FDI in Retail in India: An Empirical Analysis

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Abstract

Allowing FDI in multi brand retailing has recently generated tremendous euphoria for some and fear for others. It is based on the notion that it will open floodgates for foreign retailers to invest and will change the retail landscape forever in India. The factors that attracted investment in India are stable economic policies, availability of cheap and quality human resources, and opportunities of new unexplored markets. Besides these factors, there are a number of macroeconomic factors that are expected to affect FDI in retail in India. Using the experiences of four other emerging economies- China, Indonesia, Brazil and Thailand, this research paper examines the relationship between FDI in retail and seven macroeconomic factors - Exchange rate (yoy%), Inflation (CPI), GDP growth, Index of Industrial Production, Trade Openness, Unemployment rate and Tax as a percentage of nominal GDP using quarterly data for the period starting from January 2000 to December 2012. The research has shown that the year 2009 was a more appropriate time in India to have policies in place to invite FDI in retail.

It is observed that there has been no such case of domination of foreign retailers in past years of globalization wherever markets for global retailers have opened up. Only limited numbers of retailer had entered into these markets with lot of caution as they had soon realised that retail thrives on local knowledge rather than imitating and transplanting global retail strategy, concepts and formats. In major emerging countries, fewer foreign retailers had been successful while several failed due to their inability to gather customer insights, comprehend local nuances and fight local competition. In fact, in many countries the local retailers have better market shares, sizes and performances.

The research findings also indicate that with the introduction of FDI in retail in India, there will be an initial displacement of middlemen from the supply chain. However, the organized retailing will induce an increase in the food processing sector and these middlemen will be absorbed by it. It is also expected that the government will take innovative measures to mitigate the adverse effects on small retailers and traders involved in the supply chain. Direct accessibility to the market will be provided to the farmers and hence, a better remuneration. With respect to consumers, they will benefit from assured weights and cash memos, enhanced competition due to the presence of bigger retailers and better quality of produce. The government revenues are also expected to rise due to elimination of intermediaries, enhanced operational efficiency, and control on post harvest wastage, however competition in the retail market would gradually be advantageous for end customer.

I. Introduction

The entry of Foreign Direct Investment (FDI) in the retail sector seems to have become the next frontier for conquest by the pro-MNC forces of liberalisation. Paul Etgart, a former director of the giant UK retailer TESCO has said, "Indian retail business should not be fooled by partnership offers by global retail giants because they want 100 per cent control and eventual ownership". He also urged the government to retain strict FDI regulations, (for) global retail giants are very smart and clever to tackle local cultural and political obstacles. Of late, the retail industry in India has often been hailed as one of the sunrise sectors in the economy. From among 30 emergent markets, AT Kearney has recognised India as the 'second most attractive retail destination' globally. With a contribution of 14 percent to the national GDP and employing 7 per cent of the total workforce in the country, the retail industry is definitely touted as one of the pillars of the Indian economy.

With huge growth potential, Indian retail industry has been touted as one of the sunrise sectors. By 2015, according to the Investment Commission of India, the retail sector would have grown to $660 billion i.e. almost three times its current levels. However, in spite of the recent advancements in retailing and its huge contribution to the economy, retailing is still among the least evolved sectors and the growth of organised retailing is immensely slower compared to the rest of the world. Food retail trade accounts for 63 per cent of total retail sales in the economy and thus, is a very large segment of the total economic activity of our country. It holds a vast employment potential and hence, attracts the attention of government and foreign major retailers. Enhancing the efficiency and improving the food retail sales would have a cascading effect on employment and economic activity in the rural areas for the marginalised workers. Even without any significant involvement of FDI, the corporate owned sector in retailing is expanding ferociously at a high rate. The question that is significant right now is that as there is no dearth of indigenous capital, why is FDI in retail needed at the first place? Secondly, how the influx of FDI in retail in the country going to affect various stakeholders?[1]

Undoubtedly, currently there exists a dismal situation of the retail sector due to various reasons explained in this research paper. Also the absence of an FDI encouraging policy in the Indian retail sector shuns away any hope of restructuring and fostering this sector, despite the on-going wave of incessant liberalization and globalization. On this contextual basis, this research paper attempts to analyse the concrete strategic issues concerning the influx of FDI in the Indian retail industry. Moreover, with the recent move of the government to allow FDI in the multi-brand retailing sector, this research analyses the effects of these changes on farmers, committees, mom & pop stores and agri-food sector. The purpose of the research is to find out whether FDI in retail would enable India Inc. to efficiently integrate its economy with that of the global economy.

[1] Guruswamy M., Sharma K., Mohanty J.P., Korah T. (2013), "FDI in India's Retail Sector: More Bad than Good?", Economic and Political Weekly, Vol. 40, No. 7, pp. 619-623

Traditionally, most of the Indian households have enjoyed the convenience of calling up the grocery "kirana" store, which has advantages of familiarity with their brand preferences, flexibility in returning and exchanging goods and also offers credit. However in most cities today, mall based shopping formats are gaining popularity but still the price-sensitive Indian shopper prefers Big box stores such as Big Bazaar specifically for the steep discounts and bulk prices. Most of the shoppers preferred the convenience and access offered by the local grocery store and hence, retail chains such as Reliance Fresh, Subhiksha and More have closed down their operations in certain locations. These retail giants will have to focus on various operations while reaching out to the Indian consumer. Firstly, they have to effectively build their expertise with cold storage technologies to attract customers with fresh and exotic vegetables and organic produce. Secondly, they need to create a range of inspirational global foods and household brands and thus create access for the consumers. Thirdly, they have to ensure interruption free supplies of essential raw materials by supporting domestic farmers.

In India, FDI in cash and carry (wholesale) with 100% ownership was allowed in 1997 under the Government approval route. Later on in 2006, it was brought under the automatic route. Simultaneously, 51% investment in a single brand retail outlet was also permitted. But till 2013, FDI in Multi-Brand retailing was prohibited in India[2].

As per the experiences of the above-mentioned Indian Mega retailers, foreign giants will have to focus on engaging shoppers' and farmers interest and ultimately combine these benefits with the advantages that local "kirana" stores have always offered – '*familiarity, convenience and personalised shopping experiences*'.

II. Indian Retail Sector: An Overview

Mckinsey & Company (May 2007) studied that the Indian retail market size is estimated to be US$ 450 billion. Retailing accounts for 14 to 15% of its GDP and constitutes as one of the top five retail markets in the world by economic value. Also with 1.2 billion people, India is one of the fastest growing retail markets in the world.

Dikshit (2011) examined that India's retail and logistics industry employs about 40 million Indians. Owner manned small shops constitute India's retailing industry. In 2010, about 4% of the industry was constituted by larger format convenience stores and supermarkets with their presence only in large urban centers. Indian central government denied foreign direct investment (FDI) until 2011in multi-brand retail, thus not allowing any foreign groups from any ownership in convenience stores, supermarkets, or any retail outlets. Also, single-brand retail was limited to 51% ownership and had to undergo a bureaucratic processing.

[2] Rupali Gupta, (2012) 'FDI in Indian Retail Sector- Analysis of Competition in Agri-Food Sector'

According to **Economist (2012)**, market reforms in November 2011 provided for retail innovation and also introduced competition with multi-brand retailers. Global giants such as Carrefour, Walmart and Tesco and single brand giants such as IKEA, Nike, and Apple had not planned strategic entry into India.[3]

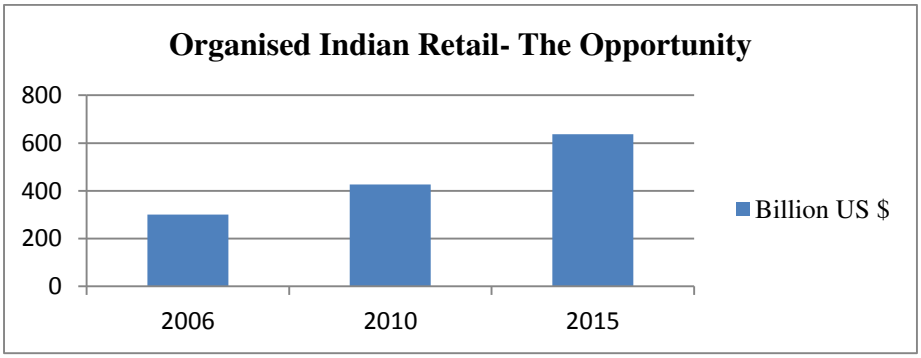
Sharma and Sahu (2012) investigated that in January 2012; reforms for single-brand stores imposed the requirement that they should source 30% of their goods from India. However the reforms allowed global retailers to innovate in Indian retail market with 100% ownership.

According to **The Financial Times (2012)**, because of the 30% requirement, IKEA announced in January that it will not open stores in India sooner. Fitch believes that this requirement will significantly delay but might not prevent brand majors from Europe, USA and Japan to open up stores in India.[4]

There are many past studies which have emphasized the role of GDP growth, wage rate, trade rate, real interest rates, inflation, and stock of FDI, domestic investment in attracting FDI in retail into a country.

i. Growth drivers in India for retail sector

The pace of growth in retail in India is very fast as it is expected that it will grow up to US$ 833 billion by the year 2013 and US$ 1.3 trillion by 2018 (at a CAGR of 10%). Simultaneously, the consumer spending has also gone up as in the last four years, the consumer spending in India surged to 75%. Also, the organized sector is promising to grow at a CAGR of 40% by the year 2013.[5]



Following are the key factors driving growth in retail industry: growing middle class income, improving demand from rural markets, young demographic profile (Average age of an Indian

[3] "Retailing in India Unshackling the chain stores". The Economist. 29 May 2012.
[4] "Ikea shelves Indian retail market move". The Financial Times. 22 January 2012.
[5] "Indian retail: The supermarket's last frontier". The Economist. 3 December 2011.

homeowner has fallen to 27 from 40 years in the last decade), increasing consumer aspirations, housing boom, rising incomes and improvements in infrastructure. Other factors are increase in per capita income, liberalization of the Indian economy and the advent of double income families. Consumer preferences are also improving and they are becoming quality conscious and shifting their purchase behaviour from the traditional retail stores to malls.

Rohilla and Bansal (2012) examined that many online stores are highly accessible and hence, also help in creating awareness about global products for local markets. For example, TV channels promoting products-HomeShop18, India Today, etc. are increasing in number. About 47% of the Indian population is under the age of 20; and this may be increase up to 55% by 2015. This young population is highly tech-savvy compared to past generations and also watch more than 150 satellite TV channels, and show very high propensity to spend. This factor will immensely contribute to the growth of the retail sector in the near future.

ii. Advent of Foreign retailers in India

Many global retailers like Walmart, Metro, Woolworth, Staples which wanted to establish and capture some market in India are now trying to leverage on the policy of 100% in cash and carry wholesales route for multi-brand retailing. Similarly retailers like Debanham, Espirit, Nokia, Zara, Mark & Spencer, Hamleys etc. are leveraging policies based on 51% for single brand retailing. Significant foreign retailers' presence is seen in Apparel, Fashion, Luxury and food retailing using either the franchise or licensing route.

Recently many global players like Amazon are taking advantage of online retailing and hence are targeting Indian consumer by setting up relationship with supply chain companies to deliver products to end customer therefore bypassing the need to create physical retail stores. To attract Indian consumer to buy their products online, Crate and Barrel has launched India specific website. To target Indian consumer, identical efforts are expected by other leading global retailing giants leveraging on 3G and smart phone apps, spread on internet, and social networking.

