South-South Investment in Infrastructure: The Operation of Indian Firms in Developing Countries

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SOUTH-SOUTH INVESTMENT IN INFRASTRUCTURE
The Operation of Indian Firms in Developing Countries

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The Operation of Indian Firms in Developing Countries

A Study Prepared
under the UNCTAD's Programme
on South-South FDI and Developing Country TNCs

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SOUTH-SOUTH INVESTMENT IN INFRASTRUCTURE
The Operation of Indian Firms in Developing Countries

Jaya Prakash Pradhan[*]

[***Abstract:*** *Since 1990s South-South investment flows have assumed a considerable significance in the economic relations among developing countries. The host developing countries tend to see the growing FDI flows from co-developing economies as a prospective source of financial capital, skills and technologies useful for their economic development. However, there is clearly a lack of recognition among them about the potential of southern investment in improving their civil, social and industrial infrastructure. A distinction can be made between the two main forms in which developing country firms participate in the infrastructure sector of co-developing countries. The first is the project exports resorted by southern firms in various infrastructure areas like transportation, communication, energy, etc. The second form comprises direct investment operation of southern firms to provide infrastructure services to the end users. India presents a classic example of South-South investment in infrastructure sector with Indian firms consistently expanding their project exports and infrastructure-related FDI activities over the years. In the light of growing size of Indian project exports and infrastructure FDI, this study calls for evolving a holistic policy framework by both home and host developing countries to enhance the potential of such investment for infrastructure development.*]

1. Introduction

In the past, public sector investments have played a lead role in developing the national physical, social and knowledge infrastructures across countries. Since many components of these infrastructures are resource-intensive in nature and have long gestation periods, state had to assume leadership role in financing, developing and maintaining of various basic infrastructure for the society. However, during 1990s there was a sharp realization among policy makers from a number of developing countries that the state alone is incapable of meeting the full extent of infrastructural requirements of their citizens and economies. The chronic inadequacies and inefficiencies in the public sector led provision of critical infrastructure services like power, telecommunication, transport (roads, ports,

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airports, and railways), water & sanitation and other social services like education and health in turn are creating bottlenecks for achieving higher economic growth. As a result of which many developing countries are now making sincere efforts to facilitate the entry of private enterprises into the infrastructure sector through liberalization of policy framework (Hariss, 2003).

In the present discourse of policy liberalization and privatization programmes in many developing countries, foreign investments and private domestic investments are accorded with equal emphasis for achieving higher levels of infrastructure development. With opening up of developing countries to foreign investment in various infrastructure projects through privatization programmes, FDI inflows into their infrastructure sector has grown dramatically in recent period. Between 1990 and 2002, the estimated inward FDI stock in the infrastructure sector of developing countries has grown by 571 per cent from US $23.7 billion to US $159.2 billion (UNCTAD, 2004)[1]. This increasing participation of foreign investment in the infrastructure services can contribute to the development of host developing countries by financing and enlarging their supply capability, quality and efficiency. FDI induced improved infrastructure in turn can push up overall growth performance of host developing countries.

Recently firms from developing countries are increasingly undertaking overseas investment activities and becoming a source for FDI-seeking developing countries (Aykut and Goldstein, 2007). Available estimate suggests that the share of South-South FDI in total FDI inflows into developing region increased from about 6 per cent in 1994 to reach 36.4 per cent in 2000 (Aykut and Rath, 2004). So far, this South-South investment had largely been regarded as complementary to the development efforts of host developing countries by the provision of capital and relevant technologies. However, in the light of enormous expansion of South-South investment since 1990s, it is essential that their role should be explored in a wider context and setting. Apart from augmenting capital and technological resources of co-developing countries, southern investment can be crucial for financing and developing their infrastructure sector. But, few developing countries have paid due attention to leverage this new source of FDI for their infrastructure development. A number of industrialized developing countries including India are undertaking large scale overseas investment activities and infrastructure services have been a critical area of their operation in developing region since 1970s.

[1] World Investment Report 2004, Annex Table - A.I.18, pp. 302. Infrastructure sector includes electricity, gas, water, construction, hotels & restaurants, transport, storage and communication.

Apart from undertaking direct investment to establish wholly owned subsidiaries or joint ventures for directly providing infrastructure services like telecommunications, developing country firms have been engaged in what is known as 'project exports'—a composite term to cover a range of infrastructure services in consultancy, construction and turnkey projects. The distinguishing character of these project exporters is that they develop the infrastructural facilities on contractual basis for a third party like a national government, international organization or a private company, which in turn engage in selling the services to the final users. These project exports activities of developing country firms cover a range of civil, social and industrial infrastructure covering transportation (roads, railways, seaports, airports, bridges), energy (power plants and distribution system, large-scale refineries, extraction and pipelines projects in oil and gas), industrial buildings and plants, social buildings (schools, hospitals, training centre, etc), water management (dams, water tanks, pipelines, waste water treatment, irrigation), and other civil engineering activities. Oman (1986) used the term 'new forms of investments' to denote the international operation of developing country firms through outward FDI (OFDI) and project exports. The evidence for early 1980s suggests that developing country firms from India, Korea and Brazil have been quite active in undertaking both outward FDI and project exports in the areas of civil engineering and building contracts and industrial plant exports in chemicals, cement, steel, machinery & machine tools and power generation (Lall, 1982; Oman, 1986).

In this brief note, an analysis of Indian companies operating in the infrastructure sector of co-developing countries has been undertaken as a case of south-south investment in infrastructure sector. The rise of Indian infrastructure outward FDI is a critical policy area given that infrastructure development is a priority policy objective of all the host developing countries. The fact that these developing countries have limited resources to remove infrastructure constraints impeding their economic growth, a significant growth enhancing role can be inferred to the Indian infrastructure FDI. In the next section, we shall explore the role of Indian project exporters operating in the developing region. It will provide an assessment of the developing region picture of project exports from India and contrasts between different segments therein. The following section considers evidence of Indian companies undertaking FDI projects in infrastructure areas of host developing countries. This is a preliminary analysis with an idea to work out trend in Indian infrastructure investment into developing region, identifying important players, main areas of operation and their development implications.

2. Project Exports by Indian Engineering Service Companies

2.1. Domestic Growth and Internationalization

India hardly had any manufacturing base in the engineering sector at the time of Independence. A number of strategic government policies implemented since 1950s have been the catalyst behind the emergence of Indian engineering companies with project exporting capabilities. Since the Second Five Year Plan (1956–61), the industrialization strategy of India has accorded a pivotal role to the development of local skills and technological capabilities for production in heavy machinery, equipment and machine tools. Apart from public sector investment in establishing modern public sector plants for domestic manufacturing of capital goods, a host of technical and science institutions were established to develop the requisite local skills. India adopted an import substitution policy to promote the engineering sector by largely banning imports of capital goods that are available locally or subjecting them to high tariff rates. Whenever imports of designs, drawings and capital goods were permitted, Indian importing firms were required to quickly absorb, update and indigenize the same. A process patent regime was adopted to legalize the reverse engineering activities of Indian firms and a number of fiscal and non-fiscal incentives were provided for promoting their in-house R&D activities.

These policy measures led to the emergence of a well diversified engineering sector to meet the bulk of the domestic requirements of capital goods and machineries. By 1973–74, the organized Indian engineering sector achieved a value added of US $2.3 billion and accounted for 37.5 per cent of total manufacturing value added in the country. Major strength of Indian engineering companies can be seen in basic metal followed by non-electrical machinery & equipments, electrical machinery & apparatus and transport equipments (Table-1). Although public sector companies initiated the process of local capability building, a number of privately owned Indian companies also came into being. Over the years, the Indian engineering sector has seen consistent expansion in terms of number of operating units in 1980s and 1990s to achieve an impressive size of US $20 billion in 2003–04. While the basic metal continued to be a major part of the engineering sector throughout, motor vehicles segment has been expanding its share (Table-2). A downward trend in the share of electrical and non-electrical machinery segments is a quite pronounced feature of emerging structure of the Indian engineering sector.

