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Supermarkets, Modern Supply Chains, and the Changing Food Policy Agenda

By Peter Timmer

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There is great interest among policy makers in how to influence the behavior of supermarkets in ways that serve the interests of important groups in society, especially small farmers and the owners of traditional, small-scale food wholesale and retail facilities. Two broader issues are also important: (1) finding a way for food prices to "internalize" the full environmental costs of production and marketing; and (2) finding a way for supermarkets to be part of the solution, rather than part of the problem, to the health problems generated by an "affluent" diet and lifestyle. There are concerns over the growing concentration in global food retailing and the potential market power that concentration implies. But the evidence of fierce competition at the retail level, and the high contestability for food consumers' dollars, have kept this issue in the background.

The ultimate impact of supermarkets in developing countries will be on the level and distribution of improved welfare for consumers. What happens to small farmers, traditional traders and mom-and-pop shops will be factors in both the size of welfare gains and their distribution, but many other factors will also come into play. Our judgment on the impact of the supermarket revolution must incorporate all of those factors. This paper places the supermarket debate in the broader evolution of food policy analysis, which is a framework for integrating household, market, macro and trade issues as they affect hunger and poverty. Increasingly, supermarkets provide the institutional linkages across these issues.

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Supermarkets, Modern Supply Chains, and the Changing Food Policy Agenda

C. Peter Timmer[1]

Abstract

There is great interest among policy makers in how to influence the behavior of supermarkets in ways that serve the interests of important groups in society, especially small farmers and the owners of traditional, small-scale food wholesale and retail facilities. Two broader issues are also important: (1) finding a way for food prices to "internalize" the full environmental costs of production and marketing; and (2) finding a way for supermarkets to be part of the solution, rather than part of the problem, to the health problems generated by an "affluent" diet and lifestyle. There are concerns over the growing concentration in global food retailing and the potential market power that concentration implies. But the evidence of fierce competition at the retail level, and the high contestability for food consumers' dollars, have kept this issue in the background.

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It is important to keep our eye on the ball. The ultimate impact of supermarkets in developing countries will be on the level and distribution of improved welfare for consumers. What happens to small farmers, traditional traders and mom-and-pop shops will be factors in both the size of welfare gains and their distribution, but many other factors will also come into play. Our judgment on the impact of the supermarket revolution must incorporate all of those factors. A political process, informed (we hope) by good economic analysis, will then determine the nature of compensatory actions needed so that losers in this revolution do not fall into poverty or mobilize enough resources to stop the technological transformation itself.

This view of economic progress as a process of "creative destruction" dates to Adam Smith and Joseph Schumpeter, but it finds continuing relevance as powerful new technologies boost productivity in rich countries and poor alike. From this perspective, supermarkets are simply a vehicle for the transmission of new information and communication technologies into developing countries and are thus just the latest manifestation of a long-run process of structural transformation (Timmer and Akkus, 2008).

There are, of course, many problems with this process. A longstanding criticism of capitalism is that it stimulates a highly unequal process of economic growth. Rich owners of financial capital and privileged workers with higher education and advanced skills are paid high returns in a market-oriented economy. What they possess is scarce, and markets reward scarcity. Individuals with only their unskilled labor to sell are plentiful. Their market wages are low and these individuals are poor. Making growth work for the poor in a market economy requires that these basic and fundamental forces be overcome.

History is full of experiments on how to do that, from totalitarian communism to democratic socialism, from central planning to "third way" market economies. These historical experiments have a surprising and powerful lesson: rapid economic growth that connects to the poor has been the *only* sustainable path out of poverty for both countries and individuals. The question is whether supermarkets are part of this path or part of the problem in staying on it.

Food policy analysis was "invented" to provide a framework for answering that question. The central analytical vision of food policy, articulated a quarter of a century ago, integrated farmer, trader, and consumer decision making into the open economy, macro framework needed for rapid economic growth (Timmer, Falcon, and Pearson, 1983). The explicit goal was a sharp reduction in hunger and poverty, which would be possible if market incentives stimulated productivity and income gains in agriculture while poor consumers were protected by stable food prices and rising real wages. The marketing sector was the key to connecting these two ends of the food system. Supermarkets were not mentioned because they were a feature of developed countries' economies and the "food policy paradigm" focused on hunger and poverty in developing countries, where supermarkets were virtually nonexistent in the early 1980s.

The analytical story, policy design, and program implementation were complicated, requiring analysts to integrate models of micro and macro decision making in a domestic economy open to world trade and commodity markets. At its best, the food policy paradigm sharply improved the development profession's understanding of the underlying structure and dynamics of poverty and the role of the food system in reducing it (Eicher and Staatz, 1998). As part of this understanding, food security came to be seen as involving two separate analytical arenas. The first, at the "micro household" level, required analysis of food access and entitlements. The second, at the "macro market" level, required analysis of food price stability, market supplies, and inventory behavior. Again, supermarkets did not seem relevant to either level of analysis.

"Food policy analysis" provided policy makers a comprehensive, but intuitively tractable, vision of how to connect these two arenas and improve food security for the consumers in their societies. This vision was always consumer driven. Farmers, as food producers, and middlemen in the marketing sector that transformed farm output in time, place and form, were seen as "intermediate" actors in the efficient production of consumer welfare. Thus the food policy paradigm fits squarely within the standard framework of neoclassical economic analysis and the long-run structural transformation that underpins modern economic growth.

