden days of cooperative retail, CWS had about 30 percent of UK retail. The cooperative retail functions as a cooperative of retail stores (of various formats) that source together (thus gaining economies of scale) from suppliers and own manufacturing facilities to produce private-label products. Starting in the 1970s, cooperative retail lost competitiveness large supermarket and hypermarket chains emerged and rapidly took over most of the co-ops' market share.

Self-managed procurement groups are variants on the theme of retail co-ops. This organizational approach is similar to the cooperative, but procurement groups tend to be more selective in product coverage, have fewer or no shared private labels, and lack shared manufacturing capacity. However, most groups include independent small stores, independent supermarkets, or chains that buy together to attain economies of scale. For example, in Mexico, three large domestic chains—Soriana, Gigante, and Comercial Mexicana—formed a procurement group called Sinergia in 2004 to better compete with their main rival, Wal-Mart/Mexico.

A close relative of the procurement group is the association of independent retailers or the supplier group with associated retailers. An example is the Independent Grocers Alliance (IGA) in the United States. A food wholesaler started the IGA in 1926 as a three-way network of (1) wholesalers; (2) manufacturers, vendors, and suppliers of equipment and grocery items, including some of the largest food manufacturers in the United State, such as Anheuser-Busch, Campbell Soup Company, Coca-Cola, Conagra Foods, Kraft Foods, Nabisco, Nestlé, and Unilever; and (3) independent retailers and small-to-medium-sized chains. (In 1986, small stores were no longer allowed to be members of the IGA.) The original intention was to help independent retailers source in bulk from large manufacturers and wholesalers; that provided a win-win solution for manufacturers and wholesalers who wanted viable alternatives to the strong bargaining power of the giant chains that were forming at that time (in particular, A&P). Retailers who were struggling to survive against the extremely rapid growth of A&P also benefited from the IGA.

5.4. Policies to Facilitate and Improve Supermarket–Farmer Relations

5.4.1. Regulation of Retail Procurement Practices and Retailer–Supplier Relations

Most developing countries undergoing rapid retail transformations do not have regulations for buyer–seller relations, such as the Perishable Agricultural Commodities Act (PACA) in the United States. The relatively sudden and rapid rise of supermarkets has tested the commercial law system and found it wanting. That has exacerbated the tensions between retailers and suppliers. However, a combination of legal-regulatory and self-regulatory approaches is emerging in the first- and second-wave countries, especially in Latin America. We predict that these approaches will diffuse to Asia in the coming years.

In both Argentina (in 2000–2001) and Mexico (in 2005), a crisis emerged in terms of relations between supermarkets and their suppliers, essentially because of the various tensions and conflicts discussed earlier in this paper. In Argentina, the Competition Commission (calling on the legal foundation comprising three laws: the Truth in Trading Act of 1983, the Consumer Protection Act of 1993, and the Competition Law of 1999) said that it would promulgate a national law to closely regulate supermarkets and their relations with suppliers—if the retail, wholesale, processing, and farming sectors did not formulate and self-implement a private code of commercial conduct. This is similar to the private sector code "encouraged" by the Competition Commission in the United Kingdom in 2002 (which later became mandatory). Retailers and suppliers in Argentina responded to this "potential stick" policy and in July 2001 signed the Code of Good Commercial Practices, the first of its kind in Latin America and probably the first in developing countries (Brom 2002). The code was strengthened by complementary public regulation. The promulgation of Decree 1/2002 in March 2002 limited the period for paying suppliers of perishable goods to 30 days (which in many cases was much faster than the previous payment periods).

This was similar to the payment period established by the PACA, a U.S. law passed in the 1930s in the face of similar emerging retailer–supplier conflicts.

The Code of Good Commercial Practices had four basic provisions: (1) compliance with contracts by both retailers and suppliers, (2) equal treatment among suppliers, (3) prompt payment, and (4) cooperation in logistics development. There is evidence that the conflict resolution mechanism accompanying the code has been effective (Brom 2006). Apart from the last provision, the private code is in essence similar to the public regulations in the United States, such as the PACA and its amendments, but formulated and implemented by the private sector (Reardon and Hopkins 2006). Brom (2006) argues that in many developing countries a private code may well be the most practical and useful approach in the short-to-medium run because it harnesses private sector interest, will, and resources and can be implemented when commercial laws and institutions are still in the development stage. Variants of the Argentine code proved attractive in Latin America, rapidly spreading to Colombia (signed in 2005), Costa Rica (under discussion), and Mexico (signed in June 2006).

5.4.2. Meso Programs to Upgrade Suppliers and Create an Enabling Environment

Governments have the option of providing market intelligence capital for suppliers at the same time they facilitate business links between suppliers and supermarkets. This includes (1) providing market information focused on detailed trends in the food industry and facilitating face-to-face meetings (bilateral and multilateral, business round tables, conventions) between retailers and suppliers; and (2) follow-up investments by the government to help suppliers meet the requirements of supermarket chains and thus enter that market.

For example, the government of Malaysia has the Federal Agricultural Marketing Authority (FAMA) under the Ministry of Agriculture and Agro-based Industry After six years in existence, FAMA covers about 8,000 farmers with 6,000 hectares. It facilitates links between producers and hypermarkets and invests in training for the contract farmers, technology and infrastructure support, logistics and collection centers, and perhaps most importantly, risk management and financial facilitation much like a factoring service. (Shamsudin and Selamat 2005) Under FAMA, farmers receive payments in 3 to 7 days, while FAMA receives its payment from the supermarkets in 60–90 days (S. Shetty, pers. comm.).

