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Background note prepared by the UNCTAD secretariat*

Executive summary

This note highlights some findings presented in the *World Investment Report 2008: Transnational Corporations and the Infrastructure Challenge*.

Meeting the huge infrastructure investment needs of developing countries, including the least developed countries (LDCs), requires an increased involvement of the private sector, in many instances represented by transnational corporations (TNCs). TNC participation may complement – but not replace – domestic public and private investment in infrastructure. As infrastructure investments are mostly market-seeking in nature, it is often difficult for countries with small economies and weak governance systems to attract them. TNCs will only invest in projects that can deliver adequate returns. Growing demand in many developed and in large emerging economies is furthermore leading potential investors to expect higher returns for a given level of risk. Expectations should be realistic, but Government strategies and policies can make a difference.

While the ultimate impact of TNCs is influenced by the behaviour of each firm, the most important determinant is the quality of the institutional and regulatory framework of the host country. Ideally, competitive restructuring, the introduction of regulation and the establishment of an independent regulatory agency should precede steps towards opening up to foreign investment. Among different infrastructure industries, openness is the highest in mobile telecommunications, and the lowest in water. Countries are generally more open to TNC involvement in industry segments that are relatively easy to unbundle and expose to competition, and in countries with greater institutional and regulatory capabilities. /...

* This document was submitted on the above-mentioned date as a result of processing delays.

To understand the suitability of different forms of infrastructure provision – ranging from public provision to various forms of public–private partnerships (PPPs) to full privatization – Governments also need to develop capacities to assess various options as well as to design and monitor specific projects. Asymmetries of information and experience between an experienced TNC and a Government can place public sector staff at a disadvantage in negotiations with companies. Greater efforts at capacity-building are needed in this area.

The policy challenge is to create the appropriate incentive structures for TNCs to make investments that help achieve various development objectives. This may require a combination of improved governance in host countries, greater support from the international community and responsible behaviour on the part of investors. To extract the greatest potential gains from involving TNCs and to address potential concerns, a concerted effort is needed by all parties concerned.

Introduction

1. At UNCTAD XII, member States decided that the Trade and Development Board should, among other things, focus on “Reviewing the flagship publications and acting as a forum for disseminating key findings (Accra Accord, para. 192 (b)). This background note serves as a basis for Board deliberations regarding the *World Investment Report 2008: Transnational Corporations and the Infrastructure Challenge*, which will be released on 24 September 2008. The present note draws heavily on the *World Investment Report 2008*, and gives a preview of some of the main trends and policy lessons highlighted therein.
2. Infrastructure industries are important for the economic and social development of all countries.¹ They provide services that are crucial for the efficiency, competitiveness and growth of production activity. Access to affordable electricity and drinking water is an important determinant of the living standards of the general population of a country. The role of infrastructure in supporting the productive activities and in maintaining a minimum quality of life is crucial to the elimination of poverty and the attainment of the Millennium Development Goals. In many low-income countries, infrastructure investment needs are huge, while the capacity of the domestic economy to generate the necessary resources is limited.
3. Meeting the significant infrastructure investment needs of developing countries, including the LDCs, requires an increased involvement of the private sector, in many instances represented by TNCs. However, both attracting TNCs to infrastructure projects and maximizing benefits from their participation are far from straightforward. Thus, Governments need to consider when it is appropriate and feasible to leverage TNCs in the development and management of their infrastructure, and how to make sure that projects with TNC involvement help promote their development objectives. In developing as well as developed countries, policymakers continue to search for ways to ensure an adequate, efficient and equitable provision of infrastructure.
4. The present note is organized as follows. The first chapter highlights the vast infrastructure investment needs facing developing countries. Chapter II examines some evolving trends with regard to the volume and nature of TNC involvement in different infrastructure industries and regions, noting a growing role of TNCs from developing and transition economies. Chapter III outlines the main potential impacts TNC involvement can have on a host country, and discusses what is required to secure benefits. Chapter IV addresses the role of national and international policies in leveraging the activities of

¹ This note focuses on physical infrastructure, consisting of electricity, telecommunications, water and sewage, airports, roads, railways and seaports (the last four referred to as transport infrastructure).

TNCs in the context of addressing the infrastructure challenge. The final chapter is the conclusion.

I. Huge needs for infrastructure investments

5. Infrastructure services are a key determinant of competitiveness in every economy. Many Governments see infrastructure, especially transport and telecommunications, as key to economic development and integration into the world economy. Good transportation and telecommunications infrastructure can contribute to an economy's national and subnational competitiveness, and to poverty alleviation. In addition, good infrastructure provision is one of the major determinants of inward foreign direct investment (FDI).

6. Estimated needs for infrastructure investment in developing countries far exceed the amounts currently planned by Governments, the private sector and other stakeholders. This creates a significant financing gap in infrastructure services. For example:

- (a) In sub-Saharan Africa, the gap between required and available financing may exceed 50 per cent. An estimated \$40 billion of investment per year in new facilities and maintenance of infrastructure through 2015 is required to meet the region's Millennium Development Goals poverty reduction targets, with roads and electricity requiring the largest investments. Some \$16.5 billion is likely to be forthcoming annually from identifiable internal, external and official development assistance (ODA) sources, leaving an estimated annual financing shortfall of \$23.5 billion (Estache, 2005; Taylor, 2007);
- (b) The financing needs and gaps of Asia and Oceania are also large, especially considering the significant investment requirements of China and India (Asian Development Bank, Japan Bank for International Cooperation and World Bank, 2005).² Over the period 2006–2010, the region has to invest some \$608 billion annually in infrastructure development, while the actual annual investment in recent years has averaged only \$388 billion (United Nations Economic and Social Commission for Asia and the Pacific, 2006; Heyzer, 2007).
- (c) In Latin America and the Caribbean, the financing gap is equally huge. The region currently spends on average less than 2 per cent of annual gross domestic product (GDP) on infrastructure, while an estimated 3–6 per cent of GDP is needed (Omura, 2006; Fay and Morrison, 2007).

