



Implications of foreign direct investment in India's retail sector



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Abstract Supply chain is the backbone of retail business. Adoption of an efficient supply chain between producers and consumers by modern large retailers could reduce average transaction and information costs of market exchange; generate surplus for stakeholders such as producers, farmers, and consumers; expand output; and could thereby contribute to economic growth and net employment gains. Foreign players can introduce a highly advanced supply chain and develop local producers and generate externalities. This paper develops a simple theory of supply chain and economic growth. It shows the implications of adaptation of the Wal-Mart model of retailing on India's retail business.

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Introduction

In the year 2012, the Government of India announced liberalization of entry of multi-brand multinational firms (MNCs) with 51% equity stake into the retail sector. However, several state governments announced that they would not allow retail MNCs into their states. This is because of the opposition from several interest groups representing wholesalers and unorganized retailers on the grounds that entry of foreign players destroys small businesses and employment, and that foreign players make monopoly profits at the cost of consumers and suppliers. These calculations are based on expected short and interim rather

than the possible long-term outcomes of the reforms (Patibandla, 2006). The objective of this paper is to analyze the net effects of allowing FDI into the retail sector in India. The main proposition is that adoption of efficient supply chain augments economic growth by reducing average transaction and information costs of market exchange. Economic growth is characterized in terms of increase in surplus of the different players such as producers, consumers, and retailers and the consequent increase in productivity.

To illustrate the point, in the mid-1980s the Indian government initiated certain partial reforms, allowing multinational firms in such industries as the two-wheelers, The Indian (family business) industrialists such as Bajaj organized themselves as the "Bombay Club" to block the reforms in the name of "nationalism". However, the government continued with the reforms. Competition from Honda forced Bajaj to restructure itself technologically and organizationally and over time it has become

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internationally competitive. The volume of sales and total profits at Bajaj are higher in the post-reform period. Furthermore, the development of auto-component supplier firms by the multinationals has made the industry internationally competitive (Patibandla, 2006).

The entry of foreign retailers will have an effect on different stakeholders. On the demand side, it will affect consumers, small retailers, wholesalers, and local large retailers. On the supply side, it will affect employment, farmers, manufacturers, middlemen, and government agents. The net effects are in terms of increase (or decrease) of total surplus of the system. In distributional terms, there could be some losers such as the wholesalers and numerous commission agents, and gainers could be farmers, small- and medium-scale manufacturers, consumers, and large retailers. Employment effects should be seen not only in terms of some direct short-term losses and gains but also long-term net gains through increase in number of supplier firms, real incomes, and consequent increase in investments.

I have developed a simple theory that shows the link between adoption of supply chain and economic growth. I then analyze Wal-Mart's model of retailing and its supply chain to understand its implications on the Indian retail sector.

Supply chain and economic growth

The main proposition of this section is that adoption of efficient supply chain contributes to economic growth by increasing total surplus of different agents of the system. In standard micro-economics textbooks, producers sell directly to consumers. The question which follows is this: What is the economic rationale for existence of a middleman such as a retailer between producers and consumers? The economic rationale could be drawn from information (Akertof, 1970; Spence, 1976) and transaction cost economics (Coase, 1937; Williamson, 1975). Market exchange involves information and transaction costs at different levels and dimensions. If a large number of small producers and consumers act autonomously, the unit information and transaction costs of exchange would be higher than if they could pool these costs and realize economies of scale. A retailer performs the job of pooling these costs and reduces the unit costs through realization of economies of scale by adoption of supply chain.