As retailing still is a very local industry (over 90%), the FDI in multi-brand retailing will only benefit existing organized players in terms of attracting foreign capital and will not change considerably the retail landscape in terms of formats proliferations - benefiting customers, generating huge employment or investment in supply chain or back end investment as has been envisaged in the policy. It is expected that many Trans-national retailers will use online route or e-commerce to attract Indian consumer to start with before setting up physical presence to test the market.

iii. Retailing is Local

Retailing has largely remained local since its advent in the 19th century. It has been local industry driven by understanding of catchments, local customers and providing merchandising to the target segments. Achieving economies of scale has been the priority of retailers since then which has been determined by developing understanding of catchments with similar shopping behaviour and dominant presence of the target segment. During 1990s due to saturation in their home markets, retailers started venturing out of their own countries mostly Europe. Local regulations which prevented them to expand and grow were another factor in expanding in the foreign lands. As per empirical data, the market share of local retailers across categories is higher than foreign retailers in all the major economies, emerging or mature.

iv. Experiences of Retailers beyond home country

Most retailers have grown concentrically because initially most of these expansions by a few Transnational Retailer(TNR) were in neighbouring countries mainly in Europe and America. In the 1990s, the retail acceleration primarily (involving European and US retailers) comprised developing store networks in, the emerging economies of Latin America, East Asia and Central/Eastern Europe along with exporting capital, formats and expertise. Wal-Mart's acquisition-led entry into the UK and Germany is an example of significant flows of retail FDI between 'mature' economies while this time. [6]

The international expansion has taken places in accordance to Table -1. This FDI inflow in retail was determined by:

a. Longer-term growth opportunities perceived to be offered by emerging economies with previously largely 'traditional' retail systems;
b. by the consolidating, and often increasingly tightly regulated, home markets of these firms;
c. by the capacity of the largest of these firms 'to leverage their increasing core-market scale and free cash flow for expansionary investment in order to secure the longer-term higher growth opportunities offered by the emerging markets' (OECD, 2000a, 306).

[6] Gokhale Srikant, Sinha Piyush Kumar. (2012), 'FDI in Retail: A Global Perspective'

Wave	1st	2nd	3rd	4th
	Early 1990s	Mid-late 1990s	Early 2000s	Late 2000s
Countries	South America East Asia (outside China and Japan). Parts of South East Asia (Thailand, Philippines). Northern-Central Europe (Poland & Baltic countries) South Africa	Mexico & Central America, Much of south-east Asia (Indonesia), South-Central Europe, South Africa	China, Eastern Europe, Russia, Other parts of Central America & South east Asia India	South Asia (outside India) Sub-Saharan Africa outside countries impacted in 2nd and 3rd waves. Poorer countries in South East Asia (Cambodia), South America (Bolivia)
'Modern' retail market share mid 2000s	50-60%	30-50%	1-20%	

Source: Globalization of Trade retail services, OECD report, Nov-2010

A study of top 250 global retailers present in India and China (Top 250 Retailers, Jan 2011, Store magazine) reveals that 110 of them operate in single local home country. 175 retailers operate in less than 5 countries, mainly neighbouring countries. Only 50 retailers operate in more than 10 countries. Only 36 of them have entered into China since the opening up of retail sector in late 1990s. Out of these, 17 retailers are already present in India. Therefore the scope for entry of global retailer entry into India is limited. At best, the global players already present in India will expand faster due to opening up.

v. Why globalization of retailers has not succeeded?

As emerging markets opened their economies for retailing in early 2000, few of these TNR ventured into these countries with mixed results. Many of these retailers exited after unsuccessful stints. Empirical analysis also shows that there are more cases of failure and exit rather than success in terms of creating economies of scale in emerging economy. Recent examples like the exit of Best Buy from China and Wal-Mart from Germany and Carrefour from Korea demonstrate of inefficiency and incapability of these giant retailers to get substantial amount of market share from the local competition.

According to **Deloitte (2010)**, retailing is a uniquely complicated business. It is the industry that maintains the closest and most personal relationship with consumers, often intersecting their

lives on a weekly and even daily basis. Achieving a successful personal relationship is far more challenging when doing it in an alien culture[7].

In addition, successful global retailing entails undertaking a wide range of tasks. These include managing diverse human resources who must engage in personal interaction with customers, managing foreign human resources from afar, managing complex and differing supply chains, managing relationships with thousands of suppliers and other vendors in multiple business and regulatory environments, meeting the requirements of multiple regulatory regimes, and all the while understanding the changing needs of diverse consumers.

In particular, they fail to deal with the resistance shown by two parts of the existing retail structures of those markets. First, by indigenous retailers who rapidly and successfully emulated the organizational innovations and best practices of the TNR that had entered their home markets and who, because of their local institutional knowledge and social/political-networks, were able to anticipate and respond to the TNRs' sources of competitive advantage. Indeed, prior to the main 'waves' of entry of 12 TNRs into their home markets some of these indigenous 'modern' retail chains had already developed the basis of a protectable market scale – i.e. sufficient to ensure that they were well positioned to resist that entry.

Several examples of this type of resistance have been documented, including the case of Chile (Bianchi & Mena 2004 and Bianchi and Ostale 2006) in the late 1990s/early 2000s, where Ahold, Carrefour and Home Depot all failed to establish themselves against sustained defense by the largest indigenous chains at the time (D&S and Cencosud in grocery retailing, and Sodimac in home improvement retailing). This demonstrates the fallacy of any easy or inevitable route to domination of emerging markets by multinational retailing.

Secondly, strong resistance has also been shown by the 'informal' retail channels. Indeed, it is widely acknowledged that the TNRs have faced persistent difficulties in fresh food retailing where 'wet' and/or 'street' market formats retain their popularity and market share in emerging markets. **Humphrey (2007)** suggests that significant question marks exist over the capacity of multinational retailing to mount a sustained challenge in this area.

vi. Changing Indian retail landscape

In the past 8 years, Indian retailing landscape has completely changed as a result of large corporate and foreign players dominating the organised retailing in top 15 cities. They aim to build a profitable and scalable business model based on local customer experience in each of the catchment. They have analysed many strategic ways about the formats, size and merchandising mix based on the catchment and customers they serve. Many Indian retail giants like Croma, Reliance Digital, etc. have worked on creating reduced size and smaller formats like Croma Zip

[7] Indian Retail market: Changing with Times, Deloitte, 2010

to reach various target segments in a profitable ways as assumptions of big box being profitable in Indian scenario has proven wrong.

India is a very complex and challenging country from a scalability perspective to serve the need of diverse mix of customers based on demographic variations. Since the consumer needs and buying behaviour are very different for each catchment within cities, various formats need to be stitched to serve different markets. But again in India, it is difficult to find critical mass of similar catchments within the same cities which have been the learning of organized players operating in India for last 8 years.

According to **India Retail Report 2013**, modern Retail has seen a significant growth in the past few years with large scale investments made by Indian corporate houses mostly in food sector retailing. The market size has been estimated to be USD 400 Billion market. Through Franchisee/Joint Venture route, foreign retailer giants and apparel brands including luxury brands have entrenched themselves in India in the last few years.

Few retailers have been designing plans to start their Cash & Carry business to have a market presence and create brand awareness. Indian retail landscape has changed since 2004 since the time world woke up to the potential of retailing in India in a significant way. The market is still fragmented dominated by small shops, the largest network of retailers in the world from street Hawkers to Luxury malls.

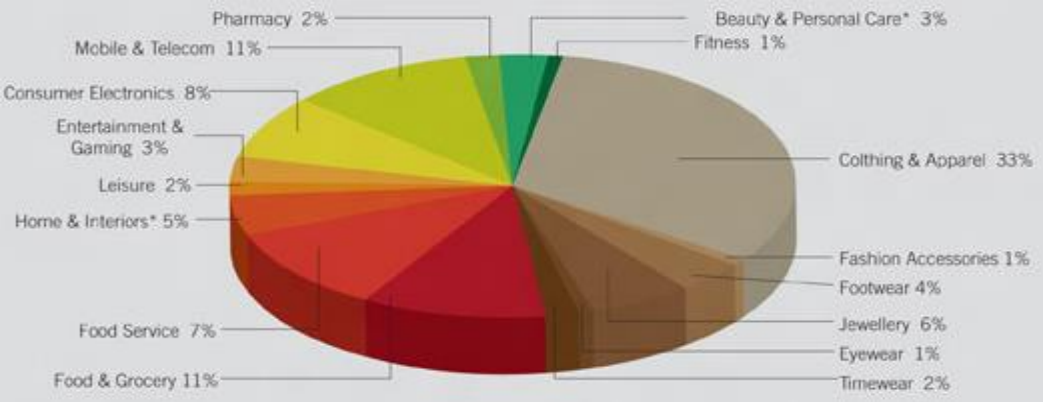
The market size is growing at 10% each year but 90% of it is unorganized. The highly diverse nature of Indian customer favours local retailers to succeed. However, 70% of India is still rural and lacks proper infrastructure. For any organized retailing to flourish, metro cities are too overcrowded and lack adequately built shopping centres, high street and mall spaces. New urban areas are coming up in cities without proper planning to create adequate space for shopping. The Mall sizes in India are half in terms of area occupied as per the International standards of building any mall. The suppliers and manufactures help in ensuring that retailing remain fragmented as this ensures the bargaining power with them rather than with retailers as has been case with dominant retailers. (Wal-Mart, Tesco, Carrefour, Best Buy and others)

Share of Modern Retail

	2010 (In Rs. Cr)	2012 (In Rs. Cr)	Growth%	Est. 2015 (In Rs. Cr)	Est. Growth%
Total Retail	21,19,634	28,50,055	16.0	47,80,318	18.8
Modern Retail	1,38,961	2,23,572	26.8	4,87,423	29.7
Share% of Modern Retail	6.6	7.8		10.2	

Source: Images Retail Intelligence Services (IRIS) Research, India Retail Report 2013

Share of different verticals in Modern Retail



Source: Images Retail Intelligence Services (IRIS) Research, India Retail Report 2013

III. Effects of FDI in retail on various Stakeholders

i. Impact on Farming Communities

Since the early 1990s, a supermarket revolution has been observed in developing countries. In order to reach the mass market, supermarkets have now developed beyond the middle- and upper-class clientele.

This process affects both traditional retailers, and the wholesale, processing, and farm sectors within the food system. With respect to quality, costs, volume, consistency and commercial practices, supermarkets require more from suppliers when they modernize their procurement systems. Supermarkets affect suppliers in a biggest way for food-manufacturing enterprises, since some 80% of contents sold by supermarkets comprise processed, staple, or semi-processed products. Thus supermarkets are indirectly affecting the farmers through processors which pass on the demands placed on them by their retail clients.

Supermarkets thus help farmers with training, credit, equipment, etc when they are unable to source from large-scale or medium-scale farmers, and small farmers lack the much needed assets[8].

Empirical analysis shows that farmers tend to earn from 20 to 50% more in net terms when they enter supermarket channels. For example, net profit is 33–39% higher among supermarket channel participants compared to traditional markets participants among tomato farmers in Indonesia along with helping the farm labour to gain. However this requires more up-front investment on the part of farmers and meets greater demands for quality, consistency, and volume compared with marketing to traditional markets.

