CHAPTER 2

REVIEW OF LITERATURE
The review of literature arrange on year-wise developments in chronological order as well as different subject context of multilateral trading system.

Literature on ICT & Developing Countries

The literature on the subject investigates the feasibility of telecommunication as one of the determinants of the economic development, and attempts to entangle the reverse causality between economic development and the demand for telecommunication services.

Garbade and Silber (1978)\(^1\), find strong statistical support for the hypothesis that the two innovations in communication technology – the telegraph and Trans-Atlantic cable -- led to efficient market places world wide through significant and rapid narrowing on inter-market price differentials.

Andrew Hardy (Hardy, 1980)\(^2\) first found The impact of telecommunications on growth based on data from 45 countries, with the largest effect of telecommunication investment on GDP found in the least developed economies, and the smallest effect, in the most-developed economies.

Leff (1984)\(^3\) argues that firms can also have more physically dispersed activity with increased telecom services (for instance, encourage telecommuting of their employees) and enjoy economy of scale and scope.

Cronin et. al. (1991)\(^4\) employ the Granger, Sims and modified Sims tests to confirm the existence of feedback process in which economic activity and growth stimulates demands for telecommunication services. As the economy grows, more

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telecommunications facilities are needed to conduct the increased business transactions.

Cronin et. al. (1993a) investigate this relationship at the state and sub-state levels. This study confirms at both the state and county levels, using data from the state of Pennsylvania, U.S., and finds that telecommunication investment affects economic activity and that economic activity can affect telecommunications investment.

Using the Peterson Index, Cronin et. al. (1993b) finds a statistically significant causal relationship between productivity growth and portion attributable to telecommunications.

There exists a negative network externality resulting from congestion, which affects the subscription level of telecom services at the particular moment. But it forces service providers and regulators to accelerate the investment in telecom infrastructure.

Norton (1992) showed that convergence could occur if developing countries could add to their stock of telephones rapidly, since they reduce transaction costs.

De Long and Summers (1993) find, based on several regressions and instrumental variable methods, strong connection between investment and productivity growth in developing countries, which imply that developing economies have to import and install machinery and equipment, in order to grow.

Telecommunication infrastructure is also a little different from other infrastructure, as a determinant of economic growth because of the existence of network externalities, a phenomenon that increases the value of a service with increase in the number of users. Because of this, the impact of telecom infrastructure on economic development is more pronounced as compared to other traditional infrastructure.

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Kim et. al. (1997) demonstrated above mentioned phenomenon in the analysis of online service competition.

Most infrastructure investments can positively affect the economy in three ways. First, it can reduce the cost of production. Second, it can increase revenues. Third, it can increase employment through both direct and indirect effects.

The research by Bayes et. al. (1999) finds that half of all telephone calls involved economic purposes such as discussing employment opportunities, prices of the commodities, land transactions, remittances and other business items. Bayes et. al. also noted that, the average prices of agricultural commodities were higher in villages with phones than in villages without phones.

Souter (1999) provides a survey of the ways in which ICT can be employed for the social and economic development of remote or rural communities.

Gupta (2000) estimates that one percent growth in telecommunication services generates three percent growth in the economy in his literatures.

Roller and Waverman (2001) were the first to use simultaneous approach to incorporate both effects in the economic model in order to validate the hypothesis of reverse causality. They use data for OECD countries that are all high-income.

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Alleman et al. (2002)\textsuperscript{13} emphasized on that infrastructure investments can increase employment through both direct and indirect effects. Similar to other infrastructure investments, investing in telecommunication will increase the demand for the goods and services used in their production and increase total national output.

Eggleston et. al. (2002)\textsuperscript{14} show how basic telecommunication infrastructure can create a “digital provide” by making market efficient through information dissemination to isolated and information-deprived locals and improve the living standards of the world’s poor, which in turn accelerates growth. As the authors themselves point out, their analysis is based on references and examples, and that more careful analysis is needed in the context of developing countries.