The surplus equation when the market is served by large of number of small firms is:

$$S = P(Q)Q - bQ - [(Is + Ts)] \quad (1)$$

The surplus equation after the entry of a large retailer is:

$$S = P(Q)Q - bQ - (Ir + Tr + d + m) \quad (2)$$

S is the surplus, P is market price, Q quantity of output, b is long run average cost of production, Is is information costs and Tc is transaction cost of a small producer (which is assumed to be similar for all the producers), Ir and Tr are that information and transaction cost of a retailer, d is the deadweight loss owing to transfer of output through the retailer and m is the mark-up of the retailer. The

condition for a positive surplus owing to the entry of the retailer is:

$$[(Is + Ts) > (Ir + Tr + d + m)] \quad (3)$$

In the first case, we assume that the output is a homogenous good. In this case the role of the retailer is to match supply and demand both in static and dynamic terms by processing information and assessing uncertainty. This is highly relevant to markets for perishable food products such as vegetables, fruits, meat, and fish, and also products such as rice, wheat, and pulses. A small producer does not possess information and capital for realizing a price that reflects inter-temporal demand of spreading the supply from one harvest to the next harvest time through storage. She/he has to sell the total output at the time of harvest. A large retailer could invest in storage costs and process the information of inter-temporal demand and pass on the information to producers. The extension of this argument could be a large retailer assessing the inter-regional demand within a country and also at the global level. For example, basmati rice could be produced only in the states of Punjab and Haryana of northern India but major part of consumption of rice is in the south.

Pin is the price of inter-temporal demand, Ph is the price of the harvest time, m is the unit mark-up of the retailer and c is the unit cost of storage. $Pin - Ph - m - c$ is the surplus that a farmer could realize because of the retailer.

The link for productivity can be seen in terms of distress sales by farmers at the time of harvest. This discourages farmers from investing in productivity-enhancing practices. If a farmer incurs additional costs for improving productivity, this will increase output, which, in turn, increases supply at the time of harvest. This depresses price realized by the farmer further. If a large retailer undertakes matching of inter-temporal demand and supply, this could mitigate distress sales and result in increase in surplus to farmers which incentivizes them to invest in productivity-enhancing investments.

Transportation and infrastructure costs should not be confused with transaction costs. Nobel laureate Oliver Williamson (1985) conceptualizes transactions costs in terms of uncertainty, frequency, and asset specificity in the context of incomplete contracts. Essentially, transaction costs are the costs of formulating and executing contracts. In the case of a large number of small producers producing a homogenous good, theoretically speaking, transaction costs are not relevant because if one supplier fails to supply, the retailers can procure a similar amount from other players. However, if the homogenous good is produced by a few large players, the retailer has to get into a contract for the quantity to be supplied based on the predicted demand. As mentioned before, the uncertainty element of transaction cost is relevant if the homogenous good is produced by a large number of players especially in agriculture because change in weather conditions could affect production of all producers disrupting the supply chain of the retailer.

Larger the number of producers, larger the total transaction costs of contracts. However, average transaction costs could decrease with increase in the number of

producers if the retailer is able to design standard enforceable contracts.

The standard information economics of adverse selection and signalling is more applicable to the case of differentiated goods on quality dimension than homogeneous goods. If buyers do not possess information on the quality differences of goods in the market, the price settles down at average which forces good quality products to leave the market. This is the typical case of adverse selection of markets descending to low quality products (Akerlof, 1970). The adverse selection outcome can be avoided if high quality sellers invest in costs of signalling quality (Spence, 1976). One of the mechanisms of signalling is by providing warranties. A small producer may not possess the resources to invest in costs of signalling. A large retailer may be in a better position to pool products of different quality, sort them and invest in matching costs of signalling. The other side of the story is that a large retailer may be in a position to standardize the output to reduce quality differences. For example, some large retailers in India help farmers standardize the quality of vegetables by training the farmers and providing them with inputs such as the right kind of pesticides. The basic result of this analysis is illustrated by Fig. 1.