[8] Rupali Gupta, (2012) 'FDI in Indian Retail Sector- Analysis of Competition in Agri-Food Sector'

ii. Support for retail reforms

During December 2011, a pan-Indian survey was conducted and a majority of consumers and farmers participated across ten major cities in the country to support the retail reforms. According to 90 per cent of consumers, FDI in retail will offer a wider choice of goods and also bring down prices. About 78 per cent of farmers said through multi-format stores, they will get better prices for their output. Marketing resources will be needed to push sales through multiple channels, as they may have to accept lower margins for greater volumes. This fact was accepted by nearly 75 per cent of the traders.

iii. Farmer groups

Announcing their support for reforms in retail, Indian farmer associations have the following opinion:

a. Shriram Gadhve of All India Vegetable Growers Association (AIVGA) lends his support because currently, middlemen commission agents benefit at the cost of farmers and the retail reform should be focusing on rural areas so that farmers are benefited.

b. Bharat Krishak Samaj, a farmer association having more than 75,000 members also lends it support to retail reform. They examined that a monopoly exists between various groups such as middlemen, commission agents available at the sabzi mandis and the small grocery retailers[9].
The group has requested the government that it should be mandatory for organized retailers to bypass the middlemen monopoly and India's sabzi mandi auction system and buy 75% of their produce directly from farmers,.

c. According to Prakash Thakur, the chairman of the People for Environment Horticulture & Livelihood of Himachal Pradesh, FDI in retail will help build storage centers that will reduce the number of middlemen, increase market access, and enhance returns to farmers[10]. He lends his support to FDI in retail by further establishing the fact that highly perishable fruits have a high demand and are not able to tap the market.

d. According to Suryamurthy, in an article in **The Telegraph**, under the current system the farmer is being exploited and their groups across India do not support present status and seek retail reforms. According to him:[11]

- They get only one third of the consumer price while rest is consumed as commissions by middlemen and shopkeepers.
- Average price farmers receive is barely 12 to 15% for perishable horticulture produce.

[9] "India government puts foreign supermarkets "on pause"", Reuters, 2011
[10] "Farmer Organisations back retail FDI". The Financial Express. (2 December 2011)
[11] Suryamurthy, R. (2 December 2011) "Enter, farmer with an FDI in retail query" Calcutta, India: The Telegraph

iv. Impact on Traditional Mom and Pop Stores

With the advent of major organized retail players in India, the existence of traditional mom and pop stores is in question.

However, there could be a co-existence. The size, complexity and diversity of retail industry is a huge advantage for the smaller players in India, However most of organised retailers have opened shop in the Metros, Tier 1 and Tier 2 towns. Reasons to prevent the liberalisation of the FDI norms for Indian retail are:

a. Adverse affect by the entry of global retail giants: Since these retailers have advanced capabilities of scale and infrastructure along with being cash rich, this may result in the loss of jobs for people in the Indian unorganised sector.

b. Better operational efficiencies of the organised players: Lower product prices by global giants may hamper the profit margins of the unorganised players.

Multi-brand retail, if allowed, can transform the retail sector in the following significant ways:

i. Firstly, the organised players are expected to bring in the much needed investment which will help the domestic retailers that don‘t have the resources to sail through during economic crisis.
ii. Infrastructure support extended to improve the backend processes would enable to eliminate such extreme wastages and enhance the supply chain operational efficiency.
iii. FDI in multi-brand retail would in no way endanger the jobs of people employed in the unorganised retail sector. On the contrary, it would lead to the creation of millions of jobs as massive infrastructure capabilities would be needed to cater to the changing lifestyle needs of the urban Indian who is keen on allocating the disposable income towards organised retailing like big box stores along with the local kirana stores. These stores would be able to retain their importance owing to their unique characteristics of convenience, proximity and skills in retaining customers. Also, these would be more prominent in the Tier-II and Tier-III cities where the organised supermarkets would find it harder to establish themselves

Hence, FDI in multi-brand retail is an important step to push more growth in the sector.

Case studies of MNCs helping farmer communities in India like PepsiCo India’s potato farming programme and Bharti Walmart initiative through Direct Farm Project and several others suggest that opening of Indian retail sector to FDI is a win-win situation for farmers. Farmers would benefit significantly from the option of direct sales to organized retailers. Global majors such as Wal-mart, Carrefour and Tesco are expected to bring a global scale in their negotiations with the MNCs such as Unilever, Nestlé, P&G, Pepsi, Coke, etc. The improved cold chain and storage infrastructure will no doubt lead to a reduction in losses of agriculture produce. It may also lead

to removal of intermediaries in the retail value chain and curtail other inefficiencies. And this may, result in higher income for a farmer.

v. Contrary view of FDI in retail in India

For many centuries, traditional retailing has been established in India, and is characterized by small, family-owned operations. Hence these ownerships are usually very low-margin, are owner operated, and pay low taxes and have very low real estate and labour costs. These businesses also develop strong networks with local neighbourhoods. Their attractiveness is increase manyfold due to informal system of credit. Apart from this, low labour costs also allow shops to employ delivery boys. These advantages are non-quantifiable but highly significant. [12]

Congested urban living conditions force few Indian households to equip themselves with adequate storage facilities since real estate rents are very high. Thus opportunities are limited for big box retailers in this sector and they will have to fight stiffly with the local sources of groceries and Kirana stores to attract consumers.[13]

vi. Perceptions, Concerns and Likely impact

Mukherjee and Patel (2005), a report of ICRIER on FDI in retail sector in India, consolidates the perception of foreign retailers on Indian market and discusses likely impact of the entry of foreign players on domestic organised and unorganised sector by undertaking a comprehensive survey. Although Indian market is portrayed as an attractive investment destination, foreign retailers state several barriers like price sensitive consumers, low purchasing power, poor brand awareness, poor infrastructure and logistic network, fragmented market, difference in taxes across states and lack of clarity of government regulation. Nearly half of the unorganised retailers surveyed felt that there is no difference between domestic organised and foreign retailers. Also, unorganised retailers are upgrading and consolidating their position to face competition. Government is also keen on developing India as a sourcing hub. India lags far behind China in sourcing. However, sourcing increased manifold in China after introduction of FDI and the same is expected in India once FDI is allowed. About the likely impact on prices, there is a difference in opinion. Prices may rise as products sold by foreign retailers are high priced (Mango, Marks and Spencer). Prices could be lower as well since foreign retailers would invest in supply chain, reduce intermediaries and wastage. Competition from foreign retailers would force domestic counterparts to upgrade and improve productivity leading to lower prices.

[12] Deloitte- (Jan 2013) Indian Retail Market "Opening New doors"- http://www.deloitte.com/assets/Dcom-India/Local%20Assets/Documents/Thoughtware/Indian_Retail_Report_Opening_more_doors.pdf

[13] Raghavan M., Anusha Chari (March 2011) "Foreign Direct Investment in India's Retail Bazaar: Opportunities and Challenges"

Policy Implication of FDI in Single Brand Retail[14]

a. 100% FDI in single brand retail trading is permitted.
b. Products to be sold should be of a particular Single Brand only.
c. 30% sourcing is to be done from micro and small industries (investment in Plant and Machinery not exceeding US $ 1mm). This will ensure that SME sector is benefited to a larger extent.

Policy Implication of FDI in Multi Brand Retail [15]

a. Individual state governments to take decision of allowing foreign supermarket chains.
b. Foreign retailers to source almost a third of their processed goods and manufactured from industries with a total plant and machinery investment of less than $1 million.
c. Minimum investment of $100 million, and at least 50% of investment into 'back-end' infrastructure, such as warehousing and cold storage facilities.
d. Foreign retailers allowed only in cities having population > 1 million. Individual state governments can choose where to allow foreign chains to open in states where there are no cities with such a big population.

IV. Analysis of Impact of FDI in Retail on Macroeconomic factors for other countries

The nations analysed below are similar to India in terms of demographics and various macro-economic factors. A comprehensive study has been done to analyse the impact of FDI in retail particularly in retail in following countries.

China

China developed its open door policy in the aspect of FDI in retail in order to take a transition from a planning to a market economy as Deng Xiaoping once said, reform in China is like "crossing the river by feeling the stones on the riverbed". Simultaneously, china has undoubtedly made the single largest contribution to global poverty reduction of any country in the past 20 years. [16]

Following has been the series of events with respect to FDI in retail in china:

i. FDI in retailing was allowed in China for the first time in 1992 only. Foreign ownership was initially restricted to 49%.

[14] Patel R., Sethi R., Bartz S., Israel R. (March 2012) " Liberalization Of India's Foreign Direct Investment Policy On Single-Brand Retail"
[15] Shekar Swamy (Dec 2012). "The Pitfalls of FDI in Multi-Brand Retailing in India"
[16] Reardon T., Gulati A. (Feb 2008) " The Rise of the Supermarkets and their Development Implications", IFPRI Discussion Paper 00752 – International Experience Relevant for India

ii. In December 2004 the government lifted up all the restrictions on FDI in Retail.
iii. Regarding employment in the retail and wholesale trade, it increased from about 4% of the total labour force in 1992 to about 7% in 2001. Between 1996 and 2001, number of traditional retailers also increased by around 30%.
iv. After liberalization of its retail sector, following changes took place (**CII-PwC, 2008**):
    a. Over 600 hypermarkets were opened between 1996 and 2001
    b. The number of small outlets increased from 1.9 million to over 2.5 million
    c. From 28 million people to 54 million people, employment in the retail increased during 1992 to 2001.
    d. GDP growth has been at 8% on an average after the introduction of FDI in Retail
v. China's inflation rate decreased to -0.8% and -1.4% in 1998 and 1999 respectively. Now after 20 years, inflation rate is at 2% rather than 14.6% and 24.2% in 1993 and 1994.
vi. The value of imports and exports has increased minutely since the introduction of FDI in retail. Also the Chinese Yuan started depreciating with respect to dollar after 1992.
vii. The total FDI inflow & outflow in retail has also increased significantly after the introduction of FDI in retail leading to increased trade openness.

Thailand

Following is the sequence of events with respect to FDI in retail in Thailand:

i. FDI in Retail was introduced in 1997 in Thailand. However, many adverse effects of FDI in retail were observed. It permits 100% foreign equity, with no limit on the number of outlets.
ii. According to a **Report of ICRIER (2008)**:
    a. Wet market and small family owned grocery stores dominated the Thai Retail industry.
    b. After the Asian crisis in 1997, the entry ban on foreign players was removed. Soon, the foreign players increased and developed their operations significantly. Eventually, most of the local players had to close down their business.
iii. However, there were certain positive effects as well:
    a. Expansion of organized retailing and a new shopping destination called Thailand;
    b. Encouraged agro-food processing industry and enhanced the exports
iv. Impact on macroeconomic factors:
    a. GDP growth rate of Thailand plummeted to -10.5% in 1998 due to the shutting down of local retailers.
    b. Unemployment rate remained low.
    c. Inflation rate also remained at 0.3%
    d. The openness indicator reached its maximum in 2002.
    e. FDI inflows increased to 7,314,804,931 in 1998.