We know that increases in purchasing power (contributed by increased telecom services) also increase demand for such services. Chatterjee et. al. (2003)\textsuperscript{15} point out that income patterns decide the disposable income levels i.e. purchasing power for telecommunication services, and in turn the growth of services.

\textbf{Literature on FDI \& HRD}

Investment in human capital development (henceforth HRD) is a pre-condition for achieving sustainable development and competitive edge. Developing the education, knowledge, skills and abilities of people helps the economy to grow through the production and provision of marketable goods and services and by attracting investment, including FDI. This in turn helps to create the surpluses needed to raise living standards through increased incomes, more equitable income distribution, increased employment opportunities, improvements in infrastructure and better social benefits (e.g. education, education, education...)


health care, housing, and social security). By creating opportunities for upward mobility, HRD reduces social stratification and tensions. In high population growth countries, HRD contributes to population control because acceptance of smaller families comes with higher levels of education.

The skills of a nation's workforce and the quality of its infrastructure are what make it unique, and uniquely attractive, in the world economy. Investments in these relatively immobile factors of worldwide production are what chiefly distinguish one nation from another; money, by contrast, moves easily around the world. A workforce that is knowledgeable and skilled at doing complex things, and which can easily transport the fruits of its labours into the global economy, will entice global money to it.

The greatest single asset of any country is its labour force. Countries that provide their workers with full employment and the opportunity to develop their skills are more likely to enjoy sustained growth than those that suffer high levels of joblessness or underemployment. As economies open themselves to world trade and investment, the significance of labour market policy only rises.

In South Asia, there are only a few countries with an appreciable number of knowledge workers. Creating the right environment for the emergence of such workers will be an important consideration in South Asia. Many of the economies in South Asia are reviewing their education systems with a view to making the changes needed to produce creative individuals who will increasingly add value to the economy. An individual's competitiveness in the job market, as well as the competitiveness of enterprises and industries, will depend more and more on the acquisition and application of knowledge. If the "most distinctive feature of the knowledge-based economy is that it uses knowledge pervasively as both an input and an output throughout the economy, then the rich economies qualify for this description.

Until recently, research on human capital formation and research on FDI have been largely carried out independently of one another; perhaps the same may be said of policy-making with respect of these two domains, with education ministries responsible for training and economic ministries responsible for attracting multinational enterprises. For example, research on human capital has focused on improving the design and
efficiency of education and training programmes while economic analysis of FDI has focused on costs and benefits to host countries in terms of investment, fiscal policy, technology transfer, access to capital and new markets, and income distribution.

MNEs are significant providers of skills to their labour-force; little research to date, however, has analyzed the broader effects of this firm-specific training on national economic performance. Recently OECD Development Centre research on globalization has shown that globalization, and FDI in particular, is increasing the demand for skills, often by allowing greater access to world technology which is increasingly skill-biased. While this leads to higher labour productivity and wages, it may also lead to increased inequality.

The level of human capital is not static: it is determined by the quality and equity of the domestic educational and training system, both public and private as well as on the job training. MNEs themselves provide formal training for their own workers and sometimes co-sponsor training and educational programmes in partnership with local institutions. Combined with the implicit ‘learning by doing’ they create through exposure to more modern technology and management techniques, MNEs can not only shift the demand for certain types of skills but also the supply. Turnover of workers and local managers can diffuse these skills to domestic firms, and non-MNE students may take advantage of the educational programmes they create. Thus the net effects of FDI on the demand and supply of skills – human capital – and therefore wages and income distribution are indeterminate or more precisely an empirical question, depending at a minimum on the type of FDI attracted, host country education and training policies, and the practices of MNEs themselves.

The diversity of national experiences raises additional questions about the relationship between human capital, direct investment, and economic performance. In Chinese Taipei, Singapore, and Korea, for example, postwar economic planners recognized the critical importance of an educated workforce for sustained growth. Singapore, in particular, used its education and language policies as a vehicle for attracting MNEs investors to the city-state, which in turn provided the basis for its economic development. In Latin America, however, there has been more debate over the role of FDI in economic development, despite relatively high levels of education spending.
The links between FDI and human capital development notable the three-way interaction between the host country’s policies affecting MNEs, its education and training system and MNEs education and training activities. To attract FDI and educational systems on human capital formation, and by implication wage and income inequality.