Table-1
The Size of Indian Engineering Sector, 1973–2004.

Year	*Engineering Sector*		*As a per cent of total manufacturing value added*
	Number of Factories	*Value added (US $ million)*	
1973–74	17501	2273	37.5
1980–81	25985	6096	40.6
1984–85	26441	7280	40.9
1990–91	29923	11652	40.2
1994–95	32208	12596	37.8
1999–00	36059	15288	35.6
2003–04	33955	19956	37.9

Note: Engineering goods sector include machinery and instruments, transport equipment, electronic goods, non-ferrous metals and iron and steel.

Source: Based on EPW CD-ROM on Annual Survey of Industries, Second Edition.

Table-2
The Structure of Indian Engineering Sector, 1973–2004

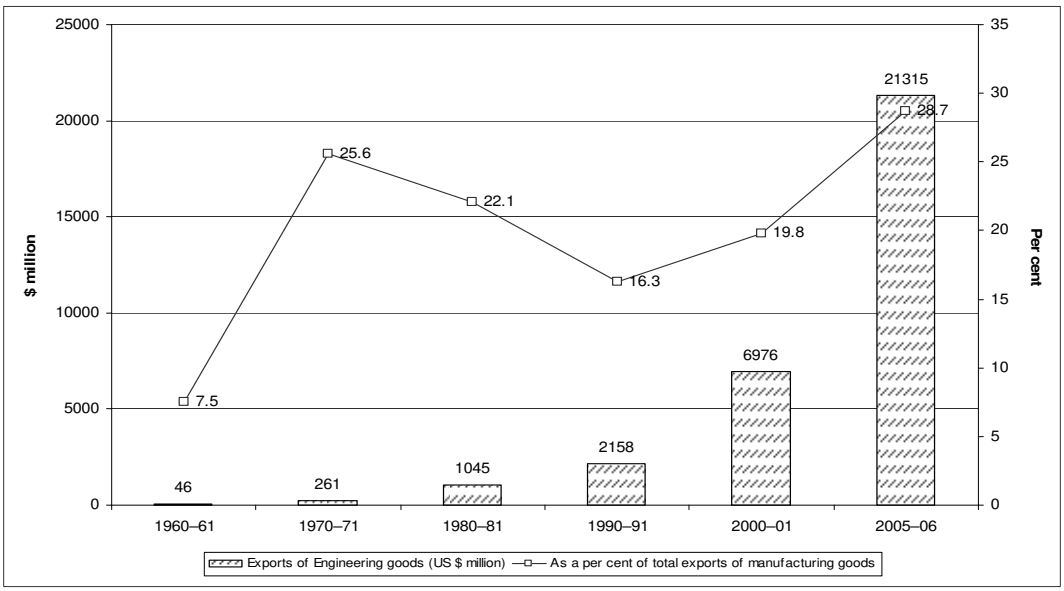
Total Engineering Sector	*Percentage share*				
	1973–74	*1980–81*	*1990–91*	*1999–00*	*2003–04*
	100	*100*	*100*	*100*	*100*
Basic Metals	32.1	31.9	34.1	35.0	37.6
Fabricated Metal Products	8.4	7.3	6.7	6.9	6.4
Non-Electrical Machinery and Equipments	19.9	20.9	17.4	17.0	13.7
Office, Accounting and Computing Machinery	0.6	1.4	1.5	0.8	2.1
Electrical Machinery and Apparatus	13.5	12.5	13.0	10.2	8.2
Radio, Television and Communication Equipments and Apparatus	3.4	2.7	5.1	5.7	5.3
Medical, Precision and Optical Instruments, Watches and Clocks	2.0	2.4	1.7	2.5	2.6
Motor Vehicles, Trailers and Semi-Trailers	9.7	10.0	11.3	14.5	16.2
Other Transport Equipment	10.2	10.7	9.1	7.4	7.9

Note and source: Same as Table-1.

Along with these developments in local capabilities in capital goods manufacturing sector, a number of engineering service companies also came up to meet the requirements of various user industries in late 1960s. Some capital goods manufacturers also diversified their operation into engineering services segment. These engineering service firms operated in the execution of engineering, industrial, social and civil projects encompassing power utilities, refining, bridges, roads, sewage, ports, airports, housing, hospitals, etc. Public sector spending on infrastructure and private sector investments in capacity expansion constituted their initial source of demand. With the starting of massive industrial programmes in a number of recently independent developing countries during 1960s, Indian engineering goods manufacturers as well as engineering services firms saw an emerging demand for their low cost engineering goods and engineering services respectively. This led them to explore markets far beyond the national boundary through exporting. In the initial period, overseas expansion of Indian

engineering service companies through project exports has been facilitated by the relatively small-sized project orders in developing countries, which were not aggressively targeted by engineering service companies based in developed countries. With Indian engineering enterprises increasingly adopting export activities, the share of engineering goods in total manufacturing exports from India started rising—it has gone up from 7.5 per cent in 1960–61 to 25.6 per cent in 1970–71 (Figure-1).

Figure-1
India's Exports of Engineering Goods: Value and



Share in Total Exports of Manufactures, 1960–2006

Source: Based on Economic Survey 2007–2008, Government of India.

2.2. The Beginning and Growth of Project Exports

The participation of Indian companies in the southern infrastructure sector through project exports began in late 1960s. Since 1968–69 a number of Indian companies many of whom are public owned started competing for overseas contracts for supplying engineering goods and services. Thus, a part of the increasing export performance of Indian engineering goods sector can be attributed to the phenomenon of project exports orders secured by Indian companies. In 1968–69, they secured orders for electric cables and conductors from four developing countries such as Iran, Thailand, Philippines and Kuwait worth US $18.8 million[2]. The value of orders won in Iran, Myanmar, Hungary

[2] Economic Survey 1968–69, pp. 33–34, Government of India.

and East African developing countries for supplying railway track accessories, wagons and coaches aggregated US $7.5 million. Contract orders from USA, Sudan, Iran, Kuwait and Philippines for steel structural, cranes and power station structures summed up to US $12.5 million. Egypt and Syria made orders for sugar and textile machinery amounting to US $6.3 million.

The modest beginning in project exports that Indian firms made in the 1960s assumed an established trend only in 1970s. In the five years period during 1976–80, the value of project exports by Indian companies stand at US $4.4 billion (Table-3). Although, public sector firms were pioneers in project exports from India, private firms equally emerged as aggressive project exporters in late 1970s. The share of public sector companies in the value of project exports from India has decreased from 75.5 per cent in 1976–77 to 38 per cent in 1980–81 reflecting the increasing role being played by private owned Indian companies. A total of 111 Indian companies undertook project exports in 38 developing countries and 5 developed countries. Among top 10 project exporters ranked by cumulative value of project exports, there were six public owned Indian companies—Engineering Project India (ranked 1st, US $645.9 million), Indian Road Construction Corporation (ranked 2nd, US $322 million), Bharat Heavy Electricals (ranked 3rd, US $292 million), National Building Construction Corporation (ranked 4th, US $264.5 million), Indian Railway Construction Company (ranked 5th, US $245 million), and Hindustan Steel Works Construction (ranked 7th, US $216 million). Only four private owned Indian companies, namely Continental Construction Company (ranked 6th, US $217.6 million),