Indonesia

Modern retail was introduced in Indonesia in the 1990s and mostly involved domestic chains. FDI in retail led to the multi-nationalization and rapid consolidation of the supermarket sectors in such developing countries.[17]

i. Currently, Indonesia permits 100% foreign equity in retail business, with absolutely no limit on the number of outlets.
ii. In 1958, the leading chain Matahari started as a small shop, expanded into a chain of department stores, and was then in 1997, bought by a giant banking and real estate conglomerate, Lippo Group. Between 2002 and 2006, Matahari doubled its sales, becoming a billion-dollar chain.
iii. Impact on macroeconomic factors
    a. A deep economic recession in 1997-98 leading to inflation of 80% during the mid 1997.
    b. The GDP growth too plunged to -13%
    c. Introduced a wide range of institutional reforms and redirected monetary policy towards maintaining price and exchange rate stability. Eventually, price stability was reinstated.
    d. Also, exports & imports & the real exchange rate remained consistent.
    e. There was an increasing effect of FDI in retail on the total FDI inflows in retail. However, FDI outflows in retail dropped after 1994.

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.

i. Empirical analysis shows that since its opening up to the foreign investment in 1994, the traditional small retailers managed to increase their market shares by 27% (according to the report by **CUTS International**).
ii. The annual GDP growth remained stable and positive.
iii. The unemployment rate decreased after 1994 after its maximum at 9.6.
iv. After 1994, the Brazilian Real appreciated with respect to U.S Dollar.
v. The value of exports and imports too increased after 1994.
vi. In 1998, the total FDI inflows in retail reached their peak.

[17] Reardon T., Gulati A. (Feb 2008) " The Rise of the Supermarkets and their Development Implications", IFPRI Discussion Paper 00752 – International Experience Relevant for India

Russia

In the 2000s, the Russian supermarket revolution has occurred. In 2002, sales by the top-15 chains amounted to $2.7 billion; by 2006, sales by those chains surged to $19.2 billion. The share of the top-3 chains was about 40 percent in 2002 and 54 percent in 2006. The foreign share of sales was 33 percent in 2002 and 35 percent in 2006 leading to 8 foreign chains among the top 15.

i. Since the introduction of FDI in retail, the GDP growth has been positive
ii. Since 2000, the unemployment rate too has decreased.
iii. After 2002, a sharp increase was observed in FDI inflows and outflows in retail.

Mexico

The Mexican case of supermarket development is quite similar to that of Brazil. In the early 1990s, nearly all the supermarket sales were by domestic chains. [18]By 2002, 48 percent of the $24 billion dollars in sales was accounted by the top-seven chains. By 2006, the sales of those chains had nearly doubled to $38 billion, and now 53 percent are by foreigners.

i. With the influx of foreign retailers in 1991, few major retail stores started dominating the market, and many of the smaller retailers were made to shut down. By 2001, only 4 chains dominated the market:
    a. Wal-Mart de Mexico(Walmex) with almost half (45.6 percent),
    b. Comerical Mexicana with a little over a fifth (20.6 percent) market share,
    c. Gigante with 15.5 percent share and
    d. Soriana with 14 percent share.
ii. By 2002, Walmex's total sales had surged to 10.1billion and by 2006, it increased to 18.3 billion (as per Wal-Mart de Mexico 2006)
iii. The GDP rate has been consistent except in 1995 when it reached -6.2.
iv. Wal-Mart took over nearly half of Mexico's retail business with just over 200,000 employees (the country's population is 112 million). Undoubtedly the unemployment rate increased to 6.9 in 1995.
v. Though the value of exports and imports was consistent throughout but the exchange rate was seen fluctuating after 1991. There was an increase in the total FDI inflows in retail.

[18] Leonardo I., Javorcik B., (Jan 2009), "Walmart in Mexico: The Impact of FDI on innovation and industrial productivity", Penn State University, NBER

V. Research Methodology

i. Objectives

Examining the relationship between FDI in retail and macro-economic factors has important implications for policy makers and foreign investors. Policy makers need to push reform agenda in domestic market so as to attract more FDI in retail in the Indian economy.

Hence various macroeconomic factors have been analysed vis-a-vis FDI in retail using quarterly data for the period starting from January 2000 to December 2011 for four countries – Brazil, China, Indonesia and Thailand. It is important to analyse the impact of FDI in retail on macro-economic factors over a period of time. Simultaneously, it is important to examine the role played by macro-economic factors in attracting FDI in retail in any country. Hence, policies should be formulated in accordance to the macro-economic factors which work best for the country. If the economy of the country indicates high probability for the country to accept FDI in a particular sector, the policies should be formulated accordingly to open barriers in order to invite FDI in the country in the respective country.

ii. Methodology Undertaken for Analysis

Dynamic relationship between FDI and macro-economic factors

According to **Ernst and Young's 2010** European Attractiveness Survey, India is ranked as the fourth most attractive foreign direct investment destination in 2010.

In their research paper "On Dynamic relationship between FDI and Macro-economic factors: The India Experience", **Tripathi, Seth and Bhandari (2011)** discuss that the factors that attracted investment in India are stable economic policies, availability of cheap and quality human resources, and opportunities of new unexplored markets. Besides these factors, there are a number of macroeconomic factors that are expected to affect FDI in retail in India.

This research considers the following macroeconomic factors/determinants affecting FDI in retail:

1. **Market Size: T**o tap the domestic market is the aim of FDI in retail in emerging developing countries, and thus market size is important for domestic market oriented FDI. Market size is generally measured by GDP or per capita income. Thus, an economy with a large market size (along with other factors) should attract more FDI in retail.

   Pfefferman and Madarassy (1992) examine that as it provides potential for local sales, greater profitability of local sales to export sales and relatively diverse resources, market size is important for FDI in retail which make local sourcing more feasible. Thus, a large market size

provides more opportunities for sales and also profits to foreign firms, and therefore attracts FDI in retail (Wang and Swain, 1995: Moore, 1993; Schneider and Frey, 1985; Frey, 1984). Here it's given by **(Real GDP$_{i,t}$- Real GDP$_{i,t-1}$)/Real GDP$_{i,t-1}$**. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

2. **Exchange Rate**: The appreciation and depreciation of currency does have an impact on the price of exports and imports making their comparative position and competitiveness in international markets fluctuate sometimes towards advantage to the home country and sometimes disadvantage.

   It was argued by **Aliber (1970)** that while firms coming from countries that have strong currency are better able to financially support their foreign direct investments than firms coming from countries that have inherently weak currency.

   This data has been taken for four countries from 2000 to 2012 on quarterly basis from Oanda.com.

3. **Trade Openness:** Trade Openness refers to the degrees to which countries or economies permit or have trade with other countries or economies. It is calculated as export plus import as percentage of GDP. It is also considered to be one of the key determinants of FDI in retail. The FDI in retail activities of the firms are constrained when there is protectionist policy followed; therefore these activities are encouraged when the country embarks on the path of liberalization.

   Scaperlanda (1992) analyzes that when capital controls are relaxed, the flow of capital between countries easier and faster. In an economy that is export oriented, the management skills of marketing products internationally, innovations, technology advancements and knowledge of external operations become unrestricted.

   The exports plus imports level of a country is taken as a variable to represent this degree of economies openness i.e. **(Exports$_{i,t}$ + Imports$_{i,t}$)/GDP$_{i,t}$**. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

4. **Unemployment Rate**: FDI have helped India to attain a financial stability and economic growth with the help of investments in different sectors. FDI has boosted the economic life of India and on the other hand there are critics who have blamed the government for ousting the domestic inflows. As a common understanding, Foreign direct investments generates employment to the unemployed, provides revenues in the form of tax and incomes, gives financial stability to the government, provides development of infrastructure, forms backward and forward linkages. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

5. **IIP: Index of Industrial Production**: Investors can use the IIP of various industries to examine the growth in the respective industry. If this index is growing month-over-month for a particular industry, then the companies in the industry are performing well. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

6. **Inflation: Bengoa and Sachez-Robles (2003)** suggested that higher rates of return is required by countries with high inflation generally to compensate for the higher risk associated with inflation. FDI in retail is motivated by investment efficiency and this is generally affected by the condition in degree of inflation. Inflation needs to be stable in order to encourage greater FDI in retail.

   Here we have taken inflation as $\mathbf{(CPI_{i,t}-CPI_{i,t-1})/CPI_{i,t-1}}$ where CPI is the consumer price index in period t for country i. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

7. **Total FDI flows**: $\mathbf{(FDI\ inflows_{i,t} + FDI\ outflows_{i,t})/GDP_{i,t}}$

8. **Tax Revenue Indicator**: Tax revenues in country i at time t in local currency unit (LCU) divided by GDP in current LCU i.e. $\mathbf{Tax\ revenue_{i,t}/GDP_{i,t}}$. This data has been taken for four countries from 2000 to 2012 on quarterly basis from Bloomberg.

Methodology 1:

Panel Data regression has been applied to carry out regression for four countries – China, Indonesia, Brazil and Thailand simultaneously and observe the results and eventually, apply them in the Indian scenario. Since FDI in retail sector data is not explicitly available for any country, the data about its presence or absence has been indicated by a dummy variable FDI in a binary format. A value 1 indicates FDI in retail was present in a particular country while a 0 indicates it was absent.

Hence various macroeconomic factors have been analysed vis-a-vis FDI in retail using quarterly data for the period starting from January 2000 to December 2011 for four countries – Brazil, China, Mexico, Indonesia and Thailand. It is important to analyse the impact of FDI on macro-economic factors over a period of time. Hence all the seven macro-economic factors have been analysed with respect to FDI in retail and other significant factors individually.

Simultaneously, it is important to examine the role played by macro-economic factors in attracting FDI in any country. Thus, Logit-Probit model has been applied to understand the significance of macro-economic factors in attracting FDI in retail in any country.

i. Empirical Results and Analysis

a. Panel Data Regression

Impact of FDI in retail on Macroeconomic factors using Panel Data Regression

Quarterly data of the following variables from 2000 to 2012 has been collected for four countries – China, Indonesia, Brazil and Thailand:

$$FDI_{it} = \beta_0 + \beta_1 * CPI_{it} + \beta_2 * EXC_{it} + \beta_3 * GDPR_{it} + \beta_4 * IIP_{it} + \beta_5 * TAX_{it} + \beta_6 * TRADE_{it} + \beta_7 * UNEMP_{it} + \varepsilon_{it}$$

(Model 1)

$$CPI_{it} = \beta_8 + \beta_9 * EXC_{it} + \beta_{10} * FDI_{it} + \beta_{11} * GDPR_{it} + \beta_{12} * IIP_{it} + \beta_{13} * TAX_{it} + \beta_{14} * TRADE_{it} + \beta_{15} * UNEMP_{it} + \varepsilon_{it}$$

(Model 2)

$$EXC_{it} = \beta_{16} + \beta_{17} * CPI_{it} + \beta_{18} * FDI_{it} + \beta_{19} * GDPR_{it} + \beta_{20} * IIP_{it} + \beta_{21} * TAX_{it} + \beta_{22} * TRADE_{it} + \beta_{23} * UNEMP_{it} + \varepsilon_{it}$$

(Model 3)

$$GDPR_{it} = \beta_{24} + \beta_{25} * CPI_{it} + \beta_{26} * EXC_{it} + \beta_{27} * FDI_{it} + \beta_{28} * IIP_{it} + \beta_{29} * TAX_{it} + \beta_{30} * TRADE_{it} + \beta_{31} * UNEMP_{it} + \varepsilon_{it}$$

(Model 4)

$$IIP_{it} = \beta_{32} + \beta_{33} * CPI_{it} + \beta_{34} * EXC_{it} + \beta_{35} * GDPR_{it} + \beta_{36} * FDI_{it} + \beta_{37} * TAX_{it} + \beta_{38} * TRADE_{it} + \beta_{39} * UNEMP_{it} + \varepsilon_{it}$$