Phelps (1966)\(^\text{16}\), sufficiently high levels of human capital are a precondition for achieving growth via technological change and total factor productivity growth.

Lucas (1988)\(^\text{17}\) model, where human capital is treated as another form of reproducible capital,

Deyo, 1989 \(^\text{18}\) finds out that Human capital is an important determinant for FDI.

Barro (1991)\(^\text{19}\) finds that A positive correlation between a country’s stock of human capital, economic growth and private capital flows particularly equity capital has been witnessed by various studies undertaken by him,

Levine and Renelt (1992)\(^\text{20}\) Contrasting explanations for correlation between a country’s stock of human capital, economic growth and private capital flows particularly equity capital

Benhabib and Spiegel (1994)\(^\text{21}\) explained correlation between a country’s stock of human capital, economic growth and private capital flows.


The Benhabib and Spiegel (1994) argument, on the other hand is that the countries that possess a sufficiently high level of human capital will be able to achieve higher growth rates by having the ability to assimilate new technologies more efficaciously by attracting MNCs. In their model, which follows the work of Nelson

Barro, Mankiw and Sala-i-Martin (1995)\(^2\) postulate that transitional higher rates of human capital accumulation will lead to higher growth rates and thereby more investment. As with physical capital, faster accumulation of human capital leads to an acceleration of the economy's progress toward higher levels of output.

FDI, as opposed to portfolio investment or other types of foreign investment, has the added benefit of technology transfer. Borensztein, De Gregorio and Lee (1998) postulate that FDI is an important vehicle for transfer of technology from more developed countries to less developed ones, making it an important factor for growth—one whose contribution to growth is relatively greater than domestic investment. As foreign enterprises MNCs invest in developing countries, they introduce capital whose effects are multifold. Beyond the primary effects of capital stock augmentation, there are secondary "capital deepening" effects that come from the introduction of new varieties of capital goods and more advanced technologies to the recipient economy. Given that MNCs possess advantages that allow them to introduce these more advanced technologies at lower costs than domestic enterprises, investment by foreign firms contributes more to growth than equivalent investment by domestic firms.

The secondary growth benefits from FDI achieved through the technology transfer channel accrue only to economies that possess a sufficient human capital base to absorb the advanced technology.

Borensztein, De Gregorio and Lee (1998)\(^2\) find that below a certain threshold of human capital, FDI has a negative effect on growth. These findings seem to support the growth literature that stresses the necessity of high levels of human capital in order to effect growth through technological change.

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Barro and Lee's \(^{24}(2000)\) propound that education becomes and increasingly important determinant from the mid-1980s.

Narula and Dunning, \((2000)\) \(^{25}\) finds that Spillovers from FDI are regarded as one of the most practical and efficient means by which industrial development and upgrading can be promoted.

Cohen and Soto \((2001)\) \(^{26}\) emphasized on one of the main characteristics of developed industrialized economies is the availability of a workforce with a high level of human capital. Human capital has been the key driver of their economic prosperity. Experience of these countries in educational attainment and economic growth during the last century indicate that HRD and economic prosperity went hand in hand. Some developing countries followed similar trends in human capital and economic growth. These developing countries appeared to have realized large economic benefit in attracting FDI into their economies, and thus mobilized inward FDI to attain rapid economic growth. Among these, the level of human capital has been a crucial factor that MNEs, especially the high value-added MNEs, were seeking when determining the new location of operation. This has recently become even more crucial mode of MNE production is becoming relatively skill-biased with an increasing number of high-technology manufacturing and services. MNEs seeking labour force equipped with knowledge in engineering, technology, organizational skills and business administration.

Noorbakhsh et al. \((2001)\) \(^{27}\) find that the impact of human capital on FDI.

