



**Asia's Infrastructure Challenges:
Issues of Institutional Capacity**

Susan F. Stone

December 2008

ADB Institute Working Paper No. 126

Susan F. Stone is a senior research fellow at the Asian Development Bank Institute in Tokyo.

The views expressed in this paper are the views of the authors and do not necessarily reflect the views or policies of ADBI, the Asian Development Bank (ADB), its Board of Directors, or the governments they represent. ADBI does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use. Terminology used may not necessarily be consistent with ADB official terms.

The Working Paper series is a continuation of the formerly named Discussion Paper series; the numbering of the papers continued without interruption or change. ADBI's working papers reflect initial ideas on a topic and are posted online for discussion. ADBI encourages readers to post their comments on the main page for each working paper (given in the citation below). Some working papers may develop into other forms of publication.

Suggested citation:

Stone, S. 2008. Asia's Infrastructure Challenges: Issues of Institutional Capacity. ADBI Working Paper 126. Tokyo: Asian Development Bank Institute. Available: <http://www.adbi.org/working-paper/2008/12/18/2780.asias.infrastructure.challenges/>

Asian Development Bank Institute
Kasumigaseki Building 8F
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

© 2008 Asian Development Bank Institute

Abstract

The Asian region has experienced substantial growth over the past several decades. Indeed, a quarter of all world exports now come from East Asia. Strong infrastructure underpinnings have often been cited as a major factor contributing to this success, and an important competitive advantage over other developing regions (Kuroda et al. 2006). However, a decline in spending over the past 10 years has raised concerns that this infrastructure-derived competitive advantage is eroding. Overall quantity and quality of infrastructure services remain uneven both across, and within, countries in the Asian region. Strong investment in infrastructure is needed to support continuing efforts to achieve overall growth as well as poverty reduction.

JEL Classification: H54, E02

Contents

I.	Asian Emergence	1
II.	Institutional Setting	5
III.	Success or Not: Measures of Government Effectiveness	10
IV.	Going forward.....	13
	References.....	15

However, Asia lags behind other regions in terms of infrastructure investment, casting doubt on its ability to meet this demand.

As shown in Table 2, Asia's total road network grew at a much slower rate than that of Group of Seven (G7) economies, despite G7 countries having more established road networks. Among developing regions, Asia has a fairly strong road network. By 2003, 32.3% of roads were paved in East Asia and the Pacific compared with 26.8% in Latin American and the Caribbean, 53.9% in South Asia and only 12.5% in Sub-Saharan Africa (World Development Indicators [WDI] 2007). However, these relatively strong numbers mask the diversity of the Asia region. For example, in 2003, only 14% of roads were paved in the Lao People's Democratic Republic (Lao PDR), and 22% in the Philippines, while in Malaysia, 81% of roads were paved.

Table 2: Infrastructure Comparisons

Infrastructure Indicator	Asia	Growth Rate ^a (%)	G7	Growth Rate ^a (%)	World	Growth Rate ^a (%)
Total Road Network (1,000 kilometers [km])	7,367.13*	1.41	10,321.83* *	2.07	30,724.92 ^o	0.65
Rail Lines (1,000 total route-km)	179.65*	0.12	382.96***	-6.7	1,066.55***	no data
Net Electricity Generation (billion kilowatt hours)	3,615.49**	6.66	7,680.44**	1.89	17,154.38* *	2.82
Access to an Improved Water Source (%)	75.92**	0.38	100**	-	82.72**	0.08
Access to an Improved Sanitation Source (%)	59.89**	0.93	100**	-	67.91**	0.27
Telephone Lines (millions)	1,115.04***	21.39	961.30***	6.17	3,348.82***	0.24
Cellular Lines (millions)	659.25***	181.32	577.95***	28.78	2,151.97***	132.61

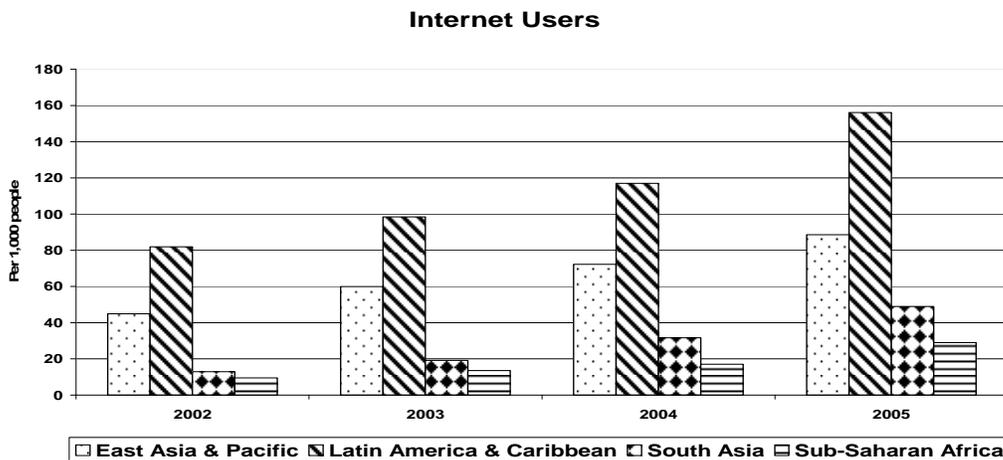
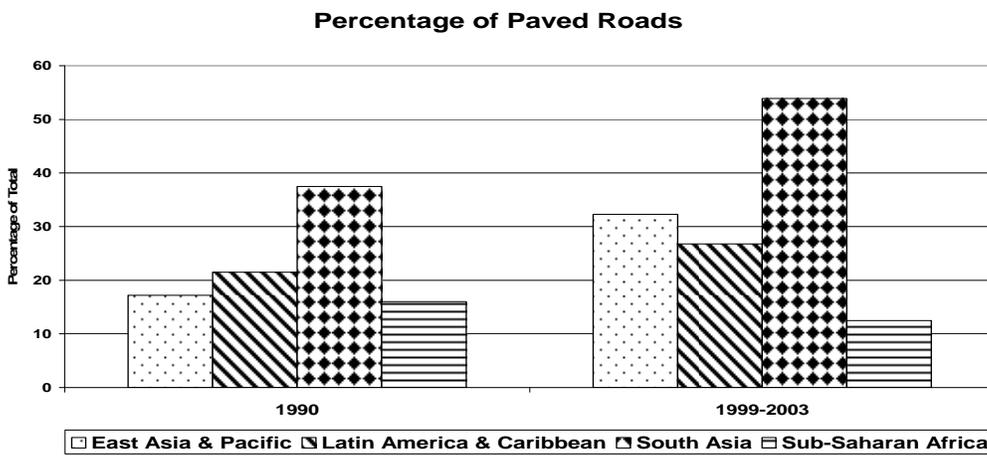
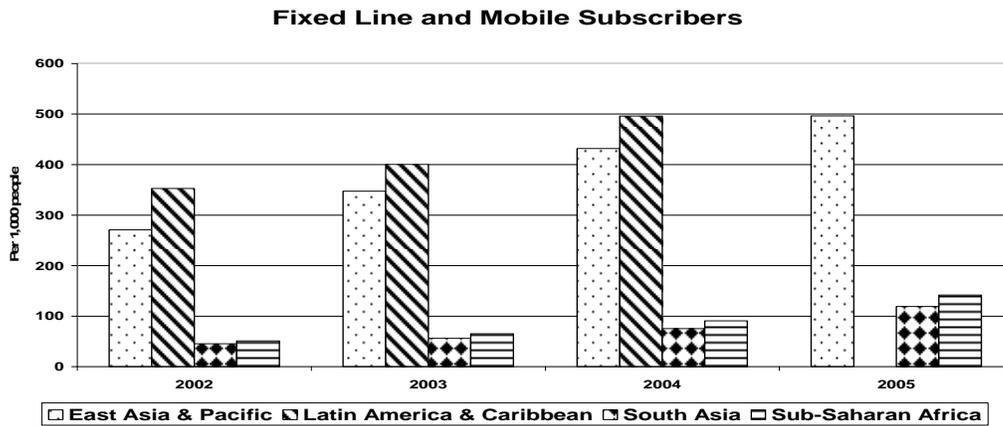
^aAverage rate from 1990 to latest year; *Latest year: 2003; **Latest year: 2004; ***Latest year: 2005;