(Model 5)

$$TAX_{it} = \beta_{40} + \beta_{41} * CPI_{it} + \beta_{42} * EXC_{it} + \beta_{43} * GDPR_{it} + \beta_{44} * FDI_{it} + \beta_{45} * IIP_{it} + \beta_{46} * TRADE_{it} + \beta_{47} * UNEMP_{it} + \varepsilon_{it}$$

(Model 6)

$$TRADE_{it} = \beta_{48} + \beta_{49} * CPI_{it} + \beta_{50} * EXC_{it} + \beta_{51} * GDPR_{it} + \beta_{52} * FDI_{it} + \beta_{53} * IIP_{it} + \beta_{54} * TAX_{it} + \beta_{55} * UNEMP_{it} + \varepsilon_{it}$$

(Model 7)

$$UNEMP_{it} = \beta_{56} + \beta_{57} * CPI_{it} + \beta_{58} * EXC_{it} + \beta_{59} * GDPR_{it} + \beta_{60} * FDI_{it} + \beta_{61} * IIP_{it} + \beta_{62} * TAX_{it} + \beta_{63} * TRADE_{it} + \varepsilon_{it}$$

(Model 8)

Where:

- CPI_{it} is the CPI yoy% of the country i at time t,
- EXC_{it} is the exchange rate yoy% of the country i at time t,
- FDI_{it} is the FDI in retail as a binary value of the country i at time t,
- $GDPR_{it}$ is the real GDP growth yoy% of the country i at time t,
- IIP_{it} is the Index of Industrial production yoy% of the country i at time t,
- TAX_{it} is the Tax revenues as a factor of nominal GDP of the country i at time t,
- $TRADE_{it}$ is the Trade openness i.e. (exports + imports)/Nominal GDP of the country i at time t,
- $UNEMP_{it}$ is the unemployment rate (yoy%) of the country i at time t.

yoy% is the year on year change in variable's value corresponding to the same quarter for e.g. 20x2 Q1 over 20x1 Q1 or 20x7 Q3 over 20x6 Q3.

Stationarity is tested for all the macro-economic variables. All macro-economic variables come out to be stationary at zero level.

Table 1: Cross-Correlation of macro-economic variables

	CPI	EXC	FDI	GDPR	IIP	TAX	TRADE	UNEMP
CPI	1.000000	0.068502	-0.223486	-0.101378	-0.213811	0.055761	-0.368261	0.116123
EXC	0.068502	1.000000	-0.091719	-0.141932	-0.033756	0.021181	-0.043228	0.086012
FDI	-0.223486	-0.091719	1.000000	0.021660	-0.078052	0.120158	0.071065	-0.141272
GDPR	-0.101378	-0.141932	0.021660	1.000000	0.752185	0.017984	-0.171854	-0.241091
IIP	-0.213811	-0.033756	-0.078052	0.752185	1.000000	-0.002524	0.009529	-0.122190
TAX	0.055761	0.021181	0.120158	0.017984	-0.002524	1.000000	0.022068	0.075404
TRADE	-0.368261	-0.043228	0.071065	-0.171854	0.009529	0.022068	1.000000	-0.340353
UNEMP	0.116123	0.086012	-0.141272	-0.241091	-0.122190	0.075404	-0.340353	1.000000

There is no multi-collinearity between the seven macro-economic variables (except FDI in retail as a binary data) since the correlation matrix of above macro-economic variables shows all the correlation coefficient to be less than 0.8. Further, Variance Inflation Factors on above macro-economic variables have been found <5. Hence there is no multi-collinearity present in the above selected variables. Panel data regression was carried out for 4 countries – China, Indonesia, Thailand and Brazil. Following is the analysis when GDP rate (yoy%) was taken as the dependent variable.

Table 2: Panel Data regression result for Model 4

Dependent Variable: GDPR
Method: Panel Least Squares
Date: 03/13/13 Time: 08:00
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.290962	0.314756	13.63268	0.0000
EXC	-1.284736	0.177678	-7.230709	0.0000
FDI	0.570258	0.265598	2.147076	0.0330
IIP	0.256009	0.014863	17.22513	0.0000
TAX	28.51006	4.015417	7.100149	0.0000
TRADE	-9.106432	0.919384	-9.904922	0.0000
UNEMP	-4.553527	1.011636	-4.501152	0.0000

R-squared	0.767962	Mean dependent var	5.582740
Adjusted R-squared	0.761036	S.D. dependent var	3.503206
S.E. of regression	1.712506	Akaike info criterion	3.946867
Sum squared resid	589.4680	Schwarz criterion	4.059188
Log likelihood	-403.4742	Hannan-Quinn criter.	3.992284
F-statistic	110.8731	Durbin-Watson stat	0.739472
Prob(F-statistic)	0.000000		

We find that GDP growth rate is independent of CPI (yoy %) but depends on exchange rate yoy %, FDI in retail (binary), IIP (yoy %), tax as a % of GDP, Trade openness factor and unemployment rate change (yoy %). The explanatory power of the model 4 is 76.8%. Since the dummy variable FDI in retail is highly significant with p-value 0.0330 and having positive coefficient 0.57, this shows that GDP rate for the four countries taken as sample was improved with the introduction of FDI in retail.

Table 3: Panel Data regression result for Model 8

Dependent Variable: UNEMP
Method: Panel Least Squares
Date: 03/13/13 Time: 08:05
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.110435	0.028714	3.846074	0.0002
EXC	-0.065361	0.014904	-4.385343	0.0000
FDI	-0.052253	0.017474	-2.990244	0.0031
IIP	0.003065	0.001528	2.005694	0.0462
TAX	1.405876	0.291837	4.817341	0.0000
TRADE	-0.533039	0.063675	-8.371239	0.0000
CPI	0.005843	0.002864	2.040238	0.0426
GDPR	-0.019836	0.004435	-4.472808	0.0000

R-squared	0.323970	Mean dependent var	-0.039139
Adjusted R-squared	0.300309	S.D. dependent var	0.134993
S.E. of regression	0.112919	Akaike info criterion	-1.486594
Sum squared resid	2.550128	Schwarz criterion	-1.358228
Log likelihood	162.6058	Hannan-Quinn criter.	-1.434689
F-statistic	13.69211	Durbin-Watson stat	0.805832
Prob(F-statistic)	0.000000		

We find that Unemployment rate depends on CPI (yoy %), exchange rate yoy %, FDI in retail (binary), IIP (yoy %), tax as a % of GDP, GDP rate and Trade openness factor. The explanatory power of the model is 32.4%. Macro-economic independent variables in the model are highly significant. Since the dummy variable FDI in retail is highly significant with p-value 0.0031 and having negative coefficient -0.0522, this shows that unemployment rate for the four countries taken as sample had decreased with the introduction of FDI in retail. Regarding employment in the retail and wholesale trade, in China it increased from about 4% of the total labour force in 1992 to about 7% in 2001. In Thailand, unemployment rate remained low. In Brazil, the unemployment rate decreased after 1994 after its maximum at 9.6. In Russia, since 2000 when the supermarket revolution took place, the unemployment rate too decreased. However, Wal-Mart took over nearly half of Mexico's retail business with just over 200,000 employees (the country's population is 112 million). Undoubtedly the unemployment rate increased to 6.9 in 1995.

Table 4: Panel Data regression result for Model 3

Dependent Variable: EXC
Method: Panel Least Squares
Date: 03/13/13 Time: 08:07
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.750899	0.117444	6.393683	0.0000
UNEMP	-1.305432	0.303503	-4.301222	0.0000
FDI	-0.328991	0.074663	-4.406348	0.0000
TAX	15.61683	0.836944	18.65934	0.0000
TRADE	-2.491622	0.266804	-9.338767	0.0000
CPI	0.100719	0.011004	9.152715	0.0000
GDPR	-0.101573	0.011349	-8.949559	0.0000

R-squared	0.802348	Mean dependent var	1.065531
Adjusted R-squared	0.796448	S.D. dependent var	1.133835
S.E. of regression	0.511549	Akaike info criterion	1.530329
Sum squared resid	52.59821	Schwarz criterion	1.642650
Log likelihood	-152.1542	Hannan-Quinn criter.	1.575746
F-statistic	135.9899	Durbin-Watson stat	0.598905
Prob(F-statistic)	0.000000		

We find that exchange rate yoy % depends on CPI (yoy %), FDI in retail (binary), unemployment rate, tax as a % of GDP, GDP rate and Trade openness factor. The explanatory power of the model 3 is 80.2% which is quite high. Macro-economic independent variables in the model are highly significant. Since the dummy variable FDI in retail is highly significant with p-value 0.000 and having negative coefficient -0.32899, this shows that exchange rate yoy % for the four countries taken as sample had depreciated with the introduction of FDI in retail.

Table 5: Panel Data regression result for Model 7

Dependent Variable: TRADE
Method: Panel Least Squares
Date: 03/13/13 Time: 08:14
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.256158	0.018497	13.84876	0.0000
FDI	2.198184	0.230676	9.529303	0.0000
GDPR	-0.036966	0.003534	-10.45901	0.0000
EXC	-0.108211	0.009515	-11.37231	0.0000
UNEMP	-0.471473	0.056528	-8.340471	0.0000
IIP	0.006798	0.001340	5.072664	0.0000

R-squared	0.581819	Mean dependent var	0.113067
Adjusted R-squared	0.571468	S.D. dependent var	0.164608
S.E. of regression	0.107756	Akaike info criterion	-1.589472
Sum squared resid	2.345495	Schwarz criterion	-1.493197
Log likelihood	171.3051	Hannan-Quinn criter.	-1.550544
F-statistic	56.20896	Durbin-Watson stat	0.456673
Prob(F-statistic)	0.000000		

We find that Trade openness factor depends on exchange rate yoy %, FDI in retail (binary), IIP (yoy %), Unemployment rate and GDP growth rate. The explanatory power of the model 7 is 58.2%. Macro-economic independent variables in the model are highly significant. Since the dummy variable FDI in retail is highly significant with p-value 0.000 and having a high positive coefficient 2.1981, this shows that Trade openness variable for the four countries taken as sample had improved with the introduction of FDI in retail. In Thailand, the openness indicator

reached its maximum in 2002. In Indonesia, exports & imports & the real exchange rate remained consistent. In China, The value of imports and exports has increased minutely since the introduction of FDI in retail. Also the Chinese Yuan started depreciating with respect to dollar after 1992. After 1994, the Brazilian Real appreciated with respect to U.S Dollar. The value of exports and imports too increased after 1994. Though the value of exports and imports was consistent throughout but the exchange rate was seen fluctuating after 1991.

Table 6: Panel Data regression result for Model 6

Dependent Variable: TAX
Method: Panel Least Squares
Date: 03/13/13 Time: 08:11
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.028986	0.006510	-4.452734	0.0000
FDI	0.012252	0.004004	3.060115	0.0025
TRADE	0.131275	0.014207	9.239953	0.0000
CPI	-0.002613	0.000637	-4.099266	0.0001
GDPR	0.006549	0.000961	6.814717	0.0000
EXC	0.040294	0.002166	18.60376	0.0000
IIP	-0.000688	0.000351	-1.963841	0.0509
UNEMP	0.073954	0.015352	4.817341	0.0000

R-squared	0.678967	Mean dependent var	0.052663
Adjusted R-squared	0.667731	S.D. dependent var	0.044929
S.E. of regression	0.025898	Akaike info criterion	-4.431570
Sum squared resid	0.134145	Schwarz criterion	-4.303203
Log likelihood	468.8833	Hannan-Quinn criter.	-4.379665
F-statistic	60.42704	Durbin-Watson stat	0.670677
Prob(F-statistic)	0.000000		

We find that tax as a % of GDP depends on CPI (yoy %), exchange rate yoy %, FDI in retail (binary), IIP (yoy %), gdp rate, Unemployment rate and Trade openness factor. The explanatory power of the model 6 is 67.9%. Macro-economic independent variables in the model are highly significant. Since the dummy variable FDI in retail is highly significant with p-value 0.0025 and having positive coefficient 0.012252, this shows that Tax revenues as a percentage of GDP for the four countries taken as sample had increased with the introduction of FDI in retail.