Table-3
Summary of Civil and Engineering Project Exports from India, 1977–76 to 1980–1981

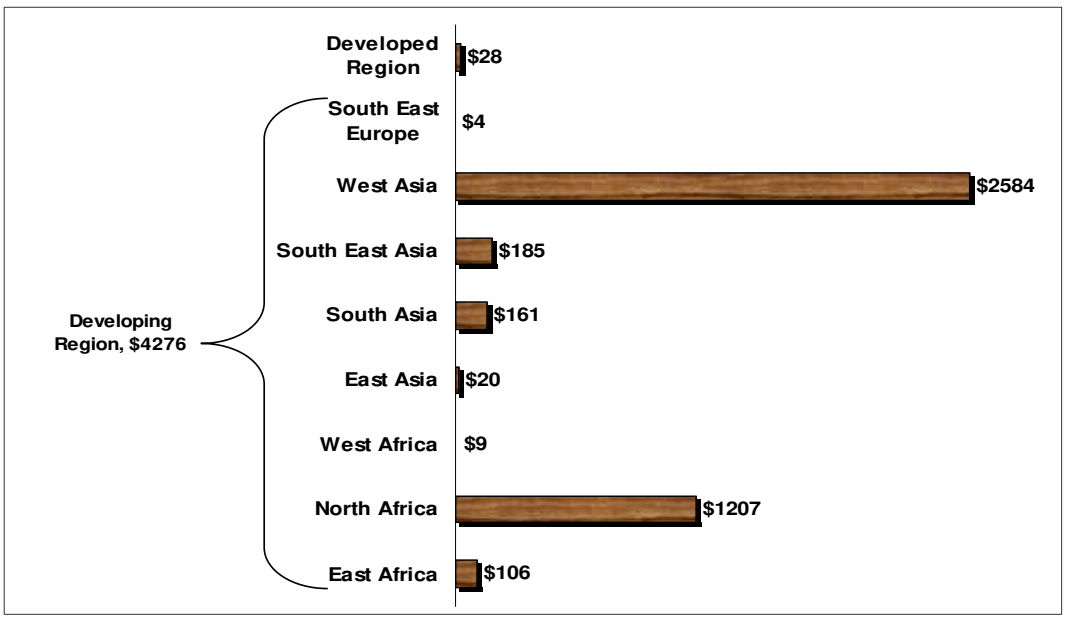
Year	*Value of Project Exports (US $ million)*			*Number of Indian Firms*			*Number of host countries*		
	Private Sector	*Public Sector*	*Total*	*Private Sector*	*Public Sector*	*Total*	*Developed*	*Developing*	*Total*
1976–77	228 (24.5)	701 (75.5)	929 (100)	24	7	31	1	19	20
1977–78	191 (33.7)	376 (66.3)	567 (100)	29	7	36	1	25	26
1978–79	417 (49.4)	427 (50.6)	844 (100)	42	6	48	1	24	25
1979–80	492 (56.8)	374 (43.2)	866 (100)	40	8	48	1	17	18
1980–81	713 (62.4)	430 (37.6)	1143 (100)	38	9	47	2	18	20
All Years	2042 (46.9)	2308 (53.1)	4349 (100)	98	13	111	5	38	44

Source: Estimated based on Federation of Indian Chambers of Commerce & Industry (1982), *Workshop Report on Indian Joint Venture Abroad and Project Exports*, New Delhi.

Som Dutt Builders (ranked 8th, US $200.7 million), Jaiprakash Associates (ranked 9th, US $133 million) and Engineering Construction Corporation (ranked 10th, US $124.4 million) find places in the top 10 list. These top 10 Indian companies together claimed project orders of US $2662 nearly 61 per cent of total project exports from India during 1976–77 to 1980–81.

The initial phase of project exports by Indian companies in 1960s–70s can be observed to be primarily developing region orientated and concentrated mainly in West Asian and North African developing sub-regions. These two sub-regions respectively claimed 60.4 per cent ($2584 million) and 28 per cent ($1207 million) of Indian project exports in 1976–77 to 1980–81 (Figure-2, Table-4). It is clear that high oil prices of 1970s led oil rich West Asian countries such as Iraq, Kuwait, Saudi Arabia, Qatar, Iran and UAE to embark upon massive infrastructure investment programme and Indian companies started venturing there to meet the rising demand for infrastructure services. In North and East Africa, Indian project exporters were very active in countries such as Libya, Algeria, Tanzania and Ethiopia which were undertaking many government-sponsored projects related to oil, power, residential and other civil construction activities. Within Asia, Malaysia, Thailand, Bangladesh and Sri Lanka are important destinations for Indian project exports in 1970s.

Figure-2
Geography of Project Exports from India, 1976–77 to 1980–81, In US $ Million



Source: Same as Table-3.

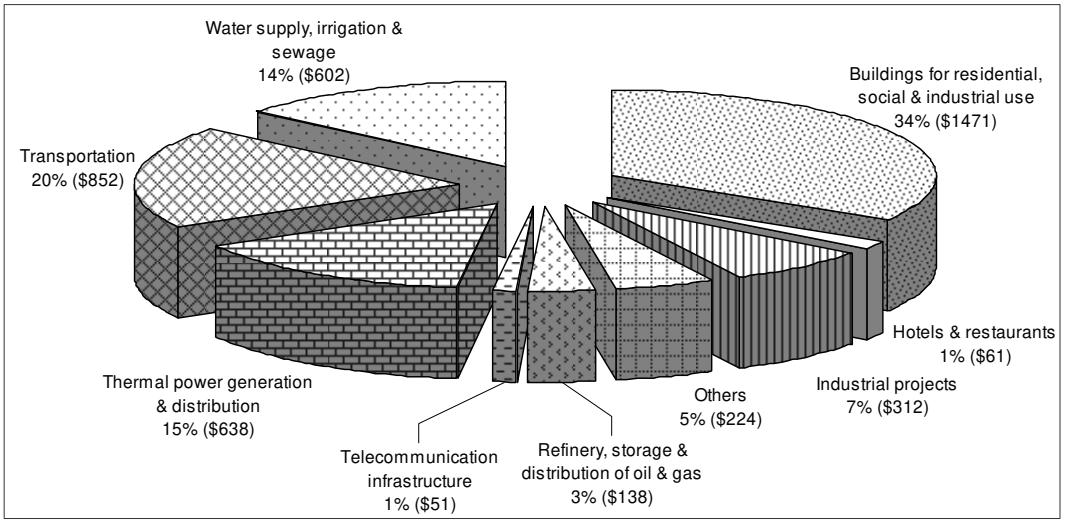
Table-4
Project Exports by Individual Host Developing Countries, 1976–77 to 1980–81

Sub-region Name	*Country Name*	*Project Exports (US $ million)*	
		Value	*Per cent*
Developing Region		4276	100
East Africa	Ethiopia	7.7	0.2
	Kenya	16.1	0.4
	Malawi	2.3	0.1
	Mauritius	2.5	0.1
	Somalia	0.3	0.0
	Tanzania	69.7	1.6
	Uganda	6.5	0.2
	Zambia	0.7	0.0
North Africa	Algeria	103.3	2.4
	Egypt	28.8	0.7
	Libya	1071.2	25.1
	Sudan	3.4	0.1
West Africa	Ghana	3.2	0.1
	Nigeria	6.3	0.1
East Asia	Korea	20.4	0.5
South Asia	Bangladesh	62.8	1.5
	Maldives	10.4	0.2
	Nepal	36.3	0.8
	Pakistan	0.8	0.0
	Sri Lanka	50.4	1.2
South East Asia	Indonesia	75.6	1.8
	Lao PDR	4.2	0.1
	Malaysia	58.7	1.4
	Myanmar	0.6	0.0
	Philippines	1.7	0.0
	Thailand	44.0	1.0
West Asia	Iran	68.2	1.6
	Iraq	1743.9	40.8
	Jordan	1.3	0.0
	Kuwait	410.2	9.6
	Oman	27.9	0.7
	Qatar	75.8	1.8
	Saudi Arabia	187.2	4.4
	Syria	5.8	0.1
	UAE	45.1	1.1
	Yemen Arab Republic	18.6	0.4
South East Europe	Romania	4.3	0.1

Source: Same as Table-3.