In Fig. 1, D is demand curve representing market size. There are N number of small firms producing and selling autonomously. The linear addition of 'U'-shaped cost curves which capture production, information, and transaction costs of small firms, is represented by LAC_s and LMC_s , the long run average cost and long run marginal costs, respectively. With these costs, the equilibrium market price is P and quantity served is OQ . Let us take that a large retailer enters the market and invests in fixed information and transaction costs resulting in global economies of scale. He/she procures the goods from the small firms and sells them in the market and the cost curves of the large firm are LAC_l and LMC_l . The procurement price he pays to the large number of suppliers is his production cost. The large firm charges a market price P_1 that is equal to long run average cost. The supply increases from Q to Q_1 . As a result there will be increase in the total quantity produced and sold and also elimination of information and

transaction costs of small firms which implies downward shifts in $LACs$ and $LMCs$. Apart from this, as the market expands there could be increase in number of suppliers. However, P_1 will be always lower than P because of economies of scale of the large retailer. As far as net employment gains are concerned we have to look at both direct and indirect gains. Adoption of highly advanced supply chain increases total market size which increases number of suppliers both in manufacturing and agriculture which generates employment. Indirect benefits are decline in prices, and increase in real income of consumers which increases consumption demand and investment (savings). The key losers could be the middlemen such as wholesalers. However, our field research in Guntur shows that wholesalers adapted efficiently with the emergence of Best Price Wal-Mart in Guntur (Patibandla, 2013). Mom and Pop stores lose their business if demand remains constant. Demand for agricultural goods has been increasing at an exponential rate with increase in population. If the large retailer develops the markets in terms of increasing productivity and standardization of the goods, Mom and Pop stores could derive externalities.

The above analysis is a simplification because it takes a single large retailer as the middleman between producers and consumers. However, the supply chain adopted in different industries is a highly sophisticated governance mechanism between a large number of different players. The supply chain is a value-addition process on a vertical chain from production of raw materials to the final stage of selling to consumers. It could be at the regional, national, and global levels. It can be present at the intra-firm level of large multinational firms operating in different regions within a country and at the global level with their multiple subsidiaries specializing in different parts of a product or a service. It is also present at the inter-firm level with different firms specializing in the production of different components. The basic theory for explanation of supply chain is derived from transaction costs theory.

Coase in his paper (1937) "The Nature of the Firm" argued that market mechanism is subject to the friction of transaction costs of search, and formulating and executing contracts. Owing to transaction costs, a firm as an organization comes into existence to economize on transaction costs of markets. The firm internalizes economic activity until marginal internal bureaucratic costs of hierarchy are equal to the marginal transaction costs of the market (boundaries of the firm). The question that follows is: Why does one large company not perform the economic activity instead of numerous companies in an industry? An explanation for this can be seen in terms of differential abilities of entrepreneurs and managers in managing a large company. The bureaucratic costs of a large single company are higher than the sum of bureaucratic costs of N number of companies in an industry.

Williamson (1975 & 1985) conceptualizes differential transaction costs through the lens of contracts. They differ in three critical dimensions: frequency, uncertainty, and asset specificity. All contracts are incomplete as it is not possible to incorporate all possible contingencies in space and time into a contract. The behavioural assumptions are bounded rationality and opportunism. Bounded rationality (Simon, 1957) refers to behaviour intendedly rational, but

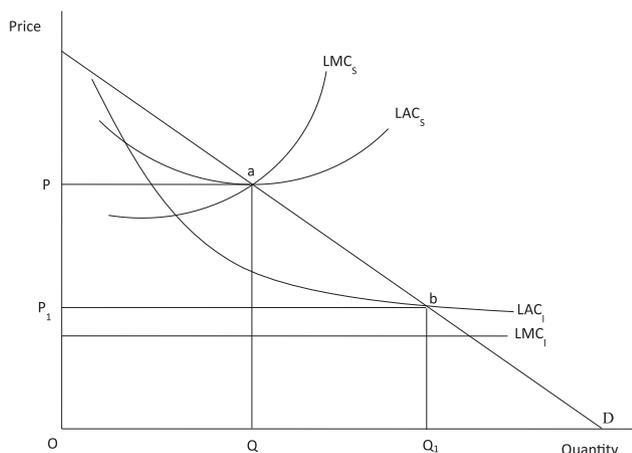


Figure 1 Effects of supply chain.

limitedly so owing to informational imperfections and cognitive abilities. Opportunistic behaviour is conceptualized in terms of self-interest with guile. In the *ex-ante* stage of a contract, the market is competitive. Once two agents enter into a contract, it becomes a bilateral monopoly. Guile is implied when contracts are incomplete, agents renege on their promises when the environment changes or when one realizes that the other party has invested in assets specific to the contract (locked-in).