Table 7: Panel Data regression result for Model 5

Dependent Variable: IIP
Method: Panel Least Squares
Date: 03/13/13 Time: 08:16
Sample: 2000Q1 2012Q4
Periods included: 52
Cross-sections included: 4
Total panel (balanced) observations: 208

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.515077	0.852474	-5.296442	0.0000
GDPR	2.159389	0.107698	20.05048	0.0000
TRADE	9.459452	2.276090	4.156010	0.0000
FDI	-3.495202	0.748541	-4.669354	0.0000

R-squared	0.665128	Mean dependent var	6.526106
Adjusted R-squared	0.660204	S.D. dependent var	8.960004
S.E. of regression	5.222971	Akaike info criterion	6.163053
Sum squared resid	5565.003	Schwarz criterion	6.227237
Log likelihood	-636.9575	Hannan-Quinn criter.	6.189006
F-statistic	135.0628	Durbin-Watson stat	0.779795
Prob(F-statistic)	0.000000		

We find that IIP (yoy %) depends on FDI in retail (binary), Trade openness factor and GDP growth rate. The explanatory power of the model 5 is 66.5%. Macro-economic independent variables in the model are highly significant. Since the dummy variable FDI in retail is highly significant with p-value 0.000 and having positive coefficient 2.159389, this shows that IIP for the four countries taken as sample had increased with the introduction of FDI in retail.

Impact of Macroeconomic factors on FDI in retail using Logit-Probit model

Logit-Probit Model: In dummy regression variable models, it is assumed implicitly that the dependent variable Y is quantitative whereas the explanatory variables are either quantitative or qualitative. There are certain type of regression models in which the dependent or response variable is dichotomous in nature, taking a 1 or 0 value. The dependent variable is of the type which elicits a yes or no response. There are special estimation / inference problems associated with such models. The most commonly used approaches to estimating such models are the Linear Probability model, the Logit model and the Probit model.

The Logit Model

Logit regression (logit) analysis is a uni/multivariate technique which allows for estimating the probability that an event occurs or not, by predicting a binary dependent outcome from a set of independent variables. The logit of a number p between 0 and 1 is given by the formula:

$$\text{Logit}\,(P_{it}) = \ln[P_{it}/(1-P_{it})] = Z_{it} = a_0 + a_1 X_i$$

In this model, P_{it} is the probability of FDI in retail being brought to India while $(1-P_{it})$ is the probability of FDI in retail being not brought to India. Hence the hypothesis behind constructing P_{it} is that what should be the policy of India compared to other countries where FDI in retail has

already been allowed to a certain extent. The base of the logarithm function is the natural logarithm e. Negative logits represent probabilities below 0.5 and positive logits correspond to probabilities above 0.5. The logit transformation is one-to-one. The inverse transformation is sometimes called the antilogit, and allows us to calculate probability.

The Probit Model

A probit model is a popular specification for an ordinal or a binary response model that employs a probit link function. As such it treats the same set of problems as logistic regression using similar techniques. The probit model is most often estimated using the standard maximum likelihood procedure, such an estimation being called a probit regression. Probit Model assumes that the function follows a normal (cumulative) distribution, and latent variable probit can be derived from the following model:

Probit = $b_o + b_1X_1 + b_2X_2 + \text{error}$

Table 8: Logit Regression Analysis for Model 1

Dependent Variable: FDI
Method: ML - Binary Logit (Quadratic hill climbing)
Date: 03/14/13 Time: 00:54
Sample: 2000Q1 2012Q4
Included observations: 208
Convergence achieved after 4 iterations
Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.244417	0.401905	-0.608146	0.5431
GDPR	0.308050	0.088737	3.471474	0.0005
CPI	-0.162583	0.039904	-4.074358	0.0000
TRADE	14.71560	5.447532	2.701334	0.0069
UNEMP	-3.603748	1.351662	-2.666162	0.0077
EXC	-0.849217	0.231005	-3.676179	0.0002

McFadden R-squared	0.161749	Mean dependent var	0.596154
S.D. dependent var	0.491851	S.E. of regression	0.446021
Akaike info criterion	1.188561	Sum squared resid	40.18473
Schwarz criterion	1.284836	Log likelihood	-117.6104
Hannan-Quinn criter.	1.227490	Deviance	235.2207
Restr. deviance	280.6088	Restr. log likelihood	-140.3044
LR statistic	45.38806	Avg. log likelihood	-0.565434
Prob(LR statistic)	0.000000		

Obs with Dep=0	84	Total obs	208
Obs with Dep=1	124		

Above table shows FDI in retail (binary) depends on GDP rate (yoy %), exchange rate yoy %, trade as a % of GDP, unemployment rate change (yoy %) and CPI. The Logit Model gives the following model:

$Y_{it} = -0.24442 + (0.30805 * GDPR_{it}) + (-0.16258 * CPI_{it}) + (14.7156 * TRADE_{it}) + (-3.60375 * UNEMP_{it}) + (-0.84922 * EXC_{it})$

Table 9: Probit Regression Analysis for Model 1

Dependent Variable: FDI
Method: ML - Binary Probit (Quadratic hill dimbing)
Date: 05/08/13 Time: 13:02
Sample: 2000Q1 2012Q4
Included observations: 260
Convergence achieved after 3 iterations
Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.753119	0.232492	3.239328	0.0012
CPI	-0.141887	0.018162	-3.407457	0.0007
EXC	-0.901089	1.531983	-1.240933	0.0146
GDPR	0.320020	0.024164	-1.018905	0.0082
TRADE	12.723178	0.627032	-1.153335	0.0388
UNEMP	-3.440082	0.670790	-2.146844	0.0018

McFadden R-squared	0.054755	Mean dependent var	0.584615
S.D. dependent var	0.493739	S.E. of regression	0.478728
Akaike info criterion	1.329341	Sum squared resid	58.21174
Schwarz criterion	1.411510	Log likelihood	-166.8143
Hannan-Quinn criter.	1.362374	Deviance	333.6285
Restr. deviance	352.9544	Restr. log likelihood	-176.4772
LR statistic	19.32589	Avg. log likelihood	-0.641593
Prob(LR statistic)	0.001671		

Obs with Dep=0	108	Total obs	260
Obs with Dep=1	152		

Above table shows FDI in retail (binary) depends on GDP rate (yoy %), exchange rate yoy %, trade as a % of GDP, unemployment rate change (yoy %) and CPI. The Probit Model gives the following model:

Y_{it} = -0.753119 + (0.320020* $GDPR_{it}$) + (-0.141887*CPI_{it}) + (12.723178*$TRADE_{it}$) + (-3.440082*$UNEMP_{it}$) + (-0.901089*EXC_{it})

The Current Macro-economic Scenario in India is (t = 2012, i = India)

Trade/GDP %	GDP rate	IIP (yoy%)	Unemp (yoy%)	CPI	Exchange Rate
0.024061	4.5	2.4	-0.09259	10.83	-1.67%

Source: Bloomberg

Using Logit Model, Y_{it} = 1.845815

Antilog (1.845815) = P_{it}/ (1-P_{it})

P_{it} = 0.8636

Using Probit Model, Y_{it} = 1.013

Probability (Z>1.013) = Pr(Probit=1.013) = 0.8443, where Z is a standard normal variate

This shows that it is the right time in India to have policies in place so as to invite FDI in retail in accordance to the analysis done in other four countries where FDI in retail has already entered.

Scenario Analysis: In 2009, Macro-economic scenario in India was (t = 2009, i = India)

Trade/GDP %	GDP rate	Unemp (yoy%)	CPI	Exchange Rate
0.015339	13	0.009346	8.2	-0.718%

Source: Bloomberg

Using Logit Model, $P_{it} = 0.9346$

Using Probit model, $P_{it} = 0.9052$

Doing a similar scenario analysis for the period 2005 to 2012, following P_{it} is derived using Logit Model:

Table 10: Logit Regression result for Model 1

Year	2005	2006	2007	2008	2009	2010	2011	2012
P_{it}	81.18%	89.04%	86.53%	87.77%	**93.47%**	92.88%	88.57%	86.36%

Using Probit Model,

Table 11: Probit Regression result for Model 1

Year	2005	2006	2007	2008	2009	2010	2011	2012
Probit	0.781	1.082	1.001	1.076	1.313	1.265	1.079	1.013
P_{it}	78.23%	85.99%	84.14%	85.81%	**90.52%**	89.16%	85.95%	84.43%

This shows that in 2009, it was a more appropriate time in India to have policies in place so as to invite FDI in retail in accordance to the analysis done in other four countries where FDI in retail has already entered.

VI. Conclusion

Small retailers will strengthen market positions by becoming and growing innovative. The factors that will compensate for the loss of market share of the unorganized sector retailers will be growing economy and increasing purchasing power. Initially there will be a displacement of middlemen involved in the supply chain which is quite desirable as well, but they will be mostly absorbed by increase in the food processing sector induced by organized retailing. In order to mitigate adverse effects on small retailers and traders, innovative government measures could be taken further. Farmers will be able to directly access the market and hence get better remuneration. Regarding consumers, they will certainly gain from assured weights and cash memos, enhanced competition and better quality of produce. Due to enhanced operational efficiency, elimination of intermediaries and control on post harvest wastage, the government revenues will rise but competition in the market would ultimately be beneficial for consumer.

Finally the government has added many constraints for the incoming retailers which reflect social benefit and has initiated a calibrated structuring of the multi-brand retail sector to FDI. The foreign retailers and major chains have to first invest in the back-end supply chain and building up this infrastructure and then, would be permitted to set up and expand their own multi brand retail outlets across the states and country. These firms hence must have already strived for creating jobs for rural sector before entering into multi-brand retailing into the regions they want to spread to. Benefits of allowing FDI in the retail sector outweigh the disadvantages attached to it according to the extensive analysis done in this research. This research paper also highlights the successful experiments in countries like Thailand and China where the issue of allowing FDI in the retail sector confronted incessant refusals and protests, but later it proved to be a successful stint and helped in reaping long term social and economical benefits. It can also be touted as one of the most promising political and economical decisions of their governments. Both in terms of employment and GDP, the country progressed.

The empirical research has shown that FDI in retail significantly impacts GDP growth rate, unemployment rate, exchange rate (INR/USD), and Trade Openness and Tax collection. Simultaneously, FDI in retail (binary) is also attracted by factors like IIP, exchange rate, tax as a % of GDP, unemployment rate change and GDP growth rate. The research findings have important implications for policy makers and foreign investors. Policy makers need to push reform agenda in domestic market so as to attract more FDI in retail in the Indian economy.

