



A Decade of Action in Transport

An Evaluation of World Bank Assistance to the
Transport Sector, 1995–2005



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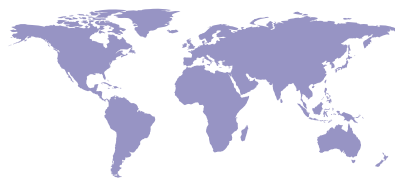
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ABBREVIATIONS

AAA	Analytical and advisory assistance
BOT	Build, operate, and transfer project
CAE	Country Assistance Evaluation
CAS	Country Assistance Strategy
CREMA	Contratos de Recuperación y Mantenimiento (Argentina)
DBFO	Design, build, finance, and operate project
EIB	European Investment Bank
ERR	Economic rate of return
ESSD	Environmentally and Socially Sustainable Development (Network)
ESW	Economic and sector work
EU	European Union
GDP	Gross domestic product
HDM-4	Highway Development and Management System
IBRD	International Bank for Reconstruction and Development
ICAO	International Civil Aviation Organization
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IFC	International Finance Corporation
IFI	International financial institution
IMF	International Monetary Fund
IR	Indian Railways
JNP	Jawaharlal Nehru Port
km	Kilometers
LICUS	Low-income countries under stress
MDG	Millennium Development Goal
MIGA	Multilateral Investment Guarantee Agency
MRT	Ministry of Roads and Transport (Ghana)
NMT	Nonmotorized transport
OECD	Organisation for Economic Co-operation and Development
OED	Operations Evaluation Department (Changed its name to Independent Evaluation Group [IEG] in December 2005.)
PCD	Provincial Communication Department (China)
PPAR	Project Performance Assessment Report
PPI	Public-private infrastructure
PPP	Public-private partnership
PRSP	Poverty Reduction Strategy Paper
QAG	Quality Assurance Group
SSATP	Sub-Saharan Africa Transport Policy Program
SSIU	Sector Strategy Implementation Update

SWAp	Sector-Wide Approach
TANROADS	Tanzanian Road Agency
TATF	Technical Assistance Trust Funds (IFC)
TAZARA	Tanzania-Zambia Railway Authority
TRC	Tanzania Railway Corporation
UN	United Nations
WBI	World Bank Institute
WDR	World Development Report
WHO	World Health Organization

Note: \$ = U.S. dollars throughout the report unless otherwise noted. World Bank fiscal year July 1–June 30.



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Foreword

This Independent Evaluation Group (IEG) study evaluates the performance of the World Bank's support for the transport sector during the period 1995–2005. The findings are intended to feed into the revision of the Bank's transport strategy. The analysis is based on a portfolio of 642 projects involving transport, of which 284 have closed and been evaluated by IEG. In addition, the report draws on staff and stakeholder interviews, an extensive literature survey, and a review of sector analytical and advisory work.

The report coincides with a period when Bank commitments for transport infrastructure are growing and when the transport sector faces escalating demands to address emerging issues of an increasingly global nature. Transport experts worldwide face a growth phenomenon fuelled by expanding human and vehicle populations and led by intensified demand for the movement of goods. This movement is stimulated by globalization and trade liberalization. People's travel needs are also expanding rapidly, as rising incomes lead to a desire for greater mobility.

The challenge for development is to support this huge growth, but at the same time to ameliorate the negative socioenvironmental impacts of transport. The sector must also look for new opportunities for more sustainable solutions than in the past. Overlaying the general scenario of economic growth is a second phenomenon of rapid urbanization, congestion, pollution, and resource

overuse. All these elements exacerbate the negative impacts of transport investments. Troubling issues include environmental damage, energy efficiency, and implications for climate change, traffic congestion, and transport safety. There are also questions relating to affordability and the logistical challenges of effective multimodal transportation.

Historically, the Bank's transport sector activities have been well managed and effective. Past efforts have focused heavily on intercity highway construction and rehabilitation. The Bank has made important progress in encouraging private sector contracting, especially of maintenance activities. In contrast, there has been more modest success with institution building and ensuring infrastructure sustainability.

Past successes notwithstanding, the time has come to reassess priorities and develop a revised

agenda that better meets emerging challenges. The evolving transport paradigm will require programmatic, cross-cutting, and multisectoral approaches. In this regard, the recent merging of the Infrastructure and the Environmentally and Socially Sustainable Development Networks in the

Bank presents opportunities for getting the most from linkages across these areas. This new paradigm should enable the transport sector to better contribute to the sustainability of Bank efforts to improve the welfare of the people in developing countries.



Vinod Thomas
Director-General
Evaluation



Executive Summary

Throughout the past decade transport projects have played a pivotal role in the support of economic development and poverty alleviation. This evaluation assesses the Bank's activities in transport during the period 1995–2005 as well as its preparedness to meet emerging challenges. It concludes that past performance has been well managed and effective, especially for intercity highway construction and rehabilitation, that the Bank's approach to transport contributed to private sector development particularly through private contracting of maintenance, that project outcome ratings have shown a steady improvement since the early 1990s, and that key elements of the current strategy—sustainability, private sector involvement, and urban strategy—remain relevant today.

However, the evaluation also concludes that transport must now focus more attention on confronting cross-cutting issues such as traffic congestion, environmental damages, safety, efficiency, and affordability.

This focus will necessitate more innovative, multi-sectoral approaches to resolve these complex and urgent country and global concerns. The Bank may have to reconsider its priorities to fully address these challenging social, political, and environmental issues and shift resources to ensuring efficient multimodal transport, improved rural linkages, and better urban transport.

Over the next 35 years 2.5 billion people will be added to the current world population of 6.3 bil-

lion. In developing countries, much of this growth will be urban; the number of cities exceeding 1 million inhabitants is well on track to surge from 268 in 2000 to 358 by 2015. This expansion, coupled with continuing globalization and trade liberalization, is expected to accelerate significantly the demand for the transportation of both people and goods.

The motor industry, for example, may have reached maturity in the developed markets of North America, Europe, and Japan, but globally it is poised for huge expansions, led by the motorization of China and India. Within a few years, China will replace Japan as the second-largest national market after the United States; over the next 20 years, more cars may be built than in the 110-year history of the

industry. Similar growth is expected in the aviation and maritime industries; only railway expansion is likely to be at a slower rate.

Although such vibrant growth may appear welcome, the scenario has a darker side as well. Today's concerns about high fuel prices will inevitably be magnified. Road transport already accounts for nearly a quarter of the man-made gases contributing to climate change. Pollution, noise, ugliness, and wasted time from traffic congestion also impose substantial societal costs. Marine oil pollution, crowded skies, and security issues also add to an increasingly dismal global transport outlook.

In developing countries the problems of congestion and pollution are further compounded by poor road safety, which has led the World Health Organization to declare road safety an international public health issue. Just over a century after the first motor vehicle-related traffic death in 1896, 1.2 million people are killed on the roads annually and 50 million more injured. More than 85 percent of these victims are from developing countries.

Public transport offers clear advantages for reducing congestion and pollution and for increasing safety. But progress has often been disappointing, because private vehicle users rarely pay the true costs they impose on society, thus encouraging urban sprawl. At the same time, decentralized cities with lower population densities and long trip distances increase the cost of providing public transport. The urban poor, usually residing on city peripheries, tend to become marginalized by a lack of accessibility. Meanwhile, the rapid growth of megacities is raising concern about worsening air quality, the adverse effects of which fall disproportionately on the poor.

The Bank's Response

Transport accounts for nearly 6 percent of global gross domestic product. It is thus no surprise that the Bank has provided more than \$30 billion, or well over 15 percent of its total lending commitments, in support of transport projects during the past decade. In the past 5 years there has

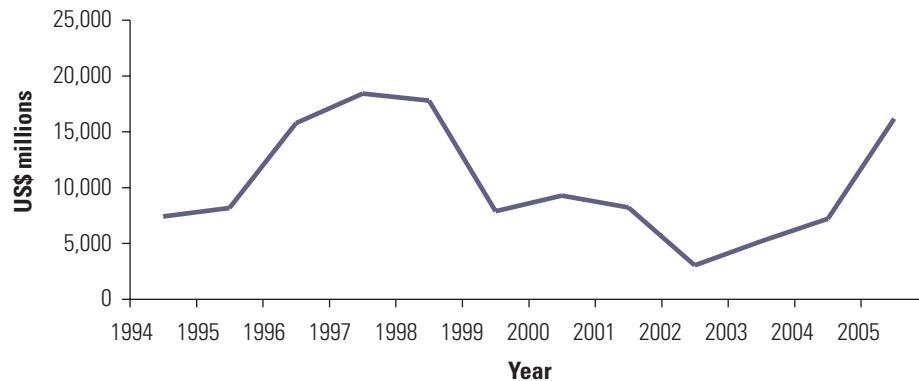
been a scaling up of transport investment as the link between poverty reduction and transport has become better understood. It is therefore timely that the Bank is now updating its strategic approach to the sector to address some of the more menacing impacts of global transport expansion and can take into account this evaluation, which includes an assessment of the Bank's readiness to meet such emerging challenges.

The World Bank's current transport strategy is influenced by three key documents. The *World Development Report: Infrastructure for Development*, published in 1994, promotes an expanded role for competitive markets in transport. *Sustainable Transport* (World Bank 1996) focuses on the need for transport systems to be comprehensively sustained—economically, environmentally, and socially. Finally, *Cities on the Move* (World Bank 2002a) focuses on the urban aspects of transport. The three elements—sustainability, private sector involvement, and urban strategy—all remain relevant today but require adjustment and a different approach to meet the challenges of the coming decade.

Private Sector Involvement Below Expectations

Optimism was high in the early 1990s that the private sector could assume a large part of the responsibility for funding both transport infrastructure and services. However, market expectations with respect to infrastructure turned out to be far too ambitious. After a dramatic decline during the financial instability of the late 1990s, when private sector transport projects in developing countries were seen as too long term and risky, confidence returned in 2005 (see figure ES.1). Nevertheless, despite a few early highly publicized failures, important progress was made internationally, and successful private concessions were effected in all modes of transport.

Although the outcome of such private investment in developing countries has been largely positive, transport concessions are still most common in middle-income countries, such as Argentina, Brazil, China, Mexico, South Africa, and Turkey. In these countries the volumes of traffic, especially

Figure ES.1: Private Sector Investment in the Transport Sector

Source: World Bank data.

for toll roads, are more attractive and there is sufficient public sector capacity to engage with the private sector. The Bank has nevertheless continued to encourage private investment even in lower-income countries; it realized that one successful project can still have a huge impact on such economies.

Port concessions in developing countries have generally been successful, as in India, the Republic of Korea, Mauritius, and Poland. Railway concessions in general, however, have been less satisfactory because governments intervene more often on pricing and labor issues. A Bank-supported railway concession in Tanzania, for example, had overly restrictive bid conditions and failed to attract private sector interest. Recently, security has also become an important issue at ports, airports, and border crossings.

Bank projects featuring private sector concessions have not grown substantially during the past decade but have seen modest growth in the International Finance Corporation (IFC). Clients generally turn to the Bank Group either for advice or when an investment is perceived as risky. In recent years, knowledge of how to set up toll-road concessions has matured, and the Bank is now able to offer services such as reimbursable technical assistance and partial risk guarantees. Where the Bank has supported or facilitated con-

cessions, they have usually been rated satisfactory or better, for example, roads in China, railways in Brazil, and ports such as Dar-es-Salaam in Tanzania and Port Louis in Mauritius.

For the foreseeable future, however, the public sector will continue to be the major owner and operator of basic transport infrastructure. This is true especially as the sector is dominated by roads, which have public good characteristics. The Bank increased its commitments for public sector transport projects once it realized that sufficient private sector investment would not be forthcoming. Evidence from Latin America has shown that a reduction in infrastructure investment (including transport) is associated with economic growth and that the gap in infrastructure expenditure relative to East Asia is widening.

The Bank's most important contribution to involving the private sector has been not in outright privatization, but through the many road programs in which it has encouraged private contracting. Also influential has been the abolition of departmental construction and maintenance and its insistence on competitive bidding for contracts. It has also had some success in encouraging the establishment of commercially run road agencies and the creation of road funds to bring greater stability into financing recurrent road expenditures, especially in Africa.

For railways, many governments are not prepared to agree to long-term concessions, such as in Morocco and Romania. The Bank nevertheless has been able to help improve accountability and transparency in financing arrangements, including openness about subsidization arrangements for noneconomic services and a greater willingness to divest noncore business components.

Although sustainability has improved, at least as reflected in Independent Evaluation Group (IEG) ratings at completion, the current reality is an understatement of what is required for truly sustainable transport infrastructure. This is because maintenance tends to have a lower priority for cash-strapped governments, despite good intentions, and because many countries are politically unstable—civil unrest can quickly undo all the good work that has gone before.

Mixed Institutional Progress

Effective governance and capacity building are integral to ensuring sustainability. The transport sector is certainly not immune from corrupt practices, especially in large construction projects. Although the sector's adherence to Bank guidelines for procurement and competitive tendering partially constrains the scope for corruption, the sector has until now lacked an explicit anticorruption strategy.

The Bank has generally had a mixed performance in helping to strengthen client institutions, with mostly modest results in low-income countries (especially in Africa) but better results in middle-income countries. In this regard, most road agencies and some railway reorganizations ranging from Ghana to Côte d'Ivoire have demonstrated greater effectiveness following Bank-supported technical assistance, but in some other countries the results have been less favorable.

Training, however, has often been aimed at assisting the immediate project and thus is less likely to have any broader or sustained impact. Often, the timing of training interventions has not been synchronized with the organizational changes needed to improve public sector performance. Institutional change takes time, and the

duration of the project intervention is relatively short. Institutional objectives therefore need to be more realistic and should be pursued incrementally through a continuing support program that extends beyond the transport sector itself.

Good Project Performance, Lagging Monitoring and Evaluation Efforts

IEG transport project ratings have shown steady improvement since the early 1990s. Good balanced portfolio performance has also been achieved among other things in large countries such as Brazil and China and in several smaller countries, including Latvia, Lao People's Democratic Republic, Morocco, Nicaragua, Peru, and Senegal. The rate of improvement overall, however, is less favorable when the largest borrowers are excluded; the concentration of transport commitments in China and India alone has increased from 31 percent to 40 percent of all transport lending over the past decade.

The good economic rates of return and outcome ratings are noteworthy, but the sector has lagged in developing practical performance indicators for the sector. Progress with monitoring and evaluation is also frequently hampered by a lack of baseline information.

Performance Difficult to Sustain

The volume of commitments is 40 percent higher today than it was in 2000. Greater productivity in the financial sense has been achieved, partly because of the large contingent of similar intercity highway projects and the availability of tools for rapid appraisal. Other factors have been the move toward programmatic lending and increased project size. But if transport is to effectively address the emerging issues, the question of staff skills needs attention.

There is evidence from staff interviews and Quality Assurance Group reviews that transport projects are particularly affected by perverse incentives against staff undertaking highly beneficial yet complex projects with valid safeguard damages related to major resettlement, environmental issues, and the presence of multiple stakeholders. In addition, there has been a relative neglect of

knowledge dissemination and sector research, the latter being significantly lower than would be expected from a sector with such a large project portfolio.

Because the Bank provides just 2 percent of total infrastructure spending in developing countries, it needs to try, wherever possible, to make a difference by demonstrating new approaches. Typically this will involve a significant increase in time and effort, which may mean greater selectivity of new projects. Although valuable analytical and advisory assistance has been carried out in several countries, the effort is spread rather thin, and awareness of this high-quality work is often not shared as widely as is warranted. More focus on such work is clearly required as an input into future Country Assistance Strategies (CASs).

Urban Transport, Rural Roads, and Multimodal Transport Increasingly Relevant

The composition of the transport portfolio (in which roads account for nearly 80 percent of Bank transport commitments) is a cause for concern, if the sector is to remain relevant. Highways will continue to be important, and the level of support should be customized by Region and country, but other transport modes and themes are growing in both importance and relevance. It will be essential to see transport opportunities with a multimodal setting of integrated urban and rural concerns.

Multimodal projects aimed at removing internal as well as cross-border trade barriers can significantly reduce freight costs. They can help improve the affordability of consumer goods and raw materials for the productive sectors. Linked to this, more projects of a logistical nature involving rail and container terminals should be anticipated. The relevance and impact of multimodal approaches is likely to increase.

There are also likely payoffs to projects addressing complex urban issues, including congestion, safety, and pollution; projects such as the air quality management projects in Mexico City and Dhaka and the assistance to China in developing insti-

tutions for sustainable urban transport will increasingly be needed. But the number of such projects financed by the Bank in recent years has fallen slightly rather than increasing, as one would expect. A major constraint is lengthy preparation time, and the lack of support and incentives for staff to get involved in more intricate projects is another factor. The Bank's current restrictions on subsovereign lending are also affecting demand for urban transport projects.

Issues of greater rural linkages, rural productivity, and environmental management are likely to be of growing importance for poverty alleviation. Recently an indicator was developed to measure accessibility (important for the Millennium Development Goals, addressing freedom from hunger and better health). There now can be a much more informed debate about the relative priority of transport improvements when preparing CASs.

Emerging Challenges

The Bank's existing transport strategy, with its focus on sustainability, urban transport, and the encouragement of greater private sector involvement, remains broadly valid. But clean, affordable, and safe transport are important challenges for the coming decade. Transport has a crucial role in helping resolve the nexus of issues associated with energy, land use, urbanization, and climate change.

Affordability concerns not only the rural and urban poor, but also freight economy aimed at improving competitiveness and stronger economic growth. This clearly cuts across all transport modes and services. Greater emphasis on safety also can be strongly justified. It is predicted that by 2020 road accidents will become the third-largest contributor to the global burden of mortality and injury. Bank-financed projects have until recently rarely addressed road safety holistically. A revised approach involving comprehensive multisector projects covering education, police, health, public works, and other departments is under development. Pedestrians and nonmotorized transport users have been found to be especially vulnerable in developing urban areas.

Especially in the larger cities, air quality is a serious concern as the number of motor vehicles continues to grow rapidly, worsening the volume of emissions. Increased support to urban transport will provide opportunities to explore reducing long-term energy demand through traffic management, traffic pricing, limits on the use of private automobiles, and greater support for mass transit systems and public transport in general. The Bank may make increased use of funding sources such as the Global Environment Facility, the United Nations Environment Program, and carbon finance initiatives in future years to tackle some of these important developments.