Over the years, there have been a wide range of challenges to this paradigm, quite independently of the recent emergence of supermarkets in poor countries. In response, Simon Maxwell and Rachel Slater edited a special issue of *Development Policy Review* under the theme "Food Policy Old and New." Their introduction includes the following observations on the evolution of food policy.

> The very term 'food policy' induces nostalgia for the 1970s and 1980s; the first meetings of the World Food Council, the establishment of the International Food Policy Research Institute, the establishment of the journal 'Food Policy.'
>
> ... Amartya Sen is usually credited with shifting the food strategy discourse forward from the original food strategies, towards entitlement and access. Entitlement, vulnerability and risk became the new watchwords: this was the emergent language of food security. The idea of 'food security' has dominated the debate since the early 1980s. Donors developed an enthusiasm for national food security planning, partly as a 'proxy for poverty planning' during the darkest years of structural adjustment. The International conference on Nutrition, the World Food Summit and WFS—Five Years Later cemented the consensus. A reduction in under-nutrition even made it into the Millennium Development Goals.
>
> Meanwhile, however, other issues began to infiltrate. They included a concern for the commercialization and industrialization of food systems, a stronger focus on the institutional actors in food trade, including supermarkets, warnings about the environmental consequences of new technologies, and issues to do with health, including problems of food safety and the growth of nutrition-related illnesses, especially heart disease and diabetes. [Maxwell and Slater, 2003]

The "new" food policy agenda is very broad and this paper focuses primarily on what kind of analysis can best help us understand the impact of supermarkets on the food systems of developing countries. Even this narrower focus intersects most of the topics now incorporated in the "new" food policy. There are many questions to address.

How does the rapid emergence of supermarkets as the dominant intermediary between farmers and consumers, even in poor countries, change the analytical task and the nature of the food policy vision? How does policy design change? What new programs need to be implemented to keep the food system focused on reducing poverty?

There are four parts to the paper as it starts to answer these questions. The first addresses specifically what is different between the old and the new food policy paradigms, and where supermarkets influence that difference. The second part puts the entire food policy debate in historical perspective as a reminder to focus our attention on the long-term process of economic development as the basic driver of the phenomena we are observing. The new role of supermarkets is addressed in this context. The third part of the paper addresses sectoral and macro dimensions of the supermarket revolution. The fourth part proposes an integration of the old and new food policy paradigms as a framework for the research needed to make policy recommendations more concrete.

Food Policy: What's Different?

It is useful to characterize the "old" and "new" food policy paradigms in relatively simple two-by-two figures that capture the key concerns of each paradigm. Both focus analytical attention on issues at the country level as well as the household level, and this provides one dimension of the comparison. The original food policy paradigm focused analysis on the links between poverty and food security. This provides the other dimension for discussion in Figure 1, which fills in the four cells of the original food policy paradigm.

Alternatively, the new food policy stresses the "double burden" on societies facing substantial degrees of hunger at the same time they face rising levels of nutritional problems of affluence—obesity, heart disease, diabetes, etc. The "development" or poverty dimension is more sharply focused on the problem of exclusion—at the national level as well as the household level. Figure 2 fills in the cells for this paradigm.

The Food and Health Dimension

A comparison of Figures 1 and 2 shows how starkly the two paradigms are different (although it is notable that supermarkets *per se* do not appear in any of the cells of either paradigm). At the country level, the earlier concern for keeping food prices at a level that balanced producer and consumer interests, with price stabilization around this level an important policy objective, gives way to equally important concerns for the budgetary consequences for governments (at national and local levels) of the health outcomes of dietary choices over entire societies.

At the household level, the traditional focus on access to foods (including intra-household access and distribution) stressed income and price variables, with a very limited role for household education and knowledge (except possibly in the derived demand for micro-nutrients). Much of the quantitative research in food policy over the past three decades has involved a search for the behavioral regularities that linked households to these market-determined variables. An early example is Timmer (1981).

Again, the contrast with the new concerns is sharp. Health professionals are either pessimistic about the political reality of using economic variables to influence dietary choices (one debate is over the efficiency of taxing fats in foods, taxing fat people, or taxing the health consequences of being fat), or are doubtful that economic incentives will actually change dietary behavior where affluence permits a wide array of choices. Consequently, there is a much sharper focus on trying to change lifestyle through improved health knowledge and nutrition education (and whether supermarkets are part of the problem or potentially part of the solution).

The international nutrition community is engaged in a pointed debate over whether approaches to changing lifestyles through education will work. In particular, if the dietary patterns of affluence have a significant genetic component—that is, humans are "hard-wired" for an environment of food scarcity and have few internal control mechanisms over dietary intake in an environment of permanent affluence and abundance—much more coercive efforts may be needed to change dietary behavior (and activity levels) than is implied by the education approach. On the other hand, such coercion directly contradicts consumer sovereignty and the basic principles of a democratic society.

Supermarkets are both the purveyors of the food abundance (and much of the "junk" food sold) and a possible vehicle for bringing about dietary change, either through improved nutrition education within stores, health warnings on particular foods that cause nutritional damage, or even regulations on what kinds of foods are available for purchase. The rapid spread of private standards on food safety and aspects of production technologies shows that public policy is not necessarily the fastest or most effective way to bring about changes in food marketing. These standards could easily incorporate health dimensions as well, especially if lawsuits over "fast food" contributions to obesity begin to be won by litigants.