Given the differential dimensions of transaction costs, agents choose different governance structures, markets, hierarchy (integration), hybrids (such as franchisees and to some extent joint ventures), and public bureaus. For investments with high degree of asset specificity, the preferable governance is integration of economic activity into a firm. Following from transaction cost economics, supply chain between different players is a matter of trade-offs between economies of specialization and transaction costs of search, and formulation and execution of contracts. Specialization of different production activities by different agents or firms is the fundamental basis of trade. If economies of specialization by different firms are higher than transaction costs it results in vertical chain between numerous players. The contracts could be formal and also relational in terms of long-term relations and investments between the parties.

Wal-Mart's model of retailing

We consider the case of Wal-Mart's model of retailing as the bench mark for the possible effects of allowing entry of large foreign retail firms into India. We consider what the advantages of Wal-Mart in the U.S. are, and in other countries, whether these advantages can be translated into India and if so what the possible effects in terms of net benefit or losses on different stakeholders are.

Wal-Mart is the largest retail corporation in the world with \$440 billion annual turnover and about two million employees (Wal-Mart Website, 2012). Wal-Mart discount store was first established in a small town Rogers in Arkansas by Sam Walton in 1962. The basic strategy was to enter small towns with population of 5000–25,000 which were not served by large retailers and derive scale advantage in relation to the size of small town markets and eliminate small players. Once it established itself in small towns, it slowly improvised its basic model and translated it to large towns (Walton, 1992).

Brea-Solis, Casadesus-Masanell, and Grifell-Tatje (2010) identified six choices or a set of choices that define the Wal-Mart's business model which are setting low prices, investing in technology, having specific human resource policies, establishing strategies for expansion, increasing product variety, and developing a Wal-Mart culture.

From the beginning Wal-Mart focused on increasing the volume of customers' visits to realize economies of scale (Walton, 1992). By keeping prices low, it increased sales much more than just to compensate for the decrease in mark-up. When Wal-Mart enters a market, prices decrease by 8% in rural areas and 5% in urban areas (Ghemawat & Mark, 2006). For example, when Wal-Mart entered the grocery business, the prices fell by 15%. This unrelenting

drive to keep prices low puts pressure on all the stakeholders: workers, managers, and suppliers (Basker, 2005).

Labour (wage) costs were treated as overhead costs for the retail business and kept as low as possible. This meant employing as minimum number of workers as possible and paying wages as low as possible. Trade unions were discouraged. However, the company introduced a profit sharing plan for workers in 1971 in which they could purchase subsidized Wal-Mart stock with a percentage of their wages. Workers are treated as associates. Managers are given certain degree of autonomy to make decisions for increasing volume of sales. For example, department heads pick an item which they consider has the potential to sell in large volumes and develop the associated promotion plan. Furthermore, Wal-Mart developed the concept of "store within store" in which each department is given the freedom to act as an independent merchant.

Wal-Mart derived competitive advantage through adoption of highly efficient logistics and distribution system by leveraging new technologies. It adopted a vertically integrated distribution system. It was one of the first retailers to adopt electronic scanners at the registers which were tied to an inventory control system such that it could know immediately which items were selling well. By 1988, Wal-Mart had the largest privately owned satellite communications network in U.S.A. This helped the managers obtain a complete picture of where goods were and how fast they were moving from the suppliers to front-end service and track all the costs involved (Lichtenstein, 2005). This made inventory management very efficient, thereby reducing working capital costs.