Yet this evaluation shows that past Bank experience, with its relatively narrow, albeit successful, primary focus on roads, will be insufficient to provide for the Bank's future response to these emerging challenges. Transport is developing into a complex multisectorial business that will require expertise from many different disciplines. The pace of change is also accelerating, and the next generation of projects is expected to have a much more urban focus. Although the demand for highways will remain the core business, it is anticipated that the Bank's clients will increasingly seek support for more complex projects and that this will gradually lead to a significant redeployment of resources and a reexamination of priorities. This can be enhanced by the recent merging of the Infrastructure and the Environmentally and Socially Sustainable Development Networks. The new priorities will require greater focus and innovation to ensure continued Bank relevance. A systematic evaluation of the recent experience with multidonor programmatic lending initiatives such as Sector-Wide Approaches (SWAs) is expected. In Africa an evaluation of the outcome of the unique Sub-Saharan African Transport Policy Program (SSATP) will also be important to refining future strategy.

Overall, the sector is at a crossroads, where it has a good window of opportunity to attain a higher level of relevance and offer a better level of support to its clients.

Recommendations to Bank Management

- Ensure that the focus of the Bank's transport operations goes beyond intercity highways and gives more attention to issues of growing urgency, including air pollution, traffic congestion, safety, affordability, and trade. This could entail a trade-off between a portion of traditional highway business and the newer, more complex challenges.
- Prepare a Bank Group transport strategy with a sixfold emphasis: (i) greater attention to air and water pollution and realizing environmental gains; (ii) achieving greater synergies across relevant sectors—building on the merging of the Bank's Environmentally and Socially Sustainable Development and Infrastructure Networks; (iii) enhancing knowledge sharing and analytical and advisory services and their contribution to country strategies; (iv) continuing to support private sector participation through close coordination among the Bank, IFC, and the Multilateral Investment Guarantee Agency; (v) increasing attention to governance and corruption issues; and (vi) redeploying staff and budget resources accordingly.
- Build up the sector's monitoring and evaluation efforts and align them with the new strategy, including through (i) the development over the next year of relevant intermediate indicators applicable to the broad range of projects; (ii) the launch of an enhanced program of rigorous impact evaluations for selected programs; (iii) a comprehensive self-evaluation of the experience with SWAs within 3 years; and (iv) an independent evaluation of the SSATP program within 2 years.



Management Response to IEG Recommendations

Management expresses its appreciation to the Independent Evaluation Group (IEG) for the constructive suggestions put forward in this evaluation. Management notes that in general the review is comprehensive and presents a well-balanced, thoughtful, and fair picture of sector achievements.

Introduction

Management notes the overall positive findings from the review. Among the review's important contributions are (a) the appropriate priority and prominence given to safety and environmental issues; (b) its observation that although the current Bank sector strategy foundations remain valid today, they require a measure of adjustment toward a more sector-interlinked approach, an evolution that the recent network integration process should make easier to implement; and (c) its set of recommendations, notably on the need to redeploy staff and budget resources in a way commensurate to the challenges at hand.

Management agrees with the thrust of these recommendations and actually feels that the review might have gone further. This analysis provides the basis to be even more explicit about the future perspectives for the transport business, while at the same time fleshing out recommendations more specifically—examples are given below. Management's specific responses are noted in the Management Action Record. The comments set out here should not be taken as de-

tracting from the overall appreciation management has for the quality and completeness of the IEG review.

Management Comments

Management would first like to note that the IEG review is timely, as it provides the backdrop for the transport strategy update under preparation (the current strategy dates to 1996). These general comments cover a variety of issues where management thinks the IEG review might have gone further in strengthening the analysis or coverage and providing more specificity in recommendations, while again acknowledging the overall quality of the review.

Transport at the Core of the Energy, Urbanization, and Climate Change Agendas and Other Multisector Linkages. The review rightly highlights the central role of transport in the nexus of issues associated with energy use, land use, urbanization, and climate change. The review, however, might have further developed the theme of the transport interface with other sectors and thematic areas, such as gender, social

inclusion, and health. It might have shown in particular how much the Bank's transport work is actually already moving more into a multisector business.

Fiscal Space. Although it is briefly mentioned, management believes that the review might have further addressed the issue of fiscal space. Fiscal space issues tend to disproportionately affect the transport sector in many countries. There are important questions around fiscal space and the problem of undermaintenance of transport-related assets and, ultimately, the potential for foregone competitiveness, sustainable growth, and poverty reduction.

Greater Differentiation across Review Periods. The review could have been more explicit in differentiating across time periods, based on the level of corporate attention given to the sector. Especially during the middle years of the review period, there were mixed corporate signals on the overall importance of infrastructure, including transport, for the Bank Group's work, up to the adoption in 2003 of the Infrastructure Action Plan (World Bank 2003a). Rebuilding skills and strengthening the lending pipeline under the Action Plan took some time, especially in Europe and Central Asia.

Client Perspective. The review is understandably organized around sector accountability within the World Bank Group. It may have been useful in the review to put a greater emphasis on un-

derstanding the client demand side of the business. In particular, management believes that it needs to give great weight in strategy development to what client countries perceive as the key issues and what they say they need from the Bank within their transport sector.

Governance and Anticorruption. Management thinks the review could have acknowledged more strongly the lead role taken by transport to mainstream and innovate on matters of anticorruption. The anticorruption frameworks set up for transport projects in the Bank's East Asia and Pacific Region, for instance, were groundbreaking efforts in this area.

Conclusions

Notwithstanding the comments above, management finds this review to be a very useful overview of the Bank's performance in the transport sector. It has served as a reference document for the ongoing strategy update and will continue to do so during strategy implementation. It reinforces management's views of the importance of further linking the Bank's transport work with other relevant sectors. That interlinkage is key to leveraging the transport sector's contribution to helping countries achieve their Millennium Development Goals. Strong support from the Bank on transport and its interlinkages can help enhance global productivity as part of partner countries' strategies to increase growth and reduce poverty. Management's responses to IEG's specific recommendations are given in the Management Action Record.

Management Action Record	
IEG recommendation	Management response
<p>1. Ensure that the focus of the Bank’s transport operations goes beyond intercity highways and gives more attention to issues of growing urgency, including air pollution, traffic congestion, safety, affordability, and trade. This could entail a trade-off between a portion of the traditional highway business and newer, more complex challenges.</p>	<p>Management agrees with the recommendation and its implication, which is at the core of the transport strategy update now being finalized under the title <i>Safe, Clean, and Affordable Transport for Development</i>. This implies specific enhancements to sector activities to promote increased road safety and appropriate policy response to linkages among transport, energy efficiency, vehicle emissions, short-term public health impacts, and long-term greenhouse gas outcomes, and to overcome physical or service quality transport bottlenecks to regional and international trade in goods and services. However, this evolution, already under way, should not be at the expense of support for high-return and in-demand highway operations.</p>
<p>2. Prepare a Bank Group transport strategy with a six-fold emphasis:</p> <p>(i) Paying greater attention to air and water pollution and realizing environmental gains</p> <p>(ii) Achieving greater synergies across relevant sectors—building on the merging of the Bank’s Environmentally and Socially Sustainable Development and Infrastructure Networks</p> <p>(iii) Enhancing knowledge sharing and analytical and advisory services and their contribution to country strategies</p> <p>(iv) Continuing to support private sector participation through close coordination among the Bank, the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA)</p> <p>(v) Increasing attention to governance and corruption issues</p> <p>(vi) Redeploying staff and budget resources accordingly.</p>	<p>Management agrees with the recommendation and will address it as follows:</p> <p>(i) The Transport Strategy Update will spell out the necessity to widen the application of key environmental issues and mainstream them into the lending portfolio.</p> <p>(ii) The sector will continue to strengthen coordination between transport professionals and other Bank Group units in all relevant areas such as urban planning, rural development, energy, gender, health and education, private sector participation, trade, and transport facilitation.</p> <p>(iii) The Transport Sector Board will encourage concentration of resources to obtain maximum impact by a series of Transport Flagship Reports designed to provide policy and practical guidance while maintaining operational application for development effectiveness. Also, to provide better support to countries preparing poverty-reduction strategies and Bank country teams preparing Country Assistance Strategies based on those strategies, the Transport Sector Board will lead the preparation of specific guidelines on how to address transport sector issues in public expenditure reviews. And to help scale up urban transport operations, the Transport Sector Board will lead the production of operational guidelines on how to implement the vision spelled out in <i>Cities on the Move</i>.</p> <p>(iv) The update to the sector strategy will reconfirm the continuation of the ongoing collaboration both within Bank teams and with IFC and MIGA units to make the most of each entity’s advantage in mobilizing the appropriate private sector skills and resources in support of sustainable transport development operations.</p> <p>(v) Special attention will be given to working across infrastructure sectors to reduce corruption risk in Bank-financed projects, while supporting wider country initiatives to reduce corruption in the transport sector as a whole, and to producing sector-based operational guidelines to enhance project resilience to corruption.</p> <p>(vi) The Environmentally and Socially Sustainable Development Network will lead a strategic staffing and budget review for transport to make the most of network integration, taking into account the skills mix needed under the updated strategy and reflecting operational demand.</p>

(Table continues on next page)

Management Action Record (continued)	
IEG recommendation	Management response
<p>3. Build up the sector's monitoring and evaluation efforts and align them with the new strategy, including through:</p> <p>(i) The development over the next year of relevant intermediate indicators applicable to the broad range of projects</p> <p>(ii) The launch of an enhanced program of rigorous impact evaluations for selected programs</p> <p>(iii) A comprehensive self-evaluation of the experience with Sectorwide Approaches (SWAs) within three years</p> <p>(iv) An independent overview of the Sub-Saharan Africa Transport Policy (SSATP) program within two years.</p>	<p>Management agrees with this recommendation, as progress and accountability in transport and development require more effort to improve measurement of the performance of transport systems, of the results of Bank-financed transport projects, and of the impact of alternative transport policies.</p> <p>Specifically:</p> <p>(i) The transport anchor is leading the development of transport results indicators, both at the sector and project level; these will be implemented across projects and subsectors.</p> <p>(ii) As part of the Development Impact Evaluation Initiative, in collaboration with the Development Economics Department, the transport sector will pilot impact evaluations of selected rural transport operations.</p> <p>(iii) Management agrees and will plan accordingly, because increasing Bank transport lending made through programmatic approaches is one of the proposed priorities of the updated transport strategy.</p> <p>(iv) Management agrees and will plan accordingly in coordination with SSATP donors and partners.</p> <p>Management will consider all of its agreed actions complete after the discussion by Executive Directors of the transport strategy update, the launching of the pilot rural transport impact evaluations, and the self-evaluation of SWAs. The SSATP program is a partnership, so management's commitment is to encourage and support partners to undertake the recommended action. Management will report on implementation results in the context of the sectoral component of the planned regular operational results reports.</p>



Chairperson's Summary: Committee on Development Effectiveness (CODE)

On February 14, 2007, the Committee on Development Effectiveness (CODE) met to discuss *A Decade of Action in Transport: An Evaluation of World Bank Assistance to the Transport Sector, 1995–2005*, prepared by the Independent Evaluation Group (IEG), and the draft management response. A statement of the external advisory panel on the IEG report was circulated as a background document.

Summary of the Evaluation Report

Transport projects have accounted for more than \$30 billion of the International Bank for Reconstruction and Development/International Development Association's commitments during the past 10 years, with a further \$1.9 billion commitment by the International Finance Corporation (IFC). IEG provided the following recommendations to Bank management:

- Expand focus of operations beyond intercity highways and rural roads.
- Prepare a Bank Group transport strategy with a sixfold emphasis: environmental impact, synergies across sectors, knowledge sharing and analysis, private sector role, governance, and redeploying staff and budget resources.
- Build up the sector's monitoring and evaluation efforts.

Summary of Draft Management Response

Management agreed with the thrust of IEG recommendations. Management also felt that the review might have gone even further in some areas such as the interface with other sectors and thematic areas, such as gender, social inclusion, and health; fiscal space; greater differentiation across review periods; and client perspective. Many of these issues are at the core of the update of the transport strategy that is being finalized under the title *Safe, Clean, and Affordable Transport for Development*.

Overall Conclusions. The Committee members commended IEG for a “very useful, timely, and comprehensive evaluation” [words taken from the Executive Directors' written statements]. The Committee also commended the transport sector staff for their hard work, and also for the high

efficacy and developmental relevance of their efforts. Members appreciated staff comments on Regional experience in Latin American and the Caribbean and Africa. There was broad endorsement of the key findings of the review and management's proposed actions, including: (1) expanding work beyond traditional intercity road construction to address emerging needs; (2) reiterating the need for having an integrated Bank Group (including IFC and the Multilateral Investment Guarantee Agency [MIGA]) transport strategy with a sixfold emphasis; and (3) reaffirming stronger monitoring and evaluation. Several speakers also reiterated the importance of listening to clients and taking into account regional approaches. The private sector role elicited a wide range of views. Some speakers would have liked the review to have covered in more detail the effect of the merger of the infrastructure and private sector development sectors in the mid-1990s that had important implications for the present.

Next Steps. The IEG findings and CODE discussion are intended to feed into the ongoing revision of the Bank's transport strategy under the title *Safe, Clean, and Affordable Transport for Development*. Management has proposed to discuss the directions of the transport sector strategy in the upcoming Sector Strategy Implementation Update.

The following main issues were raised during the meeting.

Report Issues. The Committee welcomed the timely IEG review of the experience in the transport sector in terms of helping the preparation of the sector strategy update and also in light of the imminent discussion on World Bank Group strategy and resources. Given the satisfactory performance of transport projects in the last decade, a member wondered why more investments had not been made in this sector. He also felt that the IEG report should have focused on lessons learned from the merger of the infrastructure and private sector development sectors, particularly the impact on the infrastructure portfolio.

Focus of Operations. Members endorsed IEG's recommendation to expand the focus of opera-

tions beyond intercity road construction and to give more attention to "emerging needs," including increased sophistication of demands in developing countries. There is a need to broaden the core business into different types of transport, including city subway systems, light railways, and airports to respond to the specific needs of mainly middle-income countries. However, members also noted the continued need for traditional highways and road infrastructure, especially in low-income countries in Africa. Speakers expressed a diversity of views on whether the primary focus of Bank work should be on the economic rate of return of projects, the cost-effectiveness of the transport mode, or the social dimension of transport projects (for example, the impact on health or gender). *Management noted that economically meaningful transport projects can also provide social benefits and opportunities to disadvantaged segments of the population. IEG also emphasized the importance of road safety, because the cost of road accidents is a heavy burden on developing countries.*

Country Focus. The importance of listening to the clients was noted, while considering that solutions suitable for middle-income countries with existing transport infrastructure may not be as applicable to low-income countries with weaker capacities and regulatory frameworks. A member emphasized the need for an integrated country approach before adopting different transport modes; transport is a national development issue with multisectoral dimensions. In this regard, members stressed the importance of being consistent with varied Regional and country needs. *Management said that countries' demands will be supported depending on the level of transport development and specific needs at the local and Regional level. However, the same policy principles and ways of assessing economic and social viability will be followed.*

Proposed Strategy

Even though the key elements of the current transport strategy (sustainability, private sector development, and urban transport) remain relevant, members generally endorsed IEG's Bank Group transport strategy proposal for a sixfold emphasis and made the following specific comments:

- *Environmental impact*—The current transport projects are more complex because of environmental impact, including pollution and energy, but their costs are higher.
- *Synergies across sectors*—Cross-cutting issues such as traffic congestion, road safety, affordability, and urban and rural development should be taken into account in project design.
- *Knowledge sharing and analysis*—The Bank should promote more analytical work, research, and dissemination and document lessons learned from projects. The public sector has a role to play in knowledge sharing, including on safety and environmental and strategic integration of transport modes.
- *Governance*—The Bank needs to assist its clients in strengthening institutional capacity, including the use of country systems in transport projects. In this vein, one member stressed the importance of national systems' budgeting for maintenance of transport infrastructure. Fiscal space and political economy should be considered in the design of the transport system (for example, roads, railways, and subways).
- *Role of private sector*—There is considerable scope for increased private sector involvement in the transport sector. However, the public sector can play different roles, from investor of transportation infrastructure to regulator. Also, consortia or public-private partnerships can play different roles in approaching social utility, externalities, or market failure. *Management clarified that transport infrastructure investment is predominantly supported by the public sector while transport services are generally provided by the private sector.*
- *Redeploying staff and budget resources*—Appropriate resources, staff skills, and incentives should be in place to address the challenges of implementing the new sector strategy. Suggestions were made on implementation issues such as the need for assessing available and needed resources, hiring of local consultants or academics, and deepening the decentralization of transport sector work.

World Bank Group Strategy. Speakers stressed the need for having an integrated Bank Group-

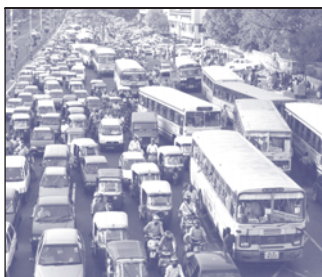
wide transport sector strategy capitalizing fully on the synergies and competencies of different units within the Bank, IFC, and MIGA. They felt the Bank should play a lead role assisting countries in the improvement of the transport sector, including advisory services and technical assistance, while assuring country ownership. The potential conflict of interests for the Bank Group, which offers advice to the authorities on transportation planning, but at the same time is also an investor in transport infrastructure, was raised. Members also stressed the importance of greater coordination with international partners in the design, cofinancing, and supervision of projects. *Management noted that the Bank has a role to play in the improvement of project design, including issues such as safety or the environment. Management has also considered partnerships with other international financial institutions and donors.*

Monitoring and Evaluation Efforts. Members concurred with IEG's recommendation to strengthen monitoring and evaluation, including addressing more decisively poverty indicators, for example, access and affordability; and the development of more indicators, for example, to assess the development impact of improved transport infrastructure and services and a comprehensive self-evaluation of programmatic lending approaches. This will also entail building monitoring and evaluation capacity in the Bank and its clients.

Challenges Ahead

Some members commented on the trade-offs for refocusing the Bank's assistance toward the new challenges identified by IEG. The importance of considering the impact of climate change and natural disasters on transport infrastructure was also noted. *Management indicated that the new strategy will address trade-offs of infrastructure with social perspective, private sector engagement, environmentally sustainable projects, and urban development, which are not separate issues of the overall transport policy.*

Jiayi Zou, Chairperson



Statement of the External Advisory Panel

The members of the external advisory panel appreciate the effort of the Independent Evaluation Group in preparing this report. Not surprisingly, the report emphasizes that the transport sector is one of the most important sectors serving national and international development, accounting for 5 percent to 6 percent of global gross domestic product (GDP). No single United Nations entity deals solely with transport because of its supportive role to all sectors, so the Bank has assumed a crucial responsibility toward its member states and has largely met their expectations.

Over the past decade, well over 15 percent of Bank lending has been allocated to 642 transport projects or projects, with transport elements exceeding \$30 billion in total lending. Bank commitments for transport and transport-related projects rank third in importance after the law, justice, and public administration sector and the social sector.

