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Determinant of Foreign Direct Investment in India's E-commerce Sector

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The e-commerce sector in India has experienced remarkable growth in recent years with many new players entering the market. Its heady growth has attracted a huge amount of private equity investments from both domestic and foreign investors. Most of the investment has been made by foreign private equity investors. The present study attempts to explore the economic factors that facilitated the unprecedented growth of foreign investment in the sector. We model the empirical analysis by treating the equity inflows of foreign players in e-commerce as amounts dependent on the variation in the number of mobile and internet subscribers at the aggregate level. The study uses the OLS regression model with the time series data for the period from 2000 to 2016. The econometric analysis reveals that both mobile and internet subscriptions have a positive impact on the inflow of foreign investment into the Indian e-commerce sector. However, relatively, the impact is higher in the case of mobile subscribers than internet subscribers.

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1. Introduction

Since the adoption of the New Economic Policy in 1991, the Indian economy has undergone systematic changes from a highly state-controlled regime to a more liberal and outward-oriented market-friendly regime. One of the main objectives of the policy change was to integrate the economy with the rest of the world so that the domestic industrial sector could get an opportunity to learn, adopt and strengthen the productive base in the long run. The new policy was the result of thinking that a more open economy would be able to overcome inherent structural rigidities and improve productive efficiency and competitiveness of the domestic industrial sector. It was believed that a market-friendly regime would attract considerable foreign direct investment (FDI) and help businesses grow, develop more expertise and advance in technology. Since FDI is viewed as an essential source of foreign technology and knowledge, several policy initiatives were made to attract and utilise them across sectors over the years.

Since 1991, the scope of FDI has expanded gradually from manufacturing to the services and infrastructure sectors. Along with other segments in the service sector, the e-commerce industry was opened for 100 per cent FDI in 2000 on the condition that the companies engaged only in B2B activities.[2] Currently, it is the service sector that attracts the highest foreign inflows and the e-commerce industry is a major contributor.

In 2000, India hardly had a player in the e-commerce industry except baazee.com. Then, baazee.com was acquired by the American e-commerce giant *eBay* in 2004 and India received its first FDI in this particular sector.[3] From 2004 to 2008, eBay had no significant rival in the Indian market. The scenario changed with the entry of *Flipkart.com*, a company in the same sector, promoted by two Indians. Since then, the e-commerce sector in India has witnessed remarkable growth. It reportedly grew at a rate of more than 34 per cent compound annual growth rate (CAGR) between 2009 and 2014 (PwC, 2015). The major players such as Flipkart and Amazon have consistently reported higher revenues.[4] The total size of the

[2] Press Note No2, 2000 Series. DIPP, Ministry of Commerce and Industry, Government of India. B2B, is a type of transaction that exists between businesses, such as one involving a manufacturer and wholesaler, or a wholesaler and a retailer. In this type of business transaction end user of the goods and services sold are not involved.

[3] eBay buys Bazee for 230 Crore, Indian Express, New Delhi Edition Dated 24/6/2004 ISID Clipping Services

[4] http://www.livemint.com/Companies/fmBluCG74XDjuBiXS5PJaP/Flipkart-pares-losses-boosts-revenue-at-its-largest-unit.html

industry was reported to be US$14.5 billion (S$19 billion) in 2016 and expected to grow to US$80 billion (S$105 billion) by 2020.[5] The Global Payments Report, published annually by Worldpay, suggests that India will become the second largest market overtaking the United States (US) by 2034.[6] The vast, growing Indian market has attracted global e-commerce players such as Amazon, eBay and Alibaba.[7] Foreign investment in Indian e-commerce industry has soared from US$2.9 billion (S$3.8 billion) in 2014 to US$4.4 billion (S$5.8 billion) in 2017 (up to September).[7] The e-commerce sector was estimated to contribute around one per cent of India's gross domestic product (GDP) by 2016-17 (Kumar, 2017).

Almost all the companies operating in the sector have received some amount of foreign investment. Some of the companies have even changed their business format to comply with the existing Indian laws. Curiously, though, not many studies have explored the question of how and why the Indian e-commerce industry has grown phenomenally so fast. This involves addressing several larger research questions such as why foreign investors are so keen on investing in India. In particular, what are the factors behind this remarkable growth? This study is an attempt to identify the potential determining factors in attracting FDI in the Indian e-commerce sector in such a short time.

The rest of the research paper is structured in the following manner. In Section 2, we address the issue of defining FDI in the e-commerce sector. This is followed by a brief overview of the theoretical frameworks and related empirical studies in the literature. Next, we analyse the trends of FDI in the Indian e-commerce industry in Section 3. In section 4, we provide the methodology and data source of the study. This includes discussion of variable selection, mathematical model and data sources. Section 5 provides the empirical results and findings. Finally, in Section 6, are the concluding remarks.

[5] http://www.financialexpress.com/industry/-in-india-from-180-in-2015-growth-crashes-to-12-in-2016-at-14-5-bn/530070/
[6] http://www.business-standard.com/article/current-affairs/india-set-to-become-world-s-largest--market-116120500765_1.html
[7] As per the data compiled from Venture Intelligence 2017 The data for only IT and ITES sector is considered

2. Is it really FDI that flows in the Indian E-commerce Sector?

We have already noted the huge foreign investment in this sector. Now, the question is whether these investments are in compliance with the various definitions of FDI. So, let us examine the wide range of definitions and concepts developed by international organisations to comprehend whether the reported FDI inflows are real or statistical artifacts.

