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Evaluating Effects of FDI in Developing Economies - The Curious Case of Indian Pharmaceutical Industry

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India's pharmaceutical industry is expected to rise to approximately US$50 billion by 2020 (Pricewaterhouse Coopers). The growth in the size of this industry is supported by growth of Indian economy, rising per capita income, epidemiological changes in Indian society and increasing awareness. To provide a boost to this industry, the Indian government in 2001, liberalised foreign direct investment (FDI) norms for the pharmaceutical sector. 100% FDI was allowed through the 'automatic route' (without prior permission) in pharmaceutical manufacturing (except in sectors using recombinant DNA technology). This decision was based on belief in popular economic theory, views of policy makers and the government regarding the benefits offered by private FDI. India once again is set to loosen controls, and allow FDI in retail and other sectors, on the pretext of the same premise that these economic reforms are needed for development. However, it is becoming necessary to examine the overly hyped hypothesis related to the need and benefits of FDI for host country. It is even more important to gather empirical support for claims regarding the beneficial impact of FDI. This paper endeavours to evaluate the benefits of foreign direct investment for developing countries, specifically India. The focus was pharmaceutical industry in India, because since 2001 India has been allowing 100 per cent FDI in this sector. It would be justified to assess the benefits accrued by Indian economy because to foreign investments in this sector because the time span is significant and evaluation will be fair.

Key Words: Foreign Direct Investment (FDI), India's FDI Policy, Pharmaceutical Industry, Economic Policy

Introduction

The recent circular (Circular 1 of 2012) by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Government of India outlines the "Consolidated FDI Policy". It suggests that, "It is the intent and objective of the Government of India to attract and promote foreign direct investment in order to supplement domestic capital, technology and skills, for accelerated economic growth. Foreign Direct Investment, as distinguished from portfolio investment, has the connotation of establishing a lasting interest in an enterprise that is resident in an economy other than that of the investor."

This view is popular among the governments, policy makers and neo-liberal economists. The case for international capital flows is usually presented in the literature as a vital component for national and international development. In particular foreign direct investment (FDI) is suggested to contribute towards financing sustained economic growth in the long term. Economists also argue that FDI is especially important for its potential to transfer knowledge and technology, create jobs, boost overall productivity, enhance competitiveness and entrepreneurship, and ultimately eradicate poverty through economic growth and development. Hence the policy makers, especially from developing countries, start marketing their nations as 'ideal' destinations for foreign investment. Furthermore, they try to create the necessary domestic and international conditions to facilitate direct investment flows conducive for achieving national development.

To attract and enhance inflows of 'the productive capital', countries and national governments concert their efforts in achieving a transparent, stable and predictable investment climate, with proper contract enforcement and respect for property rights, embedded in sound macroeconomic policies and institutions that allow businesses, both domestic and international, to operate efficiently and profitably for maximizing the development impact. The governments and policy making bodies prioritize revamping economic policy and regulatory frameworks for promoting and protecting investments, including the areas of human resource development, avoidance of double taxation, corporate governance, accounting standards, and the promotion of a competitive environment, etc. They also encourage mechanisms, such as public/private partnerships and investment agreements, for strengthening productivity.

The picture presented above is aligned with the sentiment of the present Indian government. As recent as 17th September, 2012, the prime minister of India, Mr. Manmohan Singh, said that "The time for big-bang reforms has come. The cabinet has taken

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many decisions today to bolster economic growth and make India a more attractive destination for foreign investment. I believe these steps will strengthen our growth process and generate employment in these difficult times" (Deccan Herald, 2012). The occasion was the governments' action on long-pending proposals to loosen market restrictions, especially in retail sector, in hope of luring more foreign investment and expertise. As is evident, the leaders especially from developing world, often exhibit their desire to attract FDI. Also, many of them, especially from Third World countries, feel that that no matter what they do, they fail to attract FDI. Contrary to these thoughts, some economists argue that 'the case for FDI is usually presented as if it is demand-driven' but the fact is that 'FDI, for the most part, is supply-driven' (Tandon, 2002). The debate and dilemma regarding the direct investment flows is best summed up as follows:

"There are certain simple propositions in economics that acquire the status of axiomatic truths, sometimes even the force of law. One of these, in our time, is the proposition that if a developing country (DC) seeks economic growth and welfare for its people, then the principal mechanism to do so is to try to attract foreign direct or private investment (FDI or FPI); and, furthermore, that in a globalized world, where capital is free to move where it will, the DC need to offer competitive terms to attract FDI."

(Yash Tandon, former Executive Director, South Centre, Geneva)

It is felt that there is a need to examine the overly hyped hypothesis related to the need and benefits of FDI for host country. It is even more important to gather empirical support for claims regarding the beneficial impact of FDI. This paper endeavours to answer the big question - how beneficial is FDI for developing countries, especially India? This was examined particularly for pharmaceutical industry in India because Indian government, since the year 2001, has been allowing 100 per cent FDI in this sector. Moreover the foreign investors do not need prior approval (automatic route) for investment in pharmaceutical manufacturing, except in sectors using recombinant DNA technology. It would be interesting to examine the foreign investments in this sector and the benefits accrued thereof.