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\(^{26}\) Cohen & Sato, Foreign Direct Investment: Analysis of Human Capital, Oxford Development Studies, 24 (2)

Reisen and Soto, 2001  

28 literatures we find that abundant evidence in the literature is available that human capital formation is among the important pre-requisites or developing countries to start benefiting from FDI Borensztein, et.al, 2003

Bassanini and Scarpetta, 2002  

29 Empirically established , that HRD and FDI have been the key instruments for growth and promoting investment in developed and developing countries.

Godo and Hayami, (2002)  

propounded that developed industrialized economies is the availability of a workforce with a high level of human capital. Human capital has been the key driver of their economic prosperity.

Katrak(2002)  

argued that sometimes these spillovers may accrue to the foreign-owned sector rather than to the domestic sector.

Nunnenkamp and Spatz (2002)  

Propounded that the impact of human capital on FDI has been statistically significant and positive, and that the effect became more significant over time.

Ritchie, 2002  

finds out that Human capital is an important determinant for FDI, especially among efficiency-seeking MNEs. This is consistent with evidence that none of the Southeast Asian countries has institutions for industrial upgrading with skills development before the influx of FDI.

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28 Reisen and Soto, Human Development Capital, World Development 30(1)


30 Godo & Hayami, Foreign Direct Investment: Human Resources Development, IMF 30 (1)


32 Nunnenkamp and Spatz, Foreign Direct Investment: Human Development Capital, Research Policy-37, World Bank

33 Ritchie, B. 2002. 'Foreign direct investment and intellectual capital formation in South East Asia', OECD Technical Papers No. 194.
UNCTAD (2002a) also finds a high correlation between human capital and FDI inflows.

From FDI Borensztein, et.al, 2003 literatures we find that abundant evidence in the literature is available that human capital formation is among the important prerequisites for developing countries to start benefiting from FDI. To attract more FDI would require a more coherent approach. One of such approach is to provide strong incentives for MNEs to participate in formal education and vocational training even for worker employed by domestic firms. This allows HRD to be flexible and demand-driven. Another policy option is to facilitate HRD for small and medium sized domestic enterprises which usually do not invest sufficiently in training of employees although these enterprises stand to gain most from education and training. In addition FDI promotion policies can target high value added MNEs that are more likely to bring new skills and knowledge to the economy that can be tapped by domestic enterprises.

Narula and Marin (2003) finds that the MNE subsidiaries hired more professionals than domestic firms of the same size, possessed a more skilled labour force overall, and spent more on training than similar domestic firms. These subsidiaries effectively have a higher labour productivity and pay higher wages.

OECD (2003) study also Empirically established, that HRD and FDI have been the key instruments for growth and promoting investment in developed and developing countries.

World Bank, 2003; UNESCO 2003 study find that HRD & FDI reinforce each other though complementary effects. Enhanced HRD increase incoming FDI by making the investment climate attractive for foreign investors. This is done through a direct effect of upgraded skill level of the workforce, as well as via indirect effects such as improved socio-political stability and health. On the other hand, FDI contributes to HRD since


37 World Bank, Investment Climate Assessment
MNCs themselves can be active providers of education and training, bringing new skill, information and technology to host countries. Ultimately, this complementary effect lead to a virtuous circle of HRD and FDI where host countries experience continuous inflow of FDI over time by increasing attracting higher value-added MNEs, while at the same time upgrading the skills content of preexisting MNEs and domestic enterprises.

The experience of Singapore, Ireland, Costa Rica, Korea, Malaysia etc. suggests that through HRD these countries have attracted substantial FDI. All these countries started industrial development with a large fraction of unskilled workers and minuscule level of FDI. These countries have acknowledged the important role of foreign firms in the economy, made heavy investment in human resource development, and in a short time have increased the supply of qualified educated workforce. Initially they have attracted low-value-added MNEs, and gradually succeeded in attracting high value-added MNEs, which went hand in hand with an upgraded investment climate and a policy environment driven by a well-functioning Investment Promotion Agency (IPA).