The report provides a wealth of concise global information, well-chosen examples, and useful case studies, thereby providing firsthand background for understanding the Bank's operations and the effort and views of its transport sector staff. The findings are transparently provided, conclusions are well documented, and the recommendations are soundly formulated. The report, therefore, provides a solid foundation for Bank management to develop and adopt new strategies and measures aimed at achieving present and future global ob-

jectives. It is also of a great value to beneficiary and donor countries and other stakeholders.

It is regrettable that this is the first evaluation of the transport sector operations since the Bank evaluation group was founded in 1973. It would be appropriate to introduce an intermediate, less-extensive 5-year follow-up evaluation that can, together with the individual evaluations of projects, complement the decade-based studies enabling monitoring of Bank operational trends and outcomes versus the Bank's medium- and long-term strategies.

The evaluation adopts a well-structured methodology of successive, interactive, and carefully designed and implemented steps. These cover a literature review, an analysis of the previously mentioned 642 projects, solicitation of special thematic studies on road maintenance and road

funds, a global overview of public-private partnerships (PPPs) in transport, a review of a special transport policy programme in Africa, and information extracted from existing impact studies in Brazil and Morocco and a multilateral study in Ghana. In addition, interviews were conducted with Bank transport staff and with stakeholders (government officials, transport service providers, and interested parties), and detailed country case studies were undertaken in Brazil, India, and Tanzania. Therefore, an admirable geographical balance between developing countries and continents has been achieved. Furthermore, the deliberations and viewpoints of the external advisory panel that arose during the progress of the evaluation have been duly reflected in the report.

The report concludes with recommendations derived logically from the findings and the results of the analysis. The panel supports these recommendations. In addition, however, we would like to emphasize important issues of particular concern. Some of these are already dealt with in the report; others are complementary.

- The failure of some projects to fulfill their objectives and to achieve their institutional and financial targets during the planned time period is discouraging and should be avoided. Realistic and attainable project objectives are necessary, regardless of country or Bank aspirations.
 - The report shows that monitoring and evaluation are rated “least satisfactory” among the subobjectives, in the analyses of the outcomes of the objectives. The panel therefore believes that it is of vital importance for the Bank and the transport sector staff to adopt appropriate strategies and to investigate better methods, indicators, and tools (for example, log-frames and target performance indicators) that are suitable for undertaking “results-based” monitoring and evaluation of projects. These should be defined during the project preparation phase.
 - Bank technical assistance is often unsustainable in recipient countries; therefore, the related strategies need to be reassessed and improved.
- Country-driven ownership is important to attain and is preferable to the imposition and enforcement of “pre-agreement conditions.”
- In some cases hired foreign consultants and Bank staff are unaware of country conditions, national obligations, and needs. Consequently, Bank missions can recommend actions or projects that do not respond to local concerns, priorities, or immediate requirements. If decision makers of the recipient country are unaware of such shortcomings, poorly conceived projects can get started and move forward, wasting time and resources. Bank management should carefully consider the selection of mission team members. Local consultants and academic transport specialists from the recipient country should be professionally contracted, not simply interviewed, as is the current practice.
 - Similarly, Bank training sometimes neglects local context, needs, capabilities, and realities. It should fully exploit local transport education expertise in the recipient country wherever available. If that is not possible, expertise from neighboring countries or those experiencing similar conditions should be utilized. Thus, the provision of realistic initiation, planning, design, and implementation of training would be ensured.
 - The panel strongly supports the reported findings on encouraging the Bank to go for riskier multi-institutional and/or multisectoral projects in developing countries, including road safety, urban transport, and rural transport projects:
 - (a) More than 3,000 deaths result daily from road accidents. Low- and middle-income countries account for 85 percent of such deaths and 90 percent of injuries (1 percent to 2 percent of GDP), and Bank projects with road safety components show mixed results to date, with outcomes often unsustainable. Hence, we call for a more thorough assessment of these projects, analyzing shortcomings, investigating the best methodology, and adopting a new

strategy, including the more cohesive multi-disciplinary approach mentioned in the report.

- (b) Given that the number of cities with a population of more than 1 million in developing countries is expected to increase from 268 to 358 between 2000 and 2015, we encourage more urban transport projects with a strong emphasis on the alleviation of the causes of the transport problem rather than just combating the symptoms, as has been the case in many previous projects. City governance under conditions of urban sprawl might be addressed to improve institutions and reform regulations; loans can be used to leverage these changes.
- (c) Many citizens of developing countries are rural poor, often with low or almost no access to transport; transport of agricultural products to markets is extremely difficult. Poverty alleviation, a key objective of the development agenda, can only be achieved if rural poverty is reduced, transport being an important catalyst. We therefore back more emphasis on sustainable rural transport projects.
- With the reported massive lending for intercity highways infrastructure in the past decade (73 percent of Bank commitments to transport) and in appreciation of the report's clear recommendation to shift the focus of transport operations toward environmental and safety concerns, the panel supports more lending in the next decade for projects that tackle global warming and rising energy costs (for example, land use/transport planning, restraining car use and reducing distance traveled, encouraging modal shifts to environmentally friendly modes, and so forth). This is in addition to including environmental concern in all projects; capabilities and obligations of developing countries should not be ignored.
- In several places the report refers to nonmotorized transport (NMT), pointing out its im-

portance to the poor in urban and rural areas of developing countries and its considerable share of total daily movements. It also emphasizes the inferior conditions of NMT facilities in many countries and the few Bank-related projects. We appreciate this finding and urge that the Bank fund more NMT projects, pointing out the problem of lack of sponsors to finance "outside the government budget" because of the lack of or very low revenue-generation nature of such projects. However, pedestrians and cyclists are also taxpayers. The Bank and its clients should identify new supportive instruments and develop more sustainable NMT strategies, capitalizing on its environmentally friendly nature and its sound economic and health effects on individuals and families, compared with the motorized modes. Support of concerned international agencies (for example, Global Environment Facility, the United Nations Environment Programme, and so forth) should be sought.

- We clearly back the report's strategic call for adequate staffing of the transport sector; the panel certainly supports including more members with long experience as well as young professionals. This ensures a smooth transition of experience, sustainable quality (innovation) and quantity of projects, and knowledge dissemination to clients' staff during implementation of projects; lack of the latter is a shortcoming of inadequate staffing indicated in the transport sector staff interviews.
- It is disappointing for the panel and the world transport community, particularly but not limited to researchers, to see few publications and research done on Bank project outcomes, data, and knowledge-base. Compared with the huge extent of Bank lending and the number of projects in the past decade, the share of transport sector research papers, reports, and publications is just 4.3 percent of the Bank total. It is self-evident that the world will expect much more in the coming decade.
- A country-specific approach to projects is important, because not all conditions prevail and

not all rules are applicable in all countries. This is vital for success and for reaching practical results. For example, metros should only be applicable for megacities, all-weather rural roads only in countries with variable climates, and installation of certain types of information technology services linked to country technological capabilities only to ensure sustainability (maintenance and/or upgrade). History; size; prevailing circumstances and problems; past and expected future development stages; economic, social, and political obligations; the level and nature of bureaucracy; current applied regulations; and institutional performance and the national culture of the public administration all dictate this approach.

- We strongly support the Bank's approach to encouraging private participation and removing obstacles to achieve successful PPPs in the transport sector in developing countries and transition economies. This is particularly important for roads and road maintenance, ports, and airports. It can also be applied in some elements of railways (train operations, track, and maintenance) and particularly encouraged in inland navigation, urban public transport, and some traffic management projects. The lessons of the success of road funds and previous global experience with PPPs in transport are excellently discussed and analyzed in the report and very much appreciated by the panel. We urge member countries and Bank staff to benefit from the useful lessons presented, taking the local context of each country into account with emphases on the required prerequisites for the success of PPPs.
- As reported, when road infrastructure is poorly maintained, the public pays heavily through higher vehicle-operating costs, accidents, loss of travel time, and reduced accessibility to jobs, among other results. However, decision makers in developing countries do not necessarily think in terms of long-term economic benefits. They are rather often engaged in

emergency financing, and the governments frequently lack liquidity for other urgent services. The Bank certainly realizes this fact, and we encourage new endeavors to promote participation of the private sector in maintaining roads and other transport assets. This similarly applies to the operation and maintenance of urban public transport.

- The fight against corruption is also very important. We admire the Bank's continuous effort and invite even greater accomplishments in this respect in the future.
- The panel supports sustaining previous attempts to achieve a balanced allocation of Bank lending by mode, country, and Region, thereby serving the balanced development cause.
- The panel acknowledges the Bank's effort to cooperate with other international funding agencies, as reported, and calls for making such connections closer and more pragmatic and widening them, moreover, to include regional agencies and transport professional institutions.
- Finally, we add to the existing report recommendations directed to Bank management a further two-tier recommendation directed to beneficiary countries—they should benefit from the report contents and findings and also upgrade the know-how and communication skills of their executive and technical staff for better utilization of the capabilities and knowledge of the Bank's missions. This will encourage negotiating sound and successful projects with attainable objectives and sustainable outcomes. Local universities' transport academics and the World Bank Institute have a key joint role to play.

We acknowledge that we have been associated with this valuable study and appreciate learning much from our participation.

Members of the External Advisory Panel

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Henning Lauridsen, Chief Research Engineer, Institute of Transport Economics, **Norway**

Chapter 1: Evaluation Highlights

- Transport is an enabling sector for development and accounts for nearly one-fifth of World Bank Group commitments.
- The products and markets of the transport industry are complex and diverse.
- There is a strong link between transport improvements and poverty reduction.
- Transport services are nonstorable and highly time and route specific.



Study Rationale, Objectives, and Organization

Transport is crucial for economic growth and trade, which are highly dependent on the conveyance of both people and goods. Virtually no production can take place unless inputs such as raw materials, labor, and fuel can be moved from different locations; neither can manufactured products be delivered to consumers, nor a wide variety of services carried out.

Transport is estimated to make a contribution of between 5 percent and 6 percent of gross domestic product (GDP).¹ It is therefore not surprising that transport projects have accounted for as much as \$30 billion of the International Bank for Reconstruction and Development's/International Development Association's (IBRD/IDA) commitments during the past 10 years, with a further \$1.9 billion committed by the International Finance Corporation (IFC).²

Role and Nature of Transport

Reductions in transport costs enable specialization and economies of scale; they can also stimulate trade and production and help to extend markets. Similarly, improvements in urban transport have been shown to enhance urban labor market efficiency and enable changes in the scale and form of urban agglomerations. All these linkages have been confirmed by extensive empirical evidence and show a positive correlation between transport investment and economic outputs.³

But transport is entering a different paradigm. The solutions that were successful in the past may

no longer be so applicable in the future as the world becomes more complex with sometimes competing forces. Those forces come from rapidly expanding and urbanizing populations, trade globalization, new technologies, and more integrated approaches to resolving intricate, multisector problems.

The Bank Group committed nearly \$32 billion for transport projects during 1996–2006.

The products and markets of the transport industry are complex and diverse, and each transport mode has distinctive characteristics. The main modes are road transport, maritime and inland waterway transport, aviation, mass transit systems, railways, and a variety of informal means.

Transport services and infrastructure are complex and diverse.

Most modes provide for both freight and passenger conveyance. A basic distinction is drawn between *transport services* rendered directly to the users and *transport infrastructure* used by transport service providers. Many transport services found in

both industrial and developing countries are privately owned and operated, but privately owned infrastructure is significantly less common. The roles of and interrelationships between the public and private sectors in transport and the sustainability of transport systems and infrastructure are pivotal to successful development.

Transport requirements also vary with the density of population (urban and rural), the distribution of wealth among a country's inhabitants, and the need to facilitate more efficient movements across international boundaries. In the city and the rural village alike, the basic problems are accessibility and affordability. In both cases the poor are often neglected because they cannot pay for services, so governments with scarce resources have to make difficult choices.

Transport provides a high level of indirect support to poverty reduction.

The effects of transport on poverty reduction are not well understood, but growing evidence links transport investment to the improved well-being of the poor.⁴ Research in rural Bangladesh, China, India, and Indonesia, for example, has shown that the greatest returns for agricultural productivity and poverty reduction often result from investments in roads. In Morocco, socioeconomic surveys have demonstrated that the provision of all-weather roads has improved the quality of education, because improved access makes it possible to recruit and retain qualified teachers. Transport provides poor people with the ability to participate better in development opportunities. Improved rural roads, in particular, enhance access to markets, jobs, schools, social services, and health facilities. Currently some 1.2 billion of the world's poor lack access to an all-weather road.

Some facets of transport distinguish it from the other infrastructure sectors.

Improvements in accessibility for the urban poor have similarly been shown to have a marked effect on their access to job opportunities and on the quality of life of low-income city residents. It is predicted that in a few years half of the developing

world's population will live in cities that as yet do not have transport systems that can cope with the expected influx of people.

Many transport sector issues are shared with the other economic infrastructure sectors, such as energy and water. But transport, and especially transport infrastructure, has a number of distinguishing features that bear directly on the relative roles of government and the private sector in their development and management. Notable differences include the following:

- At both national and local levels, transport infrastructure interrelates closely with land use and has a large impact on the physical structuring of the overall economy and its inclusiveness. These are areas of preeminent government responsibility that usually require proactive planning, in addition to appropriate pricing and taxation policies.
- Transport activity, especially in roads, has significant negative external effects (particularly congestion, air and noise pollution, and accidents), which have proved much more difficult to reflect directly in pricing structures than externalities generated in other sectors. This means that government interventions are often needed to improve resource allocation.
- Transport infrastructures tend to have particularly long lives if efficiently maintained, so the economic priority of investing in them depends to a great extent on uncertain predictions of demand in the far future, and capital charges often account for a higher share of the overall costs of service delivery than for the other infrastructure sectors. This means that government absorption of some risks may be necessary to realize investments that are conducive to a desirable physical structuring of the country's territory and economy.
- Transport services are also nonstorable and are highly time and route specific. For these reasons, the difficulties of achieving economically efficient pricing structures require that costs sometimes be recovered from within the sector only by use of cross-subsidies and that some services may need to be subsidized from outside the sector. The great diversity of trans-

port services, and the need for them nonetheless to interlink in manners specific to time and place, also means that special attention often has to be given to coordination among enterprises and agencies operating in the different modes.

Evaluation Rationale, Objectives, and Organization

This evaluation responds to interest from the Bank's Board of Executive Directors regarding both the impact of the private sector on infrastructure and the role of infrastructure in support of the Millennium Development Goals (MDGs). It complements infrastructure reviews already completed by the Independent Evaluation Group (IEG) in the water, electric power, urban, and telecommunication sectors.

The pillars of the current Bank transport strategy define the four main areas that are the primary focus for this evaluation:

- The extent to which client countries have developed *competitive markets* in transport and rethought the respective roles of the private and public sectors in transport supply.
- The extent to which transport projects and strategies in member countries are *sustainable*. This is meant not just in terms of the preservation of physical assets and the ability to address environmental matters, but the whole supporting edifice of an appropriate regulatory and policy framework, sound governance, and an adequate institutional capacity, including an appropriate organizational structure and sufficiently trained personnel.
- The degree to which transport assistance has been able to *contribute to poverty reduction* in both rural and urban contexts.
- Fourth, based on lessons learned and taking into account the availability and adequacy of resources in the sector, an assessment of the readiness of the Bank transport network to respond to the *emerging global challenges* it has identified.

The review has eight chapters. Chapter 2 discusses global trends, Bank strategy, and sector

outcomes. Chapter 3 analyzes the transport portfolio, including performance by mode and by Region. It concludes with a discussion of

Regional donor cooperation and an assessment of nonlending assistance. Chapter 4 is devoted to the Bank's role in promoting private sector participation in transport, and chapter 5 focuses on sustainability, institutional development, and environmental protection. Chapter 6 reviews the contribution of transport to poverty reduction, and chapter 7 examines process, resource, and performance issues pertaining to the transport network. The final chapter presents the main findings, lessons, and challenges this sector is likely to face in the future, as well as the study's recommendations.

Transport services are not storable and are time and route specific.

Evaluation Method

This study is the first major and comprehensive IEG evaluation of the transport sector; in the past only subsectors such as urban transport, railways, and ports have been reviewed. The period covered by the review is July 1995 to June 2006. During this time there were 642 projects with transport components in the portfolio. Of these, 335 have closed and 284⁵ have been evaluated by IEG. This extensive customized database covering all transport modes provided the foundation for an analysis of how the projects performed, their outcomes, and what lessons have been learned.

This study is the first comprehensive IEG review of the transport sector.

A number of instruments were used to conduct this review (further details are in appendix A):

- *Literature review*: Covering published documents on transport issues relating to developing countries, complemented by a review of Bank nonlending transport activities
- *Portfolio review*: 642 projects examined
- *Analysis of existing evaluations*: 57 Country Assistance Evaluations (CAEs); 254 reviews of Implementation Completion Reports (ICRs); 74 Project Performance Assessment Reports

(PPARs) covering 41 countries, of which 20 were specifically selected during the study design for inclusion to ensure a balanced geographic and modal coverage

- *Special thematic studies*: Road maintenance and road funds, a global overview of public-private sector balance in transport, and a review of a special transport program in Africa. Information was also extracted from existing impact studies in Brazil and Morocco and a multilateral study in Ghana.
- *Stakeholder interviews and Bank staff interviews*: One-third of the Bank's transport network staff—representative of both headquarters and country offices—was interviewed. Stakeholders interviewed included government officials, providers of transport services, and interested parties, such as consultants, user groups, and academics.
- *Country case studies*: In-depth analysis of transport activities and stakeholder opinions in Brazil, India, and Tanzania.

Chapter 2: Evaluation Highlights

- Without efficient transport, the productive sectors cannot fulfill their potential, so many of the MDGs will not be achieved.
- Globalization has intensified the need for efficient transport.
- Private sector engagement in transport increased in the early 1990s, but the public sector remained dominant.
- Increased attention by the Bank to the social sectors drew lending away from transport for a while.
- Since 2002 there has been a strong swing back to transport lending as part of the Bank's renewed emphasis on infrastructure.



Global Trends, Bank Strategy, and Sector Outcomes

Globalization, and especially international trade liberalization, has greatly stimulated investment in the transport sector. East Asian economies in particular have been growing at over 7 percent annually for the past 15 years. Accompanying this growth has been a commensurate increase in the demand for transport infrastructure and services.

Global Transport: Trends and Issues

Global competition has intensified the need for efficiency in transport and logistics systems in the delivery chain, from the point of manufacture to delivery to the customer. The challenge for transport providers is to meet future capacity needs and further develop technology to achieve greater efficiency and lower costs. As oil prices have risen, transport has increasingly become the biggest cost factor in the final amount the consumers pay.