International Investment Flows

The economists tend to promote free flow of capital across nations because it allows capital to get the highest rate of return. The unrestricted capital flows also offer several other advantages like - international capital flows reduce the risk faced by owners of capital by allowing them to diversify lending and investment; the global integration of capital markets can contribute to the spread of best practices in corporate governance, accounting rules, and legal traditions and finally the global mobility of capital limits the ability of governments to pursue bad policies (Feldstein, 2000). These international financial flows can take several forms viz. bonds, bank finance, official assistance on concessional basis from international financial agencies (like World Bank and International Monetary Fund), portfolio investment in ownership of firms and foreign direct investment. These can be broadly classified as debt and equity finance. Bonds, bank finance and official finance are forms of debt finance whereas direct investment and portfolio investments are forms of equity finance.

The distinction between debt and equity finance is important for understanding repayment liability. When a country's liabilities are in the form of debt, its scheduled payments to creditors do not fall if its real income falls but in case of equity, a fall in domestic income reduces earnings of foreign shareholders (Krugman and Obstfeld, 2009). For sometime now, due to aid weariness and debt crises, investments on account of private sector have become the preferred mode of financing development in the developing countries (Rao and Dhar, 2011). Further, in case of equity finance, portfolio investments have a short horizon because the investors do not make long term commitments in their host countries. Though foreign portfolio investments are welcomed due to their non-debt creating nature and perceived contribution to the development of the capital market, they have also been a source of concern because of the volatility and asset price bubbles that they cause resulting in the destabilization of economies.

In contrast, FDI is viewed as "good cholesterol" (Loungani and Razin, 2001) because it provides certain benefits to host countries like: (a) it allows the transfer of technology (particularly in the form of new varieties of capital inputs); (b) it contributes to human capital development in the host country (c) the profits generated by FDI contribute to corporate tax revenues in the host country (Razin and Sadka, 2001). An additional benefit is that FDI is thought to be "bolted down and cannot leave so easily at the first sign of trouble" (Loungani and Razin, 2001). In principle, therefore, FDI should contribute to investment and growth in host countries.

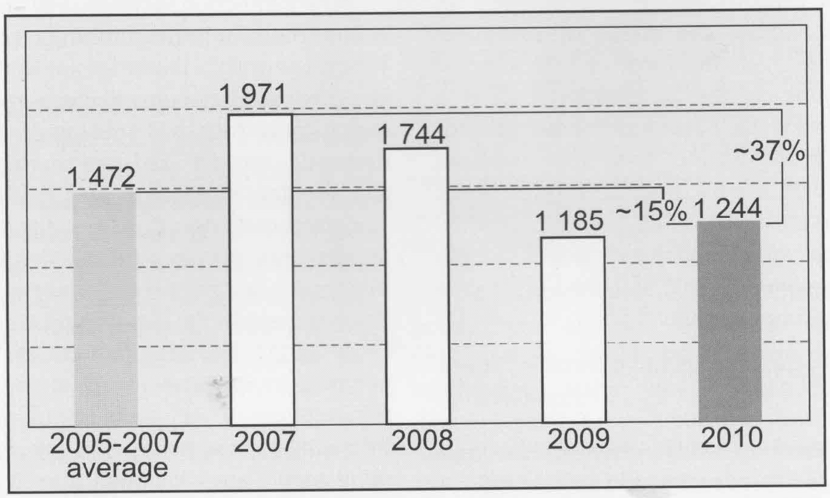
India after independence in 1947 formed an economic policy based on socialistic pattern with central planning and tight government regulations, permits and controls. The ever increasing state controls were carried on to such a point where, after nearly four decades of governmental intervention, the nation had become virtually bankrupt in almost every sphere - economic, political, and commercial (Salve, 1993). India relaxed her foreign investment regime in 1991 as a part of the overall liberalization of the economic policy. The governments approach was to attract FDI in large amounts and also allow foreign portfolio investors to invest through the stock market. FDI started flowing into India, continued in 2000's until the fall in inwards FDI recently which is being scrutinized as a reflection of worsening investment climate characterised by retardation in economic reforms, slow labour market reforms, problems in acquisition of land and ongoing inquiries into scams of humongous magnitude (Rao and Dhar, 2011). With all developing nations eager to attract FDI, the success of a nation in attracting foreign investment is proportional to that nation's resources, macro-economic environment and the existence of lucrative investment opportunities.

Trends in FDI Flow - World

(Data Source - World Investment Report, 2011)

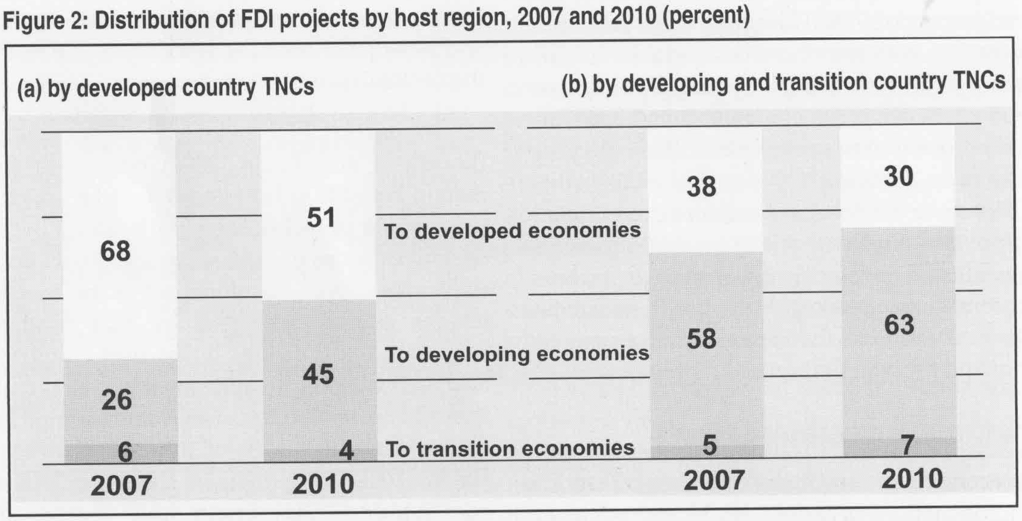
Global FDI inflows increased by 5 per cent, to reach $1.24 trillion in 2010 but remained nearly 37 per cent below their 2007 peak (UNCTAD, 2011). The developing and transition economies were important recipients of FDI as well as outward investors. The transnational corporations (TNCs) are increasingly investing in both efficiency- and market-seeking projects in developing countries.