The new technology and new types of capital introduced by the MNCs in the host country will lead to production methods that are more skill intensive that those of existing firms. Recently a Foreign Direct Investment Survey shows “ability to hire technical/managerial staff, and skilled labourers” to be among the critical factors of location choice. Recently conducted survey show that many Japanese MNEs considered “availability of superior plant worker and managerial personnel” to be an important factor for future investment choice of production bases.

Such an increase in skill-biased production will in turn cause an increase in relative demand for skilled labor. With the supply of skilled labor inelastic in the short run, this will lead to an increase in the wages of skilled workers relative to those of unskilled workers. These wage changes would induce workers to acquire knowledge and market driven skills. The human resource development in this framework acquires a central position.

On the demand side, MNEs facilitate investments in human capital. One in the short-term, firm level activities by which individual firms interact with host-country labor markets through on-the-job training, support for local educational institutions, and the like. The other is long-term, country level activities by which MNEs collectively contribute to the overall macro environment in which fiscal policy drives education
policy. To the extent that MNEs contribute to a good macro environment in host countries—through raising workers productivity, providing a relatively stable source of foreign capital, paying host country taxes—they contribute to the ability of host countries to fund education.

**Literature on Regional Trade agreements**

A series of recent studies on regional integration provides relevant empirical findings and insights on the conceptual criteria for successful regional trading arrangements. Long before the recent wave of PTAs and FTAs,

Lipsey (1960)\(^{38}\) put forward the hypothesis of "natural trading partners," suggesting that the higher the proportion of trade with the region, and the lower the proportion with the rest of the world, the more likely is a regional agreement to raise welfare effects.

Wonnacott and Lutz (1989)\(^{39}\) present a modified version of the natural trading partner hypothesis by incorporating location and transportation costs. They find an increasing tendency for countries to trade with other countries in geographical proximity.

Summers (1991)\(^{40}\) reinforced the "natural trading partner" argument, hypothesizing that "to the extent that blocs are created between countries that already trade disproportionately with each other, the risk of trade diversion is significantly reduced."

Deardorff and Stern (1994)\(^{41}\), also referring to transport costs, suggest that geographical proximity between countries tends to reduce trade diversion.

Michaely, (1996)\(^{42}\) propounded that proponents who utilize statistical measures such as the *complementarity index* argue that the higher the observed values of the index

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between partners, the more likely is it that a proposed regional trade agreement will succeed.

The empirical literature refers to the impact of concentration and diversification of exports on regional trade agreements.

Yeats (1998)\textsuperscript{43} states that studies have shown that countries with highly concentrated exports may experience a relatively high degree of instability in export earnings that could reduce a country's ability to consistently maintain financial commitments required by regional agreements.

While the natural trading partner hypothesis has provided a popular argument and is based on the volume of trade, the hypothesis ignores the effects of trade policy, transport logistics, and other considerations, such as complementarity and competitiveness issues, which are all-important factors that can determine the success or failure of a PTA.

Schiff (2001)\textsuperscript{44} argues that the volume of trade does not necessarily provide an objective measure of the extent to which trading partners are "natural." The reason for this is that the volume of trade is itself affected by trade policy.

Schiff (2001) introduces a version of the natural trade hypothesis that is independent of trade policy. He proposes a definition of natural trading partners as a situation characterized by complementarity rather than substitutability. If a country imports what its trading partner exports, Schiff concludes that the hypothesis of "natural trading partner" is likely to hold.

Furthermore, a substantial empirical literature refers to the existence of complementarity rather than competitive trade as a precondition needed to enhance the probability of a net trade-creating, rather than net trade-diverting, regional trade arrangement. Countries with different comparative advantage profiles should, in


\textsuperscript{44} Schiff, M. (2001) "Will the Real 'Natural Trading Partner' Please Stand Up?" \textit{Journal of Economic Integration}, Vol. 16, No. 2.
principle, have more opportunities to trade with each other compared with those with similar comparative advantage profiles.