^oLatest complete year: 1999 (from 2000 onwards incomplete).

Source: World Development Indicators 2007 CD-ROM

Net electricity generation has grown rapidly in the region (6.7%), yet it still lags behind Latin America in terms of power consumption (in kilowatt-hours) per capita. Telephone usage in Asia – telephone and cellular lines – has increased faster than the world average, yet again, the region lags behind Latin America. Indeed, with the recent exception of paved roads, the Asian region lags behind Latin America on most infrastructure measures (Figure 1).

Figure 1: Further Infrastructure Comparisons



Data source: World Bank Development Indicators 2007.

The sustained growth in the East Asia and Pacific region of over 7% annually for the past 15 years has steadily increased the demand for infrastructure. This demand has varied in nature and magnitude depending on the evolving structure and rates of growth of specific economies. Growth in urban populations, and the need to feed those populations, increases pressure on transport, water, and sanitation systems. It is estimated that over the next five years, Asia will require some \$37 billion annually for investment in transport alone (Sharan et al. 2007).¹ Asia makes up more than half of the world's anticipated annual infrastructure investment needs (Table 3).

While, land transport has increased across the region, much still needs to be done. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) estimates that \$18 billion is needed to develop and upgrade the 26,000 kilometers of roads necessary to complete the Asian Highway (ESCAP 2006); an additional \$13.5 billion is needed to close the 13 "missing links" in the trans-Asian Railway. As inland sites are increasingly developed through inland container depots (ICDs) and intermodal connections expand and upgrade, a level of investment of close to \$5 billion will be required for the continued construction of these ICDs (ESCAP 2006). India alone has widely reported its need for transport upgrades will exceed \$500 billion over the next five years.

Table 3: Anticipated Annual Infrastructure Investment Needs, 2005–2010

	Million US\$			% of GDP		
	New	Maintenance	Total	New	Maintenance	Total
East Asia & Pacific	99,906	78,986	178,892	3.67	2.90	6.57
South Asia	28,069	35,033	63,102	3.06	3.82	6.88
Central Asia	2,726	4,108	6,834	2.76	4.16	6.92
<i>Total Asia</i>	<i>130,701</i>	<i>118,127</i>	<i>248,828</i>	<i>3.17</i>	<i>2.86</i>	<i>6.03</i>
Developing Countries	233,139	231,654	464,793	2.74	2.73	5.47
World	369,095	479,624	848,719	0.90	1.17	2.07

Source: Fay and Yepes 2003.

In addition to roads, the rapid growth of trade in Asia has been accommodated through the introduction of larger container vessels and the expansion and diversification of feeder services that is logistics services that support the movement of goods in the region. While container port investment is expected to rise substantially in the next ten years, bottlenecks, primarily in public ports, have hampered the opportunity for further trade expansion. In addition, bureaucratic processes have delayed the necessary expansion of infrastructure investment. From 2000–2005, developing economies in the Asia-Pacific spent only \$1.7 billion on investment and maintenance of container ports. However, that number is expected to increase almost 40% between 2005 and 2010, and to double between 2005 and 2015 (ESCAP 2006). Viet Nam alone plans to spend US\$4.5 billion on new port facilities over the next five years.

The changing geographic distribution of people also puts pressure on infrastructure systems. Cities account for some 70% of the region's GDP growth and this trend is likely to continue. By 2025, East Asia will absorb almost 500 million new urban residents and achieve urbanization rates of over 50%. In 1990, 33% of Asia's population lived in cities; by 2006 it

¹ Unless otherwise stated, all currency values are in US dollar.

was 41% (ESCAP 2007). Increases in population and the pace of motorization, coupled with a rise in incomes and accelerated, unplanned suburban growth, will disproportionately affect the mobility and living conditions of the poor, who are often rural migrants with limited access to motorized transport. Growing numbers of supermarket chains, characterized by central procurement and distribution systems, a broader geographic range of operations, and fewer but larger volume suppliers, reflects pressure to keep food costs relatively low while coping with the complexities of the urban environment. The ability to deal effectively with these trends will drive the region's economic performance. Lowering transport and logistics costs remains the key challenge for countries if they wish to stay competitive. For example, logistics costs accounted for approximately 10% of the United States' (US) GDP in 2002, while they comprised 17.9% of GDP in the People's Republic of China (PRC), and 17.4% in India. Further, logistics costs in both India and the PRC have increased since 1997, while those in the US have fallen (Rodrigues et al. 2005).