The Balance of Payment Manual of the International Monetary Fund defined FDI as a category of international investment that reflects the objective of obtaining a *'lasting interest'* by a resident entity in one economy in an enterprise resident entity in another economy. The "lasting interest" implies the existence of a *long-term relationship* between the direct investor and the enterprise, and a significant degree of influence by the investor on the management or the enterprise. The Organisation for Economic Cooperation and Development (OECD) defines FDI as cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a *lasting interest* in an enterprise (the direct investment enterprise) that is resident in a country other than that of the direct investor (OECD 2008). According to the United Nations Conference on Trade and Development (UNCTAD), FDI is an investment involving a *long-term relationship* and reflecting a *lasting interest and control* by a resident entity in one economy (...) in an enterprise resident in an economy other than that of the foreign direct investor (...). FDI implies that the investor exerts a *significant degree of influence on the management of the enterprise* resident in the other economy (UNCTAD, 2013).

All the definitions cited above agree on the point that the investor should have a lasting interest and significant control over the investee firm. When we identify FDI along these standard definition criteria, we find that the inflow of foreign investments in Indian e-commerce sector does not strictly qualify as FDI. According to Sengupta (2017), foreign investments made in this sector are private equity (PE) investments that do not have a lasting interest in company management. However, it should be noted that the majority of the investing firms hold more than 10 per cent of the shares in the investee companies and possess significant control and even nominated directors in the investee firms (see Choudhury, 2015). This unique pattern of management practice is a direct consequence of the current regulatory regime of the government. As foreign investment in any form is not permitted in retail e-commerce activities in India, the companies have adopted a unique marketplace model[8] of investment. Using the marketplace model strategy, which is open to FDI, the Indian companies have been able to comply with the existing laws (Choudhury, 2015). There is an ongoing debate on whether to include PE investment in FDI (See Rao et. al, 2013). However, as we are unable to segregate private and foreign equity participation using existing data, we have decided to consider the PE investment in Indian e-commerce sector as FDI. As such, both PE investment and FDI are used interchangeably[9] in our study.

2.1 Theoretical Framework

There exists vast theoretical literature explaining the determinant of capital flows across national borders. Most theories explain different facets of FDI such as motives, impact, determinants and so on. However, the empirical results vary with the country, sector and industry. In this section, we provide some of the traditional as well as modern theories of FDI along with some empirical studies that are relevant to our research questions.

Initially, the theories of capital market and portfolio investments were used to describe the initiation of FDI. Originally, direct investment was an international capital movement only (Kindleberger, 1969). In fact, before 1950, FDI was regarded as a subset of portfolio investment. Stephen Hymer was one of the pioneering economists to establish a systematic approach towards the study of FDI theories. Hymer (1960) developed the industrial organisation approach of FDI theories. His theory of FDI was the very first work which explains international production, firm-specific advantage and activities of the multinational enterprises (MNEs). His theory found favour with Lemfalussy (1961), Kindleberger (1969), Knickerboker (1973), Caves (1974), Dunning (1974), Vaitsos (1974) and Cohen (1975). Hymer argued that the imperfection in the market leads to the existence of multinational corporations (MNCs).[10] His theory focused on the two types of imperfections in the market. First, the imperfections in transaction-cost and, second, the imperfections in the size of the

[8] except in cases of a manufacturer selling it products manufactured in India through retail, or a single brand retail trading entity operating through brick and mortar stores, or an Indian manufacturer selling its own single brand products through retail.

[9] We considered PE as FDI only for this paper.

[10] Most of the FDI flows through MNCs; consequently, theories explaining FDI are also invariably explaining MNCs.

organisation. According to Hymer, the bigger-sized firm will bring the ownership advantages to the host countries in order to compete with domestic firms.

Dunning (1977, 1979 & 1988), in his path-breaking works, amalgamated three different explanations as to why a firm opens a foreign subsidiary. The theory also discussed the entry choice for MNEs. This theory of eclectic paradigm is also referred to as the OLI paradigm. In his theory, Dunning integrated the oligopolistic theory or the theory of industrial organisation, the internalisation theory and the location theory to explain why firms operate internationally. Dunning argued that the ownership advantages (O), locational advantages (L) and internalisation (I) are the preconditions for a firm to produce goods internationally.

Extending this OLI paradigm of Dunning (1995, 1998), Singh and Kundu (2002) offered a theoretical framework to present the changes brought in by *e-commerce* companies. They called the revised paradigm the N-OLI framework which represents the network (N)-based advantages prevalent in e-commerce, namely, those of embeddedness, electronic brokerages, and network economics. Their theory is also regarded as a foundational structure in the study of e-commerce theories (Agarwal and Wu, 2000).

Apart from these traditional and classical theories of FDI, there are a number of theories developed more recently. These are generally referred to as the *modern theories* of FDI. The classical theory focuses on the FDI flows from developed countries, while the modern theories focus on the FDI flows from developing and emerging economies (Mathews, 2002, 2006, Buckley, 2010). Several theories have also been propounded and conceptualised specific to the emerging economies (Mathews, 2002, 2006). Mathews proposes a complementary model to the OLI paradigm, adapted to the level of MNEs from the emerging economies: LLL (linkage, leverage and learning). Mathews (2006) highlighted that the MNEs from the emerging economies like India, China and Brazil were the new entrants in the international markets and could benefit from access to advanced technology (by imitation) and thereby reduce property gaps with MNEs in the developed countries. Dunning *et al.* (2008) recognised that the emerging MNEs are short of the “O” component (ownership or property benefits), but this does not mean that such benefits are absent. This argument of Dunning fits in the case of the e-commerce companies like Alibaba of China.