The Poverty and Development Dimension

One of the key messages for developing countries in *Food Policy Analysis* was the link between poverty and food security, at both the national and household levels. In turn, poverty was considered primarily an economic problem that could only be addressed in a sustainable fashion by linking the poor—mostly in rural areas—into the process of economic growth. A dynamic agriculture as a stimulus to forward and backward linkages within the rural economy served as the "prime mover" in this process. Through improved agricultural technology, public investments in rural infrastructure, and the end

of “urban bias” that distorted incentives for farmers, policy makers could have a simple and clear approach to reducing poverty and improving food security.

With success in the rural economy, migration to urban areas would be more of a “pull” process rather than a “push,” especially if favorable macro economic and trade policies were stimulating rapid growth in a labor-intensive manufacturing (and construction) industry. In combination, these activities pulled up real wages and, when sustained, led to rapid reductions in poverty (Timmer, 2002, 2005). In many ways, this paradigm could be described as an “inclusion model” because of its focus on including the poor in the rural economy, including the rural economy in the national economy, and including the national economy in the global economy. Its greatest success was in East and Southeast Asia from 1960 to 1997, but the model has been under attack since then as the benefits of globalization seem not to have been as widely shared as earlier hoped.

The failures of globalization provide the analytical theme for the new food policy paradigm. Figure 2 characterizes this theme around the analytics of “exclusion.” At the national level, the question is why so many countries have been “non-globalizers.” The essence of the debate is whether the global economy, in the form of rich countries and transnational corporations, has excluded these countries from participating in trade and technology flows, or whether the countries themselves have been unsuccessful in the process because of domestic shortcomings in policies and governance (including corruption).

The debate has a local focus as well. Within an otherwise well-functioning and growing economy, many groups can be excluded from the benefits of this growth. Unskilled workers unable to graduate to higher technologies and uneducated youth unable to compete in a modern economy are a sizeable proportion of the work force in countries with poor manpower and training policies and resources. Globalization makes it more difficult for these countries to compete for trade and investment flows that would provide the first steps up the ladder of higher productivity.

The “exclusion” lens focuses especially on small farmers. Their fate has been a source of policy concern well before the supermarket revolution gained speed in the early 1990s in Latin America, but there is no question that the issue is now squarely on the policy agenda, as this special issue indicates. It is precisely over this topic that the debate between the relevance of the old and new food policy paradigms has taken shape: which approach offers the most useful insights and policy/program guidance for assisting small farmers in their efforts to remain as viable suppliers to supermarket procurement officers? The answer depends on the time horizon of analysis. In the short run, finding income opportunities for small farmers is essential, but in the longer run they need to have other options, including migration to urban jobs.

Figure 1

The "Old" Food Policy

	Food Security	**Poverty**
Country Focus	Market prices: Level and stability	Economic growth and rising real wages
Household Focus	Access to Food --incomes --prices --knowledge (especially for micro-nutrients)	Jobs, especially through a dynamic rural economy, migration, and labor-intensive manufacturing

Figure 2

The "New" Food Policy

	The "Double Burden" of Hunger and Obesity	**Exclusion**
Country Focus	Government costs of health care and pensions	"Non-Globalizers" (Governance?)
Household Focus	Lifestyle and health knowledge (are we "hard-wired" for scarcity?)	Small farmers Unskilled workers Low education

Food Policy and Supermarkets in Historical Perspective

The "big" question in social science is whether to study diversity or central tendencies. In the context of economic development, this question translates into whether to analyze the process from the perspective of changing welfare of entire societies over long periods of time, or whether to study inequality in its many dimensions during a particular epoch. The two perspectives obviously relate to each other, possibly even in causal ways, as is illustrated by the modern debate over the contribution of income inequality to economic growth, and vice versa (Easterly, 2003).

Figure 3 provides a framework for thinking about these issues in the context of the rapid emergence of supermarkets as the dominate retail supplier of food, even in developing countries. The horizontal axis depicts the long-run process of economic growth, or the transformation of societies from "poor" to "rich". This is the dominant transformation that humanity has undergone in the past ten millennia, and is "the natural course of things," to quote Adam Smith's observation in the 18th century.[2] To see the dominance of this transformation requires a very long time horizon, more a purview of economic historians than development specialists.

The various dimensions of this process have been summarized as the "structural transformation," wherein entire societies undergo the wrenching changes associated with agricultural modernization, migration of labor from rural to urban areas, and the emergence of urban industrial centers (Timmer, 2009). As part of this process, as both effect and cause, the demographic transition moves a society from an equilibrium of high birth and death rates to a "modern" equilibrium of low birth and death rates. The structural transformation has taken as long as three centuries in England and the United States (and is still continuing), and as little as a century in Japan and its East Asian followers. The lengthy process provides a cautionary message to those in a rush to transform their societies.

At the same time that this structural transformation is unfolding, there is enormous diversity across societies in how they organize themselves politically, define themselves culturally, and reward themselves economically. This is the vertical dimension that Figure 3 illustrates in a crude and simple fashion. During any historical epoch, there will be a set of identifiable "drivers" that are pushing the economy to the right, from poor to rich, while at the same time structuring the diversity within societies, and among them.