II. TNC involvement in infrastructure industries: recent trends

7. Mobilizing FDI and other forms of TNC participation is one way of addressing the shortfall of infrastructure services in developing countries. Such involvement may complement – but cannot replace – domestic public and private investment in infrastructure.

8. Available data on inward FDI stock suggest that the share of infrastructure industries in total FDI globally currently hovers at close to 10 per cent, but this represents a rapid rise over their roughly 2 per cent share in 1990. Moreover, in addition to FDI, many countries have encouraged other modes of TNC involvement, such as build–own–operate (BOO),

² As an example, to support a GDP growth of 9 per cent over the period 2007–2012, India needs an estimated \$99 billion in annual average investment in 10 major infrastructure segments. The public sector is expected to provide 70 per cent of this investment, and the private sector the rest (Government of India, Planning Commission, 2007).

build–own–transfer (BOT) or rehabilitate–own–transfer (ROT) concession arrangements, and the full impact on the level of investment arises from these as well as FDI.³

9. FDI flows in infrastructure industries worldwide surged in the late 1990s, fell back from 2001 to 2003 and partially recovered from 2004 to 2006. The sharp rise at the end of the 1990s was partly an effect of FDI flows of the telecommunications and information and communications technology (ICT) bubble. As a result, estimated FDI stock in infrastructure rose significantly between 1990 and 2006 globally (30-fold to \$786 billion) as well as in developing countries (29-fold to \$199 billion).

10. Foreign investment commitments (which include FDI, concessions and other types of TNC involvement) in Private Participation in Infrastructure (PPI)⁴ projects show that, since the late 1990s, when most infrastructure investment by TNCs went to Latin America, a greater share has been taking place in Asia and Africa. During the period 1996–2000, Latin America and the Caribbean accounted for 67 per cent of the total foreign commitments by TNCs in the infrastructure industries in developing economies, but only 32 per cent in 2001–2006. Meanwhile, the share of Asia and Oceania rose from 21 per cent to 38 per cent, and that for Africa from 12 per cent to 30 per cent.⁵

11. Foreign companies play a significant role in infrastructure projects in developing and transition economies. Data on investment commitments in infrastructure projects with private sector participation suggest that foreign investors accounted for about 29 per cent of such commitments during 1996–2006 (fig. 1). By subregion, the ratio was lower in Asia (20 per cent) and higher in Africa (36 per cent) and in Latin America and the Caribbean (33 per cent). In South-East Europe and the Commonwealth of Independent States (CIS), the corresponding share was 41 per cent. By industry, the share of foreign investors in total commitments in developing countries was the highest in telecommunications (35 per cent), followed by energy (30 per cent), water and sewage (25 per cent) and transport infrastructure (19 per cent).

12. LDCs account for less than 1 per cent of world FDI inward stocks in infrastructure. Their marginal status is confirmed by data on foreign investment commitments. For example, over the period 1996–2006, LDCs attracted a little over 5 per cent of the foreign investment commitments (of \$246 billion) in infrastructure in developing countries. Most infrastructure commitments in LDCs were related to telecommunications, which accounted for almost half of the total. By contrast, water and sewage infrastructure was largely underrepresented. Thus, despite increases in LDCs, investment remains small and far below what is needed.

13. Most of the world's 100 largest infrastructure TNCs (ranked by foreign assets) belong to three industries: electricity, telecommunications and transport. While the majority of the top 100 infrastructure TNCs in 2006 were headquartered in developed countries, as many as 22 of them were not. Moreover, in some industries, such as ports, developing country firms – including DP World (United Arab Emirates) and Hutchison Whampoa (Hong Kong, China) – have emerged as industry leaders.