In the initial phase of expansion, project exports from India were dominated by the activities related to construction of building and complexes for residential, social and industrial use. This segment accounted for 34 per cent of the total project exports from India over 1976–77 to 1980–81 (Figure-3). The building projects implemented by Indian firms covered a wide range of fields such as housing, hospitals, post offices, schools,

Figure-3
Structure of Project Exports from India, 1976–1981, In US$ Million and Per cent



Source: Same as Table-3.

training and research institutes, and stadium. The US $257 million worth of housing project by Engineering Project India in Kuwait is the top development project executed by Indian companies in the segment of building and complex construction. It is followed by Hindustan Steel Works Construction's $124.4 million housing project in Iraq, $99.5 million hospital project of National Building Construction Corporation in Algeria, another housing project of Engineering Project India in Kuwait for $87.4 million and construction of low price residential complex by Maker Development Services for $67 million in Iraq.

The transportation segment with US $852 million is the next important project export activities of Indian companies in late 1970s. Construction of crucial transport infrastructure like railway tracks, roads, bridges and aircraft-hangers projects were the main areas of Indian firms' transportation project exports. The construction of a high speed railway line (250 Kmph) on Mussayeb-Kerbala-Samawa section in Iraq on turnkey basis for US $245 million by Indian Railway Construction Company (IRCON) and road construction project of Indian Road Construction Corporation for US $115 million are two top important transportation project exports by Indian companies.

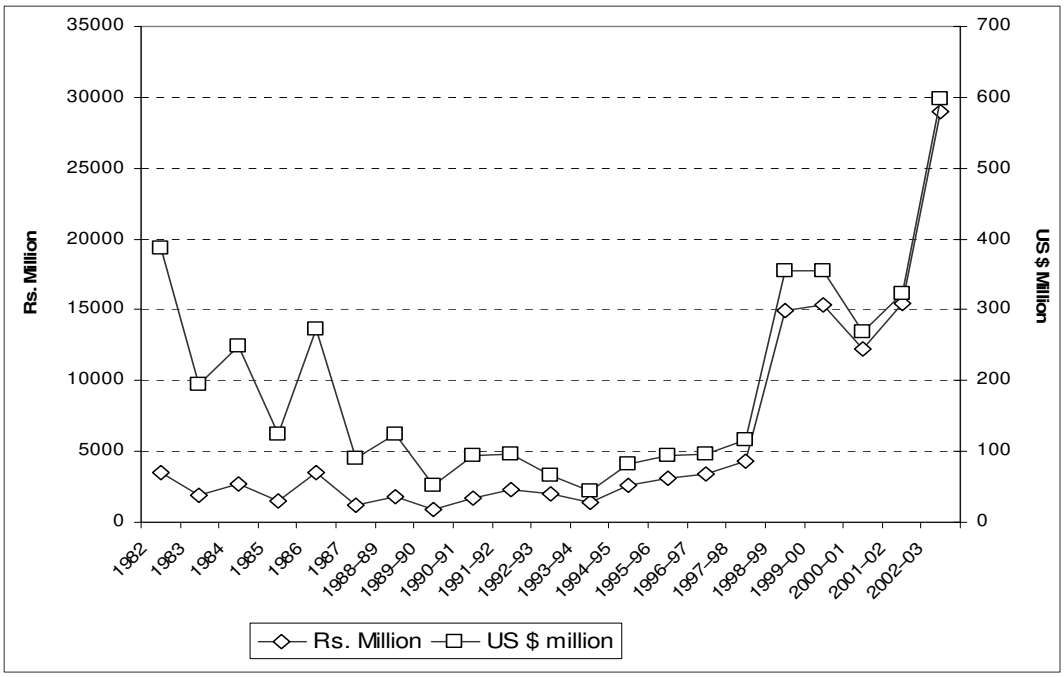
Indian power companies and electrical equipment suppliers undertook a total of US $638 million worth of projects in thermal power generation and distributions sector of developing region during late 1970s. The power project exports of Indian companies include design, fabrication, erection and commissioning of hydropower project, power

station, transmission towers and lines, installation of electrical and mechanical equipment, etc. Some of the major power project export contracts secured during this period included construction of two power stations by Bharat Heavy Electricals in Libya for US $107 million and an electrification project in Saudi Arabia for US $72 million.

Projects related to supply of water, industrial plants and equipment, oil & gas and communication infrastructure are other important areas of project exports from India. Clearly, Indian companies have expanded their operation into large segments of basic economic and social infrastructure of developing region by the late 1970s.

Indian companies' engagement in the infrastructure sector of developing countries continued in the 1980s and 1990s period but with a declining trend in the size of project exports measured in terms of US $. The annual value of civil construction project exported, which was US $386 million in 1982 has sharply fallen to mere US $53 million in 1989–90 (Figure-4). During the period 1982 to 1989–90, Indian engineering service companies undertook a total of US $1496 million of project exports, which is just 34 per cent of their project exports (US $4349 million) in the late 1970s. This declining trend in

Figure-4
Trends in Civil Construction Project Exports by Indian Firms, 1982–2003, In Rs. Crore and US $ Million



Source: Based on Overseas Construction Council of India, 2003.

Indian project exports continued till the mid-1990s. This slow-down in project exports during 1980s and early 1990s is a result of the combination of two main factors. First, the general stagnancy in the productivity and quality of Indian engineering goods sector, which has started negating the competitive advantages of Indian project exporters in facing the stiff global competition in the construction sector of many developing countries. Second, the continued growth recession witnessed by major developing countries in the Gulf and Africa, which in turn led to a general slow-down in demand for infrastructure related activities.

Since late 1990s Indian civil construction project exports started recovering from the deceleration suffered in 1980s and witnessed a sharp boom from 2000–01 onwards. The value of civil construction projects has gone up from US $83 million in 1994–95 to US $598 million in 2002–03. As per the Annual Report 2004–05 of the Department of Commerce, Min6istry of Commerce & Industry, Government of India, the total amount of contracts secured in civil construction, turnkey and consultancy services stood at US $4713 million during 2000–01 to 2003–04. While civil construction accounted for 43 per cent of the total project exports, turnkey projects claimed 53 per cent and consultancy just 3 per cent. With developing countries including India opening up their infrastructure sector to private investment and stepping up their infrastructural development activities in energy, roads, railways, ports, etc., this growth of Indian project exports is a natural outcome. The efforts of Indian engineering goods manufacturers in improving their productivity and technological competitiveness in the reform period may also be partly contributing towards the increasing trend in project exports from India.

The growth of Indian project exports continued to be limited to developing region in post 1970s period. There are a total of 38 developing countries accounting for 96.6 per cent of the total value of civil construction project undertaken by Indian firms during 1982 to 2002–03. A total of five developed countries, namely France, UK, Russia, Japan and Luxembourg did attract the attention of Indian project exporters but the project works were small in size amounting to just 3.4 per cent of total exports of civil construction project.