International Coordination

Because transport is supportive rather than directly productive, it is inevitably integrated into the strategic frameworks of other sectors. This is why, unlike in many other sectors, there is no single United Nations (UN) entity responsible for promoting and coordinating transport issues, although there are some valuable international initiatives that have established cross-cutting global strategies on specific transport-related subjects. Good pioneering efforts include studies by the United Nations Conference on Trade and Development

on international transport problems facing landlocked countries, the report on prevention of road traffic injuries by the World Health Organization (WHO), the Global Facilitation Partnership for Transportation and Trade, and the International Civil Aviation Organization (ICAO) on air safety and security.¹

Transport features indirectly in many other strategic areas, including air pollution and HIV/AIDS prevention. Predictably, it is an important component in both rural and urban development programs.

Poverty Reduction

The UN Millennium Declaration, the cornerstone of the world's current development agenda, does not specifically feature transport in its 2015 MDGs—goals that include freedom from hunger, universal primary education, gender equality, reduced child mortality, improved maternal health,

Efficient transport is vital for trade globalization.

Transport is an enabling element for achieving the MDGs.

control of disease, and environmental sustainability. Transport does, however, provide accessibility both for rural villagers and urban slum dwellers and is a vital enabling element of achieving many of the MDGs.

The absence of adequate transport can ensure that the poorest people remain in poverty. This is a critical issue when half the world's population lives on less than two dollars a day and a fifth survives on a dollar a day or less.

Transport Efficiency

According to studies undertaken by the UN Conference on Trade and Development (USAID 2001), 11.5 percent of the total value of imports to Africa is related to transport costs. The equivalent percentage for Asia is 7.2 percent and North America, 6.7 percent. On the export side, for many countries in Sub-Saharan Africa, at least 20 percent of the export costs are directly attributable to transport. For landlocked countries such as Malawi, the figure can be as high as 55 percent.

This very seriously weakens the terms of trade for such countries. Transport inefficiencies can also exacerbate the impact of distance. For instance, it can cost three times more and take five times

Privately run transport services are widespread and usually successful.

longer to move a container 500 kilometers (km) inland in China than it does in the United States. Economies of scale are becoming increasingly important and have resulted in the establishment of huge transport hubs, where high productivity can reduce costs dramatically.

Private Sector Involvement

Privately run transport services are widespread and usually successful. Optimism was high in the early 1990s that the private sector could also assume a much larger part of the responsibility for transport infrastructure. But market expectations, especially in developing countries, turned out to be far too ambitious, and after a dramatic decline in the late 1990s recovery only became evident in 2005. Nevertheless, despite a few highly publicized failures, successful private concessions have been established in all modes of transport.

In developing countries transport concessions are most common in middle-income countries, such as Argentina, Brazil, China, Mexico, South Africa, and Turkey. In these countries the volumes of traffic, particularly for toll roads, are more attractive and there is sufficient public sector capacity to engage with potential private sector concessionaires. Despite this progress, for the foreseeable future, the public sector will undoubtedly remain the largest owner and operator of basic transport infrastructure, partly because the transport sector—especially roads—manifests public good characteristics and partly because of growing concerns about safety and security issues.

Infrastructure Sustainability

A lack of capacity to preserve infrastructure assets after construction is a problem confined mostly to developing countries. Inadequate maintenance budgets in the face of widespread poverty, as well as lack of skills and political instability, have all contributed to concerns about the adequacy of asset preservation, especially in the more fragile countries. Positive results have been achieved through introducing a degree of management autonomy, better assurance of funding, greater public participation and more involvement by the private sector.

Transport Sector Growth

In the transport sector, the motor industry has reached maturity in the markets of North America, Europe, and Japan. Globally, however, it is poised for huge expansion with the motorization of China and India. Within a few years China will replace Japan as the second-largest national market after the United States, and over the next 20 years more cars may be built than in the entire 110-year history of the industry (*Economist* 2005).

Similar expansion is expected in the aviation and maritime industries; only in railways is growth likely to be slower. Especially in the developing world, urban growth is surging, and the number of cities with more than 1 million inhabitants is on track to increase from 268 in 2000 to 358 by 2015 (UN Habitat 2001). Although some recent advances in technology, such as telecommuting; electronic pricing; and improved vehicle, fuel, and engine efficiency may to some extent impinge

on likely future scenarios for the industrial countries, for most of the world's inhabitants, such developments may have only peripheral relevance in the short to medium term.

Environmental Issues

We now live in a global community. Not only poverty, but air pollution, transmission of diseases (including HIV/AIDS), and safety and security all have important transport aspects. Reducing the negative impacts of transport activities needs an integrated international approach involving multiple sectors. If the transport challenges for the next decade are to be met, then environmental issues and sustainable development must be more prominent in the design of future transport projects. For cities in developing countries, some experts (Gwilliam 2005) are calling for more imaginatively designed public transport projects that will be more creative in the structuring of passenger fares, better complement land use policies that assist the poor, and combat traffic congestion through the supply of cost-effective solutions such as bus rapid transit systems, parking strategies, and road pricing schemes.

Foundations and Relevance of the Bank's Current Transport Strategy

The existing Bank transport strategy has evolved from the accumulation of considerable experience over a long period.² The only formal sector strategy paper produced by the Bank on transport, however, is *Sustainable Transport: Sector Review and Lessons of Experience* (World Bank 1996, and as updated in Sector Strategy Implementation Updates [SSIUs]). Three widely distributed reports, however, have played a role in shaping the current Bank strategy: the *World Development Report: Infrastructure for Development* (World Bank 1994b), *Sustainable Transport: Priorities for Policy Reform* (World Bank 1996), and *Cities on the Move* (World Bank 2002a). A fourth report on safe, clean, and affordable transport for development is in the consultation stage. It is intended that this document provide a formal basis for an update of the Bank's 1996 strategy paper for the period 2007–15.

The essence of the latest thinking is that virtually all the arguments that formed the basis of previ-

ous documents remain valid, but today several issues need much greater emphasis—a view this evaluation confirms. Finally, an infrastructure action plan from 2003 is also important and relevant because it launched a scale-up of Bank infrastructure investment, including transport. Each of these documents is now briefly considered.

World Development Report 1994

In the early 1990s there was growing support for the notion of greater participation by the private sector in the provision of infrastructure. This stance was encouraged by arguments questioning infrastructure's inherent natural monopoly structures. For example, the theory of contestable markets was influential in airline deregulation. Gomez-Ibanez and Meyer (1993) reported that privatization in transport on balance seemed to have been more beneficial than not but was not a panacea. The privatization solution, among other things, depended on the competitiveness of the markets served and the extent to which efficiency gains could be realized.

The Bank's 1994 *World Development Report* (WDR) was the seminal document propelling the Bank toward the **greater use of the private sector in infrastructure. It concluded that many developing countries would benefit through economic growth and poverty reduction if incentives to providers were clarified and strengthened.** This could be achieved by giving management more autonomy and focusing accountability on service to customers; by structuring the sectors and relevant regulation in a manner to promote effective competition; and by giving users and other stakeholders more voice and responsibility in planning and regulatory arrangements.

Increased reliance would be placed on the private sector for the direct provi-

The motor industry is poised for strong growth, which heightens environmental concerns.

The 1994 WDR propelled the Bank toward greater use of the private sector in infrastructure.

Private sector involvement varies in intensity from one country to another.

sion of infrastructure and services (including transport). Services would benefit from the positive experiences in a number of countries in the industrial and developing world alike. Governments would concentrate on creating and maintaining legal and regulatory frameworks to attract private providers. At the same time, they would safeguard the interests of the poor, improve environmental conditions, and coordinate cross-sector interactions. In urging consideration of increased reliance on private sector providers, the WDR also recognized that private involvement would inevitably grow at substantially different rates in different countries. Those rates depend on private capacities, the ability of government to provide an appropriate regulatory framework, the performance of public sector providers, and political consensus in favor of private provision.

Sustainable Transport

The ideas in the WDR were expanded on in the context of the Bank's 1996 *Sustainable Transport* paper, which found that the dominance of the public sector in the operation of transport services had in some cases resulted in adverse effects. Those included high costs, lack of flexibility in service provision, and assets not being properly maintained.

Sustainable Transport encouraged substantial changes in government's role. To redress these shortcomings the report ***advocated the Bank to encourage substantial changes in the role of government in transport, reducing its function as a supplier but increasing its function as a regulator.*** It recognized that governments need to create a proper institutional framework for competition, set economically efficient charges for the use of publicly owned transport infrastructure, and increase community participation in decision making. The theme of "sustainability" was comprehensive and intended to include economic, financial, environmental, and social sustainability.

Cities on the Move focused attention on transport modes in urban areas. ***Cities on the Move*** A few years later, a Bank urban transport strategy review entitled *Cities on the Move* (2002a) concentrated

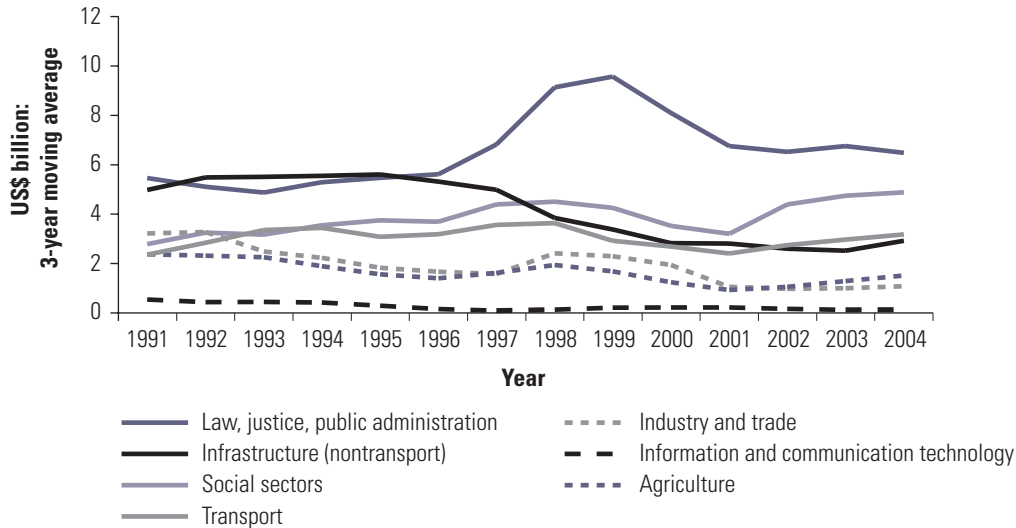
on the social exclusion aspects associated with urban inaccessibility. Its objectives were ***to develop a better understanding of urban transport problems and to articulate a strategic framework that could be applied in developing countries.*** The report recognized that urban growth increases transport costs: "Economies of agglomeration generate the growth of cities. As cities grow and become richer, vehicle ownership and use grow more rapidly than the available road space, resulting in increased congestion and traffic-generated air pollution."

The report also observed that the number of megacities—cities with more than 10 million inhabitants—is expected to double within a generation. It recognized that increased use of private vehicles in cities is contributing to falling demand for public transport and a subsequent decline in service levels. Sprawling conurbations have made the journey to work excessively long and costly for many of the poorest people, while pedestrians and nonmotorized transport continue to be inadequately served. The paper concluded that transport provision can play an important role in social safety nets.

Changes in Poverty-Reduction Strategies

During the mid-1990s, the prevailing view inside the Bank was that the rapid growth in the volume of private infrastructure investments would continue unabated. At that time there was also increasing concern about the Bank's public image, following potentially damaging opposition by sections of civil society to a handful of large but high-profile infrastructure schemes. This undoubtedly accelerated a strategic shift in the Bank's focus, from infrastructure to the public administration and the social sectors (figure 2.1).³

The shift also reflected a growing view that there should be a more direct focus on poverty reduction, given the neglect of the social areas discussed in the context of the IDA Replenishment Agreements and of the Highly Indebted Poor Countries Initiative. Spending on infrastructure was further dampened by the Asian financial crisis, which had a global knock-on effect for many developing countries. From 1998 to 2002 the

Figure 2.1: Trends in IBRD/IDA Lending by Major Sector Groups, 1991–2004

Source: World Bank data.

Bank cut back its infrastructure lending from \$9 billion to about \$5 billion per year; at 30 percent of total Bank lending this was an all-time low. Transport lending by IBRD and IDA peaked in fiscal 1997 at an annual average of almost \$4.0 billion before falling off sharply to \$1.7 billion by fiscal 2000.

By 2002 it had become clear that the reduction of infrastructure lending was a cause for concern. There was general concurrence that for developing countries total infrastructure investment should be in the region of 5.5 percent of GDP, but it was reported that only 3.5 percent was actually being realized. Representatives of some large developing countries expressed dismay that investments in intercity highways in particular were lagging behind. Private sector investment in infrastructure had peaked globally at about \$110 billion in the late 1990s before declining to around \$58 billion in 2002. At the same time, there was recognition of the links among infrastructure service provision, increased economic growth, and the reduction of poverty as expressed in a number of contexts, including the MDGs.

The World Bank Group acknowledged that reversing this trend required scaling-up infrastruc-

ture spending. It launched an infrastructure action plan to reassess and accelerate its infrastructure lending program. This plan included anticipating client demand for infrastructure, rebuilding the knowledge base, and creating new lines of business and instruments to meet emerging client needs. Figure 2.1 shows how transport commitments by IBRD/IDA fluctuated immediately before and during the study period and illustrates the trends described in this section.

By the end of fiscal 2004 transport commitments at \$3.7 billion had returned almost to the nominal level experienced in fiscal 1997. Roads and highways continued to dominate the new portfolio.

Update of Sector Priorities

The Bank's Transport Sector Board is currently updating sector priorities for the period 2007–15 in a draft document. This draft recognizes that the world's thinking on economic development has moved on and that initiatives such as the

A combination of factors, including greater attention to poverty reduction, reduced attention on transport and infrastructure in the late 1990s.

Recognizing infrastructure was linked to growth and poverty reduction, the Bank shifted its attention back to the transport sector in 2002. MDGs are now central to the development debate. **While the fundamental pillars of the Bank transport strategy remain valid, the draft calls for additional emphasis on issues related to poverty reduction, international trade, the environment (especially in cities), and safety.**

In four of the MDG goals, health and environmental sustainability are crucial issues. In these areas transport can contribute strongly by reducing road traffic accidents, controlling vehicle emissions, and taking measures to restrict the transmission of disease where transport has a role.

Making transport more affordable is a major challenge; not only can high transport costs discourage trade and economic growth, but they can also reinforce the economic and social exclusion of the poorest people, both in the rural and urban contexts. Although these policy issues are not new, until recently they have not been accorded top priority or applied in a sufficiently meaningful number of projects.

This review thus looks for evidence as to how these issues have been addressed during the past

Increased involvement of the private sector in transport improves accountability and efficiency, but the extent of investment has been disappointing.

10 years and suggests how the Bank can learn from its experience in changing its strategic emphasis. Recently the Bank Environmentally and Socially Sustainable Development Network (ESSD) was combined with the Infrastructure Network. The purpose of consolidating these two networks is to mainstream environmental issues, improve synergies, better integrate core operations, and

strengthen the focus on sustainability. Some of the lessons of experience described in this evaluation may assist the deliberations emanating from this new alignment.

Sector Outcomes

Encouraging Competitive Markets/Assisting in Balancing the Roles of the Public and Private Sectors

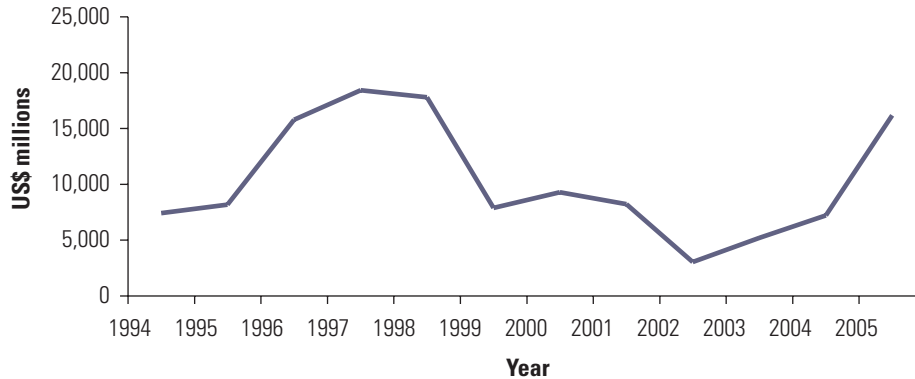
At the broadest level there is little doubt that the WDR was correct in noting that increased involvement of the private sector in transport would improve accountability and efficiency. That claim has proved to be substantially correct in most Bank projects evaluated. Despite a few failures, according to the extensive background paper prepared on this matter, the vast majority of project outcomes worldwide have also been positive. Efficiency and service indicators have typically shown sustained improvement following the introduction of private participation, while many projects have helped establish the regulatory frameworks necessary to safeguard the public from the abuse of monopoly power and to ensure compliance with safety and other issues of public concern.

However, the extent of investment by the private sector in transport infrastructure has been disappointing. In the early 1990s there were expectations that the private sector would play a substantial role in the provision of such infrastructure. Indeed, investment in developing countries did show early growth, but it peaked in 1997 at \$18.4 billion (figure 2.2).

In 2002 it then collapsed to \$2.9 billion as better opportunities for scarce funds were perceived during a period of financial instability. Financial returns on transport projects were seen as being very long term and therefore risky. Confidence has been restored just recently, with \$16.2 billion committed in 2005. The Bank erred in reducing commitments to transport infrastructure so severely in the late 1990s, despite the warnings in the *Sustainable Transport* paper that filling the gap through private sector funding was unlikely to succeed.

Increased private sector involvement in transport infrastructure concessions has had positive effects on both technical and allocative efficiency. Here the Bank has played a modest role in supporting

Figure 2.2: Private Sector Investment in Transport Projects in Developing Countries, 1990–2005



Source: World Bank data.

toll-road concessions; it has played a more substantial role in railway restructuring in Latin America (especially Brazil) and in support of railways transitioning from command to market economies in Eastern Europe and Central Asia. The Bank Group has also given substantial support to privatization of ports and waterways projects and more recently to aviation projects.

Helping Clients Achieve Sustainable Management of the Sector

The Bank's main contribution to the road subsector has been through the encouragement of private sector involvement in road and maintenance management. It has had some success in improving road department accountability, often by establishing road agencies and road funds and contracting out to the private sector—not only construction and rehabilitation, but also routine maintenance, design, and general supervision. Transparently competitive tendering of works against performance-based specifications has been a significant step forward.