In traditional supply chain, goods pass from manufacturer to wholesaler to distributor, to retailer and customers. Wal-Mart procures goods directly from manufacturers bypassing all intermediaries and always drives a hard bargain with suppliers. It spends a significant amount of time meeting vendors and understanding their cost structure. Once satisfied, it establishes long-term relationship with vendors. It is in constant touch with suppliers through computer network (Chandran, 2003). The long-term relationship of repeated interactions reduces transaction costs of exchange. Once goods are procured, Wal-Mart's warehouses supply 85% of the inventory as compared to 50–60% for competitors. Consequently, it is able to provide replenishments within two days against at least five days for competitors and shipping costs on average turn out to be 3% as against 5% for competitors. The inventory management system helps in tracking exact location of a product inside a warehouse and nine miles of laser conveyor belts help to transport products to the packaging area quickly. Information technology systems help to augment responsiveness of its vendors and reduce stock-holding significantly. It adopted the technique of "cross-docking" by which goods from suppliers are directly procured from manufacturing plants, sorted and delivered to customers. Wal-Mart adopted radio frequency identification (RFID) technology which is superior to the bar code system. All suppliers are made to equip their products with RFID tags. Radio frequency identification readers installed in the stores are capable of scanning multiple RFID tags which eliminates the need for individual scanning (Deb & Agrawal, 2012). Wal-Mart owns its own large network

trucks for moving goods from warehouses to stores. This ruthless pursuit of cost and price cutting strategies of Wal-Mart enabled it to grow into a gigantic retail corporation (Fishman, 2006).

Basker (2005) found that Wal-Mart's entry into a sample of towns resulted in job losses in the retail business as some small and medium size retail establishments closed. On the other hand, Ghemawat and Mark (2006) argue that Wal-Mart has grown the economic pie available to be divided among its various stakeholders instead of slicing up a fixed pie in a way that favours one group over another. They cite the McKinsey Global Institute's study of the U.S. labour productivity growth between 1995 and 2000 (by Robert Solow), which shows that Wal-Mart contributed significantly to its growth. Given that Wal-Mart's prices are 8% lower than competitors', U.S. consumers save about \$18 billion per year. For each job lost through Wal-Mart effect, consumers saved more than \$7 million per year. This would imply that in terms of net effects more jobs were created through increase in incomes and expenditure than those of direct losses.

The above discussion shows that Wal-Mart derived a sustainable advantage with respect to competitors in the U.S. with net positive effects on the economy as a whole. The issue that follows is whether it has been able to translate it to foreign country operations. The theory of multinational firms shows that a firm becomes a multinational if it has intangible asset advantage in technology, brand name and organization: otherwise local firms can produce the product more efficiently than a foreign firm (Hymer, 1960). However, the intangible asset theory is only a partial explanation. Multinational firms have to take into account diverse economic, political, and social institutions of different countries, governance and management decisions while making their entry (Patibandla, 2007). The institutional environment in terms of the constitution, the legal system, property rights, contract laws, regulatory institutions, embedded norms and customs, and consumer behaviour which determine transaction costs of business could be broadly similar across a group of countries and diverse across a group of other countries. For example, when Wal-Mart entered Canada and the U.K. it was successful. However, it failed in South Korea and Germany and struggles in countries such as Japan and Russia (Patibandla, 2013).

In case of Germany, Wal-Mart management at the top was not able to understand and deal with Germany's regulatory and institutional conditions and consumer preference for value rather than service and work culture. In case of South Korea, consumers prefer to buy small and fresh quantities and Korean competitors attracted consumers away from Wal-Mart with marketing strategies based on nationalistic feelings (Patibandla, 2012).

In the case of Mexico and other Latin American countries which are geographically close to the U.S., Wal-Mart has been successful. Wal-Mart entered Mexico in 1991 with a joint venture with the largest Mexican firm Aurrera which was bought out in 1997. Wal-Mart modernized warehousing, distribution, and inventory management which reduced costs and prices significantly. It adapted to Mexican conditions with "Bodega Aurrera" stores or austere versions of supermarkets designed to meet small town needs, and high-end "Superama" in high-end neighbourhoods. This allowed

it to target different customers with different purchasing power. The operation of Wal-Mart in Mexico is shown to have resulted in \$60,000 in savings to customers for each \$10,000 in wages paid to employees (Das & Pramanik, 2011). Wal-Mart grew very rapidly in Mexico. By 2012, it became the largest private employer with 209,000 employees.