Governments also have the option of facilitating the building of organizational capital among suppliers. Supermarket chains usually do not work with individual small farmers, and if they do, they interact with associations or groups of farmers to cut transaction costs. Moreover, traditional cooperatives are usually not viable for these relationships because of free-rider problems. Governments thus need to think hard about the role of new-generation cooperatives and other farmer associations and how to design programs to assist them in new markets, such as supermarkets. In Chile, however, Berdegué (2001) found

that forming small-farmer organizations (for export and for modern markets locally) is "necessary but not sufficient." Groups and clusters are often needed to attain critical mass of volume and economies of agglomeration to enter a market; but to stay in the market and prosper, groups need a series of key management and organizational investments and a continuous and flexible upgrading and adaptation to the needs of specific clientele.

Another option available to governments is building standards capital. To match the public standards with the private standards of processors and supermarkets and thus induce a diffusion of practices that would meet those norms, governments have begun adapting public standards to private standards.

Governments can also build financial services access capital for suppliers. Reducing the market risk faced by retailers coupled with increasing access to financial capital (as working capital and for investments in equipment and other physical capital upgrades) are crucial final elements of competitiveness with inclusiveness for suppliers.

5.4.3. Micro (Retailer-Led) Programs to Source Directly from Farmers and Upgrade Suppliers

While supermarket chains often buy directly from companies making processed products (e.g., edible oils, flour, and biscuits) or semiprocessed products (e.g., dairy products), it is uncommon for retail chains to have programs to help upgrade those companies. Rather, retailers simply lay out the private standards and other transaction requirements to the processors.

By contrast, it is still relatively uncommon for supermarket chains in developing countries to buy fresh produce directly from farmers; when they do, it is either from a medium-sized-to-large agribusiness or from cooperatives of small-to-medium farmers (and only extremely seldom from individual small farmers). However, it is usually the cooperatives of small produce growers that most need help in upgrading skills and equipment to meet the demanding standards of modern markets. Although not yet common, cases are emerging of retailers setting up direct sourcing programs from co-ops of small farmers that include upgrading activities, in many cases supported by governments, donors, or nongovernmental organizations.

Example: Metro Cash and Carry in China. In 2007 Metro Cash and Carry initiated a project in collaboration with several levels of the Chinese government. The project combines direct sourcing from farmers around Hefei in Anhui Province (located a day's drive from Shanghai and an area that supplies various agricultural products to that municipality) and marketing the products through the Metro Cash and Carry stores (to consumers and food service and small food retailers) and eventually through the distribution platform Metro is planning to develop in a wholesale market in Shanghai. Metro's initiatives are linked to the 200 Markets Upgrading Program launched in 2006 by the Chinese Ministry of

Commerce The ministry seeks to upgrade wholesale markets by associating 100 dynamic anchor firms (food retailers, logistic firms, cooperatives, and so on) with 100 wholesale markets to upgrade operations and sow the seeds of best practices through business links and by example. The 200 Markets Upgrading Program also wants to improve the link between farmers and dynamic urban markets by improving farmers' access to wholesale markets. At the same time, the goal of the ministry and of Metro is to increase farmers' capacity to implement good practices for quality and food safety and to increase urban consumers' access to safe food that is traceable through origin labeling.

Here we focus on the Metro program of sourcing from farmers in Hefei. The program is designed to source fruits and vegetables, pork, poultry and eggs, and fish and other freshwater products. The supplying side is the area around Hefei in Anhui Province. Metro buys from half a dozen leading cooperatives and farming companies that are composed of many small producers. Several actors participate: (1) Metro has a cross-docking distribution center to receive products, providing product safety and quality monitoring; training and communication; local interface with third-party auditing and service providers (such as certified slaughterhouses), local governments, producer associations, and university partners; and, of course, the logistics and processing activities of collection and on-distribution to Shanghai. (2) The government of Hefei provides investment in logistics infrastructure as well as inspection and certification services (the latter through the food inspection division). This is supplemented by provincial and national government investments in local infrastructure. (3) Farmer associations or cooperatives bulk the product from member farmers and deliver to the cross-dock operation, and they monitor members for good practices in production and handling. (4) The Hefei Agricultural University supplements normal extension services by providing specialized training and applied research—for example, in packing and processing methods. (5) Third-party auditors monitor the operations for product quality and safety and environmental effects.

This innovative combination has several advantages for various actors. Metro gains a quality-assured and traceable sourcing operation that cuts several components of cost by shortening the supply chain. Metro also benefits from government investment in logistics on the supply side and from university extension to its own suppliers. Governments at various levels enlist the action of a powerful marketing agent (Metro) to create incentives for programs to improve the food supply chain; these programs form part of Metro's long-term objectives but need innovative measures to address certain issues such as traceability and food safety for which regulation and training alone are usually insufficient. The Agricultural University gains long-term capacity building in the province because they have high-end (quality differentiated) practicum and research/extension opportunities. The farmers gain because they can have fixed prices with stable client relations that diminish risk, and can increase their marketing of

quality-differentiated product, which appears to be limited in traditional market situations. They also gain from increased extension and infrastructural investment which the university and the government provide.

The receiving side is in Shanghai, arguably the fastest-growing urban food market in the world and a city where a rapidly growing middle class seeks quality food (and apparently is willing to pay for it) and where the government and consumers are increasingly concerned about food safety and so may be responsive to origin and safety labels. The Metro operation in Shanghai provides required market information (prices, volumes, packaging, and product types) and receives the product in its distribution center there, as well as at its planned platform at a wholesale market.

Because the Metro Cash and Carry program is new, its impacts have neither fully developed nor been evaluated. We have hypothesized benefits, but do not know what benefits (or costs) will arise when it is has been for some time under implementation. However, as an innovative program that combines numerous players in private–public partnerships and fits into the larger development plans of the Chinese government, it appears to hold promise and should be observed by governments and private sectors in China and elsewhere who want to promote market linkage opportunities for small farmers.

6. IMPLICATIONS FOR INDIA

The organized retail in food and grocery segment in India is growing fast, although the exact numbers on its growth differ widely (16–50 percent) depending on the source and definition being used.[4] The growth rates projected by Planet Retail for the next five years indicate that the growth in organized food retail is likely to be accelerating,[5] and it may turn out to be akin to the information technology revolution but so far has been well rooted in domestic demand and domestic capital.