For the other transport subsectors, sustainability has been less of an issue, because after the introduction of private sector business principles and appropriate financial models, far fewer problems have ensued. This situation assumes that governments meet their obligations for subsidizing

services that are not financially viable but that are deemed to be in the public interest and that they do not interfere in labor issues.

For urban transport there has been growing recognition of the need for integrated efforts between public sector officials responsible for road infrastructure, traffic flow, and parking regulations and the increasing number of private bus companies, with interdependent performance targets jointly set. A key issue is whether the Bank has supported enough projects of this nature.

Supporting Transport Projects Contributing to Poverty Reduction

Many transport projects indirectly support poverty reduction, but the linkages are frequently difficult to measure. The most important contribution of increased private participation in reducing poverty is through its effect on the efficiency and costs of transport and consequently on the competitiveness of other sectors and on general economic growth.

Such effects often have a stronger distributive dimension in the transport sector than in other infrastructure

The Bank has had successes encouraging greater private sector involvement in roads.

Many transport projects indirectly support poverty reduction.

sectors because of transport's special role in the geographical spread of development. In the literature review, however, no substantial evidence of serious negative impacts on poor people resulting from transport privatization actions has emerged.

The distributional impact of transport projects is relatively underresearched, but there is evidence from, for example, the rural road impact study in Morocco (appendix B) that village road improvements can significantly affect school enrollment and attendance. Similar evidence shows that clinics, nutrition programs, and

Under Bank leadership an indicator of rural accessibility has been established.

even credit extension depend on transport in one way or another, aside from the obvious direct benefits from improved access to produce markets and from new employment opportunities in road construction and maintenance. Because transport provides accessibility for both rural villagers and urban slum dwellers, it is recognized as vital to achieving many of the MDGs.

Considerable international attention and funding have been made available toward the achievement of these goals, but one problem has been the unavailability of suitable indicators to measure progress. Under Bank leadership the first indicator has now been established for rural accessibility. "Sustainable access to rural transport" measures the number of people who live within a 2-km walk of an all-season road. When other companion indicators are developed in the near future, it will be possible to better quantify progress in poverty reduction internationally because of improved transport infrastructure and services. More impact studies on the effects of improved accessibility would, however, be beneficial.

A further area that could be improved is the achievement of substantive and lasting capacity building. During the past decade, results have been patchy in this area because the traditional sector approach often appears to be inadequate for tackling a problem that can cut across several

sectors. Recent moves to introduce programmatic, multidonor approaches may yield better results.

Responding to Global Transport Sector Challenges

These have been identified as safety, reductions in vehicle emissions, and improvements in transport affordability. Every day around the world, more than 3,000 people die from road traffic injuries, with low- and middle-income countries accounting for nearly 85 percent of the deaths and 90 percent of the injuries. Although the number of deaths in industrial countries is declining, the figure for developing countries is increasing rapidly; by 2020 it is predicted that road traffic injuries will be the third leading contributor to the global health burden.

WHO and the World Bank have jointly produced a *World Report on Road Traffic Injury Prevention* (WHO 2004). It suggests that such injuries are a growing public health issue, disproportionately affecting vulnerable groups of road users in developing countries. Road traffic injuries cost low-income and middle-income countries nearly 2 percent of their GDP—often more than the total development aid received by these countries. Sector-wide efforts to reduce the incidence of such injuries have for the most part been fragmentary and relatively ineffective. Completed Bank projects with road safety components have had mixed results, and the outcomes have not always been sustainable.

The direction now is toward a more cohesive approach whereby the problem would be tackled on a multidisciplinary and cross-sectoral basis. A similar course of action is being followed by the aviation sector with the ICAO, based on concerns about deteriorating safety and security standards in some developing countries.

Road transport alone accounts for nearly a quarter of the man-made gases said to accelerate climate change. Public transport offers clear advantages for reducing congestion and pollution, as well as for increasing safety. Progress, however, has often

been disappointing. Private vehicle users rarely pay the true costs they impose on society, and this encourages urban sprawl. At the same time, decentralized cities with lower population densities and long trip distances increase the cost of providing public transport. The urban poor, who usually reside on city peripheries, are often marginalized by the lack of accessibility. The Bank has led some initiatives and prepared both general and specific guidelines in this area, but much more remains to be done.

Policies to ameliorate the problem of poor air quality are gradually being implemented in the industrial world, and some pioneering work has been done in developing countries, especially Brazil and Mexico, and in some Asian cities. The Bank has been at the forefront of this activity and produced a report entitled *Reducing Air Pollution from Urban Transport* (World Bank 2004a) aimed at national and local policy makers involved in air quality management. Implementing these ideas is still work in progress, especially

in poorer countries where politicians are more concerned with pressing basic needs.

Progress on affordability has been more substantive. The delivery of transport services and infrastructure has generally become more efficient with greater involvement of the private sector, but this has not al-

ways resulted in savings passed on to the poor. Much more attention needs to be given to appropriate pro-poor subsidization policies and the relationship between land use and transport costs. Globalization and rising fuel prices have reinforced the pressures of market forces on transport providers to ensure they are as efficient as possible. However, as demographic and factor costs continue to rise, further innovation and experimentation will become necessary. The Bank is a player but could become a real change agent in this arena.

Road transport accounts for nearly a quarter of the man-made gases contributing to climate change.

Chapter 3: Evaluation Highlights

- Transport lending commitments have fluctuated considerably during the review period. Roads dominate the portfolio.
- India and China account for 42 percent of all transport commitments.
- Average project size has increased over the past 10 years.
- Project outcome ratings have steadily improved over the past decade.
- Transport sector-wide approaches and program-based approaches will need to be evaluated more systematically when initial projects have been completed.
- Greater donor cooperation looks promising despite coordination issues.
- Nonlending assistance and knowledge dissemination have been given insufficient attention.



Bank Support to the Transport Sector

Total IBRD/IDA transport commitments fluctuated considerably over the past decade (figure 3.1). At their highest volume, just under \$4.0 billion in fiscal 1997, they constituted 21 percent of all Bank lending. At their lowest point, \$1.7 billion in fiscal 2000, they were just 12 percent. But the *average* for annual commitments for transport, at 15 percent, was one of the highest shares of sector lending during the decade.

Trends in Bank Lending to Transport

These fluctuations reflect the relative weight attached to infrastructure in the Country Assistance Strategies (CASs), mirroring the strategic thinking at the time. The low point in 2000 came from a greater emphasis on the social and public administration sectors, while the recent peak in 2004 was a result of the increased priority accorded to infrastructure investment in general. In fiscal 2005 the upward trend dipped, because of constraints in IDA lending in Africa and postponed activities in East Asia. However, the upward trend has resumed; based on the value of projects in the pipeline, it is expected to stabilize at around \$3.5 billion per annum.

During the past decade an average of 84 percent of commitments for transport were prepared under the Transport Sector Board, with the remaining 16 percent prepared as part of projects in other sectors such as urban or agriculture. In these latter cases, transport was typically a minor component. On average, some 26 transport proj-

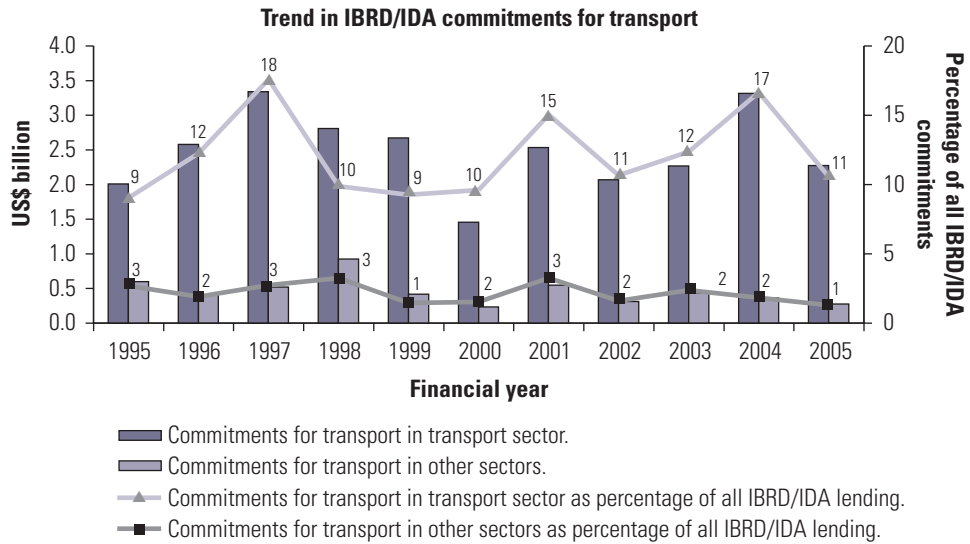
ects were completed annually. Meanwhile, the average transport project size has shown an upward trend, from \$100 million in 1995 to \$150 million in 2005 (figure 3.2). The Bank's Public-Private Infrastructure (PPI) database for developing countries shows that the concentration of transport lending to the larger borrowers—such as Argentina, Brazil, China, India, and, more recently, Indonesia and Mexico—has contributed to the increasing average project size because these borrowers have the capacity to manage very large investment programs.

Most of the countries receiving the largest share of transport lending are in the middle-income group; the seven top countries in the period 2001–05 also featured in the preceding 5-year period, with some slight differences in

The majority of projects were prepared under the purview of the Transport Sector Board.

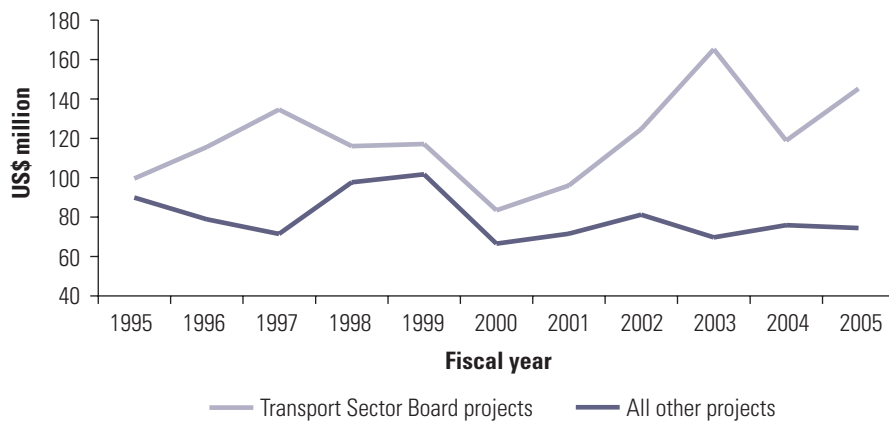
Lending has increasingly concentrated on a few middle-income borrowers.

Figure 3.1: Trends in IBRD/IDA Commitments for Transport, Fiscal 1995–2005



Source: World Bank data.

Figure 3.2: Trends in Average Project Size, Transport Sector Projects versus All Other Projects, Fiscal 1995–2005



Source: World Bank data.

ranking order (table 3.1). India recently displaced China as the largest borrower, while Brazil is ranked third, Indonesia fourth, and Argentina fifth. These five countries currently account for 54 percent of all transport lending.

The concentration of transport commitments in China and India has increased from 31 percent to 40 percent of all transport lending over the past decade. An analysis of all nontransport Bank commitments for the same period (appendix A, table

Table 3.1: IBRD/IDA Commitments for Transport (\$ billions): Share of Top 5 and Top 10 Countries, Fiscal 1995–2000 and Fiscal 2001–06

Country	Commitments for fiscal 1995–2000		Country	Commitments for fiscal 2001–06	
	Share of total (%)	Commitments (\$ billions)		Share of total (%)	Commitments (\$ billions)
China	24	4.2	India	25	4.2
Brazil	10	1.7	China	14	2.3
India	7	1.3	Brazil	7	1.1
Russian Federation	7	1.2	Indonesia	5	0.6
Argentina	6	1.1	Argentina	3	0.5
Indonesia	3	0.6	Vietnam	3	0.5
Mexico	3	0.6	Mexico	3	0.4
Bangladesh	3	0.5	Colombia	2	0.4
Vietnam	2	0.4	Congo, Democratic Republic of	2	0.3
Poland	2	0.4	Egypt, Arab Republic of	2	0.3
Total (all other countries)	33	5.9	Total (all other countries)	34	6.2
Total	100	17.9	Total	100	16.8
Share of top 5 countries	54			54	
Share of top 10 countries	67			66	

Source: World Bank data.

A.1) shows that the focus on India and China is less marked and has fallen from 17 percent of all commitments in fiscal 1996–2000 to 11 percent in fiscal 2001–05. This means that the transport share of the India and China portfolios has been growing at a time when their overall portfolios have been diminishing. In both cases this was driven by high-level national government perceptions that aspects of their development vision were being hampered by insufficient transport infrastructure investment.

Bank transport commitments for the top 10 borrowers have shown a marginal decrease over the decade, from 67 to 66 percent (table 3.1), while there has been a larger decrease in nontransport commitments, 59 percent to 53 percent (appendix A, table A.1). This means that overall the transport sector is gradually increasing its share of Bank lending to middle-income countries. While this helps address concerns about the dwindling demand overall for Bank loans from this group of countries, it raises questions as to whether the balance between middle- and lower-income countries is appropriate.

Twenty percent of transport commitments are to upper-middle or high-income¹ countries, 42 percent are to lower-middle-income countries, and the remaining 38 percent are to low-income countries (less than \$825 per capita), mostly financed through IDA credits. IBRD project outcomes are similar to those of IDA, but on average the sustainability of IBRD projects is superior (77 versus 68 percent). Although the IDA share has been variable, in recent years it has accounted for roughly one-third of transport commitments.

Final disbursements in aggregate are nearly always lower than commitments, because in only a few projects are all commitments actually used. This can be because of changing needs and circumstances or because of exogenous factors affecting the projects. During fiscal 1995–2005, about 83 percent of Middle East and North Africa Bank Region commitments were disbursed, compared with 80 percent for East Asia and the Pacific, 78

In India and China, the share of lending for transport has grown in a diminishing portfolio.

percent for Africa, 77 percent in South Asia, 60 percent in Europe and Central Asia, and only 55 percent for Latin America and the Caribbean.

The reasons for the lower levels of disbursement in the latter two Regions include the cancellation, scaling down, or curtailment of large projects in countries such as Brazil, Colombia, Mexico, the Russian Federation, and Turkey because of financial crises, changing circumstances, or, occasionally, noncompliance with Bank requirements. IEG background research indicates that transport projects are more vulnerable to postponement when financial crises occur because the short-term impacts are less visible and the repercussions more politically manageable than for cutbacks in health, education, and social spending.

Overall Project Performance

IEG ratings of the overall project outcome of Transport Sector Board projects show that the performance has been consistently better in comparison to nontransport projects (table 3.2). In the most recent period, fiscal 2004–06, satisfactory outcomes have been achieved at a level 10 percentage points higher than for all other Bank-

supported projects; sustainability is likely in 7 percent more projects. However, the percentage of projects with an institutional impact of substantial or better that formerly exceeded the percentage for all Bank-supported projects is now about the same, in part reflecting a trend toward less challenging transport projects (see chapter 7).

An issue sometimes raised by clients or Bank staff is that, although transport projects have been performing better than projects in other sectors, projects in the transport sector are relatively narrowly focused. In other words, roads predominate in the portfolio. There is also some evidence from the Quality Assurance Group (QAG) and from the results of the staff interviews that multifaceted urban projects are sometimes avoided when preparation time is lengthy—because of the need to attend to many safeguard issues, multiple stakeholders, and major environmental issues, thus increasing the risk of failure.

Progress in institutional development has been attributable at least in part to greater private sector involvement and a more commercial approach to road management (see chapters 4 and 5).

Table 3.2: IEG Ratings of Overall Project Outcome, Institutional Development, and Sustainability by Exit Year, Fiscal 1992–2006 (Transport Sector Board projects versus all other Sector Boards)

IEG Rating	Board		Fiscal 1992–94	Fiscal 1995–97	Fiscal 1998–2000	Fiscal 2001–03	Fiscal 2004–06
Outcome: Moderately satisfactory or better (%)	Transport	All projects	69	78	84	86	89
		Excluding large borrowers ^a	71	70	82	74	88
	All other	64	67	68	72	79	
Institutional development: Substantial or better (%)	Transport	All projects	25	37	63	68	57
		Excluding large borrowers ^a	27	33	57	66	50
	All other	30	32	37	45	57	
Sustainability: ^b Likely or better (%)	Transport	All projects	46	55	70	74	78
		Excluding large borrowers ^a	47	43	66	71	71
	All other	44	47	54	64	71	

Source: World Bank data. See also figures in appendix A.

a. Argentina, Brazil, China, and India.

b. Resilience to risks of future net benefit flows.

Although sustainability ratings have shown steady improvement, they are likely overstated for countries with weak capacity. This is the category most frequently downgraded in subsequent PPARs,² where the assessments are usually made 2–4 years after project closure. Overall, table 3.2 shows in all categories lower ratings if the four largest clients are excluded; this is generally because such countries have substantial institutional capacity compared with many poorer countries.

Modal Comparisons

The most striking aspect of table 3.3 and figure A.4 in appendix A, showing the modal distribution of Bank commitments, is the predominance of the road sector. For fiscal 2001–06 the percentage shares for railways (eight), aviation (three) and ports (three) are relatively small. Urban transport is mostly classified under “general transport.” A deeper analysis shows, however, that if urban roads and streets are added from the general to the roads category, then the percentage share of transport commitments that are road related rises to almost 80 percent of the portfolio. Meanwhile, the shares for railway and port projects have slightly decreased, and those for aviation and general transport have slightly increased.

Roads

In virtually all countries, roads and highways are the predominant form of land transport, fre-

quently carrying more than 80 percent of passenger kilometers and a significant percentage of freight ton-kilometers.³ Not surprisingly, a correspondingly large number of the transport projects supported by the Bank are also road projects (rural, urban, and intercity), and in general the physical objectives of these projects are implemented successfully.

Of the 97 Transport Sector Board road projects with specific physical upgrading and rehabilitation objectives completed and evaluated, 79 percent have been rated

moderately successful or better on outcome (see table 3.4). These results were fairly equally distributed through the various regions. IEG’s records show that on average an economic rate of return (ERR) of 29 percent was achieved during the past

10 years; sound supervision practices and advice from the Bank were often indicated in both ICRs and PPARs as important reasons for the positive outcomes.

IEG ratings for transport projects have normally been better than for other projects but are less satisfactory when the top four borrowers are excluded.

The transport sector is relatively narrowly focused because roads predominate; projects with a long preparation time are sometimes avoided.