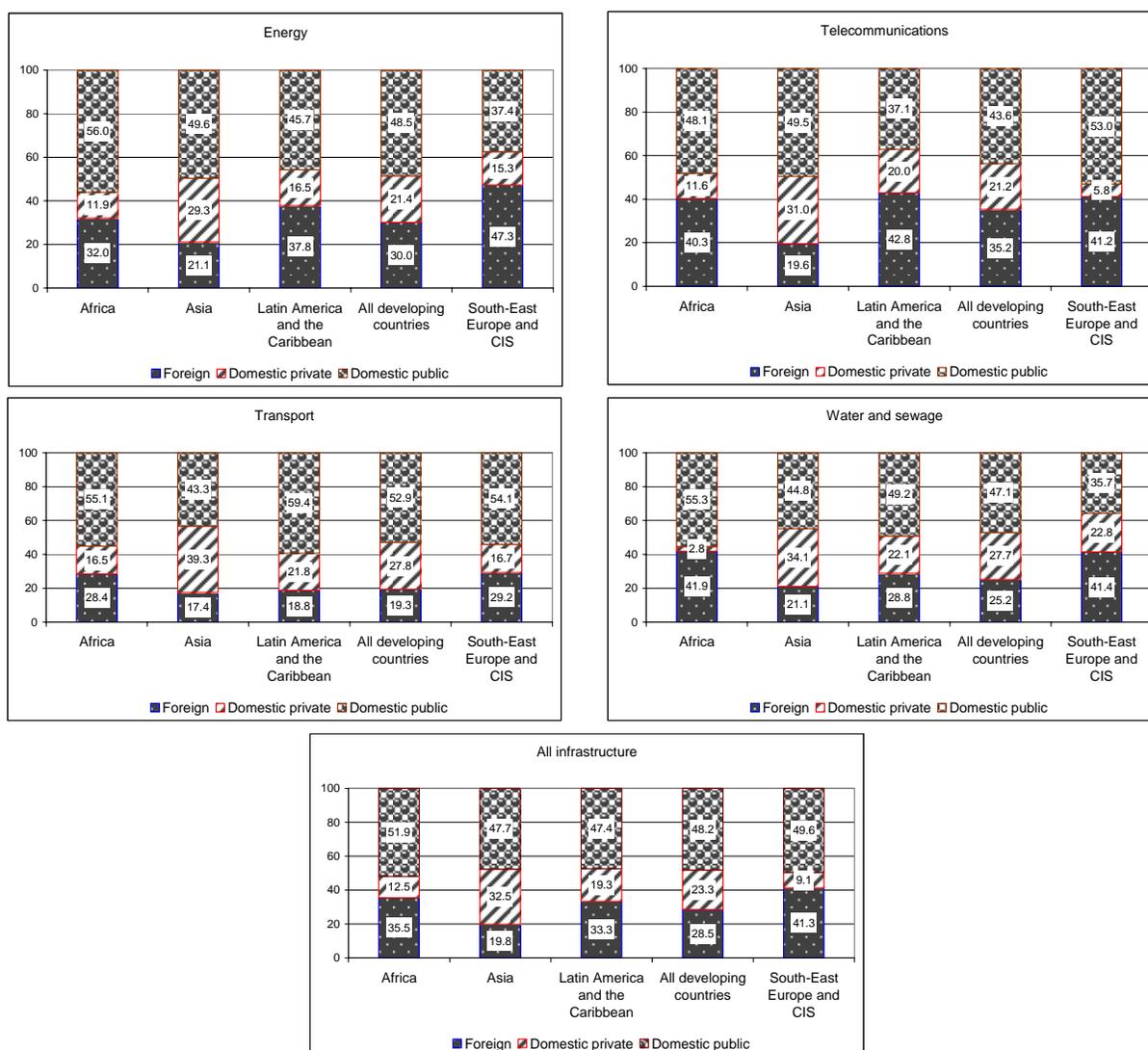
³ Because of the nature of such concessions – i.e. to rehabilitate or build infrastructure and run related services – TNCs participating through such arrangements invest significant amounts. For example, BOO and BOT schemes were generally used for greenfield projects in infrastructure in Latin America (Strong et al., 2004).

⁴ Investment commitments in the World Bank's PPI database comprise those made by TNCs and the domestic private sector in developing and transition economies. If the State or State-owned enterprises have a share in these private sector projects, they are also included in the total. However, infrastructure investments made solely by the State are not.

⁵ UNCTAD calculations, based on data from the World Bank's PPI database.

14. Developing country investors play an especially prominent role in LDCs. Over the period 1996–2006, they accounted for almost 40 per cent of the infrastructure commitments in these countries, as compared to 32 per cent for all developing and transition economies. The share of South–South investment into LDCs was particularly high in the case of transport infrastructure, notably as a result of investments from West Asia and South Africa.

Figure 1. Share of foreign, domestic private and domestic public investors in the investment commitments of the infrastructure industries of developing countries and of South-East Europe and the Commonwealth of Independent States, by industry and region, 1996–2006 (%)



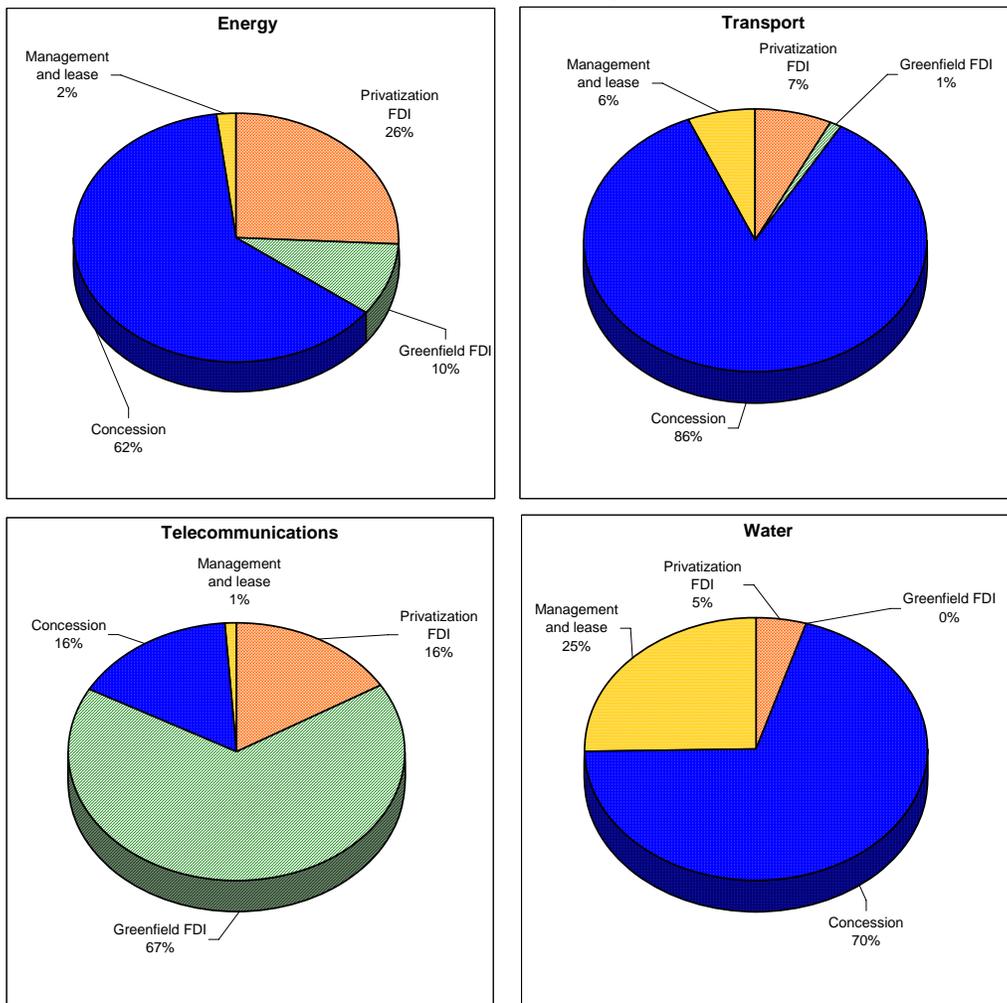
Source: UNCTAD calculations, based on data from the World Bank's PPI database.