Wal-Mart entered China in 1996 and now it operates 352 stores in 130 cities. Wal-Mart has been able to cater to the rapidly growing Chinese market at around 18% annually. It accounts for 30% of China's exports. About 20,000 Chinese suppliers provide Wal-Mart with 70% of its global sales. Thirty percent of Chinese exports are accounted for by Wal-Mart (Schell, 2011) Schell observes "Just as China is providing Walmart with the lifeblood of its commercial growth, Walmart is helping the Chinese state not just to satisfy the escalating demands of its consumers but to extend Beijing's regulatory writ. Together, they are engaging in a bold experiment in consumer behaviour modification, market economies, and environmental stewardship... how Walmart and China interact with each other over the next decade will be critical to the fate of the planet's environment."

Over the years as the incomes of Chinese consumers have been growing, there has been greater demand for clean food and environment-friendly practices. Wal-Mart started to adopt environment-friendly practices. As Schell (2011) notes, through well-organized companies such as Wal-Mart that operate nationally, the Chinese government has found auxiliary sources of public education, control, and regulation through effective supply chain with no extra cost to the public.

Changing organization of India's retail sector

In the year 2012, the Indian retail sector was estimated to be Rs. 18,673 billion and it accounted for around 15% of GDP and 8% of total employment. The sector is highly fragmented with about 96% of the stores in the unorganized sector. The Kirana stores (Mom and Pop stores) numbering around 12 million are spread across 5000 towns and 600,000 villages throughout India. These are mostly family-owned with family labour. At the bottom of the pyramid are millions of pavement stalls in India (PriceWaterhouseCoopers, 2011).

The Boston Consulting Group (2012) estimated retail sales to be \$471 billion with 7% share for the organized retail (\$34 billion) in 2011. It also shows that by 2020 the size of organized retail would be around \$260 billion with a penetration of 21%. Increasing middle class incomes and use of automobiles, refrigerators, credit cards, and adoption of technology for supply chain is expected to shift the balance in favour of organized retail in metros and small towns.

As mentioned earlier, the Government of India liberalized the entry of multi-brand foreign retailers in the year 2012. It has imposed some restrictions — they can set up stores only in cities with population of more than one million, have to source 33% of goods from small and medium manufacturers and have to invest at least \$100 million with half the amount going into infrastructure.

Wal-Mart entered India as a joint venture with the Indian firm Bharti to circumnavigate India's FDI rules. Bharti did not possess prior retail business. It wanted to enter into retail business by using Wal-Mart's expertise. Interestingly, it is a non-exclusive partnership and Wal-Mart can forge other alliances in India. Bharti is Wal-Mart's franchisee and wholly owns and manages front-end retailing by setting up multiple stores across India (Patibandla, 2012). Bharti Wal-Mart has three forms of business models: Cash and Carry, Small Supermarkets (Easy Day) and Compact Hyper Markets. In the case of Cash and Carry format, there are no policy restrictions on goods sold, as it is basically a business-to-business model. However, the government issued only 60 licenses for Cash and Carry operation for the entire country. Small- and medium-scale businesses are provided a registered card with which they can buy goods in bulk and sell them to consumers with a mark-up. In 2013, the Indian government announced that foreign retailers can sell directly to consumers. This broke up the joint venture.

At present, supply chain both in the manufacturing and the agricultural sectors is fragmented and inefficient. In a few industries such as two-wheelers, automobiles and some electronic goods, the entry of multinational firms resulted in development of vendor firms and advancement in technology. For example, the first tier auto-component firms have become internationally competitive (Patibandla, 2006).