II. INSTITUTIONAL SETTING

An economy's institutional endowments are critical to its growth potential. Endowments include formal constraints, such as constitutions, laws, and rules, as well as informal constraints, such as conventions, customs, and norms. Industrialized countries have established formal and informal constraints on human behavior that are more or less conducive to market transactions. Thus, institutions in these countries operate under fairly favorable conditions.

In comparison with the situation in developed countries, the institutional context of developing economies is much less favorable to market transactions. Regulatory rules and conventions are often weak and underdeveloped. Many developing economies lack the sound institutional structures needed to promote private enterprise and competition. Thus, policies that have worked elsewhere often result in disappointing economic outcomes when applied in the developing world. On a more micro level, regulatory regimes in developing countries can suffer from considerable deficiencies in management, often lacking skilled technocrats. This institutional weakness is further complicated by an inability, or unwillingness, of regulators to commit to some type of reform to reduce inconsistency and unpredictability, especially in countries with unstable political structures that lead to frequent changes in governments and where contracts are not protected by law.

Numerous studies have shown that regulatory offices in developing countries tend to be small, under-staffed for the task they face, and often more expensive to run (in relation to GDP) than those in developed economies. There is a lack of knowledgeable and trained regulatory staff, especially of economists, accountants, and lawyers skilled in regulatory policy analysis and contract design. In a survey of 22 regulators in 13 Asian countries, Jacobs (2003) identified the lack of well-trained staff as a major constraint on the quality of regulation. Regulatory staff often have limited understanding of policy analysis methods, such as regulatory impact assessment, which can assist in the implementation and design of new regulatory measures.

Issues of regulatory capacity and strong institutional structures are becoming increasingly important in Asia. The region is going to need to attract significant financing in order to meet the estimated \$250 billion in annual infrastructure investment needed to support regional growth (Asian Development Bank [ADB] 2007). This amounts to around 6% of the region's GDP. In 2007, ADB approved over \$10 billion in loans and another \$1.8 billion in grants and capacity building assistance. Between 1984 and 2005, cumulative private sector investment in the region has been about \$284 billion, or an average of \$12.9 billion per year. Looking at these figures, it is clear that there is a significant gap between available funds and what is required for investment in infrastructure. This is despite the fact that the region continues to have one of the highest savings rates in the world. To attract and deal effectively with additional funds, even from within Asia, significant restructuring of the region's institutional

capabilities is necessary. However, many countries do not have the capacity or regulatory framework to fund an infrastructure upgrade, or to gain enough investor confidence to attract private sector participation.

Even acknowledging the need for government initiatives, the call to increase government operations to strengthen institutional structures is often met with severe resistance by those in the position to provide such reforms. The link between growth and public finance in transition economies has still not been conclusively established, mostly due to a lack of data, making it difficult to argue effectively for an increase in the role of government in the region. There is broad consensus that there are three main factors that affect public finance and economic growth:

1. Macro stabilization (usually measured as inflation);
2. Market liberalization and structural reform; and
3. Initial conditions (for example, level of development).

Initial conditions in the Asia Pacific region are extremely diverse. Many of the economies have not achieved sustained macroeconomic stability. Liberalization and structural reform across the region have been inconsistent at best, and while initial conditions in established economies such as Singapore and Hong Kong, China create an atmosphere of relative stability and confidence, the same cannot be said for the rest of the region. Still, many countries struggle to find a balance between expanding institutions to address serious inadequacies, and reducing red tape and regulatory interference in order to attract foreign investment.

In a recent study, Pushak et al. (2007) found that while institutional quality is important, the impact of government on economic growth is not straightforward. Using a panel data study covering 25 countries over the period 1992–2004, the authors found that for established economies, the marginal benefits of public expenditure tend to fall as the size of the expenditures program grows. This builds on findings by de la Fuente (1997), who reported that for a given sample of Organisation for Economic Co-operation and Development (OECD) countries (data from 1960–1993 and 1970–1995), a decrease in total government expenditures increased growth rates. In the European Union (EU), for every \$1 increase in government spending, there is an average decrease in private investment of \$0.32 (Pushak et al. 2007). Further, the marginal cost of taxation has been shown to increase as the tax burden rises. All of these findings caution against government expansion. However, these relationships appear to rely a great deal on income levels. The authors therefore conclude that transition economies may find that with better quality governance, the “optimal” size of government in achieving high economic growth, could actually be higher than the accepted average (including developed economies).

Thus the effect of government size on economic growth can vary significantly, depending on the quality of public sector institutions or governance in a given country. Key drivers of economic growth may shift in relative importance over time, so that while the size of government does matter, its impact is nonlinear. Beyond certain expenditure thresholds, public spending has a negative impact on growth, while at levels below this cutoff, there is no measurable impact. As government expenditures grow, they may be associated with large distortionary taxation and regulatory activities, less efficient provision of services, and new opportunities for rent seeking and corruption. To the extent that increases in government expenditures are “quality” they do not necessarily impact negatively on growth. The size of government does not have adverse consequences when government is relatively more effective or public sector institutions stronger.

These findings may help explain the slow growth of private investment in the region. As stated above, East Asia has experienced faster growth in trade and GDP than Latin America, yet it falls behind as a destination for private investment, especially in infrastructure. Between 1984 and 2005, Asia as a whole accounted for less than 30% of