The FDI in multi-brand retailing will mostly benefit existing organized players in terms of attracting foreign capital because retailing still is very local industry (over 90%), and will not change significantly the retail landscape. Many transnational companies will use online marketing route to attract Indian consumer before setting up physical presence to test the market.

This research also recommends the government of India to shift focus and not rely much on FDI in retail to act as a game changer. Indian Government should emphasize on building infrastructural facilities especially developing transportation systems like roadways and railways, setting up economic zones for warehousing facility, streamlining labour laws, planning urbanisation to ensure adequate availability of quality real estate, high street and implementing GST to give new dimensions to modern organized retail in India.

Current analysis of macro-economic factors vis-a-vis other developing countries also shows that it is the right time in India to have policies in place so as to invite FDI in retail in accordance to the analysis done in other four countries where FDI in retail has already entered.

The empirical research done in this research paper also shows the dependence of various macro-economic factors on FDI in retail. Factors such as GDP growth rate, Unemployment rate, IIP, tax as a factor of GDP, trade openness and exchange rate yoy % are dependent on FDI in retail according to the analysis done on four countries – China, Indonesia, Brazil and Thailand.

Finally, it does not matter whether it the local or foreign retail players leading this next wave of retail revolution in India as long as Indian consumer is getting benefitted in terms of access to innovative retails formats, best practices and availability of goods and services from all over the world along with great shopping experience.

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Appendix I: Historical data of macro-economic variables

Table A

Quarter Year	FDI in retail (Binary)[a]	GDP growth rate[b]	CPI yoy%[c]	Tax yoy%[d]	Exchange rate yoy%[e]	IIP yoy%[f]	Trade yoy%[g]	Unemployment rate yoy%[h]
1. Thailand								
4 2012	1	18.9	3.23	0.058065	-2.07%	47.12	0.418505	-0.2
3 2012	1	3.1	2.93	0.065671	0.31%	-10.84	0.45637	-0.10769
2 2012	1	4.4	2.52	0.080424	0.74%	-1.22	0.441386	0.491228
1 2012	1	0.4	3.39	0.050187	0.00%	-6.83	0.424743	-0.0875
4 2011	1	-8.9	3.97	0.054521	2.91%	-34.47	0.429379	-0.31034
3 2011	1	3.7	4.13	0.062127	-0.47%	2.79	0.466555	-0.26966
2 2011	1	2.7	4.1	0.07688	-0.88%	-2.67	0.431346	-0.56154
1 2011	1	3.2	3.02	0.046643	1.81%	-1.85	0.404863	-0.28571
4 2010	1	3.8	2.92	0.050977	-5.28%	2.75	0.387779	-0.12121
3 2010	1	6.6	3.25	0.058583	-2.22%	9.87	0.415747	-0.24576
2 2010	1	9.2	3.22	0.07578	-1.59%	17.84	0.404279	-0.25714
1 2010	1	12	3.74	0.043099	-1.21%	31.02	0.372592	-0.45366
4 2009	1	5.9	1.93	0.049053	-1.98%	12.64	0.386984	-0.25
3 2009	1	-2.8	-2.13	0.057242	-2.22%	-5.56	0.390291	-0.0084
2 2009	1	-5.2	-2.76	0.071705	-1.51%	-10.79	0.345199	0.286765
1 2009	1	-7	-0.25	0.04137	1.39%	-22.05	0.31921	0.289308
4 2008	1	-4.1	2.14	0.042034	2.73%	-9.6	0.409176	0.178571
3 2008	1	3.1	7.24	0.059856	5.06%	5.93	0.486467	0.017094
2 2008	1	5.2	7.46	0.073168	4.04%	9.43	0.425655	-0.13376
1 2008	1	6.3	5.02	0.044379	-0.42%	11.62	0.41208	0.012739
4 2007	1	5.4	2.88	0.047895	-1.07%	12.64	0.405165	-0.13178
3 2007	1	5.5	1.63	0.059045	-3.44%	9.11	0.408254	-0.04098
2 2007	1	4.6	1.9	0.073837	-4.28%	5.08	0.403258	-0.06548
1 2007	1	4.6	2.5	0.047937	-6.86%	5.41	0.373706	-0.14674
4 2006	1	4.4	3.33	0.049502	-3.03%	5.67	0.405043	-0.11034
3 2006	1	4.8	3.66	0.059584	-1.18%	5.71	0.444327	-0.10294
2 2006	1	5.1	6.05	0.076002	-3.08%	5.46	0.42644	-0.18447
1 2006	1	6.1	5.68	0.051999	-4.11%	8.77	0.404424	-0.27843
4 2005	1	4.7	5.97	0.044674	-0.60%	4.99	0.415611	-0.03333
3 2005	1	5.5	5.6	0.061847	3.05%	11.19	0.461438	-0.11688
2 2005	1	4.7	3.68	0.073613	3.79%	10.87	0.451623	-0.16935
1 2005	1	3.6	2.75	0.054778	-4.15%	9.07	0.400358	-0.09894
4 2004	0	5.9	3.12	0.046406	-2.45%	11.04	0.3945	-0.18033
3 2004	0	6.3	3.3	0.061379	2.65%	11.64	0.418108	-0.01911

2 2004	0	6.6	2.66	0.069227	2.48%	10.88	0.398569	-0.00402
1 2004	0	6.7	1.99	0.051978	-1.32%	11.16	0.365363	-0.01394
4 2003	0	8.3	1.65	0.054758	-3.77%	15.08	0.364934	0
3 2003	0	6.7	1.92	0.056765	-2.26%	10.66	0.372725	-0.12778
2 2003	0	6.6	1.7	0.065726	-1.25%	10.09	0.367097	-0.12324
1 2003	0	6.9	2.03	0.05133	-1.37%	15.68	0.351964	-0.11146
4 2002	0	6	1.46	0.047871	3.19%	14.36	0.352991	-0.25306
3 2002	0	5.8	0.39	0.053641	-1.74%	12.01	0.365157	-0.31559
2 2002	0	5	0.39	0.064946	-2.18%	10.9	0.352107	-0.20225
1 2002	0	4.5	0.58	0.048602	-1.34%	2.14	0.323759	-0.30835
4 2001	0	2.7	0.98	0.043725	-1.32%	-2.88	0.340894	-0.3232
3 2001	0	2.1	1.56	0.052888	-1.01%	-1.08	0.382768	-0.31152
2 2001	0	2.2	2.43	0.061538	5.00%	1.03	0.374157	-0.24416
1 2001	0	1.7	1.44	0.043808	-0.33%	3.44	0.367386	-0.15245
4 2000	0	4	1.77	0.042125	5.98%	11.36	0.394342	-0.32963
3 2000	0	2.4	2.19	0.052734	5.97%	11.15	0.384836	-0.29259
2 2000	0	6.1	1.65	0.058876	2.59%	14.12	0.333153	-0.12778
1 2000	0	6.5	0.95	0.048799	-2.98%	21.96	0.312381	0.02037
2. Indonesia								
4 2012	1	6.11	4.41	0.113	1.29%	11.01	0.01539	-0.04063
3 2012	1	6.16	4.48	0.1102	2.28%	-0.43	0.014397	-0.05183
2 2012	1	6.36	4.49	0.1152	2.36%	2.23	0.016113	-0.0583
1 2012	1	6.29	3.73	0.1143	0.91%	3.97	0.015906	-0.07059
4 2011	1	6.5	4.12	0.1122	4.64%	3.67	0.01711	-0.07381
3 2011	1	6.49	4.66	0.1106	-0.10%	9.65	0.017285	-0.07606
2 2011	1	6.52	5.89	0.1123	-3.45%	2.16	0.01795	-0.07341
1 2011	1	6.45	6.84	0.1096	-0.65%	1.21	0.016029	-0.08232
4 2010	1	6.81	6.32	0.108696	-0.46%	1.54	0.016876	-0.05986
3 2010	1	5.81	6.15	0.1098	-1.49%	2.25	0.014556	-0.04054
2 2010	1	6.29	4.37	0.1101	-1.32%	2.94	0.0147	-0.06839
1 2010	1	5.99	3.65	0.112	-2.36%	3.61	0.014526	-0.08968
4 2009	1	5.6	2.59	0.1143	-4.97%	3.72	0.014909	-0.09483
3 2009	1	4.27	2.77	0.1167	-5.74%	3.35	0.013025	-0.08642
2 2009	1	4.14	5.67	0.1189	-8.74%	3.51	0.011903	-0.06739
1 2009	1	4.52	8.57	0.1245	6.06%	3.4	0.010675	-0.03783
4 2008	1	5.28	11.5	0.1303	18.45%	3.5	0.014678	-0.07727
3 2008	1	6.25	11.96	0.1322	-0.24%	3.6	0.018536	-0.10989
2 2008	1	6.3	9.99	0.1301	0.13%	3.7	0.01971	-0.11596
1 2008	1	6.22	7.64	0.13	0.33%	3.9	0.018991	-0.13231
4 2007	1	5.84	6.73	0.1242	-0.21%	4.1	0.009974	-0.12438
3 2007	1	6.74	6.5	0.1236	2.94%	4.3	0.009421	-0.1165
2 2007	1	6.73	6.02	0.1233	-1.37%	4.5	0.009779	-0.0856
1 2007	1	6.06	6.36	0.1226	-0.44%	4.7	0.009267	-0.06699
4 2006	1	6.06	6.05	0.1225	-0.02%	4.4	0.010398	-0.10268
3 2006	1	5.86	14.87	0.1234	0.55%	3.8	0.010202	-0.08363