2.2 Empirical Studies

Along with the above theoretical explanations of the international capital movements, there also exists a vast set of empirical studies. This set of literature can be classified into two different sections. First, those studies which explain the macro level determinants of FDI inflow and, second, the sector-level studies which describe the reasons behind capital flow in a particular sector.

ADB (2004) argued that factors like technological advances, bilateral investment treaties, emergence of integrated production and marketing networks at the international level have resulted in a significant increase in the inflow of international capital in the various developing countries. Bouoiyour (2003) commented that countries are aggressively trying to attract foreign investment by offering income tax holidays, import duty exemptions and subsidies to foreign firms, as well as measures like market preferences, infrastructures and sometimes even monopoly rights.

The literature remains largely inconclusive as to whether FDI may be sensitive to tax incentives. Some studies have favoured that idea that host country corporate taxes have a significant negative effect on FDI flows, while others hold the opposite view. Hartman (1994), Grubert and Mutti (1991), Hines and Rice (1994), Loree and Guisinger (1995), Cassou (1997) and Kemsley (1998) maintain that host country corporate income taxes have a significant negative effect on attracting FDI flows. That is, the higher the tax rate, the lower the FDI inflows. On the other hand, Root and Ahmed (1979), Lim (1983), Wheeler and Mody (1992), Jackson and Markowski (1995), Yulin and Reed (1995) and Porcano and Price (1996) conclude that high taxes positively impact the FDI inflow.

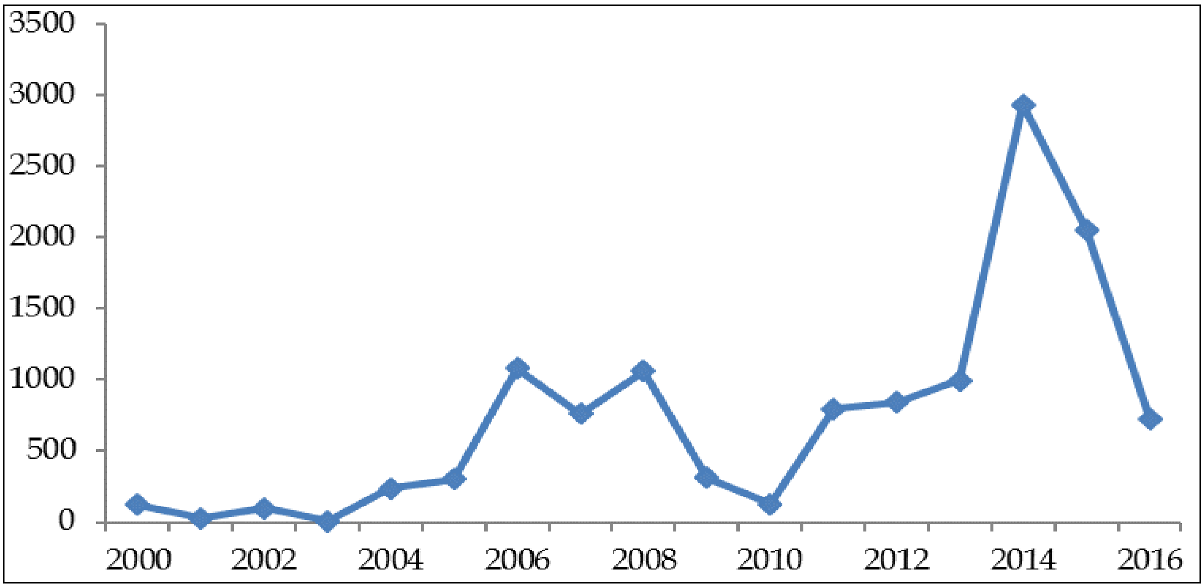
Charkrabarti (2001) suggested that the market size of the host country plays a big role in attracting foreign capital. Market size hypothesis maintains that a large market is required for efficient utilisation of resources and exploitation of economies of scale: as the market size grows to some critical value, FDI will start to increase. The study also argued that trade openness (measured by the ratio of exports plus imports to GDP) also plays a vital role in determining the inflow of FDI.

In the case of e-commerce, there is considerably less evidence on what determines investment patterns, especially in lower-income countries such as India. Raipuria (2000) studied e-commerce in the context of opportunities for Indian export. He argued it is essential for a business to survive and grow in a competitive world. Satapathy (1999) discussed various proposals made by or within the World Trade Organization (WTO) and their implications regarding e-commerce. Government policies governing the e-commerce sector are not very clear and robust. There is also debate on whether to include it in the purview of the WTO. Agarwal and Wu (2000) examined various factors influencing the growth potential of e-commerce in emerging economies from a multi-theoretical perspective while Gupta (2017) investigated the role of the government policies in determining the growth of the e-commerce sector in India. A similar study was conducted by Viswanathan and Pick (2005) comparing India and Mexico; it focused on the policy and institutional variables that might impact the diffusion of the e-commerce sector. Kuthiala (2003) explored the opportunities and challenges that India faces in adopting e-commerce. Analysing the secondary data, the study outlines the potential gains that India can make in the global market by adopting e-commerce. For a review of the literatures on the e-commerce sector, see Vaithianathan (2010).