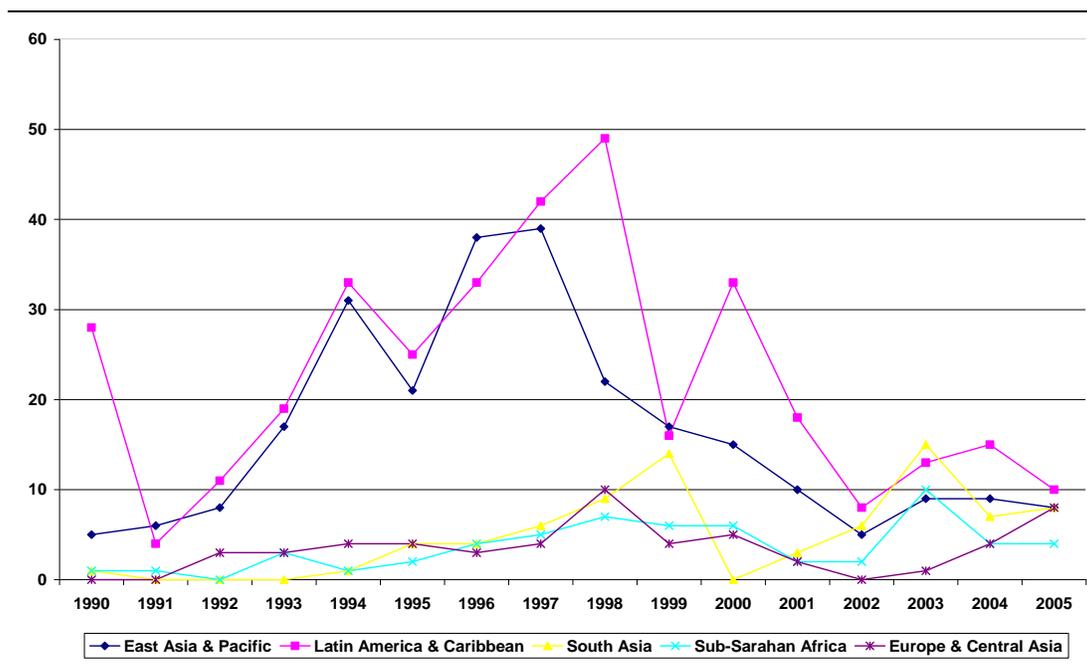
private sector investment in infrastructure worldwide, while Latin America accounted for over 44% (World Bank, Private Participation in Infrastructure [PPI] database 2007).

During the last two decades, private sector investment in the region’s infrastructure has fluctuated widely, reflecting its sensitivity to macroeconomic instability and the general investment climate (Sharan et al. 2007). This is evident in the pattern of investment in the region. Investment is highly concentrated in several countries, the top six, between 1984 and 2005, being: the PRC (25.3%), India (15%), Malaysia (15.5%), the Philippines (10.9%), Thailand (10.5%), and Indonesia (8.8%).

Across the developing world, investment in East Asia and the Pacific has been below what would be expected given the growth and strong trade figures in the region. Figure 2 shows that Latin America has led Asia in the number of PPI projects for most of the time period under consideration. In 2002, South Asia also passed East Asia and the Pacific, and Central Asia has shown recent signs that it could do the same. Given the outstanding performance of the region in most economic measurements, the lack of private investment has been a cause of concern for most governments in the region.

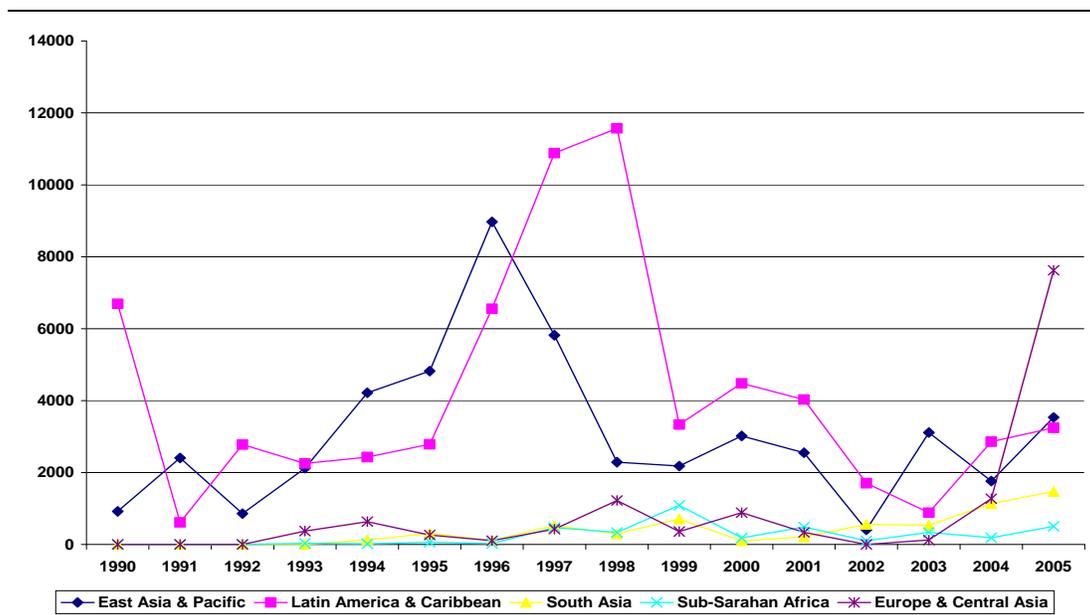
In terms of dollar investment, again Latin America leads, with the Europe and Central Asian region also demonstrating strong growth (Figure 3). The lack of investor confidence in developing markets following the financial crisis of the late 1990s is clearly evident in the graph. Prior to this time period, growth in private sector investment was strong, but the region has yet to recover those levels. At the same time, since 2003, the South Asian region and the European and Central Asian region have both shown strong growth in dollar commitments from the private sector for transport ventures.

Figure 2: Number of PPI Projects in the Transport Sector



Data source: World Bank PPI database 2007.

Figure 3: PPI Investment in Transport (in million US\$)



Data source: World Bank PPI database 2007.

This performance becomes even more puzzling when regional differences in business environments are examined. Table 4 shows selected statistics on doing business across borders for four developing regions. East Asia and the Pacific consistently ranks at the top, with the exception of days for export (Latin American and Caribbean) and days to open a business (South Asia).