Figure 1: Global FDI inflows, average 2005-2007 and 2007 to 2010 (billions of dollars)



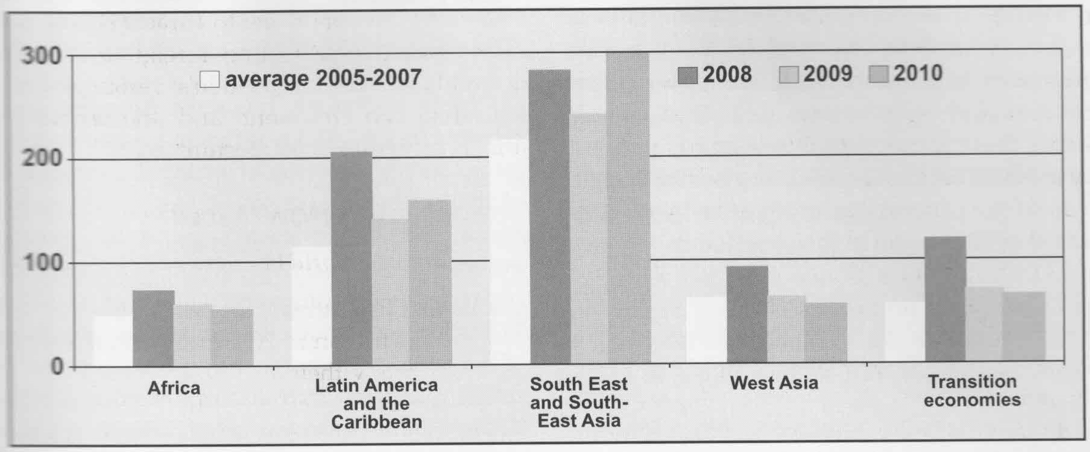
Source: UNCTAD (World Investment Report, 2011)

Figure 2: Distribution of FDI projects by host region, 2007 and 2010 (percent)



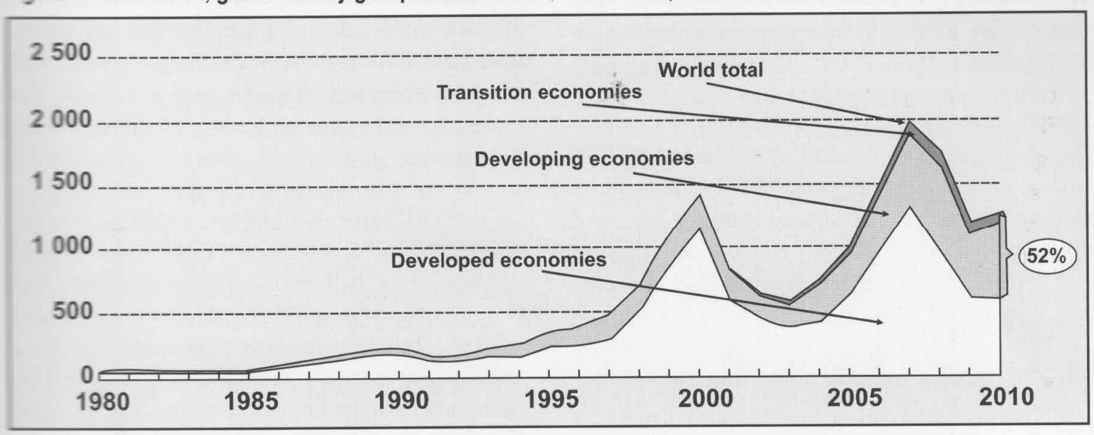
Source: UNCTAD (World Investment Report, 2011)

Figure 3: FDI inflows to developing and transition economies, by region, average of 2005-2007 and 2008 to 2010 (billions of dollars)