Table 3.3: IBRD/IDA Commitments for Transport (\$ billions): Distribution by Transport Mode, Fiscal 1995–2000 and Fiscal 2001–06

Transport mode	IBRD/IDA commitments fiscal 1996–2000		IBRD/IDA commitments fiscal 2001–06	
		(%)		(%)
Roads	13.0	73	11.9	73
Railways	1.5	9	1.3	8
Ports	1.2	6	0.5	3
Aviation	0.1	0	0.5	3
General transport	2.2	12	2.2	13
Total^a	17.9	100	16.3	100

Source: World Bank data.

Note: “Multimodal” projects have been redistributed among the appropriate modes.

a. Totals may not add up exactly as a result of rounding.

Table 3.4: Transport Sector Board Projects, Fiscal 1995–2006: Analysis of Performance by Physical Infrastructure Objectives

Subobjective	No. of closed projects with physical objectives rated by IEG	No. of objectives rated moderately satisfactory or better	Rated moderately satisfactory or better (%)
Roads and highways (greenfield)	14	11	78
Roads and highways (upgrading and rehabilitation)	51	40	78
Rural roads (local)	15	12	80
Urban roads	17	14	82
Aviation (public)	3	2	67
Ports and inland waterways	13	10	77
Railways	14	11	78
All physical infrastructure	127	100	79

Source: World Bank data.

Most road-upgrading projects achieve their physical goals.

Examples of good practice in road projects, whereby sound design and construction lead to positive ERRs, stand out in many countries, including Armenia, China, Lao People's Democratic Republic, Latvia, Nicaragua, and Peru. In Peru significant improvements were made to rural accessibility, and transport tariffs for freight declined by between 9 percent and 15 percent. In Nicaragua the project's success was in part due to successful donor coordination.

A variety of mechanisms has been introduced to improve maintenance.

Cases do exist of outright failure or very serious delays, but these are mainly in countries that have experienced political instability such as Guinea-Bissau, Haiti, Niger, and the Republic of Yemen. In the north of the Republic of Yemen the 157-km Harud-to-Huth road took more than 10 years to complete because of a combination of factors ranging from damage caused by flash floods, to slope instability problems, to civil disturbances that eventually resulted in military protection being given to contractors to finish their work.

As far back as 1988, the Bank estimated that road infrastructure with a value of \$45 billion had been lost because of inadequate maintenance in the 85

developing countries reviewed (World Bank 1988). Having to rehabilitate paved roads too frequently because of neglect could conservatively be more than three times as expensive for the road authorities (based on undiscounted costs) as maintaining them on a regular basis.⁴

Despite the Bank's emphasis on adequate and timely road maintenance, this objective was seldom satisfactorily accomplished. The limited funds allocated to roads were often wasted through inefficient work methods and too much spending on new construction at the expense of the maintenance budget. As a result, a high proportion of the roads in developing countries remained in poor condition.

In response, the Bank in 1995 supported a new approach. By that time, governments in many countries were beginning to improve the services and efficiency of infrastructure by private sector participation in road operations. This included maintenance by contract, competitive tendering, and improvements in management and accountability through the establishment of road agencies, funds, and boards.

At the same time, scarcity of government tax revenues encouraged some countries to seek alternative financing mechanisms, such as toll con-

cessions and surcharges on fuel costs. In cases where roads were carrying traffic volumes in excess of 10,000 vehicles per day, those roads were potential candidates to be tolled to generate revenue. This approach has developed significantly over the decade, and the Bank has often played the role of facilitating the right environment. IFC has made commitments to only two toll roads during fiscal 2001–05 (see chapter 4).

Through urban road projects the Bank has also become involved with issues related to traffic congestion, traffic management, and externality costs. The pressure for additional road space is relentless, with the pool of motor vehicles worldwide growing by 3 percent annually. Concerns increasingly center on exhaust emissions, continued reliance on fossil fuels, and a worsening road accident rate.

Railways

For nearly a century railways worldwide were at the forefront of technology in passenger and freight transport. But from the early 1930s their primacy began to erode, with increasing competition from other modes of transport. Rail technology has not kept pace with competing transport technologies, but for the conveyance of bulk commodities and the transport of goods in containers over long distances, the mode remains competitive. For social or environmental reasons, many countries continue to operate uneconomic rail services that are dependent on subsidization, while others have not invested sufficiently to replace aging infrastructure, or have allowed the buildup of a relatively large and unproductive labor force.

This situation is exacerbated in many developing countries, especially in Africa, where railways were originally constructed to carry mineral exports from the interior to the coast and where volumes of general freight are often insufficient to maintain a viable service. Passenger traffic has to some extent shifted away from the railways, but in some developing countries, such as India, this mode remains important for the mass movement of low-income passengers. Indian Railways tariff policies that overcharged freight to subsidize passenger travel caused a loss of freight traffic to road transport. However, the organization currently is undergoing a major transformation.

Over the years the Bank has had mixed experiences with railways. In 1993 an IEG review of lessons and practices from railway projects showed that only about half of the 40 projects completed between 1985 and 1992 were considered satisfactory (IEG 1993b). Principal reasons for the shortcomings were insufficient authority of railway management over rates; the lack of a commercial approach to the transport market; resistance to change by railway management, labor unions, and government institutions; inefficient operations; and the Bank's reluctance to penalize failure to comply with loan covenants. Traffic in almost all the projects evaluated had been expected to grow to some degree; yet in practice freight traffic declined in more than half of these railway systems.

This rather sobering analysis led to greater selectivity in railway projects whereby the potential borrowers had to demonstrate their commitment to a change process⁵ and more thorough preparatory work had to be undertaken. There was also growing interest in railway concessions following the accomplishments in Argentina in the early 1990s and later in Brazil, in which the Bank was involved. Although the Bank has supported a number of railway privatizations, the preference in some parts of the world (especially Asia) is to continue to support state-owned railways. In such cases Bank policy permits assistance to achieve more efficient and effective operations of the public rail companies, while encouraging opportunities for private sector participation and the privatization of noncore businesses, where feasible.

In the countries of Eastern Europe and the Commonwealth of Independent States that are making the transition from command to market economies, there has been a major contraction in the rail market. This was caused by the restructuring of extractive and heavy industries at the

Railways remain competitive for transporting bulk goods, but many countries still subsidize uneconomic operations, especially passenger services.

Limited success with railway projects led to increased selectivity in the 1990s and better results.

same time that the privatization and subsequent growth of road transport was occurring. In the Russian Federation, which has by far the biggest railway system, there has been extensive rethinking of the country's future railway needs, supported by the Bank and other international financial institutions.

Fourteen Transport Sector Board railway projects approved during fiscal 1996–2005 have been closed and rated by IEG. The overall percentage of projects with a moderately satisfactory rating or better on outcome is 78 percent. This was a significant improvement over the earlier assessment, following the tightening of railway appraisal procedures and improved support through the development of a railway toolkit. If the seven railway projects falling under other sector boards are added, the percentage with a positive outcome rating is still 71 percent.

Most success has been achieved in the Latin America and the Caribbean Region, primarily in Brazil, and in East Asia and Pacific; in fairness, however, scrutiny of some of the projects in Asia shows rather less demanding development objectives (more focus on physical infrastructure and rolling stock than on restructuring). An attempt at restructuring the railway in Indonesia was unsatisfactory, mainly because of a change in government priority after the Asian financial crisis. The Africa Region also showed improved performance with satisfactory projects in Côte d'Ivoire (where the need for operating and capital subsidies was eliminated), Malawi, and Zambia. Reasons for some of the less successful projects were mainly lack of government commitment and inadequate preparation (as in Tanzania).

A major reason for the success of concessions (see chapter 4) has been the Bank's willingness

Bank willingness to fund retrenchment costs has helped improve the success of rail concessions.

to fund retrenchment costs and programs to improve opportunities for workers who now have to make a new livelihood. A project for the Polish Railways commencing in 2001 led the way in this respect when

some 37,000 railway employees were redeployed. This may be considered as best practice for railway labor restructuring. Zambia is a good example of a similar program in Africa.

Ports and Inland Waterways

The number of ports and inland waterway projects approved by IBRD/IDA has fallen slightly over the past decade, but IFC commitments have increased. Thirty projects involving ports, harbor operations, and water transport and representing nearly one-quarter of the IFC transport portfolio by value were recorded during the study period (see appendix D). IBRD/IDA has focused largely on establishing appropriate regulatory frameworks, helping secure transaction advisors (to assist with the process of transferring operations to the private sector), or advising on trade and facilitation projects.

Thirteen completed and evaluated projects relate to ports and waterways. Successful outcomes are evident in 77 percent of these projects. Best practice, on the basis of an outcome rating of highly satisfactory in a PPAR, was found in Mauritius, where the country's trade competitiveness was greatly enhanced through increased capacity, efficiency, and productivity.

Recently there has also been growth in the number of inland waterway projects in the active portfolio, especially in China, and a major trade and facilitation initiative has been undertaken in southeast Europe. The ICR Review confirms satisfactory progress on streamlining border crossing points, with substantial savings in truck waiting time and in the productivity of customs officials and other border activities.

Aviation

While completed aviation projects are relatively few in number, the extent of active projects has shown an upswing in the past 3 years. This rising interest in aviation is in part driven by increasing concerns regarding safety and security.

For example, the Board recently approved the first regional air transport safety and security project

for West and Central Africa. All six Regions now include aviation projects in their portfolio and are advised by a dedicated aviation specialist. IFC, having made no commitments for airports and airlines between fiscal 1990 and fiscal 2000, has supported seven projects in the past 5 years, committing \$147 million. Aviation projects account for 26 percent of Multilateral Investment Guarantee Agency (MIGA) exposure.

Regional Lending Trends

Figure 3.3 shows that the East Asia and Pacific, South Asia, and Africa Regions have been the most active of the Regions. The East Asia and Pacific economy has grown by more than 7 percent annually for the past 15 years, driven by the dramatic growth of China, Malaysia, Thailand, and Vietnam. Countries such as Cambodia and Lao PDR, however, remain relatively poor. The increasing affordability of motor vehicles in the high-growth nations is straining existing transport capacity. Cities account for 70 percent of the Region's GDP growth, and this trend is likely to continue. Decentralization has brought new challenges in formerly centralized economies such as Indonesia and the Philippines. China remains the dominant borrower in the East Asia and Pacific Region, with a Bank portfolio

that is almost 80 percent IBRD financed.

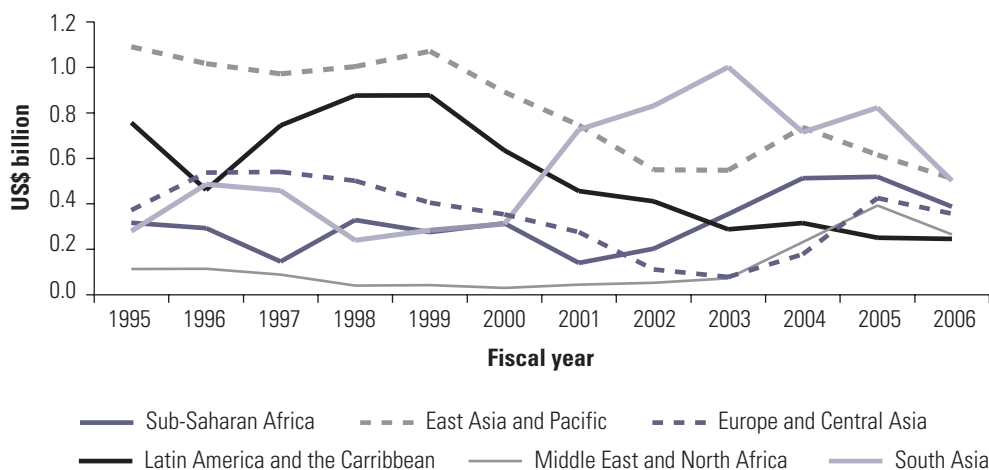
The South Asia Region has had average annual growth rates of nearly 6 percent. The public sector remains dominant in roads and urban passenger transport. Treating the Region as a whole, however, obscures major intraregional differences in institutional capacity, such as between India and Bangladesh.

Africa has until recently been another growth area for transport commitments because the Bank realized that excessive transport costs continue to be a hindrance to the Region's development (the Region currently contributes less than 2 percent to total world trade). The recent leveling off of commitments is attributable, according to Bank management, to IDA constraints to funding in the Region. Ethnic unrest and civil war have also sometimes made it difficult for the Bank to provide effective support, but a strategy is in place to

The Bank Group is becoming more involved in the aviation sector.

The relatively high level of activity in Africa is intended to improve the terms of trade and alleviate poverty.

Figure 3.3: Trends in IBRD/IDA Commitments for Transport by Region



Source: World Bank data.

move quickly when the situation in a country improves, as in Angola and Liberia.

Until recently Europe and Central Asia experienced only modest growth in transport commitments, but IEG verified that more projects are now in the pipeline. Here the emphasis has been on the transition to market economies after the collapse of the Council for Mutual Economic Assistance and the breakup of the former Soviet Union.

The Middle East and North Africa Region, meanwhile, despite highly unstable geopolitical conditions, has also seen a modest upturn in commitments in support of strategies for accelerating growth and employment. Yet the Region has lost global market share in many export sectors, and non-oil exports represent just 1 percent of the world share. Although a number of factors have contributed to this situation, improved transport infrastructure will be needed to reverse this position.

Only the Latin America and the Caribbean Region has seen a significant decline in commitments, primarily because of fiscal space constraints in several countries. The Bank Group’s response in the transport sector has been to encourage efficiency through greater private sector partici-

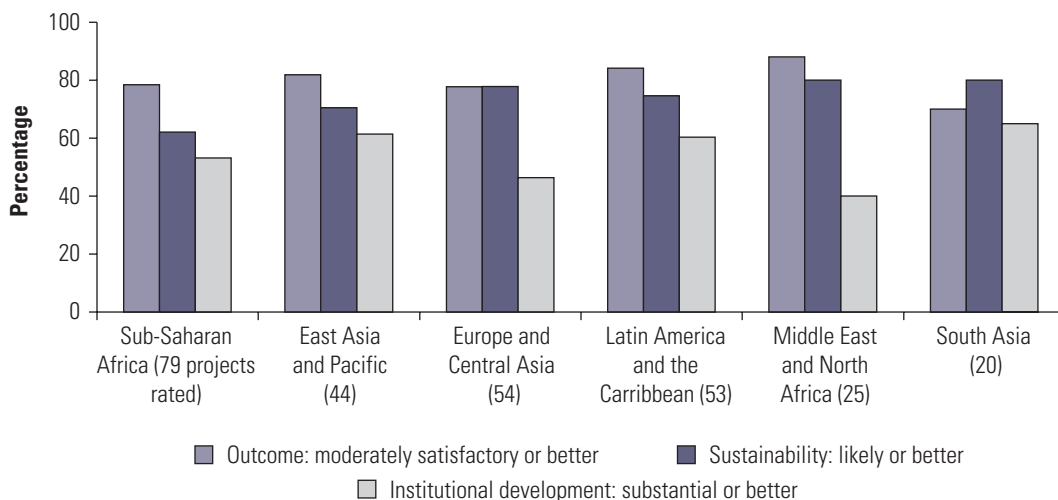
pation. The Region clearly needs to invest much more in transport infrastructure, however, where investment has halved since 1985 and the gap with East Asia and Pacific is widening.

IFC’s transport portfolio is heavily focused on Latin America and the Caribbean, which accounts for 67 percent of transport commitments, compared with 37 percent for other Regions. This pattern of concentration in Latin America and the Caribbean reflects good progress toward privatized infrastructure and transport services. Latin America and the Caribbean also has a strong institutional and regulatory framework to support private investment in the sector.

Regional Outcomes

If IEG performance ratings for outcome are compared over the review period, the Middle East and North Africa, Latin America and the Caribbean, and East Asia and Pacific stand out (figure 3.4). Only South Asia is lagging slightly. Sustainability is most often rated likely in the Middle East and North Africa, South Asia, and Latin America and the Caribbean; Africa has the worst performance. Institutional development impact has been most substantial in Latin America and the Caribbean and South Asia and least substantial in the Middle East and North Africa.

Figure 3.4: IEG Ratings for Outcome, Sustainability, and Institutional Development (Approval Year Fiscal 1995–2006)



Source: World Bank data.

The overriding conclusion from staff and stakeholder discussions on the Regional portfolios, however, is that a customized approach to transport investment in each Region is essential.

Regional and Donor Cooperation

The Bank works in close cooperation with other multilateral development institutions.⁶ All such institutions see the advantages of working together both formally and informally. But as the Joint Evaluation of the Road Program in Ghana found, there are often practical difficulties that have to be overcome. The most notable example of this is the need to clearly identify project contributions to national development objectives such as poverty reduction through a well-functioning monitoring and evaluation system; there is also a need for greater focus on institutional capacity building.

Donors sometimes have priorities that are not necessarily “owned” by the client country. Problems also stem from different donor procedures for implementation, monitoring, accounting, and reporting (appendix B). The willingness to harmonize these approaches deserves further exploration but will involve working through a series of complex issues. An area of cooperation that has attracted significant interest in recent years has been the Sub-Saharan Africa Transport Policy Program (SSATP) (see box 3.1).

In the past few years sector-wide approaches (SWAps) and program-based approaches⁷ have been introduced, whereby specific investments or activities are developed in a country-led sector program within a common multidonor development framework. These programmatic approaches show promise for enhanced development support in transport and related sectors, but their outcomes need to be fully evaluated over the next few years. The advantages of pursuing SWAp arrangements are stronger country ownership and leadership, greater flexibility, better policy dialogue and transparency between the partners and stakeholders, greater focus on results in a programmatic framework, economies of scale, and probably a better approach to capacity building.

Some difficulties with SWAps encountered to date in other sectors include problems in adapting

donor policies and procedures to SWAp requirements, donors with agendas specific to their own policies and mandates (it is often easy to reach agreement on overarching development objectives; the difficulties arise in the details), and donors that find they can no longer meet their original commitment or disbursement targets. In all cases the importance of strong and continuing leadership of such programs was stressed. Transport sector SWAps have commenced in Brazil, China (Fujian), Mexico, Poland, and Vietnam but as yet have not been completed and evaluated.

Nonlending Assistance

Knowledge Management

In 1996 the Bank made a commitment to become a global knowledge bank. To this end, it substantially upgraded its information management systems, initiated a wide variety of new activities for the aggregation and sharing of knowledge, and aimed to foster a more open, knowledge-sharing culture within its staff. This section looks at how well the transport sector has responded to this challenge.

An IEG evaluation on sharing knowledge (IEG 2003) concluded that, overall, the Bank had made more progress in establishing the architecture to support its knowledge initiative than in creating the governance arrangements and work processes to carry it out. The assessment went on to say that the Bank needs to move deliberately to embed knowledge sharing in its core operational processes. It can do this by providing more direct support to task teams and more knowledge capacity enhancement for clients.