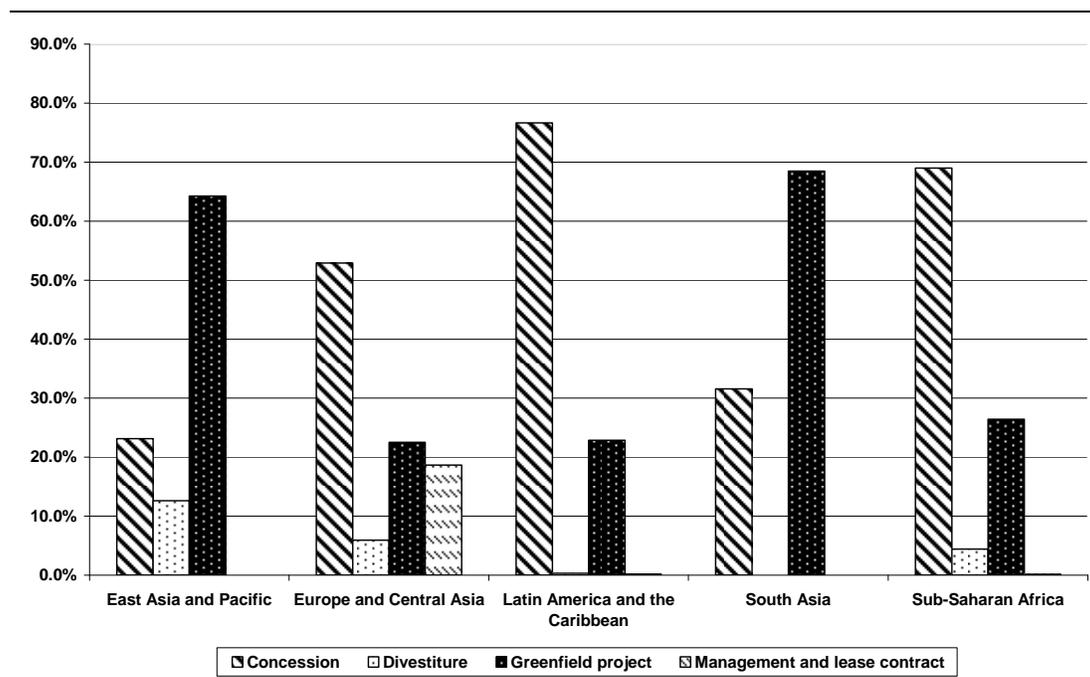
Table 4: Trading Across Borders, 2006

	East Asia & Pacific	Latin American & Caribbean	South Asia	Sub-Saharan Africa
Document for export (number)	6.7	6.9	8.5	7.8
Time for export (days)	23.3	19.7	33.0	34.7
Cost to export (US\$ per container)	902.30	1,229.80	1,339.10	1,878.80
Document for import (number)	7.1	7.4	9.0	8.8
Time for import (days)	24.5	22.3	32.5	41.1
Cost to import (US\$ per container)	948.50	1,384.30	1,487.30	2,278.70
Days to open a business	44.2	64.5	32.5	47.8

Source: World Bank Doing Business database 2008.

Another key difference in private investment patterns among the regions is shown in Figure 4. While the private sector has invested in concession and divestiture projects in other regions, in East Asia and the Pacific, investment is concentrated in greenfield projects which account for more than two thirds of the total investment in the region. This reflects the cautious approach taken in East Asia and the Pacific as opposed to Latin America and Europe and Central Asia (consisting mostly of Eastern European projects), which, according to some, proceeded ahead in the privatization process without the deep sectoral and institutional reforms required to facilitate strong private sector participation (ADB 2004).

**Figure 4: PPI Investment in the Transport Sector by Type, 1990–2005
(percentage of total)**



Data source: World Bank PPI database 2007.

Experiences with Decentralization

While the economic successes of some countries in the East Asia and Pacific region over the past 30 years were partly attributed to well performing public sectors, serious deficiencies in public sector governance were evident in many countries by the time of the 1997 financial crisis. Low levels of government accountability, transparency, and probity contributed to the crisis. Despite efforts to correct these deficiencies in the post-crisis environment, many problems remain. In particular, institutions of public financial accountability often fail to meet internationally accepted standards, especially with respect to procurement management and information systems in government. Decentralization is often put forth as the answer.

In some East Asian countries, initial progress on decentralization has been promising. Where decentralization "leaps" have been attempted, as in Indonesia and the Philippines, they have gone fairly smoothly. Intergovernmental fiscal systems have been institutionalized, workers have been transferred from central ministries to local governments without significant disruptions, and local authorities have taken up service-delivery functions reasonably effectively. Where decentralization has proceeded more gradually, as in Cambodia and Viet Nam, it has produced some gains in service delivery and public participation at the local level (White and Smoke 2005).

But there have been problems. Uncertainty over functional responsibility among different levels of government threatens to reduce the efficiency and effectiveness of the regimes. There is a need to develop robust financial mechanisms for channeling money to sub-national governments. In some countries, the failure to allocate sufficient own-source revenues to local governments has hampered their ability to deliver services. A further challenge relates to the accountability of local governments and the capacity of their management systems. A lack of capacity among local government officials can severely hinder development opportunities.

Few empirical studies have examined the impact of decentralization on governance in East Asian countries. One of the reasons is that most countries in the region began the decentralization process relatively recently: the Philippines and Viet Nam in the early 1990s, Thailand and Indonesia in the late 1990s, and Cambodia at the turn of the century. Of these, Indonesia and the Philippines have gone the furthest in implementing comprehensive programs. However, even these economies still struggle with effective implementation of decentralization, especially in the area of infrastructure, and specifically in transport.

Decentralization has become a catchall phrase for describing a process that is highly variable, that results from diverse motives, and that includes a range of practices and institutional reforms. But even as these varied reforms have been implemented and economic growth has progressed in the region, poverty has manifested itself in pockets of exclusion. Income and access to economic opportunity reveals increasing rather than decreasing inequality, both across the region and within countries. Such opportunity is sharply differentiated by age and gender, level of education, location (e.g., urban-rural, upland-lowland, geographic barriers to transportation and commerce), and ethnicity.

Further complicating the decentralization process and its impact on growth and infrastructure spending, is the nature of infrastructure projects themselves. The impact of economies of scale, and spillover effects associated with this type of investment, are difficult to manage, especially for local governments. Accounting for these factors is especially important when decentralizing decision making and giving responsibility to lower levels of government. When infrastructure projects cover multiple jurisdictions, such as in the management of water resources or trunk roads connecting regions, this becomes especially problematic. Community competition can often lead to inefficient outcomes and over-investment. Indeed, the need to ensure equity, harmonize standards, and ensure efficient revenue collection has put limits on decentralization.

However, infrastructure projects are widely used to promote decentralization. These projects engender strong opinions within the community on the types of projects and service improvements needed in a region. The process of defining priorities for infrastructure investment often provides local citizens with their first opportunity to participate in public decision-making. Participation at the local level, if it becomes widespread, provides support for the decentralization process as a whole. Indeed, it is often with transport projects that decentralization processes achieve their most intense validation, as communities rally around investment in a local road or bridge.