As compared to the 1970s, the geographical trajectory of Indian project exports to developing region took some noticeable trends during 1982–2003. The two major host regions namely West Asia and North Africa witnessed sharp decline in their share in total Indian project exports into developing region from 60.4 per cent to 52.3 per cent and 28 per cent to 10 per cent respectively (Figure-5, Table-5). The decline in the share of West Asia is mainly because of adverse developments related to Iraq like the Gulf War in 1990–91, UN sanctions and consequently rising payment dues outstanding against

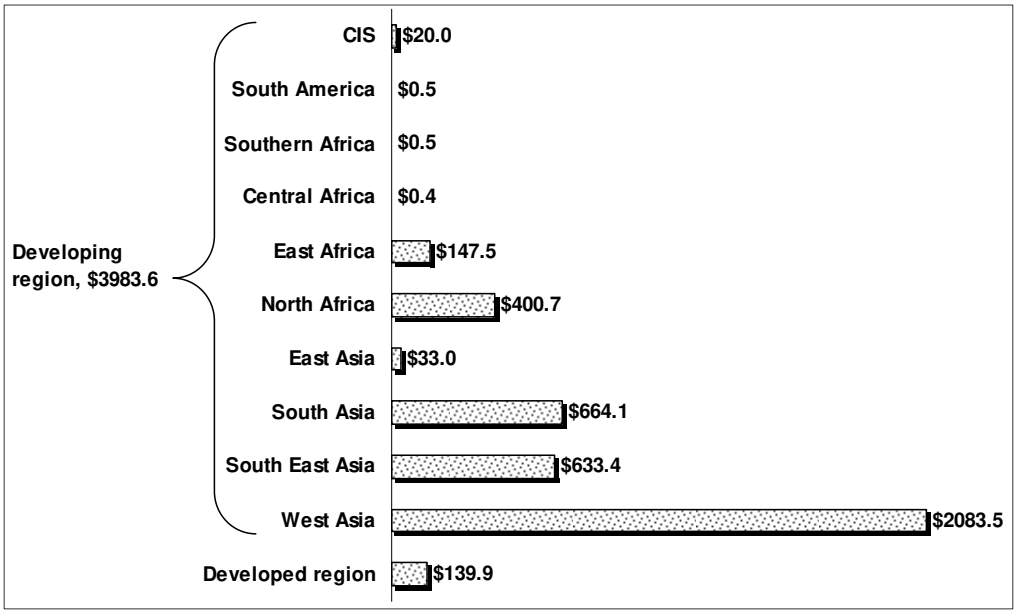
Table-5

Civil Construction Project exports by individual host developing countries, 1982 to 2002–03

Sub-region Name	*Country Name*	*Civil Construction Project Exports (US $ million)*	
		Value	*Per cent*
Developing Region		3983.6	100
Central Africa	Angola	0.4	0.0
CIS	Kazakhstan	16.8	0.4
	Uzbekistan	3.1	0.1
East Africa	Ethiopia	2.2	0.1
	Malawi	12.3	0.3
	Mauritius	85.9	2.2
	Mozambique	0.1	0.0
	Tanzania	46.5	1.2
	Uganda	0.0	0.0
	Zambia	0.4	0.0
East Asia	Hong Kong	33.0	0.8
North Africa	Algeria	115.9	2.9
	Libya	284.8	7.1
South America	Peru	0.5	0.0
South Asia	Bangladesh	174.2	4.4
	Bhutan	308.1	7.7
	Maldives	17.5	0.4
	Nepal	99.3	2.5
	Sri Lanka	65.0	1.6
South East Asia	Brunei	17.0	0.4
	Indonesia	185.9	4.7
	Lao PDR	0.2	0.0
	Malaysia	425.9	10.7
	Thailand	2.5	0.1
	Vietnam	1.8	0.0
	Botswana	0.5	0.0
West Asia	Iran	23.6	0.6
	Iraq	717.6	18.0
	Jordan	138.1	3.5
	Kuwait	93.7	2.4
	Lebanon	40.4	1.0
	Oman	134.0	3.4
	Qatar	71.0	1.8
	Saudi Arabia	318.8	8.0
	Syria	20.5	0.5
	Turkey	98.0	2.5
	UAE	348.8	8.8
	Yemen	79.2	2.0

Source: Same as Figure-4.

Figure-5
Regional Composition of Indian Civil Construction Project Exports During 1982 to 2002–03, In US $ Million



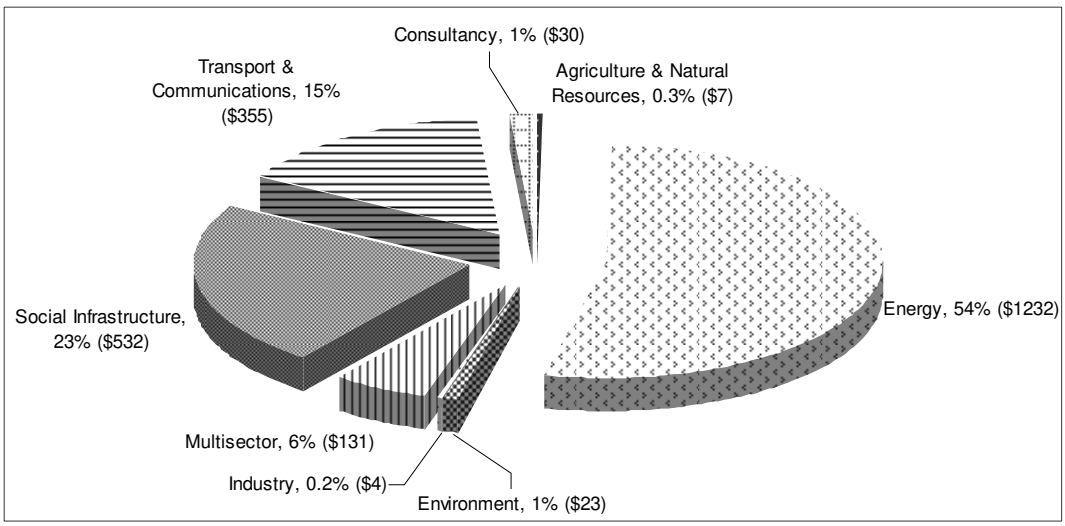
Source: Same as Figure-4.

projects executed therein. The decline in the share of North Africa is primarily because of decline in business opportunities in Libya due to cutbacks in development expenditure led by waning petroleum revenues in the 1980s and the UN sanction in 1990s. The infrastructure sector of South Asian and South East Asian developing countries seem to have received more attention of Indian project exporters since 1980s. Both these Asian sub-regions saw that their share went up from 3.8 per cent to 16.7 per cent and 4.3 per cent to 16 per cent respectively between late 1970s and 1982–2003. In the late 1990s, some Indian project exports to developing countries in CIS and South America can also be noticed.

Indian project exports have got diversified over the years. The 1990s saw the rise of energy sector as the top destination for Indian project exports. The long-term price boom in energy sector that began in early 1990s led many developing countries to concentrate on their renewable and non-renewable sources of energy. These included large scale developmental projects in hydroelectric, oil, gas, coal and other energy sources. Indian companies actively participated in the development efforts of developing countries by providing cost-effective services with regard to energy sector. Energy projects exports by Indian firms account for 54 per cent of their total project exports. Social infrastructure, which was the top host sector for Indian project exports in late 1970s now occupies the

second position after energy sector in 1994–95 to 2002–03. It accounts for 23 per cent of the total project exports from India (Figure-6). Transports and communication with 15 per cent is the third important operating area of Indian project exporters.

Figure-6
Sectoral Composition of Construction Project Exports, 1994–95 to 2002–03, In US$ Million and



Per cent

Source: Same as Figure-4.