15. TNCs participate in infrastructure projects through various equity or non-equity legal forms. Given the high risks, long gestation periods and high capital intensity associated with many infrastructure projects, they often enter into host countries via “special purpose vehicles” or consortia, in cooperation with other investors. Data from the World Bank’s

PPI database on investment commitments in developing and transition economies for the period 1996–2006 suggest that the form of TNC involvement varies considerably by industry (fig. 2).

16. In energy (primarily electricity) concessions, equity-based public–private partnerships (PPPs) were the most frequent form of TNC participation in developing countries, representing 62 per cent of the cases. Privatizations and greenfield projects together accounted for 36 per cent. In transport infrastructure, foreign participation was largely dominated by concessions (more than 80 per cent of the cases). Telecommunications was the only infrastructure industry in which TNC involvement was dominated by FDI forms. Reflecting the importance of mobile communications, in particular, more than two thirds of the cases were greenfield FDI projects, while privatization (mostly of fixed-line communication) accounted for 16 per cent. In the water industry, TNCs entered mostly through concessions (70 per cent of the projects). This industry also frequently used management and lease contracts (25 per cent).

Figure 2. Legal forms of foreign commitments in infrastructure, by industry, 1996–2006 (based on the number of projects, in %)



Source: UNCTAD calculations, based on data from the World Bank’s PPI Database.

17. Most infrastructure investments are market-seeking in nature. This makes it difficult for countries with small economies and weak purchasing power to attract foreign investment. This is particularly true if governance systems are poorly developed, as this increases the level of perceived risk. Such issues must be kept in mind when considering the potential for enhancing TNC involvement in developing countries' infrastructure. Risks are particularly high in cases where large-scale capital investments are needed up front, where cost recovery is difficult to achieve and where social concerns are high.

III. Impact of TNC participation on host developing countries

18. TNC participation in infrastructure in developing countries has resulted in the inflow of substantial financial resources. The stock of infrastructure FDI in developing countries (\$199 billion, as mentioned above) is an indicator of the extent to which such participation has mobilized financial resources. Another measure – TNC investment commitments as a proportion of private sector projects in infrastructure (which include FDI, concession agreements and management contracts, the main modes of TNC participation) – also indicates that TNCs have mobilized significant resources for investment in developing countries. During the period 1996–2006, such commitments were about \$246 billion.⁶

19. Not all financial resource flows, primarily in the form of FDI and concessions, constitute new investment in infrastructure from the host country perspective (e.g. TNC participation arising from acquisitions of existing assets does not necessarily add to capital stock). However, inasmuch as concessions were about equal in value to FDI in all investment commitments during 1996–2006, the TNC contribution to infrastructure investment in developing countries is likely to be larger than suggested by FDI stock.

20. Despite significant levels of TNC investment in developing-country infrastructure, more of it is required to bridge the vast financing gap: there is need for substantial amounts of additional investment, irrespective of source. Mobilizing FDI and other forms of TNC participation is one way of addressing the shortfall in infrastructure investment, but it should be seen in context. For instance, in Africa, total TNC investment commitments in infrastructure during the period 1996–2006 were \$45 billion – an amount that is barely equivalent to the region's current annual infrastructure investment needs of \$40 billion.

21. In a similar vein, investment in infrastructure by foreign companies in the 1990s was connected with a decline in public investment in the sector across much of Latin America and parts of Africa. In expectation of a large-scale increase in private sector investment, many countries cut back on public expenditure in infrastructure, but the increase in investment by TNCs (and the domestic private sector) did not fully compensate for this decline (Calderón et. al., 2003; Servén 2007). An important lesson from this experience is that TNC participation should not be seen as sufficient to provide for a country's investment needs in infrastructure industries, but rather as an important supplement and complement to domestic investments.