The current and projected growth rates in organized food retail are quite high, albeit from a very small base. Organized retail in all commodities constitutes about 4 percent of total retail, while in food and grocery segment the ratio is less than 1 percent. Notwithstanding this small share, if these high growth rates continue, or accelerate further, it might not be long—say, by 2015—before the share of organized retail in food and grocery segment accounts for at least 15–20 percent; by then it would start having some noticeable impact not only on unorganized retail in food but all along the food supply chain. As the share of organized retail increases, the sector is likely to experience major consolidation, with large retailers and processors taking over smaller players or joining hands with other large retailers to exploit greater economies of scale. In 2007, Reliance took over Adani Retail in Gujarat; and Trinethra stores were bought by the retail segment of the AV Birla group under the banner More. Also, Mumbai-based Spinach retail stores took over Delhi's Sabka Bazaar and Home Store. Recently, media reported Bharti is likely to take over Big Apple, which started in 2005 and now has 65 stores covering an area of more than 100,000 square feet (Chakravarty and Kurian 2007).

Since the story is just unfolding in India, it would be useful to draw some lessons from the experience of other countries that are way ahead on this path and then manage this change to the best advantage of most of the stakeholders in the supply chain. There are several key stakeholders in the supply chain, if we look at it from "plate to plough" in a demand-driven, consumer-dominated transformation: the consumers, retailers, processors, wholesalers, commission agents, logistics people, and primary producers (farmers). Extending this supply chain brings in input dealers, bankers, insurance companies, and others that support the supply chain in numerous ways. As organized retail grows and occupies a larger space, almost all the stakeholders in the supply chain are likely to be affected, some less and some more, some favorably and some adversely. This happens in any major structural transformation.

[4] For example, Chapter 2 (Table 2.4) of the ICRIER report (Joseph et al. 2008) shows that the compound annual growth rate of organized retail in food and grocery was an estimated 16 percent during 2004–2007. The India Retail Report (Commerce and Industry Ministry, 2007, 74) states that the growth rate of organized food and grocery was 42 percent in 2006 over 2005. However, the Planet Retail website www.planetretail.net reports that the growth rate of the top-10 grocers was 50 percent annually during the period 2000–2006. This wide variation in growth estimates is the result of lack of any credible agency collecting this information in a systematic and comprehensive manner.

[5] The sales of the top-five grocery retailers, for example, are projected to grow from $1 billion in 2007 to $15 billion in 2012, a 15-fold increase in five years (Planet Retail website ; Gulati and Ganguly 2007).

Normally, stakeholders who experience gains quietly support the change, while those who lose try to either stop the change or adapt their own situation in such a way that they can minimize the losses. For the policymaker, this is often a complex and difficult situation. But then the art of successful policymaking is minimizing the negative impact and, if possible, compensating the losers, while maximizing the gains for majority of stakeholders and even taxing them marginally to generate resources to compensate the losers or assist them in acquiring other jobs or opening other businesses.

The following discussion concentrates primarily on three major stakeholders: the consumers, traditional retailers, and farmers. The reason for this focus is that the numbers of these three stakeholders in society are very large, and in a democratic society like India, these numbers exert influence through the ballot box. Thus, policymakers cannot ignore it while managing change.

However, before we look at the likely impact on these three major stakeholders, it might be worth looking at their basic structural characteristics and how they are likely to change.

6.1. Enhanced Welfare Gains for Consumers

On average in 2004, Indian consumers spent about 51 percent of their total expenditures on food; in rural areas, that figure was about 55 percent and in urban areas it was 42 percent according to the National Sample Survey (Planning Commission 2004). Although India has a large rising middle class, its income levels are much lower than those in developed countries. Most Indians are very price sensitive. Any pressure on prices, especially for food, gets the immediate attention of policymakers. For example, the onion crisis in the summer of 1998 paved the way for the exit of the ruling government at that time (Desai 1999). In 2007, inflation crossed the 6 percent mark, triggering a series of inflation-controlling policy changes spearheaded by food price controls. The lesson seems clear: any relief in food prices makes consumers happy. However, policymakers need to remember that policies to rein in inflation should not conflict with the interests of other major stakeholders in the economy, especially producers (farmers). If falling prices for food are achieved by making transportation, logistics, and procurement more efficient (e.g., by better planning), then both producers and consumers benefit. However, reducing consumer prices by suppressing prices for producers could lead to a conflict, and policymakers would have to make difficult policy choices.

The emergence of organized retail undoubtedly gives consumers a wider choice of goods, more convenience, and a better shopping environment, among other benefits. This is feasible because organized retail can take several formats, from small neighborhood stores in densely populated cities with high real estate prices to large air-conditioned malls in the periphery where real estate is cheaper. Organized retail can appear small but spread in all local markets, providing the convenience of a neighborhood *kirana* store but with procurement on a mass scale that keeps prices low and provides greater variety. This is

confirmed by the consumer survey in the ICRIER report (Joseph et al. 2008) and the experiences of countries like the United States, Chile, and Mexico. With a reasonably long history of organized retail, the United States has shown that many organized retailers have been able to hold retail prices down, especially for mass-consumption goods. Fishman (2006) shows that retailers like Wal-Mart have held the U.S. inflation rate down by at least 1 percentage point (normal inflation hovers around 2–4 percent). The success of such retailers to hold the price line comes largely from their efficient national and global sourcing and scale economies. In India, given a very large price-sensitive population, holding the price line for a large mass of consumers could be a great boon to consumer welfare.