As in the past, public sector companies continued to contribute to project exports from India. According to Export-Import Bank of India, 14 public owned companies participated in the bidding for project exports during 1998–99 as compared to 35 private companies[3]. Among public sector, Bharat Heavy Electricals Limited (BHEL) turned out to be most aggressive project exporters from India. The commissioning of 600 MW western mountain gas-based power station in Libya and 1020 MW Tala hydroelectric project in Bhutan are two important project exports by BHEL. The current overseas project activities of the company includes gas turbine based 240 MW ADB-funded power plant at Siddhirganj in Bangladesh, 500 MW power plant in Jordan, gas turbines for 52 MW Oman refinery company, 500 MW power plant in Indonesia, etc. IRCON is another public sector company which had played a predominant role in helping as many as 20 developing countries to expand their railway and road infrastructure. It has completed about 90 overseas project exports of which important projects are—the construction of high speed railway lines on Mussayeb-Kerbala-Samawa section and Al Muthanna

[3] Export-Import Bank of India (1999) 'Project Exports Reach A New High', at: http://www.eximbankindia.com/old/press990401.html

section (1985–87, US $130 million) in Iraq, Pelabuhan Tanjung-Pelepas-Johar rail link in Malaysia (1999–2002, US $121 million) and Benisef railway line in Algeria (1985–1988, US $80 million). Beside, railway infrastructure, IRCON has contributed to the development of road ways, bridges and buildings in Bangladesh, Nepal and Indonesia, Jordan, Malaysia, Saudi Arabia. National Building Construction Corporation, PEC Limited, Water and Power Consultancy Services (WAPCOS) Limited, Telecommunications Consultants India Limited, Engineering Projects (India) Limited, RITES Limited, HMT (International) Limited, Bridge & Roof Co (India) Limited are other important public owned companies undertaking project exports from India. Among private sector players L&T Limited, Voltas Limited, Som Dutt Builders, Tata Projects Limited, KEC International Limited, Tecnimont Icb Limited, S S Foundry Chemical Industries Limited, B. Seenaiah & Company and UB Engineering Limited are leading project exporters from India[4].

These emerging Indian project exporters can be predicted to play an important role in improving host developing countries' civil and industrial infrastructure. The ability and capacity of Indian engineering companies to serve the wide ranging infrastructure demand enhances the choices of developing countries in terms of the increased size of suppliers and put downward pressure on the cost of financing infrastructure projects. Global corporations are forced to offer competitive rates while competing for project exports in developing countries. It is also important to note that developed country project exporters are concentrated on large value projects whereas developing countries also have many small-sized infrastructural works to be concluded. In this context, Indian project exports serve this missing market and help developing countries in building their vital infrastructure. In this way, Indian project exports act as a promoter of economic growth in many host developing countries. Along with host developing countries, India—the home country also benefits from her project exports activities. The participation of Indian companies in overseas project execution creates demand for exports of other Indian construction and engineering products and generates employment opportunities for skilled manpower.

3. Rise of Indian FDI in Infrastructure Sector

In addition to the traditional route of project exporters, the participation of Indian companies in the infrastructure sector of developing region is increasingly assuming the mode of foreign direct investment. With India liberalizing her regulatory framework for allowing private sector participation in a number of new infrastructure areas like

[4] Construction World (2003), 'Project Exports: Booster Needed!' Cover Story, February.

telecommunication services, transportation services, power, internet services, etc., a new breed of Indian infrastructure firms that are directly selling services to the end customers came into being. These new Indian infrastructure players have not only phenomenally grown in domestic market, but are increasingly entering markets in other developing countries by undertaking cross-border direct investments.

Table-6 summarizes the trends in greenfield Indian infrastructure investment in developing region. Since its modest beginning in the 1970s, Indian infrastructure FDI directed at developing countries accelerated in the 1990s. Developing region hosted US $265 million of such FDI in 1990s, which is 38 times higher than US $7 million in 1970s. The cumulative greenfield Indian FDI in the infrastructure sector of developing region stood at US $1073 million at end March 2007. Infrastructure accounted for 12.4 per cent share of the total Indian FDI in developing region during 1970–2007 reflecting expansion of a total of 217 Indian infrastructure firms into developing region. A total of 45 developing countries have received Indian infrastructure FDI (Table-6).

Table-6
Indian Infrastructure FDI in Developing Region, 1970–2007

Types of Infrastructure	*Value in US $ million*						*In Number*	
	1970–79	*1980–89*	*1990–99*	*2000–07*	*All Years*			
					Value	*Per cent*	*Investing Indian Firms*	*Host developing countries*
Construction and engineering services	3	1	58	329	391	28.8	83	30
Hospital and health services			6	8	13	1.0	8	7
Hotel & restaurants	4	8	168	20	201	14.8	51	25
Power generation				1	1	0.1	1	1
Telecommunication Services			10	505	515	38.0	13	10
Transportation services		2	22	210	234	17.3	66	18
Grand Total	7	11	265	1073	1355	100	217	45
As a per cent of total Indian FDI outflows into developing region	8.6	9.2	14.0	12.2	12.4			

Note: Data for 2001 is only from January to March, 2002 is from October to December and 2007 data is from January to March; Developing region includes developing countries and transition economies of South-East Europe as classified by the UNCTAD in World Investment Report 2006.

Source: Calculated based on a dataset compiled from unpublished remittance-wise information from Reserve Bank of India, published reports of Indian investment centre and unpublished firm-level information from Ministry of Commerce.

Indian telecommunication service companies emerged as top outward investing firms accounting for an estimated 38 per cent share of the total Indian infrastructure FDI in developing region. A total of 13 Indian companies have undertaken US $515 million

worth of greenfield FDI in 10 developing countries. Tata Communications with US $282 million, Reliance Infocomm with US $215 million and Iridium India Telecom with US $10 million are three leading players in the telecommunication sector. Construction and engineering services is the second important host for Indian infrastructure FDI claiming about 29 per cent. A total of 83 Indian firms have invested in this sector covering as many as 30 host developing countries. As compared to Indian FDI in telecommunication service provision, Indian FDI in construction sector is the initial form of Indian infrastructure FDI starting since 1974. Punj Lloyd Limited, Nagarjuna Construction Company, Greatship (India) Limited, Rail India Technical & Economic Services Limited and Telecommunications Consultants India Limited are top five investors in this sector.

Transportation services and hotel & restaurants respectively account for 17 per cent and 15 per cent shares in total Indian infrastructure FDI in developing region. West Asia Maritime Limited, Great Eastern Shipping Company Limited and Tolani Shipping Company Limited are three important Indian firms operating in the area of transportation services. In the provision of hospitality services, Indian Hotels Company Limited, Oriental Hotels Limited and Piem Hotels Limited are important Indian investing firms.