3. Trends of Investment Flow and Shareholding Pattern in the E-Commerce Industry in India

Private equity (PE) firms are playing a growing role in the Indian e-commerce sector. They made more than 400 investments in it between 2007 and 2014. All the domestic as well as foreign investment in this sector is by PE firms. In 2013, PE firms invested US$617 million (S$810 million) with 31 deals in this sector. The number of deals increased to 40 with a total investment of US$4,402.23 million (S$5,781.67 million) in 2017. These investments poured into businesses of various sizes and in different segments of the sector. The Indian e-commerce giant Flipkart alone received US$4,000 million (S$5,253.40 million), of which US$2,500 million (S$3,283 million) came from the Japanese investor Softbank in August 2017. Flipkart's investment was followed by another e-commerce brand, Paytm. The trend in foreign PE investment in the Indian e-commerce sector is given in Figure 1.

<u>Figure 1:</u> Trends in Foreign Private Equity Investment in Indian E-commerce Sector (2000-2016)



Source: Author's calculation from Venture Intelligence Database.

PE investment has grown steadily since 2002 except in 2006-08 and 2014-16. The PE investment trend held steady during 2000-2003. After 2005, it increased to some extent but there were fluctuations. There was a steep increase in 2013 followed by a sharp fall in 2016. The major reason for this unusual increase was the capital infusion in Flipkart. This extraordinarily large volume of investment shook the entire trend of investment. The fall during 2016 was the result of the market returning to normalcy and there was no huge investment, as in the case in 2014. Table 1 shows the major investors and the funds raised by the major e-commerce players in India since 2014. A closer inspection of the data reveals the skewed nature of the investments made in the e-commerce sector. We can see that, though there was a huge infusion of capital, most of the money went to only a few companies. Big companies like Flipkart, Snapdeal, Jabong, Paytm and Pepperfry.com received the lion's share.

<u>Table 1:</u> Major Investors and Investee firms in Indian E-commerce sector

Year	Amount (Mil US$)	Major Investors	Major Investee
2014	2933.0	Tiger global, Nasper, Accel Partners, DST Global, ICONIQ Capital, Morgan Stanley, Temasek	Pepperfry.com, Snapdeal.com, Jabong.com, FabFurnish.com
2015	2057.00	Temasek, Soft Bank, Kalaari Capital Goldman Sachs	Snapdeal, UrbanLadder.com Pepperfry.com
2016	725.87	Helion Ventures, Bessemer, Ascent Capital,	Furlenco Snapdeal, Industrybuying.com, Big Basket
2017	4402.23	Nasper, Tencent, Soft Bank, Nexus,	Just Buy, Flipkart, Snapdeal, Paytm, UrbanLadder

Source: Dealcurry 2013, 2014 Venture Intelligence 2015 onwards. Data includes on e-commerce and mobile commerce under IT and ITES sector

In 2014, Flipkart raised US$1 billion (S$1.3 billion) from a group of PE investors. This was one of the biggest investments raised in a single round by an information technology firm in the world. It ranks with Yahoo’s US$1 billion (S$1.3 billion) deal to buy a stake in Alibaba. Bigger still was Facebook’s record US$1.5 billion (S$1.97 billion) transaction [ahead of its initial public offering (which included a secondary component, meaning that a portion went to the selling shareholders and not into the company)]. But the record was broken by Flipkart itself in 2017 when it raised another US$2.5 billion (S$3.3 billion) from Japanese investor Softbank.

3.1 Shareholding Patterns

The shareholding pattern reveals how the *ownership* of the total volume of shares (equity and preferential) of a company is divided (ownership division and distribution) among the various entities and individuals. This sub-section depicts and compares the shareholding patterns of the major players in Indian e-commerce. The selected companies hold the majority share in the market.

Table 2 shows the various shareholders or owners of the major e-commerce players in India. Flipkart.com is controlled by the entity Flipkart Internet Private Limited. The website Amazon.in is managed by Amazon Sellers Services Private Limited, while Paytm is controlled by One97 Communications. The New Delhi-based firm Jasper Infotech manages the website, Snapdeal.com.

<u>Table 2:</u> Shareholding patterns of Indian E-commerce Companies

Company/Websites	Shareholders and theirs shares in per cent
Flipkart	Tiger Global (29.5), Accel partners (11.5), Binny Bansal (8.7), Sachin Bansal (8.7), Intervision Services (18.4), Others (23.2)
Snapdeal	Soft Bank (32.98) Kunal Behl (3.94), Kaalari Capital (7.81), Nexus (9.71), ebay (6.32), Rohit Bansal (2.44), Alibaba (2.93), Foxconn (4.03), Temasek (2.65), Others (27.19)
Amazon	Amazon Asia-Pacific Resources Private Limited, Singapore (99) Amazon Eurasia Holdings S.A.R.L, Luxembourg (1)
Paytm	Alipay Singapore E-Commerce P Ltd (32.41), Mr. Vijay Shekhar Sharma (21.33), SAIF III Mauritius Co Ltd (20.37), Alibaba.com Singapore E commerce Co P Ltd (8.53), AIF Partners India P Ltd (8.31)

Source: Ministry of Corporate Affairs, Government of India

The descriptive analysis reveals that the majority of the shares in these companies is held by foreign PE investors. It is interesting to note that the pattern of shareholding has changed drastically since the formation of these companies. These companies raised funds by issuing equity shares to the listed investors and subsequently reached the current pattern. At present, none of the founders of these companies hold a controlling stake except in the case of Amazon.in, which is a subsidiary of Amazon Asia Pacific Resources Private Limited and Amazon Eurasia Holdings S.A.R.L, Luxembourg. They have held onto Amazon.in, investing a huge amount of money in their Indian subsidiary since its formation in 2013.