III. SUCCESS OR NOT: MEASURES OF GOVERNMENT EFFECTIVENESS

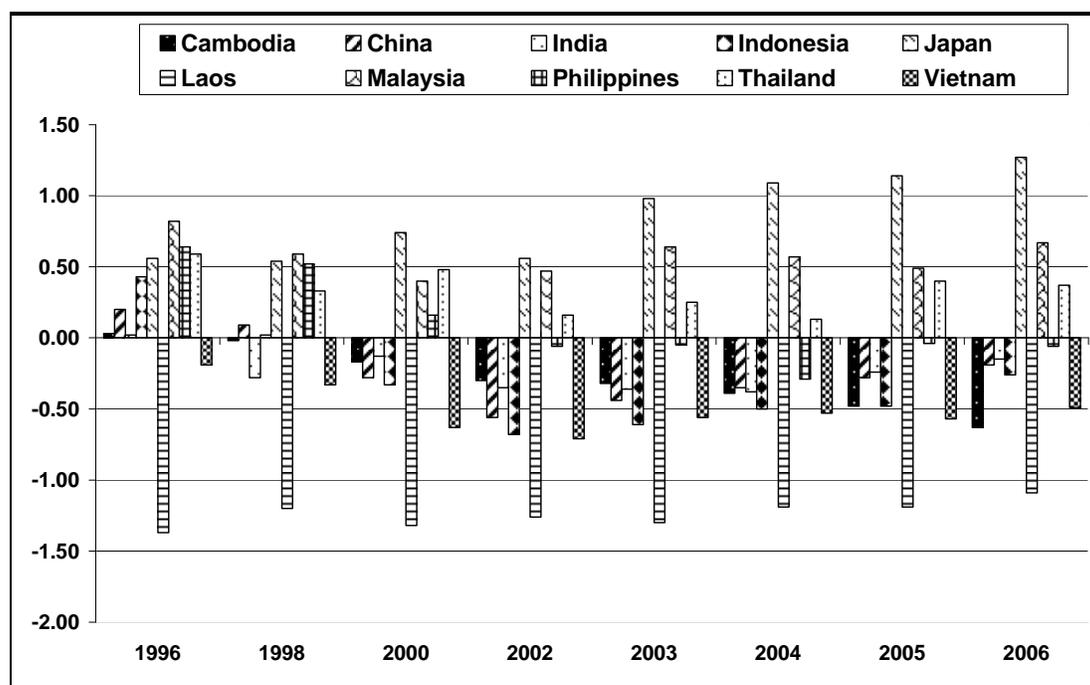
While empirical studies have found that the quality of governance has an important impact on economic growth, measuring governance quality and performance remains a major challenge (Kaufmann and Kraay 2003). The most comprehensive and reliable source of information on government performance is the Worldwide Governance Indicators (WGI), which were first released in 1999 by Kaufman, Kraay, and Zoido-Lobaton (1999a and 1999b). The most recently published survey data (Kaufman, Kraay, and Mastruzzi [KKM] 2007) updates indicators to 2006, revises earlier estimates to take account of new information, and expands the number of countries examined (now 212). Consistent and revised data are available for 1996, 1998, and 2000–2006.

Drawing together information from over 33 data sources provided by 30 different organizations, the WGI measure governance performance in six separate dimensions. The scores are distributed normally around a mean of zero with a standard deviation of one. This means that virtually all scores lie in a range from -2.5 (poor) to +2.5 (good), with larger values signifying a better score. Estimates of the accuracy of the indicators are also available and these suggest that accuracy has improved over the years.

Three measures of performance for selected Asian economies for 1996, 1998, 2000, and 2002–2006 are examined. Figure 5 shows the change in regulatory quality for this period. This indicator measures “the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development” (KKM 2007: 4).

Almost across the board, regulatory quality in the region has gone down since reported in 1996. In that year, only Lao PDR and Viet Nam reported negative measures. By 2006, only Japan and Thailand had shown an improvement in quality measures, while Malaysia remained relatively consistent. These findings are supported by the observation that these countries, i.e., Thailand and Malaysia, have achieved some of the most significant growth in private sector participation in infrastructure in the region. Indeed between 2003 and 2005, Malaysia experienced the highest private sector investment in infrastructure, expressed as a percentage of GDP, than any other country examined (WB PPI Database 2007). On the other hand, the Philippines and Indonesia, cited as having gone the furthest in the decentralization process, have shown a decrease in regulatory quality over time. As a percentage of GDP, these two economies experienced the lowest amount of private sector infrastructure investment.

Figure 5: Regulatory Quality

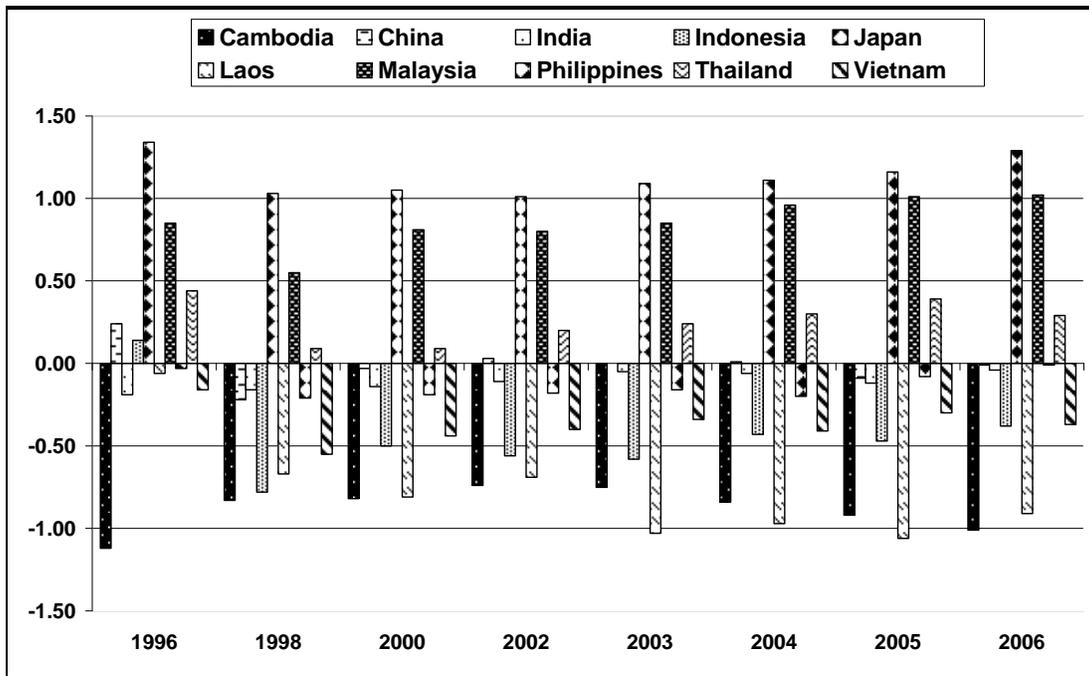


Data source: KKM 2007.