An analysis of transport sector reports was undertaken for this evaluation covering research papers, sector reports, publications, and

Donor coordination is important and sometimes excellent, but many practical difficulties still have to be overcome.

Multidonor programmatic approaches show promise.

The transport sector has a low number of knowledge products relative to other sectors.

Box 3.1: Sub-Saharan Africa Transport Policy Program

The SSATP was launched in 1987 as a joint initiative of the Bank and the United Nations Economic Commission for Africa with the support of the donor community. It responded to the need for accelerated improvement of transport sector performance in Africa. The work program comprised a Road Management Initiative; Rural Travel and Transport Project; urban transport, railway management, trade and transport, and human resources and institutional development. The last component, however, did not attract funding. The program is managed by the Bank on behalf of the stakeholders. Currently there are 31 active member countries.

In the late 1990s some donors reduced their budget allocations, expressing concern about the program's relevance, the degree of accountability of program management, and the extent of involvement of recipient partner countries. This led in 2001 to a strategic review conducted by the Netherlands Economic Institute. The review found that the program had become fragmented, with various components being managed independently. Consequently, it did not fully reflect the donors' objectives to use SSATP as a platform for integrating poverty-reduction issues; nor did it meet the needs of member countries, which viewed the program as top down and supply driven.

Despite these criticisms, none of the stakeholders wanted the program discontinued because there was unanimous agreement that it was an important platform for knowledge sharing, exchange of good practice ideas, and networking. It also had the potential to do much more. The Bank, for its part, acknowledged that it was hampered because the program manager was only part time and because frequent changes in program staff led to discontinuity in coordination.

Sources: NEI 2001a, 2001b; World Bank 2003b, 2005e.

Since the review, however, there has been a considerable effort to upgrade governance and management of the program, through improved transparency, accountability, and responsiveness. The program agenda is back in the hands of the stakeholders and partners, and its focus is primarily on the contributory role of transport in Africa's development, connecting with the aims of the New Partnership for Africa's Development. The Bank has installed a full-time program manager as well as other specialist expertise and has been active in supporting the long-term development plan for 2004–07, supported by a budget of \$26 million.

A full independent evaluation is scheduled for 2007, although it is not clear what outcomes would be measured, because the plan focuses mainly on outputs. But nearly 75 percent of the Africa Region staff interviewed by IEG responded positively to the Bank's continued involvement in the improved SSATP. They referred especially to the solid progress of the Road Maintenance Initiative and to the 27 member countries operating road funds—most of which have secured independently audited “ring-fenced” income sources—and to the progress with railway concessions. Others mentioned the heightened awareness of strategic planning, and all spoke of dissemination (there are nearly 400 SSATP publications).

Not everyone was supportive, however. Critics were unconvinced that the program was cost effective, observed that the meetings were cumbersome, and noted that there is little apparent connection between planning and implementation activities. It is too soon for IEG to assess whether the revitalized SSATP is a success.

newsletters produced between 1995 and 2005.⁸ Table 3.5 shows that there were 437 documents during this period covering transport sector issues.⁹ In comparison with the Bank as a whole for the same period, this represents just 4 percent of all Bank knowledge documents—a rather low percentage for a sector that accounts for 15 percent to 20 percent of Bank lending. Moreover, as the transport sector is highly heterogeneous, involving multiple modes and themes, it might have been expected to have had a greater share of analytical output. The lack of a global program to coordinate, finance, and support transport research

for developing countries is a factor; other sectors such as health and agriculture are not disadvantaged in this way. Industrial countries currently conduct most existing transport research, and comparatively little is directed at developing countries. Although the Bank's role is not to fill this gap, it can and does show leadership and does act as a catalyst for research to be carried out when appropriate. Table 3.5 shows no journal articles and relatively few publications.

Prior to this evaluation, there had not been a detailed review of the Bank's literature for the trans-

Table 3.5: Count of Research Papers, Sector Reports, Publications, and Notes/Newsletters: Transport Sector versus Other Sectors, 1995–2005

	All sectors	Transport sector	Transport sector share (%)
All working papers	5,599	226	4.0
Sector reports	756	42	5.6
Publications	1,689	40	2.4
Newsletters/notes	1,908	129	6.8
Journal articles	25	0	0.0
Total	9,977	437	4.3

Source: World Bank data. Also see appendix G.

port sector. Reports that focused primarily on transport were also poorly represented among those sampled for the annual “Quality of Economic and Sector Work” assessments¹⁰ conducted by QAG between 1998 and 2002, although those documents that were included received satisfactory ratings overall.¹¹

Knowledge Products

Africa is a major recipient of knowledge products (table 3.6); the Region’s widespread poverty accounts for the large number of Poverty Reduction Strategy Papers (PRSPs). Europe and Central Asia ranks second and has experienced demand for the most Public Expenditure Reviews.

An analysis of 87 CAS Reports for the period fiscal 1994–2005 shows that while 79 provided rat-

ings for infrastructure, only 18 mentioned transport specifically. The most frequently mentioned transport issues raised in the CAS documents (appendix A, table A.3 has a full list) are fairly predictable and include the elimination of transport bottlenecks, the need for institutional reform and capacity building, and inadequate financing for road maintenance. More noteworthy are the topics mentioned less frequently. For example, much less is said about urban transport planning and transport-related aspects of the environment, social issues, road safety, risk management, knowledge dissemination, and measuring project progress and performance.

The lowest awareness of transport issues includes urban, social, risk-management, and environmental concerns.

Table 3.6: Economic and Sector Work Strategy Documents by Region, 1995–2005

Documents	Africa	East Asia and Pacific	Europe and Central Asia	Latin American and the Caribbean	Middle East and North Africa	South Asia	Total
CEM	10	13	19	19	7	9	77
PER	19	11	22	13	2	5	72
PRSP	25	5	9	4	1	3	47
CAS	50	21	42	37	12	11	173
Total	104	50	92	73	22	28	369

Source: World Bank data.

Note: CAS = Country Assistance Strategy; CEM = Country Economic Memorandum; PRSP = Poverty Reduction Strategy Paper; PER = Public Expenditure Review.

Many of the CASs for the top 15 borrowing countries rated infrastructure as high, but only Brazil and Ghana mentioned transport specifically. In the Brazilian case, the issues are transport decentralization, rehabilitation of state and federal paved roads, privatization of rail freight, urban transport, bottlenecks, and multimodal transport. In Ghana inadequate roads are seen as a bottleneck to agricultural marketing; the need to improve financial management in the sector is also discussed. In general the issues raised as priorities in the update of sector strategies are also rarely raised in the context of transport, which is indicative that an integrated approach involving the transport sector is not “top of mind.”

Analytical and Advisory Assistance Including Events and Technical Papers Prepared by Operational Staff

In terms of analytical and advisory assistance (AAA) support, the sector has witnessed a sharp decline in economic and sector work (ESW) from 35 in fiscal 2005 to 19 in fiscal 2006. Technical assistance initiatives also declined from 17 in fiscal 2005 to 9 in fiscal 2006. Though the quantity relative to many other sectors is small, there have nevertheless been some significant papers, presentations, analyses, and workshops by Bank transport staff and outside experts. Several of the peer-reviewed papers and publications are recognized as having made an important contribution to transport development knowledge. Examples are papers on road funds, railway reform, reduction of vehicle air pollution, transport decentralization, and road safety.

In IEG’s view, two main factors emerge from this work. One is that the poorer countries are much less well covered than the middle-income countries; the other is that more work is needed in the areas that will present major challenges in the future. Some specific examples follow.

Pioneering work has been undertaken in Brazil in support of transport privatization initiatives.

In India, the more important AAA work covers presentations on railway restructuring experi-

ences, road financing and rural roads, urban transport strategy, and a comparison of strategic road planning approaches between India and China. A report entitled *India’s Transport Sector: The Challenges Ahead* (World Bank 2002c) has probably had the most impact, because it was prepared on the basis of extensive consultations with senior central and state government officials, private institutions, and many experts. Judging by the extent of consultation, it is likely that the analysis and recommendations are shared by the majority of the participants. Many of the road and port proposals have been carried out, although the move toward rail reform is only now commencing.

In Latin America and the Caribbean the Bank has been particularly active in Brazil, where 11 policy and analytical reports have been produced since fiscal 1995. These reports are associated with all the areas of transport in which the government of Brazil has promoted privatization initiatives. Indications from the Brazilian stakeholders’ survey show that the Bank has had close and positive dialogue with the relevant decision makers. Because this assistance was backed by large loans, the Bank also had strong credibility. The studies focused on the railways, multimodal freight transport, and urban transport reform. Bus/metro integration and, in Recife, the establishment of a body that could coordinate all public transport services are considered pioneering works in the Region.

In the Russian Federation and Commonwealth of Independent States countries’ sustainable urban transport policies and railway restructuring were among many topics discussed. Some of this work resulted in papers useful for more general application, such as how to implement reforms necessary to deregulate, liberalize, and accelerate privatization and how to improve urban transport institutional capacity, introduce appropriate funding mechanisms, and establish fare levels for public transport. In the Europe and Central Asia Region generally, the emphasis has been on a smaller role for government and improvements in the climate for private participation. Specific papers were prepared for Poland and Kazakhstan, among others.

In Africa, the IEG country case study of Tanzania shows a somewhat different perspective. In the past 25 years the Bank has not carried out a formal piece of sector work either for the transport sector as a whole or for individual transport modes. However, other mechanisms have been used to develop policy options. Some SSATP papers focused specifically on Tanzania, such as one that analyzed road sector reforms and another that focused on nonmotorized transport. In addition, the privatization program (ports and railways) was analyzed in documents prepared under the Bank's public sector program. The SSATP plays an important role in dissemination in Africa at a strategic level, but it is independent from the Bank activities.

There are also several papers and guidelines by individual Bank staff and other transport experts that the Sector Board recommends for staff guidance. The more important of these can be accessed from the transport Web site and have been rigorously peer reviewed; these Web sites also contain toolkits and useful links to other Web sites. All Regions and a few country offices (including India, Turkey, and Vietnam) have made an effort to provide transport information on their country Web sites.

The Bank's transport AAA work, based on comments in the literature, stakeholder feedback, and IEG judgment, appears in general to be of good quality, covering both sector and policy support. However, it tends to focus on the larger countries such as Argentina, Brazil, China, Mexico, Poland, and the Russian Federation to the detriment of the smaller ones (exceptions are Lao PDR and the Pacific islands). In addition, the technical assistance or policy analysis components (according to many of the staff interviewed) would not have succeeded without being linked to investments in physical assets, which make the often painful organizational and policy changes recommended more palatable to implement (for example, the development of second-generation road funds in Sub-Saharan Africa and the urban transport institutional reforms in Brazil).

The degree of success of Bank-financed technical assistance studies is mixed, according to clients'

perceptions of their relevance and value. Sometimes, as in China, the former Yugoslav Republic of Macedonia, Vietnam, and the Republic of Yemen, not all the studies were viewed as useful; they either commenced late or the recommendations were not pursued. Some studies prepared by consultants were too voluminous and technical to be easily understood and displayed inadequate regard for political and financial feasibility.

In contrast, the Russian Federation urban transport study was extended to allow for additional studies on railways and national roads, and further advisory work on

urban transport issues was carried out simultaneously using other funds. IFC has also supported the transport sector with technical assistance and advisory services delivered by its Trust Funds (TATF) and Advisory Service Departments. Between fiscal 1990 and 2005, TATF supported 39 projects with a total cost of \$5 million. Typically, TATF projects were related to privatizations and feasibility studies on private operation of ports and shipping, air transport, and cargo facilities.

Training and Dissemination

The sector board has overall responsibility for transport learning and knowledge management. It sponsors various events for the purpose of learning, exchanging information, and supporting strategy formulation (appendix G); it also maintains the Bank's transport Web site, which has been substantially upgraded. An earlier attempt to create a knowledge asset database was abandoned; all information is now filed in the Bank's electronic filing system. The sector is still working toward a formal knowledge-dissemination plan and a system for capturing all presentations originating from country offices.

The World Bank Institute (WBI) is the learning arm of the Bank. WBI aims to help its clients prepare for the knowledge-based economy by designing

Quality analytical work has been important to progress on institutional reform.

The Sector Board is still developing a knowledge-dissemination plan.

and delivering courses and seminars, promoting knowledge networks and communities of practice, and providing policy and strategic advice. Training and policy dialogue relating to the transport sector conducted by WBI over the past 8 years has been focused heavily on competition and regulation issues. This in part reflects the knowledge

The transport-related output of WBI does not appear to be fully aligned with the needs of transport operations.

of WBI staff, whose expertise is primarily in financial modeling, regulation, and institutional arrangements, including how to establish successful public-private partnerships (PPPs).

Twenty-seven WBI transport-related events were conducted between October 1997 and March 2005. The attendees have primarily been senior and middle management government officials. Although these events have been well received, based on the feedback obtained at the conclusion of the seminars, only one of the events was subjected to a “level-two” evaluation by the WBI Evaluation Group.¹²

There is an apparent lack of connection between the needs of transport operations and the output of WBI. There is also no dedicated program for transport, and it is unclear whether the WBI focus countries align with transport sector priorities, because transport in some cases has not featured strongly in some country strategies. WBI does not have transport skills outside the narrow area described above, and there is limited interaction between WBI and the Transport Sector

Some country stakeholders criticize the Bank for ineffective knowledge dissemination.

Board. To make up for this limited coverage, the network has developed links with some specialist partners promoting particular areas of training in developing countries.¹³

Despite all the publications and presentations mentioned in this chapter, all three country stakeholder opinion assessments undertaken as part of this evaluation contained some degree of criticism about effective knowledge dissemination. In Brazil only 4 of 18 stakeholder respondents un-

equivocally ranked Bank dissemination highly, while 3 thought it was ineffective. The remaining stakeholders thought dissemination was satisfactory, but with caveats—the biggest of which was that few documents were available in Portuguese. *Cities on the Move* was, however, translated into Portuguese with the help of the Bank Country Office and São Paulo; thousands of copies were subsequently distributed to Brazilian professionals, students, universities, and to other lusophone countries. Most respondents suggested that a more structured country approach was needed that involved government, academics, and stakeholders, taking advantage of local transport events.

In Tanzania the feedback contained the following comment:

The Bank has not been effective in disseminating its know-how. Bank experts are very knowledgeable but meet and share their experiences with relatively few people. Stakeholders often do not have ready access to publications and newsletters and the Internet is not accessible by some people.

In the Indian survey, the perceptions on dissemination were much more positive (reflecting the fact that more activity is taking place there). However, even here it was said that there was insufficient priority given to urban and intermodal transport issues.

The staff interviews in the Bank transport network also elicited some interesting comments, such as, “We need to disseminate more effectively, but we are all too busy to share innovation successfully,” “We need less pressure [on task team leaders]—then we can improve operational quality and dissemination effectiveness and ensure we stay abreast of developments in our field,” and “We now lack the depth of internationally renowned experts who have led innovative thinking in the past.”¹⁴

These comments suggest that the right balance between projects and advisory work has not yet been achieved. Certainly at the Regional level, management has not yet considered knowledge

sharing as a way of doing business through embedding it in core lending and nonlending processes. Relatively few CASs contain knowledge-sharing objectives and strategies, and many staff members believe that they lack incentives to make knowledge sharing a routine part of their work.

IEG believes that regular discussions with clients to customize their knowledge requirements could also lead to better opportunities for policy dialogue. Such dialogue is also pursued through the lending projects themselves—but this is not recorded.

Results from the stakeholder interviews indicate that nonlending assistance in the transport sector is of good quality, but in quantity it is insufficient, compared with the rest of the Bank. It needs

to be planned more strategically with better resources and more interaction with both staff and clients if it is to progress beyond its present status. This implies that more effective sharing of resources between networks is necessary. Clearly the recent merging of the Infrastructure with the ESSD Network is a positive step in that direction.

At a Regional level, management has not yet accepted knowledge sharing as a way of doing business.

Chapter 4: Evaluation Highlights

- Greater involvement of the private sector has often led to improved performance and better service.
- Six middle-income countries account for 80 percent of private sector transport infrastructure investment.
- In many cases, urban passenger services could be improved by better-regulated private sector competition.
- The Bank has made a major contribution to the roads subsector by promoting private sector road and maintenance management.
- IFC has increased its investments in transport.
- There must be sufficient local capacity to engage with the private sector and a supportive regulatory framework.
- Corporatization can succeed if accompanied by a variety of other reforms.



Promoting Private Sector Involvement

Although experience shows that in some circumstances greater use of the private sector can achieve considerable efficiencies, this is a complex and sensitive area and client commitment to such changes is crucial.

The balance between the public and private sector roles in transport varies by country, depending on history, culture, sociopolitical circumstances, and policy choices that may, for example, place a high premium on national security, including ownership of national assets. However, because privately owned transport services are widespread and usually successful, the Bank has encouraged such services, either within a competitive market or, where the market is more restricted, within the support of an appropriate regulatory framework.

Government provision of such services has frequently been found deficient in technical and allocative efficiency. Privately owned transport infrastructure, in contrast, is much less common for a number of reasons, including its monopolistic nature, financial returns that are often very long term (and therefore risky), and the disputable perception that the public good can only be assured by public ownership.

The levels at which the balance between the public and private sectors in transport can be changed are oversight, execution, and finance. *Oversight* generally involves user participation in the plan-

ning and regulatory aspects of sector operations. *Execution* refers mainly to how institutions actually undertake their work, including the extent to which public institutions subcontract to private enterprises and how they do this. *Finance* means the level at which the private enterprise provides some or all of the capital financing that would otherwise have come from the public sector.

At one end of the spectrum are government departments that execute the work with their own labor forces; at the opposite end are private enterprises that fully undertake this responsibility. In between are many alternative structures for the assignment of risks and responsibilities at the management level (see appendix A, table A.5).¹

International Trends in Privatization

A detailed review of worldwide experience in transport privatization was used to provide a benchmark for best practice in achieving public and private sector balance. The Bank's activities

Improvements in the provision of transport services require the right balance of private and public sector reforms.

Early expectations for the extent of private sector investment were

overly optimistic. As already noted, in the early 1990s there were ex-

pectations that the private sector would play a substantially more significant role in the provision of transport infrastructure and services. Some of these expectations, especially regarding infrastructure, were impractical, and the authors of *Sustainable Transport* (World Bank 1996), while supporting an expanded role for the private sector, were cautious about the extent to which the private sector could increase its role. The Bank has a PPI database that tracks infrastructure projects in developing countries involving private participation in funding and risk taking.²

The period fiscal 1995–2005 was very volatile. Despite early growth, it peaked in 1997 with a total expected transport investment of \$18.4 billion,

Six middle-income countries account for 80 percent of private sector transport infrastructure investment in the developing world.

then plunged to \$2.9 billion in 2002. In 2005 it recovered, rising to \$16.2 billion. During 2005 significant new private sector investments were recorded for Hungary, India, and Turkey, with aviation and port projects strongly featured.