Both foreign and local investment firms are pouring money in the Indian e-commerce sector. Its high growth rate and high potential to earn huge profits in the near future have attracted PE firms. The investors are drawn by the growing market for online retail, favourable demographics, and increasing internet and mobile penetration. This is discussed in detail below.

4. Major Determinants

There are various factors which play a decisive role in the growth of a particular sector in an economy. The persistent growth of the Indian e-commerce sector has attracted foreign investors. Today, the majority shares of almost all the companies operating in the industry are held with foreign investors (Banerjee, 2016). E-commerce has boomed in India for various reasons such as rapid adoption of modern technology by Indian consumers, increase in the number of internet users, innovative and different business models and alternative payment options offered by e-commerce companies (Kumar, 2017). This shows the importance of information and communications technology (ICT) in enabling a conducive platform for investment in a short period of time.

People now, especially in urban areas, are growing accustomed to making online purchases. Today, in any tier 1 or tier 2 city, we can purchase almost everything from fruits and vegetables to high-end jewellery without visiting a brick-and-mortar store. The government's policy to promote digitalisation and digital transaction has helped this industry to grow. The Indian government has strongly encouraged the development of the internet and information technology through various incentives, including exempting the industry from burdensome regulations and controls (Miller, 2001, Gupta, 2017). There are things we can no longer do unless we go online. For instance, it has become mandatory to file income tax returns online; shares and debentures cannot be bought in physical form; cash transactions are not possible beyond a certain limit. Most of the commercial banks are promoting online transactions and offering discounts or some kind of privileges if we use the online banking system. The evolution of digital wallets, gift cards and other similar online payment methods has helped the e-commerce sector to grow. We elaborate on this in the following sub-section.

(a) Internet Penetration

A study by Cisco found 373 million people in India, or 28 per cent of the population, were connected to the internet in 2016.[11] The figure is even higher, according to the report, 'Internet in India 2016', issued by the Internet and Mobile Association of India (IAMAI) and IMRB. It says the number of internet users in India went up from 278 million in October 2014 to 432 million in December 2016. Of them, 269 million, or 62.3 per cent, were from urban India and 163 million, or 37.7 per cent, from rural India. The report says 51 per cent of the urban internet users, or 137.19 million, use the internet daily while 90 per cent of the urban internet users, or 242 million, use the internet at least once a month. On the other hand, in rural India, 78 million users, or around 48 per cent, use the internet daily while 140 million, or around 83 per cent, use the internet at least once a month[12]. India added 60 million

[11] https://yourstory.com/2017/06/india-internet-users-report/
[12] https://www.medianama.com/2017/03/223-iamai-internet-india-2016-report/

new internet users in 2016, and around 100 million users (existing plus new) took up broadband connections, according to a Telecom Regulation Authority report in 2016.

(b) Mobile Penetration

Currently, India is the biggest consumer of mobile phones in the world[13]. Almost half of the country's population now subscribes to a mobile service. According to a report prepared by the GSMA in 2016, India has 616 million active unique mobile subscribers. Mobile broadband connections are growing at the rate of 15 per cent per year. A Confederation of Indian Industry report estimates that, in six years, 600 million people will be accessing the internet through mobile phones.[14] The GSMA report estimated over 400 million SIM connections would be added by 2020, bringing the connections' penetration to just over 100 per cent.

A drop in call rates and the availability of smartphones at lower prices and on monthly instalments have boosted mobile sales and usage. Data plans in India cost only half as much as in China and are merely one-third of the price in the US.[15] This has facilitated traffic to e-commerce websites in India. Accessing e-commerce websites through mobile phones has increased significantly in India in recent times. At present, mobile commerce represents nearly 50 per cent of online retail sales in India, compared with around 48 per cent in China and 34 per cent in the US. Nearly half the US$12 billion (S$16 billion) in yearly online sales in India takes place through mobile phones, which were set to overtake PC-based sales in 2016 and reach US$51 billion (S$67 billion) by 2020, according to a recent report by research firm Forrester. Myntra, a fashion retailer owned by Flipkart, saw 90 per cent of its traffic and 70 per cent of its sales from mobiles before famously abandoning its PC-based site altogether.[16] Another e-commerce firm, Snapdeal, also gets much of its business over the phone – 50 per cent of its sales orders come through its mobile app.[17]

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[13] http://www.business-standard.com/article/current-affairs/india-set-to-become-world-s-largest--market-116120500765_1.html

[14] http://www.business-standard.com/article/companies/5-factors-that-will-drive--growth-115021201785_1.html

[15] http://www.business-standard.com/article/current-affairs/india-set-to-become-world-s-largest--market-116120500765_1.html

[16] http://www.livemint.com/Industry/hq14qOAOPNhevLeAAZABeK/Mobile-phones-to-dominate-online-sales-medium-in-India-rep.html

[17] http://www.firstpost.com/business/goodbye--hello-m-commerce-50-of-snapdeals-sales-come-via-mobile-flipkart-tries-to-catch-up-1970063.html

The development of mobile applications used for shopping has contributed immensely to the sales of e-commerce companies. A shopping app on a mobile device helps a person shop from anywhere, anytime. Shopping with a mobile app is easier and faster than shopping using a desktop computer. E-commerce companies have come up with user-friendly applications. This has resulted in increased sales for the e-commerce companies. Flipkart has been following a "mobile first" approach and 70 to 75 per cent of its total traffic is already coming from its mobile app.[18]

Cash on delivery or paying at the time of delivery of the goods purchased online is another significant reason for the increased sales of the e-commerce companies. Cash on delivery accounts for 50 to 80 per cent of the online transactions in India, reported the magazine Business Today citing a study by Ernst & Young.[19] An increase in the number of credit card users is another reason for the exponential growth in the sales of e-commerce companies. Faster and on-time delivery of goods, the ability to deliver goods in rural/remote areas, and the emergence of exclusive logistic companies for delivering goods sold by e-commerce companies have also pushed up their sales volume.