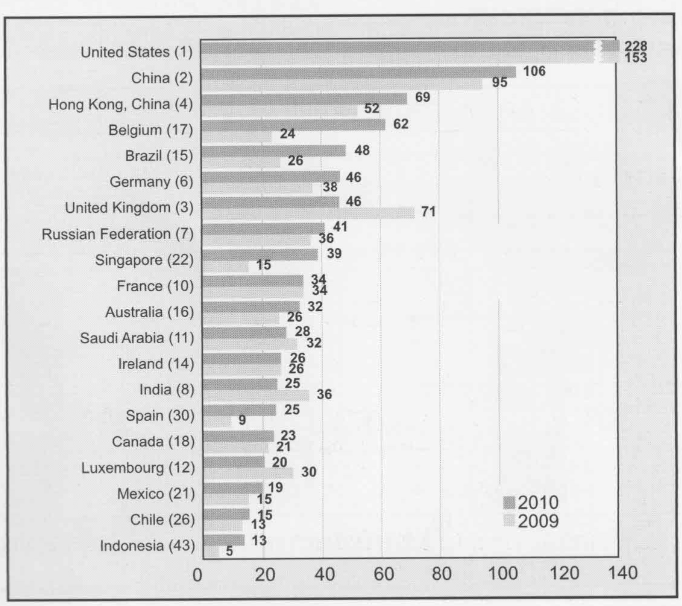
Source: UNCTAD (World Investment Report, 2011)

Figure 4: FDI inflows, global and by group of economies, 1980-2010 (billions of dollars)



Source: UNCTAD (World Investment Report, 2011)

Figure 5: Global FDI inflows, top 20 host economies, 2009 and 2010 (billions of dollars)



Source: UNCTAD (World Investment Report, 2011)

However there are significant regional differences in FDI inflow to developing countries. FDI flows to Africa fell by 9 per cent but inflows to East Asia, South-East Asia and South Asia as a whole rose by 24 per cent in 2010. The trends varied in Asian region, with inflows to ASEAN almost doubling; those to East Asia witnessing 17 per cent rise and FDI to South Asia declining by one-fourth. FDI flows to Latin America and the Caribbean increased by 13 per cent in 2010 with South America seeing FDI inflow growth rate of 56 per cent. FDI flows to transition economies declined slightly in 2010. In contrast to the FDI boom in developing countries as a whole, FDI inflows to the 48 LDCs declined.

For the first time, developing and transition countries absorbed more than half of global FDI inflows in 2010 and about half of the top-20 host economies for FDI in 2010 were developing or transition economies.

There were major sectoral differences in FDI inflow. FDI in services, continued to decline in 2010 as during crisis. All the main service industries (business services, finance, transport and communications and utilities) fell but at different rates. The financial industry experienced sharpest decline in FDI flow. Manufacturing attracted almost half of FDI but investments fell in business-cycle-sensitive industries such as metal and electronics. The chemical and pharmaceutical industry remained resilient and industries such as food, beverages and tobacco, textiles and garments, and automobiles, recovered in 2010.

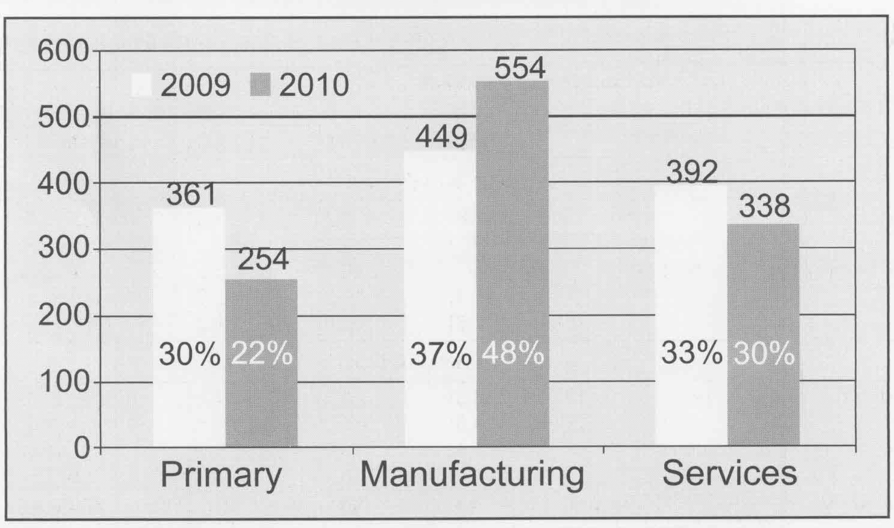
Trends in FDI Flow And Investment Policy - India

(Data Source: RBI, 2012)

India undertook economic liberalisation and reforms in 1991 and a series of measures taken to attract foreign investment included: (i) introduction of dual route of approval of FDI RBI's automatic route and Government's approval route, (ii) automatic permission for technology agreements in high priority industries and removal of restriction of FDI in low technology areas as well as liberalization of technology imports, (iii) permission to Non-resident Indians (NRIs) and Overseas Corporate Bodies (OCBs) to invest up to 100 per cent in high priorities sectors, (iv) hike in the foreign equity participation limits to 51 per cent for existing companies and liberalization of the use of foreign 'brands name' and (v) signing the convention of multilateral investment guarantee agency (MIGA) for protection of foreign investments. Also Foreign Exchange Management Act (FEMA), 1999 was introduced.

Investment proposals falling under the automatic route and matters related to FEMA are dealt with by RBI, while the Government handles investment through approval route as well as FDI related through its three institutions, viz., the Foreign Investment Promotion Board (FIPB), the secretariat for industrial assistance (SIA) and the Foreign Investment Implementation Authority (FIIA). FDI under the automatic route does not require any prior approval either by the

Figure 6: Sectoral Distribution of FDI projects 2009 - 2010 (billions of dollars)



Source: UNCTAD (World Investment Report, 2011)

Government or the Reserve Bank. The investors are only required to notify the concerned regional office of the RBI within 30 days of receipt of inward remittances and file the required documents with that office within 30 days of issuance of shares to foreign investors. Under the approval route, the proposals are considered in a time-bound and transparent manner by the FIPB. Approvals of composite proposals involving foreign investment/ foreign technical collaboration are also granted on the recommendations of the FIPB. The current FDI policy in terms of sector specific limits has been summarized in Annexure I.