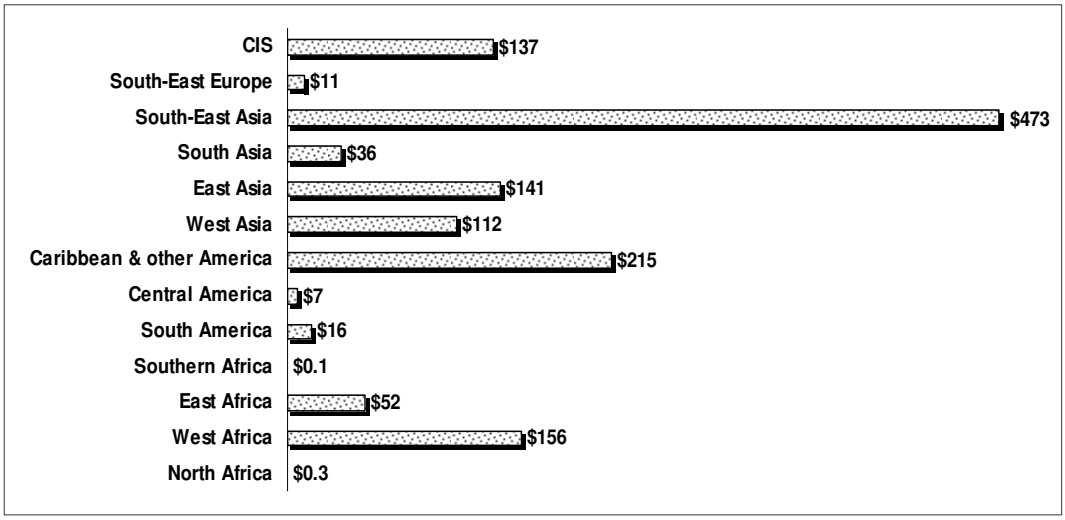
In power sector, Indian companies are increasing their role in neighbouring countries like Sri Lanka, Nepal, Bhutan and Myanmar. The public sector company, National Thermal Power Corporation (NTPC) has entered into a joint venture with the Ceylon Electricity Board for building a 2×250 MW coal-based power plant in Sri Lanka for US $500 million in December 2006[5]. GMR Energy Limited has recently signed a memorandum of understanding with Nepal for setting up of the 300 MW Upper Karnali hydro-electric project in February 2008. Under bilateral partnership with Bhutan, India has undertaken direct investment in developing 336 MW Chuka hydropower project commissioned in 1986, 60 MW Kurichu project commissioned in 2001 and 1020 MW Tala hydropower project commissioned in 2007. A number of Indian companies such as Hindustan Construction Company, Bharat Heavy Electricals Limited, Larsen & Toubro (L&T), Gammon (India) Limited, National Hydroelectric Power Corporation and Power Grid Corporation of India Limited, were involved in the setting up of these power plants and transmission lines in Bhutan.

Indian infrastructure FDI is highly intra-regional in character. Asia alone accounted for 56 per cent share of the total infrastructure outflows from India during 1970–2007 (Figure-7). South-East Asia with US $473 million is the most attractive sub-region in Asia

[5] Hindu Business Line (2007) 'NTPC's Lanka power plant to get new site', September 14.

followed by East Asia, West Asia and South Asia. Latin America & Caribbean with US $238 million is the second important host region for Indian infrastructure FDI flows (18 per cent share). It is followed by Africa (US $208 million, 15 per cent) and South-East Europe & CIS (US $148 million, 11 per cent). Within these regions, Indian infrastructure FDI flows is concentrated in Caribbean & other America, West Africa and CIS sub-regions. At the level of individual host developing countries, Indian infrastructure FDI is concentrated within a few countries. Top five host countries together claimed about 73 per cent of developing region bound Indian infrastructure FDI (Table-7). These countries are Singapore (25.5 per cent), Bermuda (15.8 per cent), Liberia (11.4 per cent), Hong Kong (10.4 per cent) and Kazakhstan (9.6 per cent).

Figure-7
Regional Composition of Indian Infrastructure FDI in Developing Region, 1970–2007, In US $ Million



Note & Source: Same as Table-6.

Table-7
Indian Infrastructure FDI by host developing countries, 1970–2007

Sub-region Name	*Country Name*	*Infrastructure FDI (US $ million)*	
		Value	*Per cent*
Developing Region		1355	100
North Africa	Algeria	0.2	0.01
	Egypt	0.2	0.01
West Africa	Liberia	155	11.45
	Nigeria	0.5	0.03
East Africa	Kenya	0.1	0.00
	Mauritius	40	2.94
	Mozambique	8	0.55
	Mozambique	1	0.04
	Seychelles	4	0.28

Sub-region Name	*Country Name*	*Infrastructure FDI (US $ million)*	
		Value	*Per cent*
	Uganda	0.01	0.00
Southern Africa	Botswana	0.1	0.01
	South Africa		0.00
South America	Brazil	0.03	0.00
	Colombia	16	1.20
Central America	Panama	7	0.50
Caribbean & other America	Bermuda	215	15.86
	St Vincent	0.1	0.00
West Asia	Bahrain	0.3	0.02
	Iran	1	0.05
	Kuwait	0.2	0.01
	Oman	2	0.13
	Qatar	0.4	0.03
	Saudi Arabia	19	1.40
	UAE	90	6.62
East Asia	China	0.02	0.00
	Hong Kong	141	10.42
	South Korea	0.1	0.01
	Taiwan	0.02	0.00
South Asia	Bangladesh	0.2	0.02
	Maldives	8	0.57
	Nepal	9	0.66
	Sri Lanka	19	1.40
South-East Asia	Indonesia	88	6.49
	Malaysia	31	2.31
	Singapore	346	25.53
	Thailand	6	0.42
	Vietnam	2	0.12
South-East Europe	Bulgaria	0.2	0.02
	Romania	11	0.80
CIS	Belarus	0.2	0.01
	Kazakhstan	130	9.62
	Kyrgyzstan	0.2	0.01
	Russia	5	0.36
	Tajikistan	0.04	0.00
	Ukraine	0.3	0.02
	Uzbekistan	1	0.05

Note & *Source*: Same as Table-6.

The involvement of Indian companies in the infrastructure sector of developing region in recent times is also taking the form of acquisition although in small numbers. Telecommunication services have been the top service sector to host acquisitions by Indian infrastructure service providers followed by hotel & restaurants and real estate development (Table-8). Indian companies like VSNL (now renamed as Tata Communications), Reliance Communications and Essar Communications are rapidly expanding their presence in developing countries through acquisitions and emerging as players in the international telecommunications and internet services space. Indian

construction companies like DLF are using acquisition as a route to serve hospitality business in developing region. As compared to the greenfield form of Indian infrastructure FDI, the number of brownfield investments undertaken by Indian firms is relatively small.

Table-8
Indian Firms' Acquisitions in Infrastructure Sector of Developing Countries

Indian firms	Foreign Target	Sector	Host country	Year
Valecha Engineering Limited	Koon Holdings Limited	Real Estate & Infrastructure Management	Singapore	2007
Country Club India Limited	Babylon Resort	Hotel & restaurant	Sri Lanka	2006
Overseas Hotels Ltd (a subsidiary of DLF Ltd.)	Aman Resorts	Hotel & restaurant	Singapore	2007
Dhanus Technologies	Borusan Telekom	Telecommunication Services	Turkey	2008
Essar Communications Holdings Ltd	Econet Wireless International Ltd	Telecommunication Services	Kenya	2008
Reliance Communications	Anupam Global Soft (U) Ltd	Telecommunication Services	Uganda	2008
VSNL	InfraCo	Telecommunication Services	South Africa	2006
VSNL	SNO	Telecommunication Services	South Africa	2005

Source: Based on dataset constructed from different reports from newspapers, magazines and financial consulting firms like Hindu Business Line, Economic Times, Financial Express, Business World, Grant Thornton India, etc.

In addition to the brownfield and greenfield types of infrastructure investments, developing home countries including India have been witnessing a new phenomenon, which can be termed as 'infrastructure tie-in FDI' projects. This tie-in FDI may come into non-infrastructure sector of a host developing country but has a 'tie-in' investment component exclusively earmarked for local infrastructure development. The case of ONGC Mittal Energy Limited, a joint venture between ONGC and Mittal Steel, to invest in the hydrocarbon sector of Nigeria is a good example of infrastructure tie-in FDI. In November 2005, ONGC Mittal Energy entered into an oil-for-infrastructure deal with Nigeria to get oil exploration blocks in return for up to $6 billion in infrastructure investment in power, railways, oil refining and agriculture[6]. The proposed power project is a 2000 MW coal-fired independent power plant and 1000 km railway line between oil city of Port Harcourt and Kano. The investment by ONGC Mittal Energy is to be proportional to the scale of oil discoveries. Nigerian government has allocated two oil blocks, OPL 279 and OPL 285, as part of the deal in 2005. In May 2006, another two blocks 209 and 212 were won by ONGC Mittal Energy.