2 2006	1	4.93	15.51	0.1237	-2.42%	3.1	0.010034	-0.04372
1 2006	1	5.13	16.9	0.1245	-6.83%	2.6	0.009561	0.018519
4 2005	0	5.11	17.8	0.12502	-0.05%	2.9	0.010091	0.111111
3 2005	0	5.84	8.4	0.125	4.77%	3.5	0.010262	0.135354
2 2005	0	5.87	7.65	0.1248	2.90%	3.9	0.010376	0.096939
1 2005	0	5.97	7.76	0.1247	1.86%	4.8	0.010479	0.057732
4 2004	0	7.16	6.27	0.1233	-0.48%	6.2	0.011205	0.05
3 2004	0	4.5	6.72	0.1234	1.70%	7.8	0.010974	0.042105
2 2004	0	4.39	6.4	0.1235	6.17%	9.4	0.00992	0.042553
1 2004	0	4.1	4.85	0.1237	0.04%	10.5	0.009341	0.043011
4 2003	0	4.63	5.57	0.12385	0.54%	6.7	0.010102	0.043478
3 2003	0	4.56	6.12	0.1224	-0.73%	5.1	0.009915	0.043956
2 2003	0	5.03	7.02	0.1214	-4.61%	4.2	0.010249	0.010753
1 2003	0	4.91	7.73	0.1198	-1.57%	3.7	0.01017	-0.02105
4 2002	0	4.68	10.28	0.11827	1.09%	3.9	0.010551	-0.06122
3 2002	0	5.55	10.38	0.1176	-1.89%	4.2	0.010641	0.123457
2 2002	0	4.21	12.58	0.1167	-10.52%	4.6	0.010815	0.222076
1 2002	0	3.52	14.54	0.1155	-1.01%	4.9	0.009794	0.353276
4 2001	0	1.56	12.65	0.1157	5.59%	4.7	0.010102	0.493902
3 2001	0	3.44	12.76	0.1143	-13.16%	4.2	0.011199	0.332237
2 2001	0	5.77	11.15	0.1136	14.86%	3.8	0.011603	0.251645
1 2001	0	3.87	9.35	0.1127	5.84%	3.5	0.012817	0.154605
4 2000	0	5.72	8.81	0.1124	5.81%	4.2	0.014592	0.093333
3 2000	0	4.42	5.78	0.1058	6.12%	4.9	0.01547	0.013333
2 2000	0	4.8	1.58	0.1019	11.50%	6.1	0.015052	0.013333
1 2000	0	4.1	-0.59	0.1024	2.31%	7.5	0.014459	0.013333
3. Brazil								
4 2012	1	1.38	5.61	6.79E-05	1.57%	-5.06635	0.034278	-0.05736
3 2012	1	0.87	5.24	6.52E-05	3.51%	-0.82942	0.035846	-0.105
2 2012	1	0.49	5	6.37E-05	10.70%	2.338715	0.036199	-0.06793
1 2012	1	0.75	5.77	7.01E-05	-1.64%	2.650184	0.034752	-0.08373
4 2011	1	1.37	6.7	6.63E-05	10.50%	-4.17967	0.038306	-0.08246
3 2011	1	2.12	7.14	6.61E-05	1.97%	-7.20878	0.042447	-0.09091
2 2011	1	3.31	6.59	6.51E-05	-4.31%	-7.50586	0.039714	-0.1293
1 2011	1	4.24	6.1	6.57E-05	-1.74%	-6.03974	0.034412	-0.14459
4 2010	1	5.33	5.58	6.58E-05	-3.09%	1.022817	0.034672	-0.21162
3 2010	1	6.93	4.6	8.79E-05	-2.30%	1.510391	0.037942	-0.16772
2 2010	1	8.76	5.11	6.2E-05	-0.51%	0.497616	0.034102	-0.15465
1 2010	1	9.34	4.86	6.42E-05	3.49%	-2.93135	0.030961	-0.13652
4 2009	1	5.31	4.23	7.09E-05	-6.92%	-8.36337	0.02979	-0.00959
3 2009	1	-1.47	4.4	6.11E-05	-10.15%	-9.2842	0.031434	0.016667
2 2009	1	-2.4	5.18	5.97E-05	-10.10%	-7.9778	0.028577	0.061728
1 2009	1	-2.71	5.78	6.35E-05	1.66%	-4.40022	0.027429	0.016607
4 2008	1	0.95	6.23	6.42E-05	37.19%	-0.85776	0.037676	-0.10649
3 2008	1	7.11	6.26	6.36E-05	0.24%	0.594083	0.047395	-0.16756

2 2008	1	6.45	5.56	6.26E-05	-4.81%	-0.21645	0.04178	-0.19242
1 2008	1	6.29	4.63	6.65E-05	-2.46%	2.082836	0.035712	-0.1398
4 2007	1	6.68	4.26	6.83E-05	-6.99%	2.99389	0.03714	-0.11866
3 2007	1	6.06	4.02	6.17E-05	-3.36%	3.901259	0.037827	-0.10506
2 2007	1	6.43	3.29	6.3E-05	-5.91%	10.26253	0.033541	-0.02904
1 2007	1	5.16	2.99	6.39E-05	-1.95%	2.49483	0.032009	-0.01309
4 2006	1	4.85	3.14	6.34E-05	-0.91%	6.202737	0.03189	0.007609
3 2006	1	4.74	3.84	6.24E-05	-0.65%	5.910014	0.035954	0.098636
2 2006	1	1.93	4.3	6.46E-05	-0.52%	3.173763	0.030588	0.019743
1 2006	1	4.33	5.51	6.33E-05	-2.28%	7.641196	0.030281	-0.06321
4 2005	0	2.13	6.09	6.56E-05	-4.20%	3.590685	0.029613	-0.10419
3 2005	0	2.1	6.21	5.99E-05	-5.53%	3.772104	0.032656	-0.14682
2 2005	0	4.33	7.8	6.17E-05	-6.68%	1.162469	0.029408	-0.17843
1 2005	0	4.16	7.45	6.39E-05	-4.54%	1.119793	0.027422	-0.12901
4 2004	0	6.08	7.23	6.28E-05	-6.42%	5.889108	0.027974	-0.1463
3 2004	0	6.28	6.9	5.81E-05	-2.02%	11.0943	0.029559	-0.13878
2 2004	0	6.19	5.49	5.85E-05	5.07%	1.975699	0.026783	-0.03672
1 2004	0	4.23	6.76	6.25E-05	-0.15%	3.656412	0.024848	0.046432
4 2003	0	0.88	11.43	6.07E-05	-1.01%	3.583031	0.024429	0.106716
3 2003	0	0.58	15.21	5.61E-05	-2.30%	-0.95545	0.024955	0.108547
2 2003	0	0.88	16.86	5.64E-05	-14.25%	8.414966	0.023258	0.066667
1 2003	0	2.34	15.63	5.91E-05	-4.99%	12.39403	0.022376	-0.04672
4 2002	0	4.86	10.64	6.29E-05	18.36%	33.21503	0.023858	-0.06535
3 2002	0	3.72	7.63	6.01E-05	24.48%	31.69476	0.02836	0.092437
2 2002	0	1.88	7.8	5.43E-05	4.92%	5.215713	0.022267	0.080108
1 2002	0	0.09	7.63	6.08E-05	-7.13%	-2.20096	0.022449	0.077739
4 2001	0	-0.69	7.49	5.98E-05	0.87%	-20.9542	0.025333	0.094073
3 2001	0	0.28	6.64	5.59E-05	11.19%	-20.556	0.03039	0.046921
2 2001	0	2.31	7	5.86E-05	13.22%	-3.17955	0.03049	0.023963
1 2001	0	3.52	6.21	5.52E-05	4.59%	-0.34968	0.030645	0.03758
4 2000	0	4.38	6.2	5.73E-05	6.37%	0.870944	0.030183	0.063
3 2000	0	4.22	7.56	5.33E-05	0.68%	0.851329	0.033935	0.023
2 2000	0	3.91	6.58	5.34E-05	1.56%	3.200835	0.031373	0.085
1 2000	0	4.73	7.88	5.61E-05	-7.30%	3.678851	0.029809	0.091
4. China								
4 2012	1	7.9	2.1	0.017088	-0.52%	10	0.00658	0
3 2012	1	7.4	1.9	0.025248	0.10%	9.1	0.009449	0
2 2012	1	7.6	2.8	0.049435	0.17%	9.5	0.014326	0
1 2012	1	8.1	3.8	0.092105	-0.89%	11	0.026407	0
4 2011	1	8.9	4.6	0.015555	-0.75%	12.8	0.006801	0
3 2011	1	9.1	6.3	0.02565	-1.33%	13.8	0.010063	0
2 2011	1	9.5	5.7	0.049668	-1.22%	13.9	0.014584	-0.02381
1 2011	1	9.7	5.1	0.089394	-1.16%	13.6	0.027376	-0.02381
4 2010	1	9.8	4.7	0.016638	-1.67%	13.3	0.006839	-0.04651
3 2010	1	9.6	3.5	0.024074	-0.78%	13.5	0.009708	-0.04651

2 2010	1	10.3	2.9	0.045218	-0.05%	16	0.014046	-0.02326
1 2010	1	11.9	2.2	0.079193	0.01%	16.8	0.024922	-0.02326
4 2009	1	10.7	0.7	0.016582	-0.06%	17.9	0.006344	0.02381
3 2009	1	9.1	-1.3	0.025281	0.02%	12.3	0.008803	0.075
2 2009	1	7.9	-1.5	0.043485	-0.09%	9	0.011638	0.075
1 2009	1	6.2	-0.6	0.069907	-0.07%	7.7	0.020471	0.075
4 2008	1	6.8	2.5	0.01313	-0.02%	6.4	0.006312	0.05
3 2008	1	9	5.3	0.021716	-1.69%	13	0.011253	0
2 2008	1	10.1	7.8	0.044697	-2.87%	15.9	0.015733	-0.02439
1 2008	1	10.6	8	0.080318	-3.60%	16.6	0.02869	-0.02439
4 2007	1	11.2	6.6	0.015556	-1.66%	17.5	0.007568	-0.02439
3 2007	1	11.5	6.1	0.023689	-1.56%	18.1	0.010916	-0.02439
2 2007	1	11.9	3.6	0.041191	-1.06%	18.3	0.015039	-0.02381
1 2007	1	11.1	2.7	0.071735	-1.30%	16.2	0.027867	-0.02381
4 2006	1	10.4	2	0.014081	-1.30%	14.8	0.007526	-0.02381
3 2006	1	10.6	1.3	0.021756	-0.57%	16.2	0.010786	-0.02381
2 2006	1	11.5	1.4	0.037395	-0.48%	18	0.014837	0
1 2006	1	12.4	1.2	0.068409	-0.39%	16.8	0.027304	0
4 2005	1	9.9	1.4	0.014205	-0.72%	16.4	0.007172	0
3 2005	1	9.8	1.3	0.019413	-1.64%	16.2	0.009992	0
2 2005	1	10.1	1.7	0.03503	0.00%	16.5	0.014236	-0.02326
1 2005	1	11.2	2.8	0.066324	0.00%	14.5	0.025155	-0.02326
4 2004	1	9.5	3.2	0.012587	0.00%	15	0.006805	-0.02326
3 2004	1	9.1	5.3	0.018346	0.00%	15.8	0.009242	0
2 2004	1	9.6	4.4	0.034858	0.00%	17.6	0.013412	0.04878
1 2004	1	10.4	2.8	0.069259	0.00%	16.6	0.023925	0.04878
4 2003	0	9.9	2.7	0.013702	0.00%	17.7	0.006017	0.075
3 2003	0	9.6	0.8	0.018489	0.00%	16.6	0.008224	0.076923
2 2003	0	7.9	0.7	0.032013	0.00%	15.2	0.011273	0.051282
1 2003	0	10.8	0.5	0.060117	0.00%	17.2	0.020058	0.051282
4 2002	0	8.1	-0.6	0.015883	0.01%	14.5	0.004867	0.025641
3 2002	0	8.1	-0.8	0.018342	-0.01%	13.1	0.007005	0
2 2002	0	8	-1.1	0.029945	0.00%	12.5	0.009289	-0.025
1 2002	0	8	-0.6	0.05002	0.00%	10.7	0.016031	-0.025
4 2001	0	6.6	-0.1	0.013721	0.00%	8.5	0.004056	0
3 2001	0	7	0.8	0.017586	0.00%	8.6	0.005952	0
2 2001	0	7.8	1.6	0.028535	0.00%	10.6	0.00869	0.025641
1 2001	0	8.4	0.7	0.052674	0.00%	11.1	0.016283	0.025641
4 2000	0	7.3	0.9	0.012883	-0.02%	10.8	0.004331	0.026316
3 2000	0	7	0.3	0.016255	0.01%	12.5	0.006305	0.026316
2 2000	0	8.3	0.1	0.025615	-0.01%	11.7	0.009024	0.026316
1 2000	0	8.1	0.1	0.046472	0.11%	10.9	0.015857	0.026316

a: FDI in retail as a binary value, *b:* Real GDP growth yoy%, *c:* CPI yoy%, *d:* Tax revenues as a factor of nominal GDP, *e:* Exchange rate yoy%, *f:* Index of Industrial production yoy%, *g:* Trade openness i.e. (exports + imports)/Nominal GDP, *h:* Unemployment rate (yoy%).