4.1 Econometric Methodology

Based on the various theoretical and descriptive trend analyses, we model that the significant foreign investment inflows in e-commerce depend on mobile subscription and internet penetration, reflecting ICT usage. In functional form, it is written as follows.

$$PE = f\,(MP, IP) \text{ ----- } (1)$$

Here, PE is private equity, MP is mobile penetration and IP is internet penetration.

We use multiple linear regression on a log-log model. We use simple OLS regression estimation technique to assess the relationship and impact of the independent variables on the dependent variable. The model functional form is given in equation (2).

$$lanc_{et} = \alpha + \beta_1 lnMS_{\backslash t} + \beta_2 lnIS_t + \text{€}_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots .. (2)$$

18 http://www.livemint.com/Industry/FBOVKPg5hZm1JVuLM3n1cM/Flipkart-Myntra-users-go-mobile-desktop-still-key-for-onli.html

19 http://www.businesstoday.in/magazine/cover-story/cash-on-delivery-impact-on--companies-customers/story/202680.html

Here PE_{it} = Private equity inflow in the e-commerce sector in India during the time period *t*. MS refers to the number of mobile subscribers and IS refers to the number of internet subscribers in India during the time period *t*.

4.2 Variable Selection and Data

A thorough review of the literature shows that there have been a lot of studies on the determinants of the FDI in an economy or a particular sector. However, there is hardly any research study analysing the determinants of the inflow of investment in the e-commerce sector in India. Therefore, we consulted a number of media articles and studies conducted by renowned private consulting firms such as PwC and Deloitte while selecting the appropriate determinant variables for the study.

The data set used in the current study consists of three variables namely, PE investment in the Indian e-commerce sector, and the total number of mobile users and internet subscribers in India. The time period considered is from 2000 to 2016. All the data collected and used are on an annual interval. The selection of the time period was strictly based on the availability of reliable and continuous data.

The annual reports published by the Telecom Regulatory Authority of India (TRAI) were consulted for compiling data on mobile and internet subscribers. However, due to non-availability of TRAI annual reports before 2005, data were extracted from *Indiastat.com* for the same variables. Indiastat.com is a well-known data provider in India. It provides secondary level socio-economic statistical information about India, its states and regions and is widely used by Indian academia.

Another database, Venture Intelligence, was relied upon to collect data on PE investment in the Indian e-commerce sector. Venture Intelligence is one of the leading sources of information and analysis on private company financials, transactions (private equity, venture capital, and merger and acquisition) and their valuations in India. This database is used extensively by transaction industry practitioners, entrepreneurial companies, educational institutions and the media.

All the analyses were carried out using the statistical software called Gretl. It is a cross-platform software package for econometric analysis. It is free, open-source software. This is published by the Free Software Foundation.

5. Determinant of FDI in E-commerce: Estimation Results

In this model, we have taken the natural log of both dependent and independent variables. Since the model is in log, the coefficients have elasticity interpretations. According to the estimated model reported in Table 3, a one-per cent increase in mobile subscribers will increase private equity inflow by 0.4 per cent, holding internet access constant. The result is found to be statistically significant at 10 per cent level. Similarly, a one-per cent increase in internet subscribers will increase PE by 0.2 per cent, holding mobile access constant. However, the coefficient is found to be not significant statistically.

<u>Table 3:</u> Determinant of FDI in e-commerce: OLS Estimation Results (2000-2016) T = 17 Dependent variable: ln PE

Independent Variables	***Coefficient***	***Std. Error***	***t-ratio***	***p-value***
const	3.40733	0.594927	5.727	<0.0001***
ln_MOB	0.396467	0.196115	2.022	0.0628*
ln_INT	0.163972	0.198436	0.8263	0.4225
Mean dependent var	5.884321		S.D. dependent var	1.503366
Sum squared resid	14.53081		S.E. of regression	1.018781
R-squared	0.598172		Adjusted R-squared	0.540768
F(2, 14)	15.91003		P-value(F)	0.000249
Log-likelihood	−22.78795		Akaike criterion	51.57589
Schwarz criterion	54.07553		Hannan-Quinn	51.82436
rho	0.010636		Durbin-Watson	1.855098

Source: Econometric results based on various sources.

Note: HAC standard errors, bandwidth 1 (Bartlett kernel); * denotes significant at the 10 per cent level. The reported standard errors are robust.

The econometric results reveal that both mobile subscription and internet access have a positive impact on the level of private equity inflow in India. However, relatively, the impact is prominent and statistically significant for mobile subscribers. Based on R^2, we can argue that the OLS model has been able to explain 60 per cent of the variation in the dependent variable based on the selected independent regressors.