However, that boon is not likely to happen overnight. Organized retailers tend to start off from first-tier cities with high purchasing power and then go to second- and third-tier cities with more price-sensitive populations. Several chains in India have started in cities like Hyderabad and Bangalore, which are prospering from the information technology boom, to the metropolitan cities of Delhi, Mumbai, Chennai, and Kolkata, and then very quickly moving to smaller cities like Jaipur and Chandigarh. Some chains have announced plans to start business hubs in rural areas. DSCL's Haryali Kisan Bazaars, Mahindra and Mahindra's Shubh Labh Stores, Tata/Rallis's Kisan Kendras, Escort's rural stores, and ITC-led Choupal Sagars are similar business hubs that provide value-added services like credit services, soil-testing facilities, education services, and agri-input supply to village farmers. In many countries, it takes decades for retail to extend into rural areas. In India, however, it appears that organized retailers are moving very fast in all cities and in all product segments (except meat and meat products). The expected benefits of that expansion are lower consumer prices for the same quality, wider variety, and a better shopping experience. These benefits should soon percolate to the mass of Indian consumers, assuming that organized retailers have free access to global- and pan-Indian sourcing directly through producers, processors, and specialized agents.

Another interesting point to note in this connection is that several surveys such as the Indonesian consumer study noted above on consumer behavior with respect to modern retailing show that consumers prefer organized retailers for their better hygienic environment, indicating a concern for food safety. Although it is difficult to implement any food safety standards in the traditional retailing environment, modern organized retailers could be thought of as an entry point to ensure food safety, not only at the retail end but also all along the supply chain. Large retailers could be encouraged to guard their supply lines and provide extension and support to ensure traceability in production and that food moves from farm to plate in a hygienic environment. This would be an additional gain to consumers, enhancing their welfare.

Almost all the convenience and neighborhood stores launched by modern retailers cater not to high-end consumers primarily but to middle- and lower-income groups. These consumers are attracted to

low, discounted price offers. The "Everyday low prices" and "Saving is my right" slogans of the Subhiksha chain have been instrumental in wooing customers and thus escalating the growth of daily footfalls. In 2007, Safal, the largest organized retail network of fruits and vegetables in India under Mother Dairy, reduced the prices of 13 selected winter vegetables to Rs 5 per kilogram. That price was lower than the prices offered by Reliance Fresh for many of the items and 50 percent cheaper than those offered by local vendors (Chakravarty 2007). The underlying idea was to give better prices to both farmers and consumers and reduce the gap between the two prices. This shows that the entry of more players will induce sufficient competition and price wars that will eventually help consumers at the front end and possibly farmers at the backend.

6.2. Upgraded and Co-Opted *Kirana* Stores and Hawkers

What about the *kirana* stores? The political debate in India today is hung up precisely on this point. Traditional retailers (*kirana* stores, street hawkers, and wetmarket stall operators) occupy an overwhelmingly large space in Indian food retail; almost 99 percent of food and grocery being sold in this country is through traditional retailers. Therefore, what happens to their livelihood as modern retail expands is a legitimate concern that every policymaker must recognize.

Experience in China and Indonesia shows that traditional and modern retail can coexist and grow, albeit at different rates, for many years, usually decades. While the *kirana* stores may be growing at about 2–5 percent or so, organized retail may be growing at 20–40 percent plus. In Indonesia, even after several years of the emergence of supermarkets, 90 percent of fresh food and 70 percent of all food is still controlled by traditional retailers. In China, the overall story is not very different, although supermarkets have moved faster into cities. Organized retail starts capturing an increasing share of the total retail in food and grocery, although in absolute terms both organized and traditional retail may be growing. However, structural changes in retail will surely start affecting large numbers of small retailers at some stage, be it after one or two decades, especially when the overall share of organized retail in food reaches about 25–30 percent. It may be such that the *kirana* traders operating at the periphery of the organized sector are the first ones to bear the brunt of its rapid expansion. These traders might lose their businesses to the organized sector relatively early, while the small and marginal traders farther away from the supermarkets continue to survive and flourish. India is likely to reach this stage in the next 10 years or so, provided the growth rates in organized retail remain as they are today or even accelerate under a more benign policy environment. Thus, India has a lead time in which to innovate for greater inclusiveness and train the small players to be a part of the retail revolution.

India can also learn from neighboring countries of Southeast Asia in this regard. As discussed in Section 5, Singapore, Taiwan, and Hong Kong had programs to upgrade traditional retailers to compete

with organized retailers, and those who could not be brought up to that level were given grants to find new jobs.

India has several options with which it can experiment. It is important to remember that organized retail is not just about big-box malls but is also about neighborhood stores (as shown by Subhiksha and Reliance) and even pushcarts. Many dairy and ice cream companies (e.g., Mother Dairy, HLL-owned Kwality Walls, Vadilall, etc.) are organizing pushcarts, and ITC has been considering using pushcarts organized through a nongovernmental organization or pushcart vendor association that can organize them and infuse some capital through microfinancing. In early 2007, ITC went ahead to launch as many as 300 pushcarts in Hyderabad and Secunderabad in Andhra Pradesh and were in talks with the Municipal Corporation of Hyderabad (*Business Line* 2007). This could help small roadside vendors develop a brand image and charge better prices for quality products. Another retail format that has gained popularity are exclusive booths and dairy parlors. For instance, Mother Dairy conducts its retail sales of milk and milk products through exclusive milk booths. Amul, the retail brand of GCMMF, has already launched about 200 outlets, mostly in Gujarat, selling all products under the brand GCMMF, including milk and ice cream. It proposed to expand the pilot project and set up 10,000 outlets across the country (Bose 2005).