22. Reflecting the ownership-specific advantages of TNCs, the main potential benefits include, in addition to capital injections, transfers of technology and management know-how. As a result, TNCs can help host developing countries enhance efficiency in the provision of infrastructure services, increase supply and improve quality. However, various costs and risks are involved. TNCs are generally only willing to invest in projects that are potentially profitable. Therefore, they are unlikely to shoulder costs and risks associated with projects that target the poorest segments of society, unless they are offered subsidies or guarantees to help ensure cost recovery. There is a risk that countries, in order to attract TNC investments, provide too-generous guarantees, with significant implications for contingency liabilities.

⁶ Investment commitments data are calculated by UNCTAD based on the World Bank PPI database.

23. TNC participation in the infrastructure industries of developing countries impacts on their performance and the provision of infrastructure services through a number of channels, particularly technology transfer and effects on competition and efficiency. TNCs in infrastructure bring both hard technology (e.g. specialist equipment for water purification) and soft technology (e.g. organizational and managerial practices) to their operations in host countries. As regards hard technology in telecommunications, for instance, market entry by international operators from both developing and developed countries has contributed to lowering the threshold of ICT access and usage for developing countries (Rouvinen, 2006). Similarly, international terminal operators have helped improve the efficiency of cargo handling by introducing new equipment and processes to container ports (UNCTAD, 2007).

24. TNCs also transfer soft technology to host-country operations, for instance by re-engineering operational processes, improving procurement and subcontracting practices, and enhancing client records and collection methods. Overall, studies show that the introduction of hard and soft technology by foreign affiliates has helped enhance productivity in services provision in a number of cases, as well as reliability and quality of service provision (Platz and Schroeder, 2007). However, context matters, and performance gains as a consequence of TNC (and more generally private) involvement are very much dependent on a well-defined regulatory environment.

25. The industry-wide impact of technology transfer by TNCs also depends on the diffusion of technology to other firms in the industry, through a number of routes of transmission, including joint ventures, mobility of personnel and demonstration effects. Importantly, for the effective diffusion of technology from infrastructure TNCs to the industry, the existence of capable domestic enterprises is essential. Diffusion also occurs when developing country infrastructure TNCs enlist the support of, for instance, international engineering and design companies to enhance their technology and expertise, but even in these cases a minimum capability threshold is important.

26. The higher the contestability of an infrastructure industry, the more likely TNC participation can contribute to enhanced efficiency through increased competition. For example, in many countries, a competitive market structure has been established in telecommunications as a consequence of technological change and industry reforms (Ure, 2008; Li and Xu, 2002). Similarly, in other countries, TNC participation has been directed to investment in electricity generation (the most contestable segment in the industry), and the establishment of foreign-invested power plants has enhanced competition and helped improve efficiency in meeting rapidly growing demand for electricity (Gómez-Ibáñez, 2007). In water supply, however, which is still essentially a natural monopoly, the entry of TNCs risks turning State monopolies into private or foreign-owned ones (Kirkpatrick et al., 2006); and the scope for enhancement of allocative efficiency through competition is limited. Regulation and modalities of TNC entry affect the extent of performance improvements, with cross-country studies showing the complementarities between privatization and competition, in that competition increases the gains from privatization, and vice versa.

27. However, while the entry of TNCs can increase competition and thus efficiency in infrastructure services, it may also pre-empt the entry of domestic players or crowd out existing ones. Experience in electricity and telecommunications – both relatively contestable industries – in some developing countries indicates that infrastructure TNCs can overwhelm small local producers, or be associated with significant market power. Foreign participation also involves other risks, including a high incidence of concession renegotiations or sometimes TNC withdrawals, which may impact on performance (United Nations Economic Commission for Africa and the United Nations Environment Programme, 2007).

28. In some developing countries, where domestic capabilities exist, local private participants can enhance their competitiveness and efficiency by collaborating with TNCs in a variety of ways. For example, partial privatization, with participation by TNCs, has been implemented by developing countries such as Morocco in telecommunications, with favourable results for competition. As an alternative to TNC involvement, some developing countries have also been able to improve the performance of public utilities through corporatization reforms without direct TNC participation. However, successful cases are mainly in relatively high-income or large developing economies.

29. The participation of TNCs has generally increased the supply of infrastructure services in host countries and improved service quality, but their impact on prices has varied, giving rise to concerns of pricing services out of the reach of the poor. In particular, the affordability of services is jointly determined by the price of services – which may be determined by Governments, especially in water and electricity – and the disposable income of consumers in an economy. The impact of TNC participation on access to services can thus differ among segments of a society; and improvements in industry performance do not necessarily translate into increased availability and affordability of services for all members of a society, especially the poor and people in rural, remote and economically deprived areas. The outcome depends not only on changes in supply capacity and efficiency as a result of TNC participation, but also on industry characteristics, host country regulations and the behaviour of foreign affiliates. In particular, there is significant variation by industry.

30. Improvements in supply, coverage of services, price and access as a result of TNC participation in developing countries are more pronounced in telecommunications than in any other infrastructure industry, especially in mobile telephony (UNCTAD, 2006). Many developing countries have experienced a “mobile revolution”, and new business models introduced by TNCs have enabled the expansion of mobile services into low-income segments. For instance, in Africa, the entry of TNCs has also helped create telecommunications-access opportunities for remote areas, which were not regarded as serviceable and profitable by national providers before. TNC entry into the transport industry of developing countries is far more varied than in other areas. International terminal operators, for instance, have considerably improved the quality of services in major ports and thereby developing country connectivity to the global economy (UNCTAD, 2007).