[6] Hindu Business Line (2005), 'ONGC Mittal Energy signs MoU with Nigeria', November 12.

Another example of infrastructure tie-in FDI project is the proposed investment of public sector owned Indian company NTPC limited in Nigeria. NTPC has signed an energy co-operation pact with Nigeria to set up and operate a 500 MW coal-fired power plant and a 700 MW gas-based power plant in return for access to at least three million tonnes per annum (MTPA) of liquefied natural gas (LNG) on a long-term basis and assistance in participation in the bidding for gas block in the African country[7]. From the Indian private sector Tata's proposed US $2 billion in Bangladesh is another example of infrastructure tie-in FDI project. In 2004, Tata proposed to build a 1000 MW power plant, a steel mill with annual capacity of 4.2 lakh tonnes and a one million tonne fertilizer factory as part of the US $2 billion investment package in return for sufficient and uninterrupted access to Bangladesh natural gas for its proposed plants for a 20-year period[8]. Later on the size of the proposed investment was revised to be around US $3 billion for a guaranteed supply of 1.25 trillion cubic feet of gas for a 15-year period and around 3 million tonnes of coal supply per annum in 2006. Even after more than two years of intense negotiations and postponements, Bangladesh has finally declined to guarantee an uninterrupted gas supply for the project in May 2008 raising uncertainty about the investment deal. These cases of infrastructure tie-in FDI projects have great potential for addressing infrastructure needs of developing countries provided such investment flows can be expanded significantly.

4. Policy Regimes on Indian Firms' South-South Infrastructure Investment

The growth of southern region bound Indian investment with special focus on infrastructure services can provide mutual development opportunities for both India and host countries. For India, project exports provide boost to engineering goods exports and provide employment opportunity for skilled Indian workers and managers. Beside, in the case of power projects in neighbouring countries like Nepal, Bhutan, Bangladesh and Myanmar, energy-staved India can benefit substantially from exporting back hydro-electrical power.

Indian policy makers were very early to recognize the crucial role of project exports and outward FDI in promoting overall commodity exports and in effecting diversification of export basket away from raw material and low technology goods exports. They also treated these investments as a strategy of strengthening economic cooperation with other developing countries. The Indian policy regimes for project exports and OFDI in 1970s–

[7] Hindu Business Line (2007), 'NTPC inks energy pact with Nigeria', May 26.

[8] Hindu (2004), 'Tatas sign $2 billion deal with Bangladesh', October 15.

80s were in their evolutionary stages with tough bureaucratic monitoring and cumbersome approval procedure at multi-layered levels like IDBI, RBI, Ministry of Commerce, Ministry of Industry, Ministry of Labour, etc. Apart from considerable delays and cost overrun in the case of project exports, the existing policy regime on OFDI restricted cash transfers for OFDI and discouraged full equity participation.

Since 1990s the policy regime governing OFDI has been simplified, made transparent and many of the restrictive provisions removed (Pradhan, 2008). In the case of OFDI, Indian company can now invest up to 400 per cent of their networth, which can be in cash transfer or capitalization of capital goods and know-how exports. Most importantly, OFDI now take place through an automatic route under RBI. There also have been attempts to simplify and rationalize the home country policy with respect to project exports since early 2000s. The RBI circular on Export of Goods and Services - Project Exports A.P. (DIR Series) Circular No.32 (October 28, 2003) led to a number of positive changes for encouraging project exports. The value of project export contracts for clearance by authorized dealers and Export Import Bank of India (Exim bank) have been raised to a uniform level of US $100 million and empowered these approving authorities (i.e., authorized dealers and Exim bank) to relax necessary clearance conditions for project exports based on their commercial judgments. Proposals in excess of US $100 million in value were required to be cleared by the Working Group. Notwithstanding these policy changes, the Report of Task Force on Project Exports, 2003, has identified a number of constraints on project exports from India—limited international brand image of India as a project exporter, inadequate institutional support, insufficient provision of competitive credit and insurance cover, inadequate information access and dissemination system and lack of targeting specific markets and projects. A more proactive role by Indian project exporters and their industry associations has been called for in this report. Following the submission of the task force report, the Government of India has set up the Project Exports Promotion Council of India (PEPC) replacing Overseas Construction Council of India as the coordinating agency for facilitating project exports. PEPC disseminate necessary information relating to emerging project possibilities to its member exporters, identify Indian companies with project export capabilities, explore new markets and organize seminars and workshops related to various issues in project exports.

Clearly the home country is attempting to evolve a facilitative policy regime for Indian FDI and project exports. These measures can be expected to increase Indian investment in the infrastructure sector of host developing countries. It is also required that host developing countries should make their regulatory regime governing FDI in infrastructure sector and import of project exports more friendly to such investments

from developing countries. Given their development experience, a number of project exporting developing countries including India can offer stiff international competition to reduce cost of infrastructure building and in many areas like hydro power, irrigation, transportation, water supply system, building construction, etc. They can offer comparative technology at significant cost advantage in specific infrastructure segments and can serve the needs of developing countries in small contracts that attract little attention of project exporters from developed countries. Host developing countries can suitably address the issue of delayed payments faced by developing country project exporters in the case of public funded infrastructure projects and may adopt a liberal view on the deployment of developing country workers associated with project exports.

5. Conclusions

The recent growth in the South-South FDI flows is likely go a long way in promoting development cooperation among developing countries by providing finance, technologies and skills to host developing countries. It may also help host developing countries in improving their vital infrastructure. The case of Indian firms' operation in the infrastructure sector of many developing countries points to the vast potential of southern investment in infrastructure creation.

Indian firms have been operating in the infrastructure sector of developing region since late 1960s through project exports and OFDI routes. They have been actively participating in the civil construction activities related to roads, railways, bridges, residential complex, hospitals, schools, water supply and sewage system, etc. Their presence also extends to energy sector, turnkey project exports in industries and providing consultancy services. Over the years Indian enterprises have been able to secure a place in project exports and in many cases they are now wining infrastructure contracts by competing with developed country project exporters. In their OFDI operations related to infrastructure services, Indian firms have established their affiliates in developing countries in the areas of construction & engineering services, telecommunication services, health services and transportation services. They are also acquiring developing region firms to emerge as important players in the provision of infrastructure services like telecommunication. The emergence of infrastructure tie-in Indian FDI projects can further boost development of southern infrastructure sector.

This growing competence and capabilities of developing country firms like Indian companies to undertake infrastructure activities through project exports and provide services to the end users in areas like hospitals, telecommunication and hospitality services, indicate that there exists a vast scope of leveraging South-South investments for infrastructure creation. It is important that developing countries should realize this fact

and adopt facilitative measures to promote southern investment into their infrastructure sector. A speedy, flexible and simplified policy procedure for granting sanction to infrastructure projects from fellow southern countries is hence called for. The entry and growth of southern investment make a genuine contribution by considerably improving cost-effectiveness in the provision of infrastructure service and also by providing additional resources, skills and technologies required by such activities. Southern home countries like India are likely to benefit from complementary exports generated by overseas project execution and from gaining access to overseas sources of energy in neighbouring developing countries. In view of these mutual development opportunities that exist in South-South investments in infrastructure, all efforts should be made by both home and host developing countries to promote this new avenue of investment.

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