Organized retailers can co-opt several *kirana* stores and hawkers drawn from the pool of traditional retailers; upgrade them with adequate infusions of capital, design, and training to enable them to better meet the demands of customers; and organize them under their respective banners through franchises, partnerships, or even employees. That is being done in Japan, where big retailers are co-opting convenience stores and upgrading them under their franchise models. In the fast-food industry, McDonald's now runs more than 30,000 restaurants worldwide (although the company has not yet offered franchises in India). In India, Nirula's followed a similar pattern, though on a much smaller scale. The franchise model can also be successful in organized retail, with some outlets directly under company ownership and others under franchise. This can make the chain competitive as well as inclusive. In India, the government as well as industry associations like the Federation of Indian Chambers of Commerce and Industry and the Confederation of Indian Industry are confronting the challenge of incorporating traditional retailers in the modern retail movement. Even civil society could join this revolution to ensure that it benefits most stakeholders in the economy. This would require not only innovative ideas but also significant resources. Interestingly, as the share of organized retail grows, the Indian government is likely to realize a major gain in terms of tax revenues, because it would be much easier to collect sales taxes from organized retailers than from traditional retailers. Tax revenues can be ploughed back into the system to upgrade traditional retailers and improve the wholesale wetmarkets, as China is doing under the 2006-launched 200 Markets Upgrading Program.

6.3. Gains for Farmers

The experiences of other countries with longer histories of organized retail reveal that processed food generally occupies the largest share of retail (roughly 65 percent), followed by semiprocessed food (about 20 percent) and fresh food (about 15 percent). Although direct links between organized retailers and farmers are possible only for fresh food, many farmers are likely to gain from links to processors, because processors work closely with modern retailers. A study commissioned by the World Bank reveals that the export noncompetitiveness of India's horticulture produce is a result of its weak supply chain (Mattoo et al. 2007). The study shows that the average price that the farmer receives for a typical horticulture product is only 12–15 percent of the price the consumer pays at a retail outlet. Over time, processors and retailers will become interdependent and even compete for their margins. However, processors will be the first to absorb the consumer preferences emanating from organized retailers, and those preferences need to be communicated to the primary producers (farmers). It would therefore be interesting to see how links emerge between processors and farmers for processed food, and between retailers and farmers for fresh food, through several institutional frameworks ranging from cooperatives to contract farming to corporate farming. Each link will have a different impact on farmers. Unlike in the past, when most of the firms entering retail restricted themselves to marketing contracts (direct buying and selling at a contracted price), the recent trend is to forge both forward and backward links with the farmers. In India, private retailers and processors have linked with farmers directly. One notable example is Nestle, a major multinational operating in the dairy sector that started its operations in 1961 with just 180 farmers and by 2006 had linked with more than 98,000 farmers (Nestle India Limited 2006). India has a history of dairy cooperatives tying up with a large number of small and marginal farmers and thereby linking farmers with the markets. These trends are emerging in contract farming arrangements in fresh fruits and vegetables and in the poultry sector.

Understanding how organized retail can affect production on the farm requires imagining the process from plate to plough, or from retail to tail (farming). In the emerging Indian economy, consumers will be the focus as supply bottlenecks are removed and competition builds up in each sector. Organized retailers are the first to interface with consumers buying in the organized channels, and they can effectively communicate consumers' preferences back to the producers (processors and farmers) in terms of quantity, quality (including food safety), and other specific traits of various commodities. By contrast, traditional retail, working facelessly through the wholesale market, is not in direct communication and interface with the farmers in the fresh domain or with the processors in the processed domain. This market information itself is critical for producers to mitigate their market risk and encourage investments. Moreover, quality-differentiating investments are not rewarded without an organized retail end.

To a certain extent, the gains to the farmers are weighed in terms of the profits they earn. Most IFPRI studies in India confirm that contract farmers earn higher profits than noncontract farmers, and this is primarily achieved by lowering marketing and transaction costs and, in some cases, offering better prices. An IFPRI study of Mother Dairy, Nestle, and Venkateshwara Hatcheries showed that contracting is beneficial because it helps farmers cut the cost of cultivation and earn higher profits compared with noncontract farmers (Birthal et al. 2006). The summary results from the study show that the net profit for the contract dairy farmers was more than double that of noncontract farmers, 78 percent higher for vegetable farmers, and 13 percent higher for poultry farmers. Production costs for contract farmers were less than those for noncontract farmers by approximately 21 percent for milk and 21 percent for vegetables. This can be attributed to the lower share of transaction and marketing costs. Another IFPRI study of dairy cooperatives shows that contract farmers earn higher profits compared with noncontract farmers (Gupta et al. 2006). In the case of Milkfed, contract farmers earned 33 percent higher net profits per ton of milk sold than did non-Milkfed farmers. Similarly, an IFPRI study of Mahagrapes showed that the annual profits earned per acre by the contract growers were nearly 38 percent higher than those of the noncontract growers (Bakshi et al. 2006). Because Mahagrapes caters to global markets, the price farmers received was almost three times higher than what they could have gotten in the local markets. The farmer members also received better-quality and cheaper inputs and extension services.

This process of backward integration can be strengthened and expedited if retailers or their specialized procurement agencies not only connect with producers (farmer organizations and processing companies) for their output but also help them, especially farmers, by providing critical inputs, such as technical expertise, extension, finance, and insurance, which are scarce or nonexistent in the public support systems accessed by most farmers. Given the scale on which organized retailers operate, they can bring in banking, insurance, and other services through specialized agencies. In Section 5, we presented several examples of this being done in many countries encouraged by their respective governments through better policy environments and more resources pumped in from the government kitty. Access to government funds would release credit constraints and also cover production risks as farmers move from low to high value agriculture. A surge in access to inputs would empower farmers to modernize and become more competitive both in national and international markets. Supplying to supermarkets can thus be a springboard for exports even by small-to-medium-sized farmers. China, Mexico, and many other countries are already doing this and provide India with valuable examples from with to learn.

Given the size of the demand among organized retailers, or among processors supplying to organized retailers, it is very difficult for farmers, especially those small holdings, to enter into agreements or contracts with retailers or processors. By clustering in groups of viable size, farmers can

match their supplies with the type and size of demand among organized retailers and large processors. But who can handle this organizational challenge?