31. Evidence regarding the impact of TNC participation on prices and thus on access to electricity and water is mixed, partly because prices reflect political and social as well as economic considerations. In these essential infrastructure services, in the absence of government subsidies to users, additions to supply capacity and productivity, along with efficiency improvements, may be insufficient to maintain low prices in order to cover costs. This has sometimes been the case in electricity and, more commonly, in water, as mentioned below. In such cases, the participation of TNCs has not contributed to improved access for the poor (Gómez-Ibáñez, 2007; Gassner et al., 2008).

32. TNC involvement in the electricity industry has in many cases led to increased supply capacity and network connections, and thus to steady improvements in the reliability and quality of service in the industry. Given the many factors involved, electricity prices have sometimes fallen after TNC entry, but overall there has been no definite trend in prices, up or down. The impact of TNC participation on users’ access to water has been disappointing, though there is some evidence that well-designed schemes for TNC participation have led to significant service expansion. For example, in Morocco, water supply and coverage improved after 1997, when private operators (all TNCs) took over some concessions in the country. On the other hand, private sector/TNC participation has also resulted in price increases in many cases. Partly because TNC participation has sometimes not met expectations on improved access, there have been cancellations of water concessions in countries such as Argentina, Bolivia and the Philippines.

33. While the ultimate impact of TNCs is influenced by the behaviour of each firm, one of the most important determinants is the quality of the institutional and regulatory framework of the host country. Good quality government capabilities are as important to formulate and implement rules to govern privately operated infrastructure as they are to fulfil the difficult task of running State-owned enterprises (Parker et al., 2005).

IV. Policy implications

A. Openness to TNC participation varies

34. Since the Second World War, the opening up of infrastructure industries to foreign investment has been much slower than in other industries. It was only in the early 1990s that developing and transition economies began in earnest to dismantle legal barriers to private, and often foreign, investment in infrastructure. The trend towards opening up to TNC participation has been more widespread among developed and relatively advanced developing and transition economies. While the nature of liberalization has varied significantly, all groups of countries are now more open to TNC activities in infrastructure than they were two decades ago.

35. There are significant variations by industry, however. Openness is the highest in mobile telecommunications, and the lowest in water. It is generally higher in industry segments that are relatively easy to unbundle and expose to competition, and in countries with greater institutional and regulatory capabilities. At the same time, recent years have witnessed increased concerns among Governments with respect to allowing foreign companies take control of certain infrastructure segments, including power generation and distribution, port operations and telecommunications.

36. National security concerns notwithstanding, many countries have moved beyond the removal of barriers to TNC involvement, and are actively promoting it in selected infrastructure industries. In a survey of investment promotion agencies (IPAs) conducted by UNCTAD and the World Association of Investment Promotion Agencies (WAIPA), almost three quarters of the respondents stated that infrastructure was a more important priority than it was five years ago.⁷ Confirming the broad patterns of openness to TNC involvement, the infrastructure industries most often targeted by IPAs were electricity generation, Internet services and airports. By contrast, the industries that were targeted by the lowest number of IPAs included electricity distribution and transmission (see table below).

⁷ An even higher share (80 per cent) expected infrastructure to become even more important for their work in the next five years. An increased focus on infrastructure seems to be justified by UNCTAD's 2008 *World Investment Prospects Survey* of large TNCs, which identified infrastructure (especially telecommunications) as among the most promising industries for future international expansion.

Table 1. Share of IPAs that promote FDI, by infrastructure industry and region
(Percentage of responding IPAs)

Infrastructure industry	All countries	Developed countries	Developing countries	Africa	Asia	Latin America and the Caribbean	SEE and CIS
Transport							
Roads	31	5	42	43	46	38	48
Seaports	37	30	42	50	31	44	29
Airports	41	35	40	57	23	38	71
Railways	24	15	28	50	23	13	29
Electricity							
Generation	49	30	56	79	46	44	57
Transmission	19	0	26	36	23	19	29
Distribution	17	5	23	36	23	13	14
Telecommunications							
Fixed	29	20	30	50	23	19	43
Mobile	40	40	40	57	38	25	43
Internet services	44	45	42	71	31	25	57
Water and sanitation							
Water supply	33	26	33	43	23	31	57
Sanitation	26	15	28	29	23	31	43
<i>Number of responses</i>	<i>70</i>	<i>20</i>	<i>43</i>	<i>14</i>	<i>13</i>	<i>16</i>	<i>7</i>

Source: UNCTAD–WAIPA Survey of IPAs 2008.

B. How to secure benefits from TNC involvement

37. As noted above, the quality of the overall institutional and regulatory framework is of fundamental importance for the ability of a country to both attract and benefit from an influx of foreign investment in infrastructure. The creation of participatory, transparent and accountable governance systems that promote and enforce the rule of law is critical. Without an adequate institutional and regulatory framework, the risk increases that countries will lose out by opening up. Moreover, a reversal of liberalization is often hard to achieve.

38. This makes the sequencing of reform important. Countries should develop the institutional capabilities first before designing and actually implementing the reforms (UNCTAD, 2004). Ideally, competitive restructuring, the introduction of regulation and the establishment of an independent regulatory agency should precede steps towards opening up. Such a sequence helps clarify the rules of the game for potential investors and makes Governments better prepared before engaging in a specific project. In reality, the opening up to foreign investment has often preceded comprehensive reform, with less positive outcomes as a result (e.g. Fay and Morrison, 2007; Wells and Ahmed, 2007; Kessides, 2005). Unless credible regulatory bodies can be established, developing countries are likely to be better off keeping their utilities in public hands (Bull et al., 2006).