In the current era—post-World War II to keep things concrete—these drivers are globalization, urbanization and technology. The question is, how have these three forces influenced the rapid emergence of supermarkets? There is now widespread agreement

[2] The full citation runs as follows. "Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism than peace, easy taxes, and tolerable administration of justice; all the rest being brought about by the natural course of things." Lecture by Adam Smith in 1775, cited in E. L. Jones, 1981, p. 235. The perspective here also draws heavily on Jones' *Growth Recurring*, published in 1988.

that the supermarket revolution itself has been driven by precisely these three drivers of overall economic change, but a dilemma remains in using this as an answer to the speed of change in the food retail sector. After all, globalization, urbanization and technology were equally cited for the rapid economic advances in the 19th century. What is different now?

The answer is given by changes in the relative scarcity of important economic resources, changes that are themselves driven by the new industrial organization of the global food supply chain. Transnational corporations (TNCs), using supermarkets as their instruments, are increasingly dominant in this global food supply chain—indeed, arguments are heard that the TNCs are using this dominance to extract monopoly profits from consumers worldwide. The dominant role of the TNCs is not in question; there is plenty of evidence from Reardon and his colleagues on the role of foreign direct investment in the consolidation of food retailers in all countries they have studied (Reardon, 2003).

But despite the straight line often drawn in traditional industrial organization literature from structure to conduct to performance, the new focus is on performance itself, in the form of profit rates above a competitive norm. Not surprisingly, these profits tend to accrue to the relatively scarce resource in the system under analysis, and to whoever controls those resources. In the global food retail system, there are three basic possibilities for what resource is scarce, although these extend outside the traditional land, labor and capital.

First, in a world of global competition, the scarce resource might be physical and marketing access to food consumers, especially food consumers in affluent countries and relatively affluent consumers in poorer countries. If supermarkets come to control this access because of scale economies and modern shopping habits, excessive profits might be earned by exploiting consumers who are forced to shop in these supermarkets.

A second possible scarce resource is access to, or control of, (through intellectual property rights) the technology that lowers transactions costs throughout the entire food supply chain. Increasingly, this is information technology that permits supermarket managers exquisite control over procurement, inventory levels, and knowledge of consumer check-out profiles. One of the world's largest supercomputers is in Bentonville, Arkansas, the headquarters of Wal-Mart. Nearly every product on every shelf in every Wal-Mart store is in that computer, and the supplier of the product typically does not get paid until a customer has it scanned at the checkout counter. Once this happens, the technology permits the supplier to be paid and notified that the item needs to be restocked. Such technology provides a powerful competitive advantage in cost control, quality maintenance, and product tracking in case of defects or safety problems. When this technology is applied globally to the food supply chain of a transnational supermarket, transactions costs will be "pushed out of the system" all the way from the food aisle, through global marketing functions, to individual farmers.

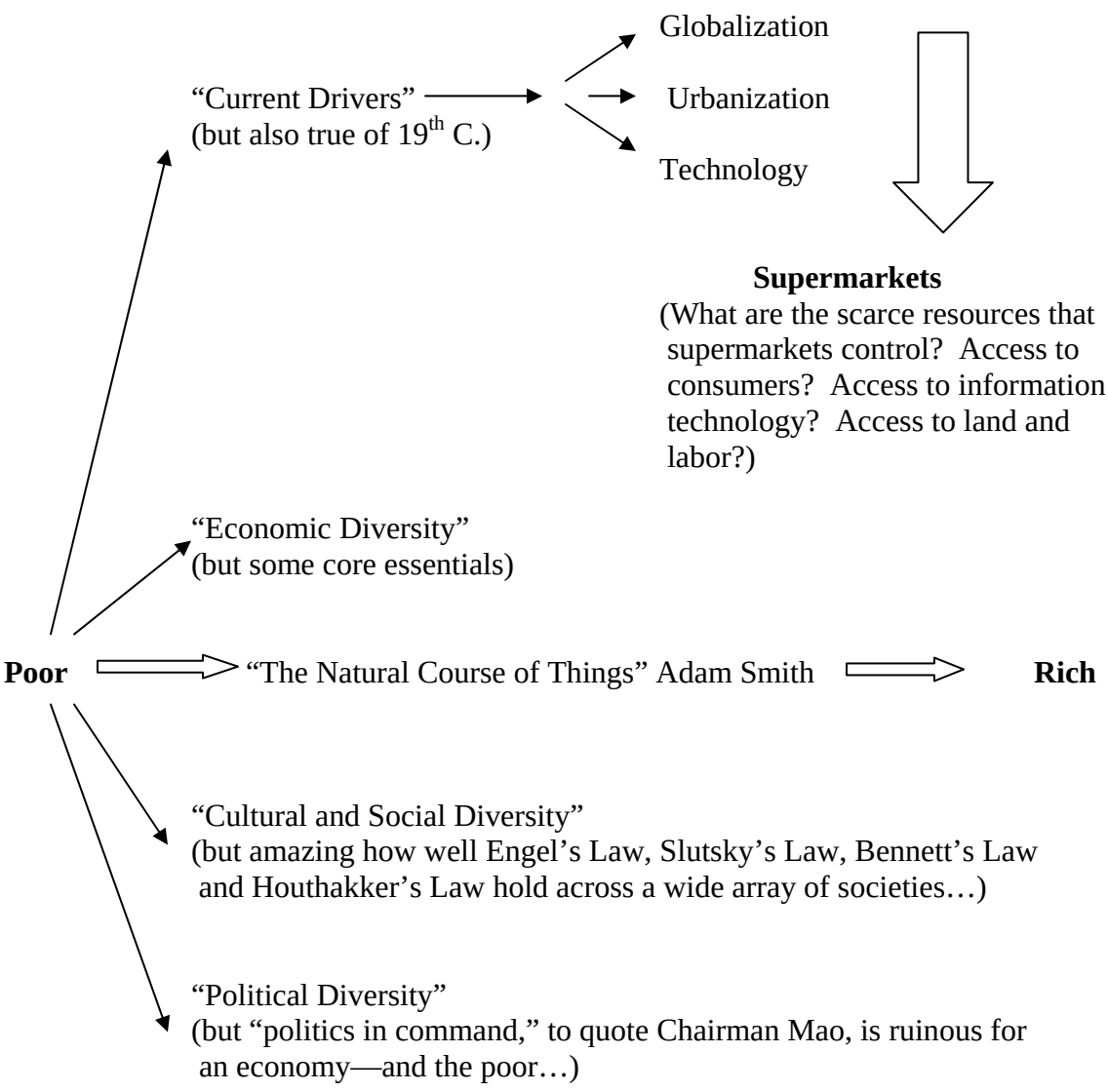
The third possibility for the scarce resource in this system is the food commodity itself—the rice, potato, Belgian endive, bell peppers, fresh fish, or chuck steak. Because supermarket quality and safety standards are so high and rigid, the ability to supply the raw commodities that meet these standards might command a price premium and additional profits for the farmers. Beneath commodity supply, of course, is the land and labor (and knowledge and technology) required to grow the commodities. Thus, ultimately, if commodities themselves are the scarce resource, capable of earning excess profits, these profits will accrue to land, labor, or both (or to the management function that harnesses the knowledge, technology and finance, although for small farmers this tends to be in the same hands as the land and labor).