The next measure presented is government effectiveness (Figure 6). This indicator measures “the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies” (KKM 2007: 3).

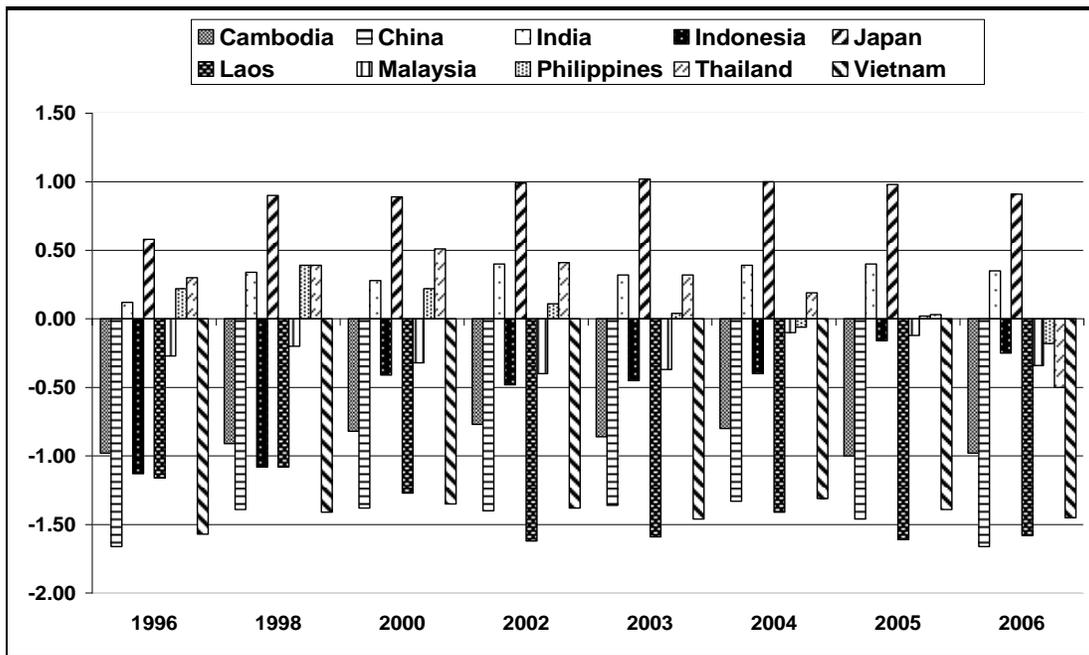
Once again, Japan, Malaysia, and Thailand stand out as the only regions to show improvement (or even to show a positive measure at all) between 1996 and 2006. For this indicator, however, Thailand remained relatively stable, while measures of Malaysian government effectiveness improved. Perhaps this is a reflection of the downside of the decentralization process. As decision-making becomes fragmented and skills are stretched, government effectiveness declines. Also, in the case of infrastructure, local political pressure may result in misguided investment decisions and intra-regional projects may face a lack of commitment given the potential dilution of political support across jurisdictions.

Figure 6: Government Effectiveness



Data source: KKM 2007.

Figure 7: Voice and Accountability



Data source: KKM 2007.

The final measure examined in the study was voice and accountability (Figure 7). This shows the “extent to which a country’s citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media” (KKM 2007: 3). One would expect this measure to have improved the most in the decentralized countries. Indeed, a key argument for decentralization is that it improves participation in the governmental process.

Once again, performance in the region was not encouraging. In this case, however, the standout was India, along with Japan. These were the only two countries with consistently positive values for this measure. Indonesia's performance also improved, whereas the Philippines actually showed a deterioration in its measured performance.

While the standard error on reported measures of WGI have declined over time, that is not to say the measures are not without their faults. In 1996, the average of the standard error was 0.33. In 2006, the standard error ranged from 0.20–0.22 for the sample as a whole, and between 0.15 and 0.20 for the countries presented here. While these figures represent an improvement, they are still large given the base values. Finally, on balance, the WGI measures suggest deterioration, both absolutely, and in terms of comparison with other countries.

IV. GOING FORWARD

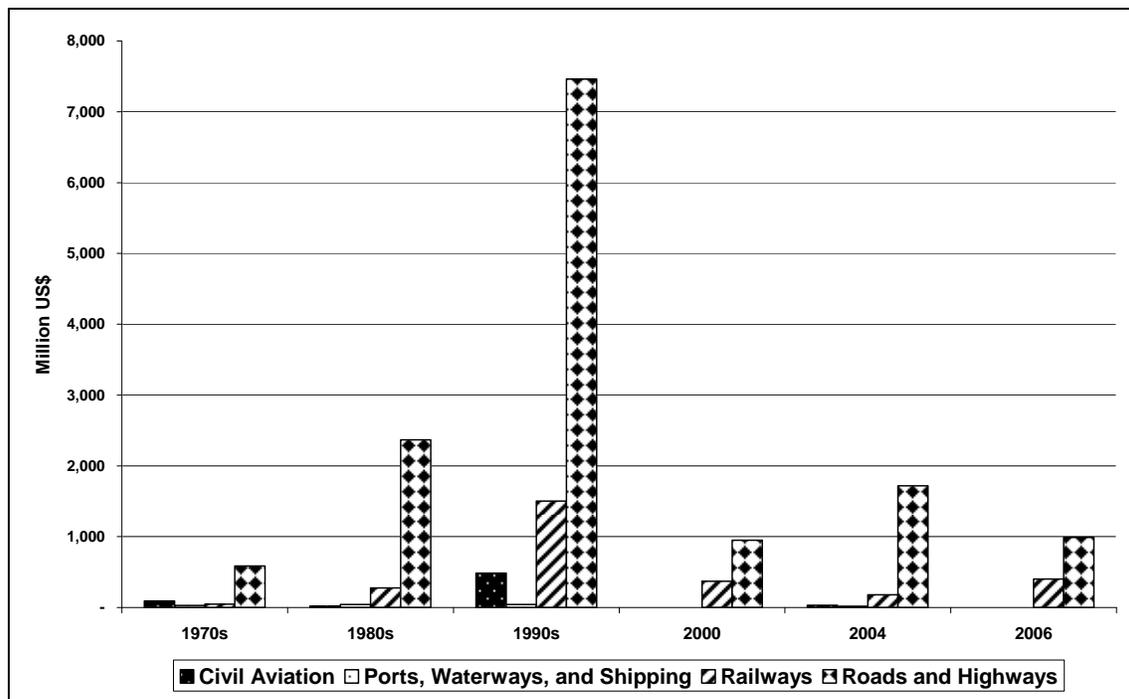
In many ways, Asia continues to struggle with its own success. Rapid growth in trade has put tremendous pressure on transport systems in the region. Population and income growth has raised the demand for electricity, communication, and travel opportunities. Urbanization is putting additional strain on sanitation and water systems, as well as logistics. Rapid change, and the desire to stay competitive, puts the additional burden of time on governments and businesses alike. In light of limited human and institutional capacity in the region, the challenges seem especially daunting.