In many countries, they key to meeting the challenge has been government support (see Section 5). One example from India is Mother Dairy in the 1970s. Although the chain was under a sort of cooperative network, duly supported by the National Dairy Development Board (NDDB) in terms of "cheap" capital and preferential allocation of land for its booths in Delhi, the key to Mother Dairy's success was that it rolled out the front end (neighborhood milk booths) in Delhi, Bangalore, and other cities and formed several cooperatives of producers, thereby linking the two through processing units. The processing units procured milk from cooperatives of farmers from remote areas, chilled and homogenized the milk, and by next day put it in the booths all over Delhi and other cities. This helped farmers by giving them an assured market (while the traditional market was risky and fluctuating) and induced more investments in the milk sector. Today India is the largest producer of milk, in part because of the productivity increases resulting from the NDDB scheme. However, much potential is yet to be realized because less than 20 percent of that productivity passes through the organized sector.

Similar things can happen under private ownership of retail and for various commodity chains (e.g., tomatoes, mangoes, and poultry). This has happened in several developing countries, including Chile, Brazil, China, and Indonesia. The backward integration of large retailers can take several forms: directly through farmers' organizations, through "lead" farmers, through specialized agencies, or through processors. However, the front end of organized retail must be big enough to necessitate large procurements and thus able to pay for the price premiums that reward consistency and quality differentiation. Once organized retail reaches a critical level of about 20–30 percent of total retail, its impact on modernizing the wholesale markets and logistics and on providing necessary inputs to farmers would become visible.

Thus, overall, it appears that society as a whole is likely to gain from the emerging structural transformation in retail trade. The gains will accrue early to consumers and a little later to farmers. However, to ensure that traditional retailers do not become losers in this revolution, innovation is needed to co-opt those who can be competitive and help others to make a transition to other jobs, as several Southeast and East Asian countries have done (see Section 5 for details). This innovation will help modernize the entire agricultural system, promote its efficiency, and make it more competitive for growth and income augmentation all along the value chain. The time for such innovation in India is now, with consumer and investor confidence high and foreign exchange funds sufficient to modernize its economy within a short period.

Each country has done this in its own way. Section 5 presents examples from Singapore, Taiwan, China, and other countries that have tried to attain competitiveness with inclusiveness. India will have to find its own version of successful innovation in retail trade.

As it stands today, the policy environment is not very conducive to the promotion of organized retailing and processing led by private players in India. The agri-retail venture Reliance Fresh, led by Reliance, suffered a major setback in Uttar Pradesh when the government asked it to pull out of the state in August 2007. Reliance was thus forced to rethink major investment plans and expansion of retail stores in the state. However, according to recent media reports, the Uttar Pradesh government has turned around and expressed its willingness to allow private retailers in the state. The government is keen to ensure that these agribusiness ventures create employment opportunities and also take care of the people displaced in the process (*Financial Express* 2007). Reliance, which had initially earmarked Rs 250 billion (more than US$6 billion) for its retail venture, has slowed down its pace in states like West Bengal to avoid a similar backlash. Apprehensions about large retailers displacing small retailers have resulted in farmer's coming together to establish farmers' malls. According to media reports, farmers in Pune are planning to take on big retailers and sell their produce directly to the consumers (Jadhav 2008). It will be interesting to observe how the government responds to these initiatives and helps organized retail spread its roots.

Organized retail is in its infancy in India but developing fast. The next 5 to 10 years are critical for its scaling up to have a visible impact on the backend operations of retailers. Government and business need to work together to ensure that this opportunity is not lost but is used in a manner that benefits most stakeholders in the chain from retail to tail. This can be done when the government establishes and follows policies for the continued growth of modern retail, and uses tax revenues collected from organized retailers to build infrastructure in commodity chains that helps farmers, wholesalers, and traditional retailers, as well as the procurement activities of modern retail itself. Each commodity chain is unique and needs careful assessment by both business and government. The transition to organized retail can be made more inclusive by bringing farmers and traditional retailers into the mainstream of this structural change, without sacrificing the efficiency of the value chains.

The failure to achieve this transition, however, will keep the value chains trapped in low levels of efficiency. They will continue to give lower prices to farmers and charge higher prices to consumers, not reward quality, not meet food safety standards, and so on. The only winners in such a system may be a handful of commission agents. However, as India liberalizes its trade, domestic unorganized value chains face global competition and will not be able to sustain their existence for long in the face of it. The total collapse of numerous value chains would create much greater pains than would the gradual transition to modernized and efficient retail chains. For example, when India introduced computers in banks, railways, and other businesses during the mid-1980s, employees went on strike for days to stop it, fearing

computers would lead to massive unemployment. Twenty years later, one can only smile at the naiveté of those opposing computerization; in 2006–2007, export earnings from software and information technology alone exceeded US$30 billion (Gulati 2007). Organized retail is likely to have a similar experience.

REFERENCES

Abbott, J.C. (1967). The Development of Marketing Institutions. In H.M. Southworth and B.F. Johnston (eds.) *Agricultural Development and Economic Growth* (pp. 364-399). Ithaca: Cornell University Press.

ACNielsen. 2007. *Survey of consumers' shopping behaviour and perceptions toward modern and traditional trade channels in Indonesia*. Report to the World Bank, Jakarta, Indonesia.

Bakshi, K., D. Roy, and A. Thorat. 2006. Small they may be and Indian farmers they are but export they can: The case of mahagrapes farmers in India. In *From plate to plough: Agricultural diversification and its implications for the smallholders in India*. Submitted to Ford Foundation, New Delhi, by International Food Policy Research Institute, Washington, DC.

Berdegué, J.A. 2001. *Cooperating to compete: Peasant associative business firms in Chile*. Doctoral Dissertation No. 3118, Wageningen University and Research Centre, Department of Social Sciences, Wageningen, the Netherlands.

Berdegué, J.A., F. Balsevich, L. Flores, and T. Reardon. 2005. Central American supermarkets' private standards of quality and safety in procurement of fresh fruits and vegetables. *Food Policy* 30(3): 254–269.