**Literature on Anti-dumping**

While the EU and the US continue to be major users of antidumping laws, this type of "administrative protection" against imports has become very widespread, with 39 other WTO-member countries (plus some non-members) initiating antidumping cases over the 1995-2003 period. Indicative of this global spread of antidumping, US exporters were subjected to 139 antidumping cases during this period, by enforcement agencies representing 20 countries (the EU regarded for these purposes as a single country). Of the top five users of antidumping since 1995, two of them – India and Argentina – had no or negligible enforcement prior to the early 1995s. The significant increase in the number of antidumping cases brought world-wide is eclipsed by a more dramatic increase in the number of countries getting involved in bringing such cases, roughly a tripling between the late 1980s and today, with all of this growth brought about by new enforcement agencies in developing economies.

Finger et al. (1996) present evidence on both country averages and industry-specific tariff reduction impacts of the Uruguay Round trade negotiations (which of course led to the formation of the WTO). These are based on planned (not simply immediate) concessions, and vary – for the sample of antidumping users we will investigate below – from no reduction in industrial goods tariffs for Chile and 0.9 percentage point reduction for Mexico to a 13.1 percentage point reduction for Thailand and a 16.5 percentage point reduction for India. In agricultural sectors, including estimates of the tariff-equivalent of non-tariff barrier reductions, the effects are often

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46 The tariff reductions used in this analysis were primarily calculated in Finger et al. (1996) as the percentage difference between the pre-Uruguay Round applied tariff rate and the bound tariff rate countries promised to implement by 1999 during the Uruguay Round Agreement. In some cases, however, the Country's pre-Uruguay Round applied tariff rate was actually lower than the country's bound rate following Uruguay Round liberalization. For example, Chile imposed applied tariff rates much lower than its bound tariff rates both before and after Uruguay Round liberalization. In the Finger et al. (1996) dataset these cases are coded as having no tariff reductions. Thus, the dataset underestimates the true decrease in applied tariff rates after the Uruguay Round.
much greater (over 30 percentage point reductions for Argentina and Thailand, roughly 50 percentage point reductions for Korea and the Philippines).

Lindsay and Ikenson (2001)\(^\text{47}\) also emphasize the growing threat to U.S. interests posed by new antidumping users, but agree with earlier authors that developing countries have likely been increasing the use of antidumping in part as an offset to lower negotiated tariffs.

Anderson and Schmitt (2003)\(^\text{48}\) develop a model based on the Brander and Krugman (1983) reciprocal dumping model, in which governments have three possible trade policy instruments – tariffs, quotas, antidumping enforcement. They find that firms have no incentive to use either quotas or antidumping if tariff use is unrestricted. In turn, given some arbitrary fixed tariff rate (as through multilateral agreement), unrestricted quotas will always dominate the use of antidumping. However, restrictions on quota use may then lead countries to turn to antidumping measures. The mid-1995s Uruguay Round agreement liberalizing (i.e., limiting the use of) tariffs and quotas provides a natural experiment for us to investigate the implications for subsequent antidumping enforcement.

Putting the two patterns (growth in antidumping and trade concessions) together, Miranda et al (2003)\(^\text{49}\) suggest that if the emergence of increased antidumping enforcement by developing countries was a quid pro quo for general trade liberalization, there may be welfare gains from this proliferation of antidumping filings, at least in a second-best sense. The CBO paper (2003) acknowledges this possibility as well, though their focus is more on whether U.S. exporters have been harmed by and/or singled out for retaliation by new users of antidumping.

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In Feinberg and Reynolds (2006), probit analysis is applied to a WTO database on reported member-country filings over the 1995-2003 period. The focus of the study is whether antidumping filings may be motivated as retaliation against similar measures imposed on a country's exporters, though bilateral export flows involved and non-retaliatory impacts of past cases are also controlled for, with other motivations — macroeconomic, industry-specific and political considerations — dealt with through industry, country and year fixed effects. Strong evidence is found that retaliation was a significant motive in explaining the rise of antidumping filings over the past decade, though interesting differences emerge in the reactions to traditional and new users of antidumping. The country and industry fixed effects estimated can of course be interpreted as the effects of factors not explicitly captured in that empirical model — in particular, the impacts of tariff (and quota) concessions made in 1994 could be an important additional factor, and that is where we turn in what follows.