Basic competitive forces will lead most "monopoly" profits or rents to end up in the hands of the owners of the scarcest resource. The evidence so far is that access to affluent consumers and to powerful information technology is scarcer than the ability to produce high-quality commodities, especially when individual producers are forced to compete on a global playing field. But this does *not* mean that TNC supermarket chains are earning monopoly profits because they have access to, even control of, these scarce resources. The cost of information technology is dropping with Moore's Law, and access to affluent consumers has turned out to be highly contestable, and thus generating competitive results, despite the industry structure. Surprisingly, the picture so far is one of intense competition and low profits. Ahold, once the world's largest food retailer, suffered losses in 2003 and 2004.

In summary, what does a long run perspective have to say about the supermarket revolution? First, it is understandable within the context of the structural transformation and the long-run evolution of agriculture within that process. Second, basic economics, with its stress on returns to scarce factors of production, is surprisingly helpful in understanding the inner dynamics of the process. But third, this perspective provides little guidance on how to assist small farmers as they compete for contracts from supermarket procurement officers. For that, the diversity of the global food system, rather than its common themes and forces, needs to be understood. Still, there are some important lessons that come from combining the food policy perspective and the historical, analytical perspective. These lessons tend to play out at the sectoral—marketing—level and at the macro level, in terms of how the overall economy is performing.

Figure 3

The Long-run Perspective



The Sectoral and Macro Perspective

The basic issues for development presented by the supermarket revolution cut across the entire economy, from agricultural technology and farmer responsiveness, to concentration in processing and retailing channels, to standards for food quality and safety, to food security at both micro and macro levels. Thus understanding the impact of supermarkets presents serious analytical *and* policy challenges.

These challenges transcend the different issues dealt with by the "old" and "new" food policy paradigms. In particular, the key issues remain of how to achieve and sustain rapid reductions in poverty and hunger through interventions (or ending interventions) in the food system. The supermarket revolution cuts both ways in this, offering greater consumer choice and lower prices for the retail services provided, but with a track record of consolidating supply chains to a handful of reliable producers able to meet quality, safety and cost standards, and thus excluding many small farmers from access to supermarket customers. The key issue is whether policy makers have an opportunity—in the face of very serious challenges—to leverage the impact of supermarkets on consumers in ways that do not increase rural poverty. To answer that, a deeper understanding of the impact of supermarkets on the marketing sector and the macro economy is needed.

Supermarkets and the Marketing Sector: Complements or Substitutes?

The marketing sector serves two primary functions in a market economy: it generates signals between consumers' desires and farmers' costs through price formation, and it performs the physical functions of marketing—transforming raw commodities at the farm in time, space and form, and delivering them to consumers' tables. These are inherently "coordination" tasks, and they require an adroit combination of public and private investments if they are to be carried out efficiently. Historically, these investments have been made very gradually as farmers evolved from subsistence activities toward a more commercial orientation. Now that commercial activities are the norm, even in economies where efficient marketing networks have not had time to emerge, policy makers are actively seeking new models and approaches to speed the creation of these networks. Supermarkets may get there first.

The growing importance of market interactions for farmers stems from at least three separate forces. First, the collapse of socialism has stimulated a rapid, if often painful, transition to a market economy. Second, increasing incomes have stimulated increased commercialization and diversification as part of an agricultural transformation.[3] Third,

[3] Three different processes of agricultural change are closely related, and hence often confused: the agricultural transformation, agricultural commercialization, and agricultural diversification. See Timmer (1997) for a fuller explanation of how these three topics are connected. The discussion in this section draws on that paper.

this commercialization and diversification is increasingly taking place with supermarkets as the main buyer of agricultural output.