39. Infrastructure investments typically also require the negotiation of contracts between the host country and the foreign investor(s). Contracts provide for a tailor-made agreement that responds to the particular requirements of each project and the intentions of the contracting parties.⁸ This makes it important for countries to develop the expertise needed to determine the desirable forms of TNC involvement, to negotiate and to monitor the implementation of projects. Governments that decide to engage TNCs in infrastructure industries have to invest time and energy to develop the skills and capabilities needed to administer the often highly complex projects. This is important at the regional and

⁸ Infrastructure projects are often governed by an overarching concessionary agreement. However, for a large project, a cluster of over 40 contracts may formalize arrangements among the numerous actors involved (Esty, 2004).

municipal levels, which are responsible for a growing number of infrastructure projects but often have more limited resources and institutional capabilities than national Governments.

40. Due to asymmetries of information and experience between an experienced TNC and a Government, public sector staff can find it hard to match the resources of the private sector when engaging in contract negotiations. While major TNCs tend to make use of international law firms and other experts specializing in project finance transactions, it is often difficult for developing countries to find the corresponding support. While international institutions – including the World Bank Group, regional development banks, export credit agencies and others – offer some capacity-building services in the area of infrastructure (see next section), little assistance related to negotiations is provided.

41. Eventually, the only way to learn and develop the necessary experience is through “learning by doing”, i.e. by engaging in a real project. In this context, it may be advisable to start with small-scale projects and to concentrate on less contentious segments of an industry. If countries wish to involve TNCs in infrastructure activities that are complex to regulate and manage, as with water, it may furthermore be appropriate to start with “low-level contracts”. For example, while technical assistance or management, operations and maintenance contracts do not attract capital inflows, neither do they attract the potential for controversy or the same degree of costs and contractual risk. Whatever the nature of TNC involvement, low-income countries are likely to benefit from partnerships with various development partners that can contribute both financial resources and technical expertise.

42. Enhancing the broader value to society requires attention to key social objectives, such as making services universally accessible and affordable to the poor. This is particularly important in the case of water, but also in other infrastructure industries. A key challenge is to meet the twin targets of (a) cost recovery – to make the investment financially sustainable; and (b) wider access to the service – to make the investment socially sustainable. The challenge is accentuated in low-income countries. Weak purchasing power of households makes it hard to recover the costs of certain infrastructure services via user charges. To achieve both targets, tariff payments typically have to be subsidized in some form.

C. More support needed from the international community

43. In light of the large needs for more infrastructure investment, it is important to consider the potential role of home countries and the international community in facilitating more foreign investments into countries that seek such inflows. This is particularly relevant from the perspective of low-income countries, which have generally failed to attract significant TNC involvement in these industries. Three types of interventions can be distinguished. The first relates to ODA lending to infrastructure projects, notably in low-income countries. A second set of measures seeks to mitigate especially non-commercial risks that are inherent to infrastructure projects and especially in countries with weak institutional capabilities. The third type is geared specifically towards strengthening the institutional capabilities of developing countries.

1. Making better use of ODA

44. Without subsidies of some form, it is difficult to attract TNC investment into economies, communities and industry segments characterized by weak purchasing power and poor records of payment. In these cases, multilateral and bilateral development finance institutions can act as catalytic financiers. Especially in such industries as electricity, water and transport, there is a significant potential for synergies between foreign investment and ODA. From the perspective of “crowding in” of foreign investment into infrastructure projects in LDCs and other low-income countries, development partners and the home countries of investing firms need to make more funds available.

45. There are some encouraging recent trends. Between 2002 and 2006, bilateral and multilateral donor commitments to infrastructure, as reported by the Organization for Economic Cooperation and Development, almost doubled, from \$9 billion to \$17 billion.⁹ Moreover, in 2007, ODA and non-concessional lending commitments by bilateral and multilateral agencies worth \$12.4 billion was committed to Africa by members of the Infrastructure Consortium for Africa for various infrastructure projects – a 61 per cent increase over commitments of the previous year.

46. Despite such positive trends, however, current levels of support have not recovered from the earlier period of declining lending volumes of multilateral banks, and they have not reached the levels promised in various international forums.¹⁰ Moreover, while development partners are yet to provide all the funds pledged in recent years to scale up infrastructure investments in low-income countries, existing funds are not fully used. At the end of 2004, the World Bank and regional development banks had unused capacity amounting to more than \$200 billion (World Economic Forum (WEF), 2006: 8). More recent assessments also show that the liquidity of development finance institutions is very high (Te Velde and Warner, 2007).¹¹ Among possible reasons for this “infrastructure paradox” – i.e. that despite the huge needs, available funds are not fully used – include skills shortages, lack of government capacity to prepare bankable projects, and a mismatch between the requirements of development partners and the priorities of recipient countries.

47. In order to make existing ODA funds more efficient in catalysing private (including TNC) investment, there may be a need to give greater attention to certain risk-mitigating policy instruments. It has also been argued that development finance institutions would have to become more willing to take risk in order to make their investments and lending more complementary to the activities of commercial market players, as well as to enhance the share of their financing devoted to LDCs (Te Velde and Warner, 2007; WEF, 2006: 11–12).

48. In addition, development partners need to keep all options open. While a strong case can often be made for facilitating greater involvement of the private sector, including TNCs, other solutions must not be ignored. In some cases, notably in water and some electricity segments, the operation of services may have to be kept in public hands. In such situations, international support efforts focused on revitalizing existing public-sector producers are required (Estache and Fay, 2007). Thus, it is important that sufficient attention also be given by development partners to infrastructure projects into which TNC involvement may not be possible to mobilize.