Birthal, P.S., P.K. Joshi, and A. Gulati. 2006. Vertical coordination in high value commodities. In *From plate to plough: Agricultural diversification and its implications for the smallholders in India*. Submitted to Ford Foundation, New Delhi, by International Food Policy Research Institute, Washington DC.

Bose, P.R. 2005. Amul mulls setting up 10,000 parlours: May sell fresh, frozen vegetables. *Business Line Internet Edition.* http://www.thehindubusinessline.com/2005/06/22/stories/2005062201480900.htm 21 (accessed February 4, 2008).

Boselie, D. 2002. Business case description: TOPS supply chain project, Thailand. KLICT International Agri Supply Chain Development Program, Agrichain Competence Center, Den Bosch.

Brom, J.F. 2002. Experiencia Argentina: Relación entre los proveedores y los Supermercados. Speech at the 7th Biennial Congress of the Costa Rican Food Industry Chamber of Commerce, Costa Rica.

———. 2006. Autoregulación privada vs. regulación estatal, experiencia Argentina e Internacional: Los códigos de buenas prácticas como metodología efectiva para resolver controversias y prevenir conflictos originados en asimetrías de poder. Universidad de Belgrano, Argentina.

*Business Line.*2007. ITC to take retail biz to doorsteps of customers. February 7.

Cabochan, C.V. 2005. *Philippines: Modern retail trade and policy implications*. Paper presented at the annual meeting of the Pacific Economic Cooperation Council, Pacific Food System Outlook 2005–2006, Kunming, China.

Chakravarty, C. 2007. A hit? Safal's sarson sag: Retailer cuts prices of 13 vegetables to Rs 5/kg. *Economic Times*. November 20.

Chakravarty, C., and B. Kurian. 2007. Bharti eyes Big Apple as starter for retail feast. *Economic Times*. December 24.

China Resources Enterprise. 2002. Retailing strategies and execution plan, July 2002. http://www.cre.com.hk/report.asp?SYear=2002&Lang=e (accessed Feb. 13, 2008)

CIES Food Business Forum. 2002. Wu-mart.CIES News of the Day, Paris.

———. 2006a. Foreign retailers pursue small-format investment in Thailand. CIES Food Business News. June.

———. 2006b. Freeze on hypermarket licenses in Malaysia may be lifted," CIES News of the Day, Paris. July 17.

———. 2006c. Retailers faced with prison/fines in Thailand. CIES News of the Day, Paris. October 4.

Coca-Cola Retailing Research Council Asia. 2005. The fresh imperative: Creating excellence in Asian fresh food retailing. Study by Accenture, commissioned by Coca-Cola Retailing Research Council.

Commerce and Industry Ministry. 2007. India Retail Report 2007. Delhi: Commerce and Industry Ministry, January.

Desai, A. 1999. *The price of onions*. New Delhi: Penguin Books.

Digal, L.N., and S.B. Concepcion. 2004. The case of the Philippines: Regoverning markets; Securing small producer participation in restructured national and regional agri-food systems. http://www.regoverningmarkets.org/en/resources/china/china_country_report_2004/ (accessed February 4, 2008).

Dries, L., and T. Reardon. 2005. *Central and Eastern Europe: Impact of food retail investments on the food chain*. Report Series No. 6, FAO Investment Center, EBRD Cooperation Program, London.

Dries, L., and J. Swinnen. 2004. Foreign direct investment, vertical integration and local suppliers: Evidence from the Polish dairy sector. *World Development* 32(9): 1525–1544.

Faiguenbaum, S., J.A. Berdegué, and T. Reardon. 2002. The rapid rise of supermarkets in Chile: Effects on dairy, vegetable, and beef chains. *Development Policy Review* 20(4): 459–471.

Financial Express. 2007. Mayawati: Retail to open to RIL. December 25.

Fishman, C. 2006. *The Wal-mart Effect*. Penguin.

Goldman, A. 1974. Outreach of consumers and the modernization of urban food retailing in developing countries. *Journal of Marketing* 38(4): 8–16.

Goldman, A., R. Krider, and S. Ramaswami. 1999. The persistent competitive advantage of traditional food retailers in Asia: Wet markets' continued dominance in Hong Kong. *Journal of Macromarketing* 19(2): 126–139.

Goldman, A., and W. Vanhonacker. 2006. *The food retail system in China: Strategic dilemmas and lessons for retail internationalization/modernization*. Paper presented at the Globalizing Retail Conference, University of Surrey, Guildford, UK.

Gulati, A. 2007. Organized retail must be competitive and inclusive. *Economic Times*. September 28.

Gulati, A. and K. Kanguly. 2007. "Competition among retail giants good," Economic Times of India, 3 August http://economictimes.indiatimes.com/Opinion/Guest_Writer/Competition_among_retail_giants_good/articleshow/2251975.cms

Gupta, K., D. Roy, and H. Vivek. 2006. Do small farmers gain from participation in producers' organizations? The case of Milkfed Dairy Cooperative in Indian Punjab. In *From plate to plough: Agricultural diversification and its implications for the smallholders in India*. Submitted to Ford Foundation, New Delhi, by International Food Policy Research Institute, Washington DC.

Gutman, G. 1997. Transformaciones recientes en la distribución de alimentos en Argentina, Buenos Aires: Secretaría de Agricultura, Ganadería, Pesca y Alimentación (SAGPyA) and Instituto Interamericano de Cooperación Agrícola (IICA).

Hen, N.E. 2007. Speech at the Official Opening of the Singapore Institute of Retail Studies, March 20, Toa Payoh HDB Hub. http://www.mom.gov.sg/publish/momportal/en/press_room/mom_speeches/2007/20070320-speech_by0.html.

Ho, S-C. 2005. Evolution versus tradition in marketing systems: The Hong Kong food-retailing experience. *Journal of Public Policy and Marketing* 24(1): 90–99.