The agricultural sector as a whole is likely to become much more diversified over the course of the agricultural transformation, when compared with a representative individual farm, but significantly less diversified than food consumption patterns. Unless agro-ecological endowments are nearly identical throughout the country, farmers with different resources are likely to specialize in different crops. This increasing specialization of farms (*decreasing* diversification) is consistent with *greater* diversity at more aggregate levels because of the commercialization of agriculture.

> Commercialization of agricultural systems leads to greater market orientation of farm production; progressive substitution out of non-traded inputs in favor of purchased inputs; and the gradual decline of integrated farming systems and their replacement by specialized enterprises for crop, livestock, poultry and aquaculture products. The farm level determinants of increasing commercialization are the rising opportunity costs of family labor and increased market demand for food and other agricultural products. Family labor costs rise due to increasing off-farm employment opportunities, while positive shifts in market demand are triggered by urbanization and/or trade liberalization (Pingali and Rosegrant, 1995, pp. 171-72).

Likewise, patterns of food consumption become more diversified than patterns of domestic agricultural production because of the rising significance of international trade, i.e. globalization. Bennett's Law suggests that there is an inherent desire for diversity in dietary patterns among most populations of the world. Low-cost transportation systems and falling trade barriers have generally opened to consumers a market basket that draws from the entire world's bounty and diversity.[4] Supermarkets are increasingly the vehicle for providing this diversity and consumers clearly support the trend with their buying power.

The growing roles of commercialization and globalization in connecting diversity of production at the farm level with diversity of consumption at the household level spawn new problems, however. In particular, increased commercialization requires that farmers learn how to cope with a type of risk that is of little concern to subsistence farmers: the risk of fluctuating prices. At the same time, specialization in crop production increases their risk from yield fluctuations. Mechanisms for coping with risk, including contractual arrangements with supermarkets, thus play a crucial role in understanding the commercialization of agriculture and the government's role in it. The interplay among price fluctuations, increasing reliance on international trade, specialization of farmers in production for the market in response to profitable new technology, and continued failure of market-based mechanisms for risk management in rural areas accounts for much of the policy interest of governments in the process of rural diversification. A key task of a new

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[4] See Chapter 2 of *Food Policy Analysis* for further discussion of Bennett's Law (Timmer, *et al*., 1983) and Chaudhri and Timmer (1985) for the greater diversity of diets as affluence permits.

food policy paradigm will be to improve the policy choices governments make as they respond to this interplay of forces with interventions into the diversification process, especially efforts to regulate the emergence and behavior of supermarkets.

One intervention in nearly all countries is to make public investments that stimulate market development and efficiency. Efficient development of entire commodity systems, from input production and marketing through to downstream processing and consumption of the final product, requires the formation of extensive backward and forward linkages from the producer level. These linkages can be both technological, depending on engineering relationships and quality requirements, for example, and financial, depending on investment patterns from profits generated by commodity production and consumption patterns from the incomes earned in the sector. Many of these linkages exhibit economies of scale and can be developed to efficient levels only if the commodity is produced in a relatively cohesive spatial pattern. This process of market deepening is a natural result of regional specialization and one of the major forces that gradually but persistently produces such specialization.

Most countries want to speed up this gradual process, but have found that government investments alone are inadequate. Well-developed, low-cost marketing systems require sufficient supplies of the specific commodities being marketed to justify the full investments needed to capture any economies of scale to the system. *Achieving this balance is a simultaneous process*, which historically has meant the gradual evolution of both the supply and demand side of the market. The interesting question now is whether supermarkets are internalizing this coordination process and speeding the rate of specialization. If so, as specialized production grows in a region, the marketing system will expand to serve it in a coordinated (but closed, to outside parties) way. The lower costs generated by specialization can confer very significant competitive advantages on regions that are both low-cost producers of a commodity and have an efficient marketing system that has adequate volume to capture the economies of scale implicit in the forward and backward linkages.[5]

Regional specialization in a range of agricultural products would thus seem to be the answer to the problem of too much diversification at the farm level. Such specialization permits the cost economies of scale (and learning) to be captured, while still diversifying the country's agricultural output. A problem remains, however. Although the country may be well diversified, individual farmers and regions are not. Significant price instability, whether generated strictly in domestic markets or transmitted from international markets, would have substantial income-distribution consequences for the farmers and regions concerned--unless their output is sufficiently negatively correlated with prices that net revenue is stabilized by unstable prices. When large regions depend heavily on a single crop for their economic base, the vulnerability from specialization is similar to that at the national level when cultivation of a staple food crop is widespread. When rubber producers, coffee growers, or maize farmers specialize in production, each can face problems of income stabilization in the face of unstable prices or yields.

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[5] This perspective on regional specialization has been generalized and formalized in Krugman's work on economic geography. See Krugman (1993).

The consequences for income distribution of crop specialization at the farm or regional level are straightforward. With domestic price stability, small farmers can specialize in single crops, and regional diversification can keep surpluses from developing. But this strategy depends on price stabilization. Otherwise individual farmers must diversify to spread risks from price fluctuations. Such diversification is likely to incur high costs because of forgone effects of "learning by doing" and the scale economies inherent in marketing systems. Compared with national specialization in a single commodity, the macroeconomic consequences of regional vulnerability are not as great--unless all prices and yields move together. But the individual and regional problems should also receive the attention of policy makers. Especially in countries with diverse regional interests, appearing to ignore the economic plight of distressed regions can have devastating consequences for the political stability of the country as a whole.