During 2000s FDI flows to emerging market economies tripled. India also received large FDI inflows in line with its robust domestic economic performance, and the increase in FDI inflows was from around US$ 6 billion in 2001-02 to almost US$ 38 billion in 2008-09. This can be attributed to liberalization of the economy since the early 1990s as well as gradual opening up of the capital account. As part of the capital account liberalization, FDI was gradually allowed in almost all sectors, except a few on grounds of strategic importance, subject to compliance of sector specific rules and regulations. There was significant deceleration in global FDI flows during 2009-10, but the decline in FDI flows to India was relatively moderate. As mentioned in previous section, the global FDI flows have recovered during 2010-11, but gross FDI inflows to India witnessed a fall and decreased to US$ 20.3 billion during 2010-11 from US$ 27.1 billion in the preceding year. This is primarily because FDI in India mainly flowed into services sector (with an average share of 41 per cent in the past five years) followed by manufacturing (around 23 per cent) and the share of services declined over the years from almost 57 per cent in 2006-07 to about 30 per cent in 2010-11. Also the decline has been mainly driven by sectors such as 'construction, real estate and mining' and services such as 'business and financial services'.

Evidence of Impact of FDI on Economy of Developing Countries

FDI is an important component of every nation's efforts toward economic development and also is an integral part of the globalization of the world economy (Festervand, 1999). FDI is prized by most of the developing countries and many countries put intentional efforts to attract FDI (Agosin & Machado, 2005). It is generally believed by these countries that FDI is inherently good for their economies and it brings valuable assets, both tangible and intangible for them (Kosova, 2010; Backer & Sleuwaegen, 2003; Aleksynska et al., 2003). Jakobsen and Jakobsen (2011) found that FDI is welcomed in developing countries, except for the countries with high economic nationalism, whereas Buthe & Milner (2008) found that all countries that are members of trade agreements such as GATT (General Agreement on Tariffs and Trade) and WTO (World Trade Organization) receive more FDI than the non members. FDI is not only considered as a healthy sign for the over all national economy but also a positive indication for the local industry considering its positive spillover effects. The proposed positive effects of FDI have generated a lot of research interest in studying the determinants of FDI into a country, so that it can be enhanced (Adams, 2010; Kok & Ersoy, 2009; Kinda, 2010; Majeed & Ahmad, 2009).

Table 1: Equity FDI inflows to India

					(Per cent)
Sectors	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Sectors shares (Per cent)					
Manufactures	17.6	19.2	21.0	22.9	32.1
Services	56.9	41.2	45.1	32.8	30.1
Construction, Real estate and mining	15.5	22.4	18.6	26.6	17.6
Others	9.9	17.2	15.2	17.7	20.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Equity Inflows (US$ billion)					
Manufactures	1.6	3.7	4.8	5.1	4.8
Services	5.3	8.0	10.2	7.4	4.5
Construction, Real estate and mining	1.4	4.3	4.2	6.0	2.6
Others	0.9	3.3	3.4	4.0	3.0
Total Equity FDI	**9.3**	**19.4**	**22.7**	**22.5**	**14.9**

Source: RBI Bulletin (May, 2012)

It is felt that assessing FDI and its benefits is not that simple. The effects of FDI are not always positive and it is difficult to predict the spillover effects of FDI, with certainty, in advance. However, not many researchers have studied the negative effects of FDI. Wells (1998) suggested that "some FDI is good, almost certainly some is harmful. But exactly what kind of investment falls in each category is frightfully difficult to determine, even if the effects are measured against only economic criteria". Similarly, Caves (1996) suggested that "...relationship between a less developed country's stock of foreign investment and its subsequent economic growth is a matter on which we totally lack trustworthy conclusions". Yamin and Sinkovics (2009) reported that the data on FDI flows and its effects provide clear indications that large investments by multi-national enterprises (MNEs) into Less Developed Countries (LDCs) have "typically resulted in extremely shallow levels and types of investment in these countries with low or absent potential for positive spillovers". In a recent study of 42 developed and developing countries, Dimelis and Papaioannou (2009) found that the effects of FDI were positive and significant for developed countries, whereas these were positive but insignificant for developing countries. It can be concluded that economic literature reviewed lacks strong empirical evidence regarding positive impact of FDI for developing countries.

Reasons for Caution

The developing nations go all out to market themselves as 'foreign investment friendly destinations'. But it is suggested that the developing countries should be cautious, and should not take completely uncritical view towards the benefits of FDI. Hausmann and Fernández-Arias (2000) retort that a striking feature of FDI flows is that their share in total inflows is higher in riskier countries, with risk measured either by countries' credit ratings for sovereign (government) debt or by other indicators of country risk. There is also some evidence that its share is higher in countries where the quality of institutions is lower.

FDI is not only transfer of ownership from domestic to foreign residents but also a mechanism that makes it possible for foreign investors to exercise management and control over host country firmsthat is, it is a corporate governance mechanism. The transfer of control may not always benefit the host country because of the circumstances under which it occurs, problems of adverse selection, or excessive leverage. Krugman (1998) questions whether foreign corporations take over control of domestic enterprises because they have special competence, and can run them better, or simply because they have cash and the locals do not?