Hu, D., T. Reardon, S. Rozelle, P. Timmer, and H. Wang. 2004. The emergence of supermarkets with Chinese characteristics: Challenges and opportunities for China's agricultural development. *Development Policy Review* 22(4): 557–586.

Joseph, M., M. Gupta, N. Soundarajan, and S. Sahu. 2008. Impact of Organized Retailing on the Unorganized Sector. Delhi: ICRIER.

Kinsey, J. 2004. *Supply chain innovations in the U.S. retail sector*. Presentation at the International Conference on Supermarkets and Agricultural Development in China: Opportunities and Challenges, Shanghai.

Jadhav, R. 2008. "Maharashtra government not averse to idea of direct marketing". *Times of India*. January 1.TNN

Lee, J-H., and T. Reardon. 2005. *Forward integration of an agricultural cooperative into the supermarket sector: The case of Hanaro Club in Korea*. Joint Working Paper, Department of Industrial Economics, Chung-Ang University, Seoul, Korea, and Department of Agricultural Economics, Michigan State University, East Lansing.

Levenstein, H.A. 1988. *Revolution at the table: The transformation of the American diet*. New York: Oxford University Press.

Manalili, N.M. 2005. The changing map of the Philippine retail food sector: The impact on trade and the structure of agriculture and the policy response. Presentation at the annual meeting of the Pacific Economic Cooperation Council, Pacific Food System Outlook 2005–2006, Kunming, China.

Mattoo, A., D. Mishra, and A. Narain. 2007. *From competition at home to competing abroad: A case study of India's horticulture.* New Delhi: Oxford University Press.

Metro Group. 2007. *Existing trader approaches*. Düsseldorf, Germany.

Ministry of Commerce. 2006. The 200 markets upgrading program. Memorandum 2006-42. Beijing, China.

Natawidjaja, R., T. Reardon., S. Shetty T. Noor, T. Perdana, E. Rasmikayati, S. Bachri, and R. Hernandez. 2007. *Horticultural producers and supermarket development in Indonesia.* Report No. 38543. World Bank, Jakarta, Indonesia.

Natawidjaja, R.S., E. Rasmikayati, Kusnandar, D. Purwanto, T. Reardon, and H. Zhi. 2007b. Impact of Agrifood Market Restructuring in Indonesia: Case of Potato Farmers in West Java. Report to Regoverning Markets Program. Padjadjaran University, Bandung.

Nestle India Limited. 2006. *Annual report 2006.* New Delhi.

Ooi, G.L. 1991. Urban policies and retail trends in Singapore. 28(4): 585–596.

Philippines Information Agency (PIA). 2006. Cebu market joins DA "Huwarang Palengke" national winners. Press release. August 31. http://www.pia.gov.ph/Default.asp?m=12&sec=reader&rp=6&fi=p060831.htm&no=51&date= (accessed February 4, 2008).

Planet Retail Daily News*.* 2005. Consumers forsake wet markets in Asia. June 7.

Planning Commission. 2004. National Sample Survey. Delhi: Planning Commission.

Reardon, T., and J.A. Berdegué. 2007. *The retail-led transformation of agrifood systems and its implications for development policies*. Background paper prepared for *World Development Report 2008: Agriculture for Development*, World Bank. Rimisp (Latin American Center for Rural Development. http://www.rimisp.org/getdoc.php?docid=6432 (accessed February 4, 2008).

Reardon, T., J-M. Codron, L. Busch, J. Bingen, and C. Harris. 2001. Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. *International Food and Agribusiness Management Review* 2(3): 195–205.

Reardon, T., S. Henson, and J. Berdegué. 2007. "Proactive fast-tracking" diffusion of supermarkets in developing countries: Implications for market institutions and trade. *Journal of Economic Geography* 7(4): 1–33.

Reardon, T. and R. Hopkins. 2006. "The Supermarket Revolution in Developing Countries: Policies to Address Emerging Tensions among Supermarkets, Suppliers, and Traditional Retailers," European Journal of Development Research, 18(4): 522-545.

Reardon, T. and C.P. Timmer. 2007. Transformation of markets for agricultural output in developing countries since 1950: How has thinking changed?" In *Handbook of agricultural economics*, Vol. 3: *Agricultural development: Farmers, farm production and farm markets*, ed. R.E. Evenson and P. Pingali, 2808–2855. Amsterdam: Elsevier.

Reardon, T., C.P. Timmer, C.B. Barrett, and J. Berdegué. 2003. The rise of supermarkets in Africa, Asia, and Latin America. *American Journal of Agricultural Economics* 85(5): 1140–1146.

Rodríguez, E., M. Berges, K. Casellas, R. Di Paola, B. Lupín, L. Garrido, and N. Gentile. 2002. Consumer behaviour and supermarkets in Argentina. *Development Policy Review* 20(4): 429–439.

Shamsudin, M.N., and J. Selamat. 2005. *Changing retail food sector in Malaysia*. Paper presented at annual meeting of the Pacific Economic Cooperation Council, Pacific Food System Outlook 2005–2006, Kunming, China.

Suryadarma, D., A. Poesoro, S. Budiyati, Akhmadi, and M. Rosfadhila. 2007. Impact of supermarkets on traditional markets and retailers in Indonesia's urban centers**.** SMERU Research Report. SMERU Research Institute. http://www.smeru.or.id/report/research/supermarket/supermarket_eng.pdf (accessed February 4, 2008).

Wang, H., X. Dong, S. Rozelle, J. Huang, and T. Reardon. 2006. *Producing and procuring horticultural crops with Chinese characteristics: A case study in the greater Beijing area*. Staff Paper 2006-05, Department of Agricultural Economics, Michigan State University, East Lansing.

Wrigley, N., and M. Lowe. 2002. *Reading retail: A geographical perspective on retailing and consumption spaces*. London: Arnold.

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