How will the increasing dominance of supermarkets influence performance of the marketing system in coping with these issues? First, there will be a concern for both the *efficiency* and *equity* of price formation, as more and more transactions are internalized by supermarket procurement officers. Such transactions are not open and transparent, and hence concern will grow over the shift in market power toward a few, large buyers, and over the likely exclusion of suppliers from these arrangements. Second, however, and partially offsetting the first concern, supermarkets can also internalize consumers' desires for price stability and hence can manage procurement contracts with stability in mind. Finally, if supermarkets in developing countries are as competitive as in rich countries, fears about monopoly control and market power will turn out to be ill-founded. The market for the food consumer's dollar seems to be highly contestable, even when only a small handful of players are able to survive the cost competition.

Macro Economic and Growth Issues

Most effects of supermarkets in developing countries are likely to play out at the firm and sector level, and macro economic effects will be modest. But they will not be trivial, especially as lower food costs translate into greater real purchasing power for consumers. The impact will then be felt through differential Engel elasticities—greater stimulus to manufactured goods and modern services; gradual retardation for staple foods, traditional clothing and basic housing. Managers of supermarkets themselves are fully aware of these trends, as a stroll down any aisle will demonstrate. By passing on lower costs, or improving food quality and convenience, supermarkets can actually speed up the structural transformation and the agricultural transformation that is part of it (Timmer, 1988).

There will also be significant efficiency effects. The mantra of supermarket procurement officers is to "drive costs out of the food marketing system." Although these "costs" are also someone's income, especially farmers and traders in the traditional agricultural marketing chain, lowering food marketing costs not only allows lower consumer costs,

with the effects noted above, but they also free up productive resources that can used in more profitable activities. This is the process by which total factor productivity improves, and this improvement, including in the food system, is the basic long-run source of economic growth (Timmer, 2002).

A final growth effect may in the long run be the most important, the technology spillover effects that result from the use by supermarket managers of imported information technology and modern management techniques honed in the fierce competition of OECD food markets. Most of this technology arrives as part of foreign direct investment (FDI), which has been the main vehicle of rapid penetration by supermarkets into developing countries (Reardon, et al., 2003). It is often proprietary, and supermarket owners go to great lengths to keep it internal to the company. But like most technologies, the knowledge that these tools and techniques exist is the key to rapid emulation, as local managers trained by the first wave of foreign supermarkets leave to establish their own companies and consulting firms. Thus the spillovers from introducing modern information technologies and management techniques can occur fairly rapidly and have widespread effects across the entire economy, not just in food retailing.

Supermarkets will affect not only the efficiency of the food marketing chain, but also the distribution of benefits from the value added in the process. In general, it is very difficult to say whether these distributional changes will be positive or negative, that is, whether income distribution will become more equal or not.

There are two important offsetting effects. On the negative side, the evidence is clear that rapid supermarket penetration into traditional food marketing systems can quickly displace “mom and pop” retail shops, traders in wet markets, and small-scale wholesalers. In most of these cases, the people displaced earn relatively low incomes and will have to make significant adjustments to find new livelihoods. The distributional effect is likely to be negative and can be substantial if these small-scale food marketing firms are numerous and widely visible. Their imminent demise can also generate significant political resistance to the spread of supermarkets, an effect already being seen throughout Asia, but with historical antecedents in the United States, Europe and Japan.

The impact of supermarket penetration on the farm sector is, of course, the big question. Experience suggests that small farmers can rapidly lose access to supermarket supply chains and thus be cut off from the growing “value added” component of retail food baskets. The suggestion is that these farmers risk falling further into poverty. But this experience is not uniform, and there are certainly circumstances where small farmers have gained profitable access to modern supply chains—the Asian experience seems to be better than the Latin American experience in this dimension. Keeping a significant number of small farmers in the supply chain of supermarkets is likely to be essential for poor countries to reap widespread social benefits from the rapid domination by supermarkets. The impact on the traditional food marketing sector will be small relative to this impact on small farmers.

What are these potential widespread social benefits that could have positive distributional effects? The extraordinary spread and speed of supermarket penetration suggests that consumers love them. It is hard to argue that low-income consumers benefit differentially, at least initially, but lower real food costs across the board (corrected for quality, safety, and convenience, all of which consumers value) clearly have an impact of greatest importance to the poor. Efforts to slow the penetration of supermarkets on behalf of small farmers and traditional agents in the food marketing chain need to keep this widespread consumer benefit in the calculus.

Can the Supermarket Revolution Help Reduce Poverty?

There is great interest among policy makers in how to influence the behavior of supermarkets in ways that serve the interests of important groups in society, especially small farmers and the owners of traditional, small-scale food wholesale and retail facilities. Two broader issues are also important: (1) finding a way for food prices to "internalize" the full environmental costs of production and marketing; and (2) finding a way for supermarkets to be part of the solution, rather than part of the problem, to the health problems generated by an "affluent" diet and lifestyle. There are concerns over the growing concentration in global food retailing and the potential market power that concentration implied. But the evidence of fierce competition at the retail level, and the high contestability for the food consumers' dollars, have kept this issue in the background.

Finally, it is useful to think through what an integrated food policy framework would look like, even roughly, in an effort to move the research agenda forward. Figure 4 illustrates the likely components. It is organized around the familiar vertical structure of the food system, with farmers at the bottom, passing their produce up through the marketing system—now divided into traditional markets and supermarkets—with consumers at the top of the chain.