Through FDI, foreign investors gain crucial inside information about the productivity of the firms under their control. This gives them an informational advantage over "uninformed" domestic savers, whose buying of shares in domestic firms does not entail control. Taking advantage of this superior information, foreign direct investors will tend to retain high-productivity firms under their ownership and control and sell low-productivity firms to the uninformed savers (Razin, Sadka, and Yuen, 1999 and Razin and Sadka, 2001).

Further, though it is true that the machines are "bolted down" and, hence, difficult to move out of the host country on short notice but the financial transactions can sometimes accomplish a reversal of FDI. For instance, the foreign subsidiary can borrow against its collateral domestically and then lend the money back to the parent company. In some other cases FDI might not be beneficial to the recipient country - especially when such investment is geared toward serving domestic markets protected by high tariff or nontariff barriers.

India's Pharmaceutical Industry

The Pharmaceutical industry has grown from mere US$ 0.3 billion turnover in 1980 to about US$ 21.73 billion in 2009-10. Pricewaterhouse Coopers (PwC) estimates that it will rise to approximately US$50 billion by 2020 - a 163% in eleven years and India will be among the top ten markets by 2020. The country now ranks third in terms of volume of production (10 per cent of global share) and thirteenth largest by value (1.5 per cent of global share). One reason for lower value share is the lowest cost of drugs in India ranging from 5 per cent to 50 per cent less as compared to developed countries. The Indian pharmaceutical market is a highly-fragmented with more than 20,000 registered units, as of 2010. The top ten participants accounted for nearly 37 percent of the market share, and the top five participants for 22 percent of the market share in 2010. The growth in Indian pharmaceutical industry is driven by the expanding economy and increasing per capita income. The rise of Indian middle class ensures that people are acquiring the buying power necessary to afford modern healthcare. Further, like almost every other emerging economy, India is experiencing epidemiological changes. It is suggested that by 2028, an estimated 199 million Indians will be 60 years or older, up from about 91 million in 2008. Also, India has the largest pool of diabetic patients. These factors help to explain why India is expected to be among the top markets for many pharmaceutical companies.

The government of India implemented a series of policy measures in the 1970s to achieve self-sufficiency in pharmaceutical production. The first step was to revamp the colonial patent legislation and abandon product patent protection for medicines. Hence, the Patents Act 1970 allowed only process patent protection for pharmaceutical inventions. As a result, Indian companies could produce new medicines which had been introduced in the international market but were not available to needy patients in India. This made possible the production and sale of new medicines at affordable prices. Secondly, the government introduced control measures on foreign ownership under which foreign companies were not allowed to hold more than 50% of equity. Thirdly, the government introduced direct price control on all formulations of about 347 bulk drugs. Fourthly, pharmaceutical multinational corporations (MNCs) were forced to start production of both formulation and bulk drugs in India. Fifthly, public sector production of bulk drugs encouraged the small and medium enterprise (SME) sector to start formulation. Within a span of some 20 years, these policy initiatives cumulatively made India not only self-sufficient but also a net exporter of generic medicines (Gopakumar and Santhosh, 2012).

Because of government policy initiatives discussed above, India became a significant player in branded generics (molecular copy of an off-patent drug with a trade name) market. It is important to note that generic versions of molecules which still had patent protection in the rest of the world were produced (by reverse engineering) and marketed in India by domestic market participants until 2005, since India did not follow any patent protection laws up to 2005. India became a global market leader in the export of generic drugs to countries such as the United States and Japan, as well as to countries in Africa and Europe (Frost and Sullivan, 2012). The Indian pharmaceutical industry has the critical role of supply of medicines to various global treatment programmes. This industry however is challenged by changes in macro-environment including (a) increasing control of the Indian pharmaceutical industry by MNCs and changing competitive landscape due to product patent protection under India's current patent regime; and (b) change in the government's policy on foreign investment since the year 2001; and (c) the radical change in India's intellectual property regime to comply with World Trade Organisation (WTO) treaty obligations.

India's FDI Policy and its Impact on Pharmaceutical Industry

India's competitive pharmaceutical industry acts as the source for affordable generic medicines across the developing world. However, the industry itself is facing significant threat. In 2001 India liberalised foreign direct investment (FDI) norms for the pharmaceutical sector. As a result, 100% FDI was allowed through the 'automatic route' (without prior permission) in pharmaceutical manufacturing (except in sectors using recombinant DNA technology). The FDI policy did not make any distinctions between 'greenfield' (new facilities) and 'brownfield' (takeover of existing facilities) investments. However, during the last 12 years MNCs did not make any major effort to undertake greenfield investments in India and have opted for brownfield investments, i.e., acquisition of Indian companies.