In the case of agricultural sector, India's supply chain is one of the most fragmented and inefficient in the world resulting in wastage of large quantities of food grains, vegetables and fruits. About 30–40% of vegetables and fruits are destroyed before they enter the market. Apart from this, output is procured through unhygienic practices. This means that farmers and consumers bear the costs of the wastage. In the case of vegetables and fruits, on average, output passes through six middlemen – from farmers to consolidator, commission agent, trader, commission agent, wholesaler, retailer and finally to consumer. Asymmetric information generated by middle-men especially the wholesalers, makes farmers, the front-end retailers and consumers worse off. As a result, farmers receive a small fraction of the final price paid by consumers (Patibandla, 2013).

India's organized retail sector has been growing at a rapid pace. For example, supermarket sales have been growing at three times the GDP growth (Reardon & Minten, 2011). India's retail sector can leap-frog by making use of highly advanced supply chain and logistics technology of the international players such as Wal-Mart. Supply chain models make use of highly complex algorithms. India has developed a highly advanced information technology industry which can be leveraged by the retail industry.

There is evidence of transformation of the supply chain that is taking place both in the urban and rural areas (Reardon & Minten, 2011). However, there are several constraints on efficiency owing to high transaction costs and physical infrastructure bottlenecks. High transaction costs are incurred while setting up of the necessary infrastructure. One has to acquire more than 21 licenses to open a retail store and pay high stamp duties in the case of transfer of property. Clear title of ownership and land use conversion are subject to complex legal issues and

corruption by government agents (Ray, Das, Baral, Rico, & Pramanik, 2012).

India is more densely populated than the U.S. and China and less densely populated than countries such as the U.K., the Netherlands and Japan. High density could be an advantage as well as a disadvantage for large retailers. Once a large retailer occupies real estate in a high density area, it will be able to realize economies of scale of serving large number of customers and at the same time real estate prices could be high. While average global rental costs for retail are approximately at 3–5% of sales, in India they account for 10–15% of sales.

India is highly diverse in ethnicity, language, culture, and environment. For example, consumer preferences and consumption patterns (for example vegetarian and non-vegetarian food) are more diverse across different regions than in countries such as the U.S., European countries and even China: which means that a standardized supply chain across the country may not work. Furthermore, at present there are large barriers to trade within the country – different tax regime of the states and infrastructure conditions. Although India's road network has been growing, it is still low at less than 4 km per 1000 people which is 1/15 of the U.S. road network (Ray et al., 2012). This means that certain elements of the supply chain could be standardized at the national level and others have to be adapted to regional requirements. The tropical environment of India provides some advantages and disadvantages. Several vegetables and fruits and pulses can be produced throughout the year which means frequent procurements and lower storage costs, and at the same time costs of hygiene and perishability will be high. Secondly, different tropical vegetables and fruits require different temperature and moisture requirements to reduce perishability and retain nutrient value.

Unlike in the U.S., Europe and Australia, major part of land holdings in India are small, medium and marginal. If a large retailer wants to procure directly from farmers, he/she has to enter into relational contracts with a large number of producers which means high transaction costs. One way a large retailer could reduce average transaction costs is by encouraging farmers to behave in a cooperative way, by pooling their efforts at input procurement and output supply. In several parts of the country there has been increasing use of mobile phones by farmers to conduct their business. Das Gupta, Reardon, Minten, and Singh (2010) show that about 80% of the potato farmers contacted multiple buyers by phone in Delhi and settled the price through phone. In other words, adoption of technologies such as mobile phones, Kisan (farmer) credit cards, and the Internet could reduce transaction costs and also foster cooperative behaviour.

Most of the major players in the retail business use third party outsourced warehouses for distribution. Distributors establish localized presence and form their own network of sales teams. The actions adopted in the supply chain are mostly reactive to those in adjacent stage. There are no systematic methods of matching demand and supply and reducing costs of uncertainty. There are a few large retailers who use the services of independent logistics firms. One example is Concor (the Container Corporation of India) which provides logistics to Bharti-Wal-Mart, Pantaloon and

Mother Dairy. Agility Logistics of the US has invested \$130 million in India. Snowman Frozen Foods of Japan is supposed to be the first and largest cold chain-cum-logistics independent firm with a pan-India presence. Consequently, there is emergence of procurement system partnership between Indian large retailers and global chains (Reardon & Minten, 2011).