2. Risk-mitigating measures

49. While host countries can reduce the level of risk by strengthening their institutions and governance frameworks, such efforts take time. Risk-mitigation measures by home countries and international organizations can be a complementary building block in the short term to mobilize private financing of infrastructure projects in developing and transition economies. They can complement private market insurers, which are also important providers of investment insurance. Special attention may have to be given to measures aimed at mitigating three broad types of risk: political risk (including sub-sovereign and contractual and regulatory risks), credit risk and exchange-rate risks.

⁹ In relative terms, growth in commitments was the highest in water supply and sanitation (198 per cent) and the lowest in energy (30 per cent).

¹⁰ For example, World Bank lending to energy and mining averaged more than \$3 billion during the period 1990–1998. This figure dropped to just over \$1 billion during 2002–2004. Although it has recovered, it was at just over \$2 billion for the period 2005–2007 (Besant-Jones, 2007).

¹¹ According to this study, “total capital...at the IFC is now close to total commitments of loans, equity and debt securities...and the institution’s capital adequacy ratio has risen from 45 per cent in 2002/03 to 57 per cent for 2006/07. [The Netherlands development finance company] FMO’s capital adequacy has increased from 38.4 per cent in 2000 to 50.5 per cent in 2005” (*ibid.*: 2).

50. Despite the plethora of risk-mitigation instruments available, current programmes are insufficiently tailored to the situation of low-income countries (Mistry and Olesen, 2003). For example, local currency financing by development finance institutions typically requires a well-established currency swap market. Where such markets exist, however, it is less likely that there is need for interventions by the development finance institutions (Fay and Morrison, 2007). Various suggestions put forward to address the specific problems of LDCs could be explored further (Mistry and Olesen, 2003; Hughes and Brewster, 2002).

51. At the same time, risk-mitigation instruments are not a panacea. A key concern is that too much risk mitigation may lead to problems of moral hazard and encourage reckless risk-taking on the part of investors and lenders (WEF, 2006: 15). While risk-mitigation tools can facilitate the mobilization of private debt and equity, they do not make poorly structured projects more viable (Matsukawa and Habeck, 2007: 6). This underscores the importance of capacity-building efforts.

3. Capacity-building measures

52. In order to address the “infrastructure paradox”, and to ensure that TNC investment in developing countries results in development gains, enhanced international support for capacity-building is essential, especially in LDCs. Reflecting the specific circumstances of each country, assistance may be provided for developing legal and regulatory frameworks, assessing different policy and contractual options, preparing project proposals and – for monitoring and enforcing laws – regulations and contracts. Considering the nature of infrastructure projects, Governments at all levels – national, provincial and municipal – are in dire need of assistance. While positive steps have been taken to meet these needs, current efforts remain vastly insufficient. Disturbingly, funds already available for capacity-building are not always fully used.

53. From the perspective of technical assistance, there is growing recognition of the need to address challenges related to regional infrastructure projects. Regional projects require coordination, legal harmonization, orchestrated administrative decisions, strong political will and, most importantly, sound governance from all participants. The World Bank Group’s pipeline of regional integration projects in Africa has been growing, reflecting the New Partnership for Africa’s Development (NEPAD) Short Term Action Plan priorities and the Africa Action Plan. The Tokyo International Conference on African Development action plan for the period 2008–2012 also attached special emphasis to regional transport and power infrastructure, as well as to enhanced involvement of regional institutions (Tokyo International Conference on African Development, 2008).

54. Most capacity-building support is currently provided by different financing institutions, which often have a direct stake in the different projects. It may be worth exploring a more active role for the United Nations in this context. As a neutral party, the organization could complement existing players by, for example, helping developing-country Governments evaluate infrastructure contracts and develop negotiating skills.

V. Conclusion

55. The development of physical infrastructure is one of the most urgent areas for policymakers in developing countries. Needs are huge, and meeting them will require optimal use of the private sector, including TNCs. This applies particularly to the case of LDCs, where infrastructure improvements remain critical for the Millennium Development Goals to be reached. At the same time, low-income countries are often poorly equipped both to attract TNCs into infrastructure and to extract benefits from TNC involvement. Whatever mix of public and private sector involvement is chosen, adequate institutions and enforcement mechanisms are essential to ensure efficient and equitable delivery of infrastructure services. For many countries, this is a daunting challenge.

56. To understand the suitability of different forms of infrastructure provision – ranging from public provision to various forms of PPPs to full privatization – Governments also need to develop capacities to assess various options as well as to design and monitor specific projects. In countries that possess limited experience of projects involving TNCs, it is appropriate to start on a small scale and concentrate on projects that are less contentious. Furthermore, it may be easier to begin with contractual arrangements that have a relatively low level of TNC involvement, such as management and operations contracts.

57. Expectations should be realistic. TNCs will only be willing to invest in projects in which they can expect adequate returns. In addition, the higher the perceived risks associated with a project, the greater the expected return will have to be. A further complication is that demands for infrastructure investment in developed countries and in large emerging economies may further hamper the ability of low-income countries to attract TNC investment.

58. There is no quick fix to apply. The challenge is essentially to create the appropriate incentive structures for TNCs to make investments that promote development objectives. This will often require an appropriate combination of improved governance in host countries, greater support from the international community and responsible behaviour on the part of investors. Indeed, to extract the greatest potential gains from involving TNCs and to address potential concerns, a concerted effort is needed by all parties concerned.

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