Thus, based on the regression model, it is found that ICT has a major influence on investment by foreign companies in the e-commerce sector in India. The major driver of FDI is the increased penetration of mobile subscription in the recent period.

6. Limitations of the Study

The study is conducted at a time where there is a serious dearth of literature in this area and only a few academic studies have been conducted on the subject matter.[20] The Indian e-commerce sector has grown so rapidly that it has hardly given any time to policymakers to understand its various dimensions. Academics or researchers have also not been able to come out with many conclusive studies. In this regard, this is a preliminary attempt to make a contribution in this emerging area of study. Being a preliminary study of an emerging and unexplored area, the study has a number of limitations.

The prime limitation is the availability of data. Among many determining factors for the rapid growth of the Indian e-commerce sector, data is available only for two variables, namely, mobile and internet penetration. Moreover, the available data is not over a prolonged period and robust in nature. Considering that there are only two variables in the econometric analysis, and that too for a period of only 16 years, it does not provide any conclusive results. The e-commerce sector in India is only about 10 to 12 years old (although there were a few companies operating even before that period) and the data for this sector is not properly maintained. With this 10 to 12 years of annual data, it is very difficult to conduct a conclusive study. These are some of the major reasons which have resulted in an inconclusive result of the econometric analysis.

Another vital limitation of the study is the unavailability of existing literature. There hardly exists any literature exploring the various dimensions of this sector. With the existing

[20] See Basu and Jones (2003), and Chattopadhyay (2003).

information, it is also not possible to thoroughly explore the various factors that are relevant for the growth of this sector.

7. Concluding Remarks

The e-commerce sector in India has witnessed remarkable growth in recent years. Both Indian and foreign companies are competing in this sector. The noteworthy growth has also attracted many private equity investors, both Indian and foreign. In this regard, the study attempted to analyse the factor helping the sector achieve and maintain a consistent growth rate in such a short period**.** In particular, the study is an attempt to explore the major factor playing the determining role in attracting foreign investment in the form of private equity in the Indian e-commerce sector. We use regression analysis and use mobile subscription and internet penetration as significant determinants of foreign private equity in e-commerce. Among the factors we considered in the econometric model, both internet usage and mobile subscription have positive impact on FDI. However, the effect is statistically significant in the case of mobile phone subscription.

The result reveals that the deep penetration of mobile and internet networks has helped users go online shopping – and this has created an incentive structure for foreign players to invest and expand business opportunities in India. The increased use of smartphones and the widespread use of mobile applications for shopping have also helped the e-commerce companies increase their sales volume and raised their growth rate. Cash on delivery, catering to remote locations, and timely and fast delivery of goods and services have also helped these companies increase sales and sustain growth.

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References

ADB (2004) Asian Development Outlook, ADB, Manila, Philippines.

Agarwal James and Terry Wu (2015) “Factors Influencing Growth Potential of E-Commerce in Emerging Economies: An Institution-Based N-OLI Framework and Research Propositions.” Thunderbird International Business Review Vol. 57, No. 3.

Ancharaz, V. D. (2003), “Determinants of Trade Policy Reform in Sub-Saharan Africa.” Journal of African Economies, 12(3), pp. 417-443.

Banerjee Sudipto (2016) FDI Guidelines for e-Commerce: Cobweb of the e-Marketplace Model, Economic & Political Weekly, Vol L1, No 36 pp.21-25.

Basu Subhajit and Richard Jones (2003) “E-commerce and the law: a review of India’s Information technology Act 2000.” Contemporary South Asia, , Vol. 12, No-1, PP 7-24

Bouoiyour, J. (2003) The determining factors of foreign direct investment in Morocco, *Savings and Development*.

Buckley, P.J. (2010). Foreign Direct Investment, China and the World Economy, Palgrave Macmillan.

Cassou, S. P. (1997), “The Link between Tax Rates and Foreign Direct Investment.” Applied Economics, 29, pp. 1295-1301.

Caves, R. E. (1974). Industrial Organization, in Economic Analysis and Multinational Enterprise (Ed) John H Dunning Allen and Unwin, London.

Charkrabarti, A. (2001), “The Determinants of Foreign Direct Investment: Sensitivity Analyses of Cross-Country Regressions.” Kyklos, 54(1), pp. 89-114.

Chattopadhyay Rohitashya (2003) “The Internet and post-colonial development: India’s transnational reality.” Contemporary South Asia, Vol. 12, No-1, PP 25-40

Choudhury Rahul N. (2015) India’s FDI Policy on E-commerce: Some observations, Discussion Paper No-DN2015/3, Institute for Studies in Industrial Development, New Delhi
Cohen, B. (1975). Multinational Firms and Asian Export, New Haven and Yale University Press, London.

Dunning, J. H. (1974). The Distinctive Nature of the Multinational Enterprise. Economic Analysis and the Multinational Enterprise, 13-30.

Dunning, J. H. (1977). Trade Location of Economic Activity and the MNE: A Search of an Eclectic Approach, in Ohlin, B., P. O. Hesselborn, and P. J. Wijkman (Eds.): The International Allocation of Economic Activity, Macmillan, London. 37.

Dunning, J. H. (1979). Explaining changing patterns of international production: in defence of the eclectic theory. Oxford Bulletin of Economics and Statistics, 41(4), 269-295. 38.

Dunning, J. H. (1988). “The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions”. Journal of International Business Studies, 19, 1-31.