The four major policy issues confronting the food system are arrayed in a diamond around this vertical structure: health and poverty concerns on the "welfare" side and food security and environmental concerns on the "efficiency" side of the diamond. From below, the basic forces affecting small farmers are the structural transformation and the role of agriculture in that process. From above, the basic forces affecting food consumers are behavioral changes in the context of increasing affluence and choices available.

Within this framework, it is possible to identify the key linkages from supermarkets through the rest of the food system that policy makers will want to understand if they are concerned about food security. At the micro, or household level, the issue is impact of supermarkets on poor consumers, especially the role of supermarkets in distribution of starchy staples. There has been remarkably little research on this aspect of the impact of supermarkets on food security.

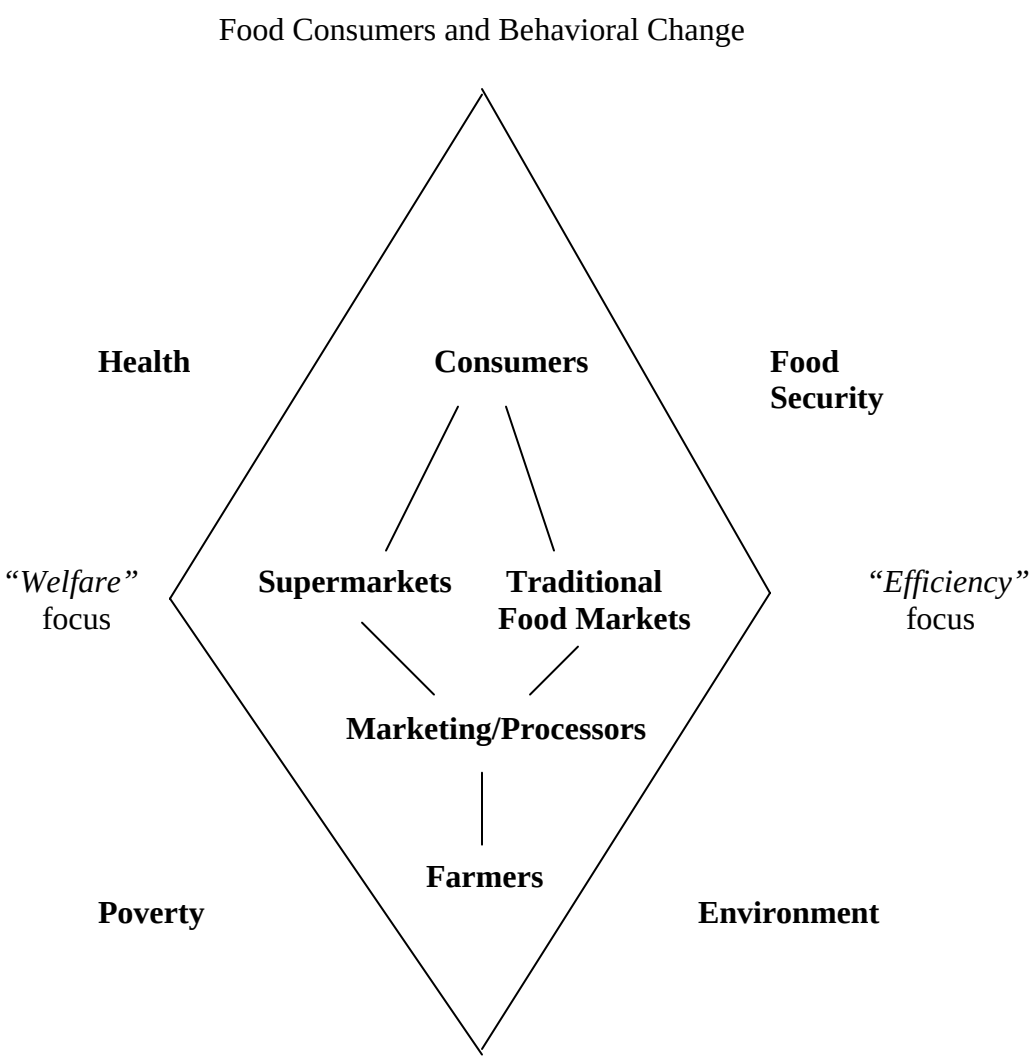
At the macro level, the issue will be the impact of supermarkets on staple food supplies, price stability, and links to global grain markets. What role are supermarkets playing in these markets at the moment? Is there any way to use supermarkets (instead of parastatals, for example) to manage "macro" food security by being the intermediary between a country's consumers and the world grain markets?

The last issue asks whether supermarkets are a major factor in the health epidemic seen in affluent countries and among the affluent in poor countries. Are processed foods, snack foods, and fatty foods, the cause of obesity, heart disease, and diabetes? Are supermarkets to blame for our rapidly rising consumption of these foods?

Taken together, these questions form the core of a research agenda that is complementary to the current attention focusing on the impact of supermarkets on small farmers, and research directed at finding policy and/or program mechanisms to help them compete successfully within the global supply chain. In combination, the consumer-oriented and the producer-oriented research, linked as they are by the rapid emergence of supermarkets as the dominant players in the food marketing arena, fit comfortably within an expanded food policy paradigm.

Figure 4

An Integration of the Food Policy Paradigms



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