At present, large retailers such as Reliance Fresh, Bharti Wal-Mart and Metro have been sourcing directly from farmers in specific regions where density of farmers is high. Bharti Wal-Mart's main focus has been on business-to-business- sourcing from farmers and selling to wholesalers and restaurants, etc. for bulk selling. In the year 2010, Bharti Wal-Mart launched an initiative to support farmers through a combination of direct sourcing and training to generate a consistent source of high-quality produce for their supply chain. It engaged over 800 farmers and sourced over 15% of vegetables sold in its stores. It is expected to directly source from 35,000 small and medium farmers by 2015 (Patibandla, 2012). In establishing cold-storage facilities, frequent power break downs have necessitated investment in diesel generators. Reliance Fresh installed reverse-osmosis machines at its processing centers to purify its water supply (Robinson, 2007). Direct procurement benefits farmers through reduction in transaction costs, faster turnaround, reliable weighing, transparent pricing, and cash on delivery (Reardon & Minten, 2011).

In the case of manufacturing, India has been able to develop world-class manufacturing industries at the higher end through the entry of MNCs owing to low cost labour with advanced skills. However, middle and low-end manufacturing have not been able to develop on the lines of China's experience. About 30% of China's exports are accounted for by Wal-Mart. At present, China's per capita income is about \$6000 while India's is about \$1800 which means that the cost of semi-skilled labour is lower in India. However, India's low-end manufacturing has not been able to become globally competitive owing to infrastructure bottlenecks of power shortage, roads, and inefficient ports, and its poor linkage with the global supply chain. Entry of Wal-Mart with its highly advanced global supply could lead to the development of the low-end manufacturing and generation of employment if it invests significant amount of resources in cultivating a long-term relationship with suppliers and helping them in quality and delivery control mechanism.

In essence, large retailers, both Indian and MNCs, have to invest significant amount of resources in developing the supply chain, and gains would be realized in the long run through realization of economies of scale and growth of incomes and number of agents in the system. As large retailers invest in generating the supply chain complemented with the government investments in public goods such as roads, energy, and primary and secondary education, the average costs of the supply chain will decrease over time owing to both static and dynamic economies.

The flip side of global supply is that high pressures on costs and prices could make supplier firms cut costs by not adopting labour, safety, and environmental standards. This is where the government has to set up effective regulatory institutions to monitor and enforce the standards. In the year 2013, Wal-Mart India announced that it will screen all suppliers for ethical standards before linking up with them.

Conclusion

This paper has developed a simple theory on supply chain and economic growth. Adoption of efficient supply chain by modern retailers can reduce average transaction and information costs of market exchange and contribute to surplus of stakeholders such as farmers, manufacturers, consumers and thereby contribute to expansion of output. The role of foreign players such as Wal-Mart is that they bring in their highly developed supply chain and logistics systems, developed over time, and adapt them to India. This could result in externalities to local suppliers and retailers, both modern and the traditional. They could introduce domestic suppliers into the global supply chain and increase their export competitiveness. Apart from this, foreign players increase competition and make the markets contestable.

A good example of the benefits of the operation of foreign players in retail space is the case of McDonalds in India. McDonalds developed a highly sophisticated franchise system of fast food. It started to build the supply chain in India six years before it opened its first outlet. It outsourced every element of its value-generation. It developed suppliers by transferring technology, and quality standards in the production of bread, meat, and vegetables. The contracts with suppliers are relational and long-term. It has standardized the quality of fast food across all the outlets in the country. Suppliers are encouraged to supply to other fast food chains. Consequently, the suppliers have benefited significantly.

Since the initiation of the economic reforms in 1991, the Indian economy has been growing between 6 and 8% annually. India's population is expected to reach 1.6 billion by 2050. This implies exponential increase in demand for food products. It is highly imperative for India to increase agricultural productivity and stabilize food prices. The government can address this by facilitating modern retailers, both domestic and foreign, to adopt highly efficient supply chain and complementing it with its investment in infrastructure and primary and secondary education.

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