Dunning, J.H., Pitelis, Ch. N., (2008) Stephen Hymer’s Contribution to International Business Scholarship: An Assessment and Extension”, Journal of International Business Studies, Palgrave Macmillan Journals, vol. 39(1), pp. 167-176.

Grubert, H., Mutti, J. (1991), “Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making.” Review of Economic Studies, 73, pp. 285-293.

Gupta Pralok (2017). Proposed E-commerce Disciplines @ WTO: Implications for Government Programmes and Digital Initiatives in India, CWS Working Paper No. 42, CWS, New Delhi.

Hartman, D. G. (1994), “Tax Policy and Foreign Direct Investment in the United States.” National Tax Journal, 37 (4), pp. 475-488.

Hines, J. R., Rice, E. M. (1994), “Fiscal Paradise: Foreign Tax Havens and American Business.” The Quarterly Journal of Economics, 109, pp. 149-182.

Hymer, S. (1976). The International Operations of National Firms: A study of Direct Foreign Investment, 14, MIT Press, Cambridge, MA.

IAMAI (2016) Internet in India 2016, IAMAI, New Delhi.

IMF (2008) System of National Accounts, IMF, Washington D. C. USA.

Jackson, S., Markowski, S. (1995), “The Attractiveness of Countries to Foreign Direct Investment.” Journal of World Trade, 29, pp. 159-180.

Kemsley, D. (1998), “The Effect of Taxes on Production Location.” Journal of Accounting Research, 36, pp. 321-341.

Kindelberger C P (1969) “American Business Abroad” Yale University Press, London.

Knickerbocker, F. (1973). Oligopolistic Reaction and Multinational Enterprise. Boston, Division of Research Graduate School of Business Administration Harvard University.

Kumar Harish Pal (2017) National report on e-commerce development in India. Inclusive and Sustainable Industrial Development Working Paper Series, WP 15 | 2017, UNIDO, Vienna.

Kuthiala, S. K. (2003). “E-commerce in India: challenges and choices.” Journal of Services Research, 2(2), 139–155.

Lim, D. (1983), “Fiscal Incentive and Direct Foreign Investment in Less Developed Countries.” The Journal of Development Studies, 19, pp. 207- 212.

Loree, D., Guisinger, S. E. (1995), “Policy and Non-Policy Determinants of U.S. Equity Foreign Direct Investment.” Journal of International Business Studies, 26, pp. 281-300.

Mathews, J.A. (2002), “Dragon Multinationals – A new model for global growth”, Oxford: Oxford University Press.

Mathews, J.A., (2006) “Dragon Multinationals: New Players in 21st Century Globalization”, Asia Pacific Journal of Management, 23, pp. 5-27.

Miller, R. R. (2001). Leapfrogging? India’s information technology industry and the Internet. Retrieved 10 August 2017, http://documents.worldbank.org/curated/en/596841468750845416/Leapfrogging-Indias-information-technology-industry-and-the-Internet.

OECD (2008) Benchmark Definition of Foreign Direct Investment, Fourth Edition OECD, Paris.

Porcano, T. M., Price, C. E. (1996), “The Effects of Government Tax and Non-Tax Incentives on Foreign Direct Investment.” Multinational Business Review, 4, pp. 9-20.

PwC (2015) eCommerce in India: Accelerating growth, PwC, Available at: https://www.pwc.in/assets/pdfs/publications/2015/ecommerce-in-india-accelerating-growth.pdf Accessed on 10.11.2017.

Raipuria Kalyan (2000) Electronic Commerce: Opportunities for Indian Exports, Economic and Political Weekly, Vol. 35, No. 35/36, pp. 3260-3265.

Rao KSC. et. al (2013) Indefinite Definition of FDI, Discussion Paper No-DN1308, Institute for Studies in Industrial Development, New Delhi.

Root, E., Ahmed, A. (1979), “Empirical Determinants of Manufacturing: Direct Foreign Investment Developing Countries.” Economic Development and Cultural Change, 27, pp. 758-767.

Satapathy, C. (1999) WTO Work Programme on Electronic Commerce: A Developing Country Perspective, Economic and Political Weekly, Vol. 34, No. 39, pp. 2771-2776.

Sengupta Jayshree (2017) Is India getting the kind of FDI it needs? ORF, New Delhi. Available at: http://www.orfonline.org/expert-speaks/india-getting-kind-fdi-needs/ , Accessed on 14.11.2017.

Singh Nitish and Sumit Kundu (2002) “Explaining the Growth of E-Commerce Corporations (ECCs): An Extension and Application of the Eclectic Paradigm”, Journal of International Business Studies, Vol. 33, No. 4, pp. 679- 697,

TRAI (2017) Annual Reports, Various Editions. TRAI, New Delhi,

UNCTAD (2013) World Investment Report, UNCTAD, Geneva,

Vaithianathan Sridhar (2010) A review of e-commerce literature on India and research agenda for the future, Electronic Commerce Research 10: 83-97, Viswanathan, N. K., & Pick, J. B. (2005). Comparison of e-commerce in India and Mexico: an example of technology diffusion in developing nations. International Journal of Technology Management, 31(1/2), 2–19, Vol. 31, No. 1, pp. 91-106.

Wheeler, D., Mody, A. (1992), "International Investment Location Decisions: The Case for U.S. Firms." Journal of International Economics, 33, pp. 57-76.

Yulin, N., Reed, M. R. (1995), "Locational Determinants of U. S. Direct Foreign Investment in Food and Kindered Products." Agrobusiness, 11, pp. 77-86.