Asia is struggling to meet these challenges by implementing institutional reform. Some countries have embraced the process of decentralization. However, to the extent that governance measures are reliable, these countries have not, as yet, achieved the desired results. All countries must attract private investment and develop the necessary infrastructure, including human capacity, to meet the demands of a growing economy.

There is a resounding call throughout the region for assistance in these matters. Countries attempting to gain expertise often find themselves competing for the same resources as the private sector, and unable to match the terms of private companies. There is also a shortage of expertise to help in the region, which can lead to conflicts of interest when dealing with many experts.

The ADB sees itself as filling a vital role in this area by providing training and acting as an "honest broker" in many deals. This is a departure from the early years of lending (the 1970s) when ADB's efforts to improve roads and highways were mostly directed toward construction or development of physical infrastructure. In the 1980s, road safety measures became an important project component. More recently, starting in the 1990s, lending programs began to include environmental protection measures, expanded capacity building initiatives in policy and institution strengthening, to include private sector participation. Lending in the new millennium has an HIV/AIDS and anti-trafficking component (Figure 8).

Figure 8: ADB Public Sector Loans in Transport



Data source: ADB

Until recently, about 50% of ADB's lending was for infrastructure. However, ADB's approach to lending for infrastructure is changing, and steadily expanding in scope. Further, a lower proportion of infrastructure lending has been on highly concessionary terms (from ADB's Asian Development Fund [ADF]), and ADB operations are responding more to quantity gaps in infrastructure and market gaps in private sector participation. Recently, ADB's infrastructure lending has become more specialized and focused on a few key areas, including roads and highways, power transmission and distribution, and energy sector development. ADB's infrastructure private sector infrastructure lending has increased sharply.

While the basic business of lending will remain the core of ADB's activity, future programs will be focused on facilitation, training, and support for attaining the primary goals of inclusive and sustainable growth and poverty reduction.

REFERENCES

- Asian Development Bank. 2007. *Asian Development Outlook*. Manila: ADB.
- . 2004. *Private Participation in Infrastructure: the Way Forward in East Asia*. Manila: ADB.
- De la Fuente, Angel. 1997. Fiscal Policy and Growth in the OECD. CEPR Discussion Papers 1755, December.
- Fay, Marianne and Tito Yepes. 2003. Investing in Infrastructure—What is Needed from 2000 to 2010? Policy Research Working Paper, No. 3102.
- Jacobs, S. 2003. *Evolution of East Asian Utility regulators: Diversity and Challenges*. Available: <http://www.regulatoryreform.com/pdfs/The%20Better%20Regulator%20March%20April%202003.pdf>
- Kaufman, D. and A. Kraay. 2003. Governance and Growth: Causality which way? Evidence for the World, in Brief. World Bank: Washington, DC. February.
- Kaufman, D. A. Kraay, and M. Mastruzzi. 2007. Governance Matters VI: Aggregate and Individual Governance Indicators: 1996–2006. *Policy Research Working Paper No. 4280*. World Bank: Washington, DC.
- Kaufman, D. A. Kraay, and P. Zoido-Lobaton. 1999a. Aggregating Governance Indicators. Policy Research Working Paper No. 2195. World Bank, Washington, DC.
- . 1999b. Governance Matters. *Policy Research Working Paper No. 2196*: World Bank, Washington, DC.
- Kuroda, H. M. Kawai and R. Nangia. 2006. Infrastructure and Regional Cooperation. Presented at the Annual Bank Conference on Development Economics. Tokyo, May.
- Nangia, R. 2006. *Cross Border Infrastructure: A toolkit*. Available: <http://www.ppiaf.org/Cross-Border-Infrastructure-Toolkit/contents.swf>
- Pushak, T., E. R. Tiongson, and A. Varoudakis. 2007. Public Finance, Governance and Growth in Transition Economies: Empirical Evidence from 1992–2004. *Policy Research Working Paper No. 4255*. World Bank, Washington, DC.
- Rodrigues, A. M., D. J. Bowersox, and R. J. Calantone. 2005. Estimation of Global and National Logistics Expenditures: 2002 Data Update. *Journal of Business Logistics* 26 (2): 1–15.
- Sharan, Diwesh, B. N. Lohani, M. Kawai, and R. Nag. 2007. *ADB's Infrastructure Operations: Responding to Client Needs*. Manila: ADB.
- United National Economic and Social Commission for Asia and the Pacific (ESCAP). 2007. *Statistic Yearbook for Asia and the Pacific*. New York: ESCAP.
- . 2006. *Enhancing Regional Cooperation in Infrastructure Development Including that Related to Disaster Management*. New York: ESCAP.
- United Nations. 2007. United Nations Commodity Statistics Trade database. <http://data.un.org/browse.aspx?d=ComTrade>
- White, R., and P. Smoke. 2005. East Asia Decentralises. In *East Asia Decentralises: Making Local Government Work*. Washington, DC: World Bank.
- World Bank. 2007. *World Development Indicators (WDI)*. Available on CD ROM. Washington, DC: World Bank.