Multinational companies (MNCs) acquisitions and strategic alliances in India's pharmaceutical industry should be understood and analyzed in the context of changing dynamics in the international pharmaceutical market. The global pharmaceutical industry is witnessing transformation. The pharmaceutical MNCs are experiencing severe crisis because the R&D pipeline has dried up to a great extent and the number of new chemical entities (NCEs) has decreased. Also, the expiry of patents on existing molecules is approaching with nearly all blockbuster drugs of pharmaceutical MNCs going off-patent in near future. The Indian generic companies posed challenge to the patents on blockbusters. Due to global financial crisis, the developed countries have started reducing social security spending to take up economic austerity measures. This will affect both personal as well as government procurement of drugs. In response to these challenges, MNCs have resorted to various strategies, one among which is to control the generic medicine market. This also explains sudden rise in acquisitions of Indian companies by MNCs which at times have offered purchase prices much higher than the sales turnover of the Indian company. The Indian pharmaceutical industry is challenged by increasing control of the industry by MNCs and their efforts to restrain generic competition.

Table 2: MNC Acquisitions in Indian Pharmaceutical Industry Select Cases

Target company	Acquirer	Country of origin	Year	Amount
Matrix Laboratories	Mylan Inc	US	August 2006	$736 mn
Dabur Pharma	Fresenius Kabi	Singapore	20 April 2008	$219 mn
Ranbaxy Laboratories	Daiichi Sankyo	Japan	11 June 2008	$4.6 bn
Shantha Biotech	Sanofi Aventis	France	27 July 2009	$783 mn
Orchid Chemicals (injectable business)	Hospira	US	16 December 2009	$736 mn
Piramal Healthcare (domestic formulation)	Abbott Laboratories	US	21 May 2010	$3.72 bn
Paras Pharmaceuticals	Reckitt Benckiser Group	UK	14 December 2010	$720.6 mn

Source: Gopakumar and Santhosh (2012)

Table 3: Strategic alliances between Indian companies and MNCs in Pharmaceutical Industry Select Cases

Partnering firm in the Indian pharmaceutical sector	Foreign partner	Description of alliance	Nature of alliance
GVK Bio Sciences	INC Research	Joint venture will establish a dedicted resource capability to offer phase I-IV clinical development programme in India	R&D alliance
Advinus Therapeutics	Merck	Discovery and clinical development collaboration on metaboilc disorders	R&D alliance
Pall Pharmalab Filtration	Euroflow Ltd, UK	Distribution of Euroflow's chromatography products and technologies in India	Sales and distribution
Ranbaxy Laboratories	Blansett Pharmacal Co, US	Sales support to Ranbaxy's DisperMox (amoxicillin tablets for oral suspension) in the US	Sales and distribution
Wockhardt	Ranbaxy Pharmaceuticals inc., US	Marketing of Wockhardt's bethanecol cholride tablets in the US	Market development, sales and distribution
Orchid Chemicals and Pharmaceuticals	Apotex Corp, US	Sale of Orchid's generic cephalosporin and other injectable products in the US	Market development, sales and distribution
Nicholas Piramal	BioSyntech, Canada	Drug research and development in biotechnology, The collaboration centres on the drug BST-Inpod which is being developed to alleviate chronic heel pain	R&D alliance
Ranbaxy Laboratories	GlaxoSmithKline, UK	Development of new chemical entities or new drugs in the areas of urology, anti-fungal, anti-bacterial and metabolic disorders	R&D alliance
Dabur India	Abbott Laboratories, US	Marketing of a number of Dabur products in the US on an exclusive long-term basis	Market development, sales and distribution
Ranbaxy Fine Chemicals	Mallinckrodt Baker Inc (MBI), US	Ranbaxy Fine Chemicals will market MBI's range of scientific laboratory products in the Indian market	Market development, sales
Wockhardt	Eisai Company Ltd, Japan	Wockhardt will market Methycobal in India	Market development, sales and distribution
Nicholas Piramal	Biogen Ideac, US	Nicholas Piramal will market Avonex for multiple sclerosis in India	Market development, sales and distribution

Source: Gopakumar and Santhosh (2012)

The Indian pharmaceutical firms have also become an integral part of the global R&D and production network of MNCs. Many Indian companies are entering into strategic alliances with MNCs for undertaking contract research and manufacturing (CRAMS) for MNCs. CRAMS essentially involves outsourcing the manufacturing of active pharmaceutical ingredients and formulations, research for new drug compounds and clinical and pre-clinical trials. The attraction of the western pharmaceutical markets has also led to the abandonment of drug research programmes for diseases that affect significant sections of India's population like tuberculosis (TB). Lupin, an Indian pharmaceutical company engaged in tuberculosis (TB) research, expressed its desire to end the TB research programme and focus on diabetes and anti-inflammatory research (Joseph, 2011). The in-house industrial pharmaceutical R&D is being largely directed to meet the needs of western markets and not for developing drugs for neglected diseases of the poor in developing countries (Abrol, Prajapati and Singh, 2011).

The MNCs engaged in acquisitions and takeovers of Indian generic companies, are mainly targeting Indian companies with a high level of technological capability. This may lead to: (a) Increase in India's dependency on MNCs - The R&D priorities of the Indian companies are increasingly determined by the demand in western markets which prefer generic medicines. This may increase India's dependency on the MNCs for the supply of essential medicines necessary for diseases affecting the patients in India; (b) Increase in price of medicines - The MNCs will get access to marketing and distribution networks of Indian companies through takeovers. They will be able to sell higher priced and patented medicines through this network which may increase price significantly; and (c) Another important issue is that the takeover of Indian firms by MNCs can significantly undermine India's ability to use the flexibilities under India's patent laws and the WTO TRIPS Agreement to the fullest extent. Critical patent flexibilities such as compulsory licenses depend substantially on the availability of generic companies to make use of the compulsory licenses (Gopakumar and Santhosh, 2011). It is important to note that MNCs enjoy a patent monopoly and charge very high prices for medicines needed to treat cancer, cardiac, diabetes and neurological conditions (Chaudhuri, 2011).

Conclusion

The developing countries aggressively market their economies for attracting FDI. However, the governments and policy makers need to closely assess the benefits accrued through these foreign investments. It is strongly recommended that the foreign capital should be 'directed' to get 'desired' benefits. This is not to suggest that FDI should be controlled but that it should be monitored. Also sector specific FDI policy and research should be undertaken by the government on a regular basis. The case of Indian Pharmaceutical Industry is intriguing as 100% FDI resulted in higher volatility in this sector because of brownfield vis-s-vis greenfield investments. In contrast to achieving the desired growth objective the competitiveness of generic drug industry was challenged. The government needs to check growing control of MNCs' over the Indian pharmaceutical market and scrutinize acquisitions and strategic alliances very strictly. Finally, it is critical for India to adopt a FDI policy in the pharmaceutical sector which appropriately monitors the concerns regarding the implications of mergers, strategic alliances and takeovers on global competitiveness of this profitable and critical growth sector in India.

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ANNEXURE I Sector Specific Limits of Foreign Investments in India

Sectors	FDI Cap/ Equity	Entry Route	Other Conditions
A. Agriculture			
1. Floriculture, Horticulture, Development and production of Seeds, Animal Husbandry, Pisciculture, Aquaculture, Cultivation fo vegetables & mushrooms and service related to agro and allied sectors.	100%	Automatic	
2. Tea sector, including plantation	100%	FIPB	
(FDI is not allowed in any other agricultural sector/activity)			
B. Industry			
1. Mining covering exploration and mining of diamonds & precious stones, gold, silver and minerals	100%	Automatic	
2. Coal and lignite mining for captive consumption by power projects, and iron & steel, cement production.	100%	Automatic	
3. Mining and mineral separation of titanium bearing minerals	100%	FIPB	
C. Manufacturing			
1. Alcohol-Distillation & Brewing	100%	Automatic	
2. Coffee & Rubber processing & Warehousing	100%	Automatic	
3. Defence production	26%	FIPB	
4. Hazzardous chemicals and isocyanates	100%	Automatic	
5. Industrial explosives - Manufacture	100%	Automatic	
6. Drugs and Pharmaceuticals	100%	Automatic	
7. Power including generation (except Atomic energy). transmission, distribution and power trading.	100%	Automatic	
(FDI is not permitted for generation, transmission & distribution of electricity produced in atomic power plant/atomic energy since private investment in this activity is prohibited and reserved for public sector.)			
D. Services			
1. Civil aviation			
a. Green filed projects	100%	Automatic	
b. Existing projects	100%	FIPB beyond 74%	
2. Asset Reconstruction companies	49%	FIPB	
3. Banking			
a. Private sector	74% (FDI+FII). FII not to exceed 49 %		
b. Public sector	20%		
4. NBFCs: Merchant Banking underwriting, porfolio management services, investment advisory services, financial consultancy, stock broking, asset managment, venture capital, custodian, factoring, leasing and finance, housing finance, forex broking, etc.	100%	Automatic	Subject to minimum capitalisation norms
5. Broadcating			
a. FM Radio	20%	FIPB	
b. Cable network:	49% (FDI+FII)	FIPB	
c. Direct to hme:	100%	FIPB	
d. Setting up Hardware facilities such as up-linking HUB.	49%	FIPB	
e. Up-linking a news and current affairs TV Channel	26	FIPB	
6. Commodity Exchange	49% (FDI+FII) (FDI 26% FII 23%)	FIPB	
7. Insurance	26%	Automatic	Clearance from IRDA
8. Petroleum and natural gas:			
a. Refining	49% (PSUs) 100% (Pvt. Companies)	FIPB (for PSUs). Automatic (Pvt.)	
9. Print Media			Subject to guidelines by Ministry of Information & broadcasting
a. Publishing of newspaper and periodicals dealing with news and current affairs	26%	FIPB	
b. Publishing of scientific magazines/speciality journals/periodicals	100%	FIPB	
10. Telecommunications			
a. Basic and cellular, unified access services, national/international long-distance. V-SAT, public mobile radio trunked services (PMRTS), global mobile personal communication services (GMPCS) and others.	74% (including FDI. FII) NRI, FCCBs. ADRs/ GDRs, convertible preference shares. etc.	Automatic up to 49% and FIPB beyond 49%	

Sector where FDI is Banned

1. Retail Trading (except single brand product retailing):
2. Atomic Energy:
3. Lottery Business including Government / private lottery, online lotteries etc:
4. Gambling and Betting including casinos etc.:
5. Business of chit fund:
6. Nidhi Company:
7. Trading in Transferable Development Rights (TDRs):
8. Activities/sector not opened to private sector investment:
9. Agriculture (excluding Floriculture, Horticulture, Development of seeds, Animal Husbandry, Pisciculture and cultivation of vegetables, mushrooms etc. under controlled conditions and services related to agro and allied sectors) and Plantations (Other than Tea Plantations):
10. Real estate business or construction of farm houses: Manufacturing of Cigars, cheroots, cigarillos and cigarettes of tobacco or of tobacco or of tobacco substitutes.

Source - RBI Bulletin (May 2012)