The PPI database does present an optimistic picture, because it represents commitments rather than actual disbursements.³ It also excludes follow-on and locally financed activities, some of which are funded by the private sector.⁴ Just six countries (Argentina, Brazil, Chile, China, Malaysia, and Mexico) accounted for nearly 80 percent of total investment over the decade. Thus, the remaining 20 percent is distributed among all other developing countries, with many having no significant private investment at all. Compilations by the Chilean Central Bank for the six main Latin American economies show a similar pattern, relative to the smaller countries in the Region.

This does not necessarily mean that attracting private sector investment is less relevant for lower-

income countries. One or two projects can have a very significant impact, as has been the case in Cambodia and Mozambique. In the latter country, the railways and port restructuring project is also benefiting neighboring states by reducing Regional transport costs.

There has been important progress in recent years in the institutional design arrangements in the Organisation for Economic Co-operation and Development (OECD) countries. Examples include the establishment of a highways agency and the railway reorganization in the United Kingdom, Australia's rail privatizations, and the broadening of responsibilities assigned to the Australian National Road Transport Commission, as well as new methods of bus contracting in Norway and other European countries. Some of these internationally recognized successes have since been adapted in privatization initiatives in developing countries. It is noteworthy, however, that major weaknesses that emerged in some of the earliest privatization efforts—such as Chile's urban public transport reforms, Argentina's freight railway concessions, and Mexico's toll roads—have largely been avoided in the reform efforts introduced by developing countries in the past 10 years. It is also generally recognized that effective institutional change takes time.

The most clearly positive effects of the WDR principles on efficiency have been in the roads field. Those principles have been applied to the management of road networks generally and strongly promoted by the Bank. This has included improvements in road department accountability, often through the establishment of road agencies and road funds; contracting out to the private sector has also occurred, not only for construction and rehabilitation but also for routine maintenance, design, and general supervision. Transparently competitive tendering of works against performance-based specifications has been a significant step forward.

In contrast with these reforms, which are largely aimed at improving the quality of public spending, toll roads have offered opportunities for attracting more private investment into the

development of road networks. Growth of privately financed toll facilities has been an important phenomenon during the decade. In a few developing countries, there are now substantial numbers of such roads, and many other countries have at least one or two. Although such roads represent only small proportions of each network, they often carry significant proportions of over-all traffic.

There is considerable evidence that the pursuit of increased private sector involvement in trade-related port and railway infrastructure has had positive effects on both technical and allocative efficiency. This has been the case even where substantial modifications have subsequently had to be made to the original structures chosen for increased private participation (as in the railways in Britain). Positive impacts have often been further enhanced by subsequent effects on other institutions in the same field, such as in India's Nhava Sheva container terminal, or through the postprivatization restructurings that occurred in the railways of Australia, southeast Brazil, and northeast Mexico.

Efficiency and service indicators have typically shown sustained improvement, and traffic growth has tended to exceed that of the regional economy, reflecting in part the attraction of traffic previously handled by other modes and facilities. Analyzing worldwide movements of containers through ports, it has been estimated (Estache and Serebrisky 2004) that the share handled by public sector operators dropped from around 42 percent in 1991 to 27 percent by 2001.

Overly centralized, government-owned and -operated urban passenger services, torn between conflicting objectives, still exist in many cities. Such services would often benefit greatly from rationalization and restructuring. A more common challenge is to develop better-regulated competition among existing private providers to generate a more reliable and safer set of services that link appropriately with one another. This scenario typically exists in the difficult context of rapidly increasing city size and worsening street congestion.

Such regulated competition is usually brought about through an urban public transit authority that will introduce competitive concessions and franchises with specific performance objectives, but within an integrated system.

Finally, the pressures of increasingly open competition in the provision of international and domestic air services have brought measurable improvements to the technical efficiency of air transport. The rise of low-cost carriers, now extending to many of the larger developing countries in Asia and Latin America, has also contributed to transport's allocative efficiency. Private management of public airports is a relatively recent innovation; whether it has contributed to these efficiency improvements is not yet clear.

At the broadest level, the review finds that the strategy suggested in the WDR has stood the test of time in OECD countries. In developing countries there is also evidence that greater involvement of the private sector, especially in service provision, usually leads to a significant improvement in transport sector performance. Nevertheless, for the foreseeable future, the public sector in developing countries will remain the principal provider of infrastructure because of investment risk factors and public ownership issues.

Bank Performance in Encouraging Private Sector Involvement

The Bank's experience in encouraging the private sector through its own lending and support programs is now compared against the above assessment (table 4.1).

Developed country successes have been adapted to privatization initiatives in developing countries with some good results.

Efficiency and service indicators have been improved by private sector involvement in ports and railways.

Urban passenger services in many cases could be improved by better-regulated private sector competition.

Table 4.1: Analysis of Performance by Private Sector Development Objectives, Transport Sector Board Projects, Fiscal 1995–2006

Subobjective	No. of PSD objectives rated by IEG	Objectives rated moderately satisfactory or better	
		Number	Percent
Ports and port restructuring	9	6	67
BOT (roads)	5	4	80
Maintenance by contract	34	27	79
Railway restructuring	14	11	79
All PSD	62	48	77

Source: World Bank data.

Note: BOT = build, operate, and transfer project; PSD = private sector development.

Road Concessions

Sector Performance

The Bank has accumulated a significant amount of knowledge about PPPs and is asked with increasing frequency for technical advice on such projects by its clients. During the review period, however, the Bank was directly involved with the establishment of relatively few toll-road projects. Of course, part of the reason for this is that roads are viable for tolling only where traffic volumes are high and local institutional capacity is sufficient to effectively engage with the private sector. In some middle-income countries the use of tolls in PPP projects has matured sufficiently so that neither the client nor the private financiers see a need for Bank Group support. The Bank's expertise is nevertheless actively sought in many other cases, including greenfield construction projects.

The Bank's advice on such PPPs is frequently sought.

In Brazil, for example, a Bank review of the highway concession program involving six state authorities was undertaken. IEG concluded in a PPAR evaluation of this initiative that the Bank had given useful advice at both federal and state levels at a critical time. Typically, the Bank has given support to many countries on land-acquisition processes and tariff setting or has offered partial risk guarantees.

Europe and Central Asia is an interesting case because initially the Bank did not support the first wave of PPPs in the Region, many of which were deemed likely to fail. However, the Bank has more recently developed innovative solutions, such as reimbursable technical assistance, to assist its clients in, for example, the Russian Federation and Hungary. To ensure a comprehensive analytical and advisory program, the Bank has developed a fee-for-service arrangement aimed at strengthening local capacity. This was used in the city of Saint Petersburg during the construction of its high-speed ring road. There is interest by governments in the Region in extending this type of service to cover Regional growth trends, economic competitiveness, investment climate monitoring and benchmarking, and asset management services.

Project Performance

Positive development outcomes have been in support of build, operate, and transfer (BOT) projects in Benin, Chile, China (box 4.1), and India. All have made satisfactory progress and Bank support has enhanced project performance.

The only unsuccessful project involved a Bank loan to Colombia to finance the government's capital contribution to a toll concession project. This was among the first operations to use Bank support for a privately funded project. The support came through credit enhancement instruments

Box 4.1: Mobilizing Private Finance for Road Development in China

Toll roads began to appear in China in the 1980s, when the central finance ministry began requiring provinces to accept full responsibility for payment of debt service on loans from which they benefited. But acceptance of the principle that roads could earn revenue directly also opened the way to private participation. Today, China has more tolled roadway than any other country, probably near 20,000 km.

Given the importance central government placed on roads—in the last years of the 1990s road investment reached 2.5 percent of GDP—the provinces have eagerly sought new ways to supplement their budgetary funds. Promoters of private finance responded imaginatively, and the market developed, often in parallel with the legislative changes that would make it fully legal. By the late 1990s, 5 percent to 9 percent of the funds going into road development were from private sources.

The original mechanism for private financing was the joint venture. Joint ventures occurred mainly with private partners from Hong Kong and public management and staff provided by the Provincial Communication Department (PCD). The Hong Kong promoters negotiated special agreements to compensate for the uncertain legal environment and sometimes carried out the construction work. From the mid-1990s, and especially after approval of a new highway law in 1997, a second source of private capital rapidly developed—the Hong Kong, Shenzhen, and Shanghai stock markets.

Investor interest in road transport was strong. Holding companies, mainly provincial expressway development companies, assembled packages of already operating toll roads and floated shares for some 20 percent to 40 percent of the aggregate value of the roads.

By 2002, 18 Chinese companies had successfully listed, in addition to the three main Hong Kong promoters. Several of the provinces have been able to reinvest substantial proceeds into further road development. Some of the stronger companies have also been able to float revenue bonds and to raise bank loans secured against their revenue streams. Initiatives to develop BOT projects, though welcomed by the central authorities for their efficiency-increasing potential, have not so far won significant support among PCDs.

Insufficient information is available to permit a full assessment of the impact the private participation has had on the technical and allocative efficiency of these toll-road operations. However, regarding allocative efficiency, concern is widespread and rising that PCDs and private promoters have often pushed toll rates to levels that divert substantial traffic to other roads. The problem is particularly serious for heavily laden trucks, which would usually cause far less damage on the stronger pavements of the new roads than on the old roads to which they divert.

A partial solution has been to introduce tolls on the competing roads as well. The Jiangsu Expressway Company followed its completion of the Huning expressway in 1996 with the purchase of 15-year operating rights on the parallel Ninghu highway so that it could itself adjust the tolls on both. Although it seems that too much weight is given to financial profitability over maximization of economic benefits in setting toll levels, this is more a problem of the existing toll system than of the private participation in it. Insofar as the latter introduces incremental capital, permitting faster expansion of the road network, it should have some beneficial allocative consequences.

Sources: Bellier and Zhou (2003); CPCS China Merchant Consulting (2003); Ojira (2003); Wood (2002).

offered at the bidding stage. The successful bidder requested the lowest government capital contribution, nearly \$83 million short of the next highest bidder. But it did not request any of the other support instruments available. Unfortunately, construction was significantly delayed, and then a dispute arose between the concessionaire and the national roads agency over a proposed change in the road alignment. In June 2000 allegations of a breach of contract led to litigation. The early termination of the concession made it impossible for the project to attain the development objectives in the manner and time agreed.

IFC commitments for roads during the study period have been relatively small and declining—10 projects, of which 8 were completed during fiscal 1996–2000 (\$190 million committed) and only 2 between fiscal years 2001 and 2005 (\$64 million committed). The first transport project insured by MIGA was in 1995 (see appendix C).

Other Roads

Sector Performance

The Bank's main contribution to the road subsector, however, has not been through conces-

The Bank's main contribution in roads has been the promotion of private sector road and maintenance management.

sions, but through the encouragement of private sector involvement in road and maintenance management. Examples include the clarification of road department accountability, often reinforced by the greater management autonomy that is created from establishing a roads agency separate from its supervising ministry; appointment of oversight and consultative bodies more representative of users and the commissioning of periodic user opinion surveys on the state of the network and adequacy of service; development of network-wide-planning systems for efficient allocation of expenditures and the setting up of high-quality data banks to underpin them; transparently competitive contracting to the private sector, not only of construction and major maintenance but also of routine maintenance, design, and general supervision; and the shift to multiyear contracts with remuneration related to the level of service afforded by the assets built or maintained.

Project Performance

Twenty-two of 26 (87 percent) closed projects with the above objectives achieved satisfactory outcome ratings—by any standard an excellent performance. More detail on performance is given in the next chapter on sustainability.

Railways

Seventy-one percent of evaluated railway projects (from all sector boards) with major restructuring, private sector participation, and/or concession objectives were successful. Brazil, Mexico, and Romania were among the best examples; the outcomes in Indonesia and Tanzania were unsatisfactory.

Government commitment has been the key to success in railway concessions.

Government commitment and realism was a common thread in the successful projects. The government of Brazil achieved its overall objective of reducing the cost of rail freight from \$2.9 per ton-km to \$1.6 per ton-km. In Mexico, traffic increased, equipment was

better utilized, safety improved dramatically, and all concessionaires generated income covering operating costs without affecting investment requirements. The outcome of the Romanian railway project was rated highly satisfactory because it fully achieved its objectives. Most noncore activities were separated from the operating companies. With regard to urban rail and subway concessions, the achievements in Buenos Aires and Rio de Janeiro were groundbreaking and have proved to be sustainable over the past decade.

Lessons from the difficulties in the Tanzanian Railways Corporation project were to not make the original bid condition too onerous and to ensure adequate remuneration for services that are not economically viable. This deterred potential investors from submitting compliant bids. However, the Bank has persevered. In a second round of bids the requirements have been softened. This new round also offers an option to obtain a World Bank Partial Risk Guarantee that will protect the operator should the asset-holding company fail to meet its obligations.

A recent review of railway concessions in Sub-Saharan Africa found no evidence of excessive profiteering; in fact, it suggested that increasing rail competition benefited transport users first and foremost through lower road transport costs (World Bank 2006g). IEG also notes that the true costs of track renewal need to be acknowledged up front, so that a seemingly favorable debt structure does not mask obligations in future years.

Railway projects in the Europe and Central Asia Region have met with mixed success. Romania had a highly satisfactory project in which a new regulatory and organizational framework was introduced, substantial progress was also made with financial restructuring, and staff size was reduced by 47 percent. Bulgaria and Croatia were relatively less successful because the authorities did not show the same determination to make necessary but difficult changes. Because these projects are strongly influenced by the European Union (EU) restructuring model, which is now being promoted beyond the Region, it would be useful to

assess the performance of this cluster of railway systems in aggregate in the near future to see what lessons can be derived.

Many countries are not yet prepared to take the full step toward long-term concessions and prefer to pursue restructuring within the public sector. Bank experience, confirmed by IEG, suggests that corporatization alone is insufficient to make any significant difference. If accompanied by a well-thought-out package of reforms, however, it can result in a much more efficient organization.

Typical components of such a package would include how the public shareholder (responsible minister) discharges the duties of performance accountability and meets social obligations. The selection of the board and senior management should be based on merit, and the lines of business structure should have segmented responsibility for management and accounts. Business plans should include a strategy to enhance service and improve productivity, while investments should be aimed at creating competitive advantage in specific markets. Activities that are not part of the core business should be competitively procured. Client countries that have successfully followed this reform process include Morocco, Poland, and Romania. Railway reforms in Asia also occurred but to date have been more limited in scope. IFC commitments for rail freight and passenger operations during the study period have increased from five projects in fiscal 1996–2000 (\$52 million committed) to nine projects in fiscal 2001–05 (\$202 million committed); outcomes have been mixed.

Ports

During the fiscal 1996–2005 period IBRD/IDA was involved in 13 completed and evaluated port and waterway projects; 77 percent rated satisfactory or better on outcome. The Bank Group encourages a commercial approach through the separation of the landlord and operating functions. In this approach the public sector landlord is responsible for maintaining the channels, wharves, utilities, and common areas, while services such as cargo handling and tug services are contracted out to the private sector.

Before this can happen, a new regulatory and administrative framework usually has to be set up. Such projects also provide an opportunity to introduce physical improvements such as new or rehabilitated berths, storage facilities, and cranes (Albania, Korea, and Mauritius); improved customs and security facilities and procedures (Tanzania); “freeport” facilities (Mauritius);⁵ and asset management systems (Poland). Container terminals are also often privatized as separate entities (Cameroon and Tanzania). Typically, the investments lead to greater volumes of traffic handled, with fewer delays and improved port handling productivity.

Only a few problem instances have been recorded; these include a delay on decisions about the introduction of additional cargo handling companies (to increase competitiveness), failure to invest in additional crane capacity as traffic increases, and overestimating expected traffic volumes at appraisal. The high success rate overall is because such concessions are normally profitable, the need for retrenchments is usually modest, and the investments are focused in one location.

During the review period the IFC also made commitments of some \$427 million to 30 port and harbor operations. Bearing in mind that IFC commitments depend on many factors, IFC’s contribution actually supported total project investment of \$2.1 billion.

Overall Transport Performance

It is clear that the Bank’s expertise is valued by its clients in a variety of PPP ventures, including greenfield construction projects. To ensure that Bank clients understand the importance of ensuring that environmental, safety, and social considerations are properly covered in such projects, constant dialogue needs to be maintained, including presentations, workshops, and field visits

The Bank Group has encouraged the separation of the port landlord and operating functions.

The Bank Group has provided effective support for establishing the regulatory and administrative framework for port privatization.

for local staff to see successful projects elsewhere. The Bank facilitated a useful debate, for example, on the pros and cons of different approaches to PPP projects in China and India.

Overall, about a third of Bank transport projects have significant privatization or commercialization objectives, and three-quarters of the outcomes are in positive territory. IFC, in contrast, as the private sector wing of the Bank Group, focuses entirely on private sector investments. Among a

sample of 22 IFC projects evaluated, 19 achieved high development outcomes and 15 had high investment outcomes. These results compare favorably with other projects across IFC. Transport investments represent an increasing proportion of IFC's portfolio, split approximately 90 percent as loans and 10 percent as equity. Additional funds raised in the form of B-loans⁶ from other lenders also showed a higher mobilization rate relative to other sectors (see appendix D for more detail).

Chapter 5: Evaluation Highlights

- Management and accountability are improving in countries where road funds, agencies, and boards are functioning properly.
- Performance-based road contracting has been successful in countries with a mature contracting industry and supporting legal framework.
- The Bank has generally supported the provision of maintenance through user charges.
- The Bank needs to help clients achieve a new level of governance and institutional capacity, but this will require a stronger cross-sectoral approach.
- Bank-supported road projects have a satisfactory record on environmental compliance but need to encourage energy savings and clean air more actively.



Road Maintenance, Institutional Development, and Environmental Protection

Given that the transport sector accounts for 15 percent to 20 percent of Bank lending and the huge sunk investments¹ in transport infrastructure in client countries, the continuing sustainability of these networks is highly important. The cost of maintaining and renewing road infrastructure is a burden for many governments, but this amount is dwarfed by the magnitude of related transport expenditure by private individuals and firms.

Maintaining the Assets

When the quality of road infrastructure is poor, the public pays heavily through significantly higher vehicle-operating and personal time costs and, in the worst cases, through a lack of accessibility for at least part of the year during the rainy seasons. Because roads account for a very substantial share of the Bank's transport portfolio, the sustainability of such infrastructure has long been a concern.

The importance of maintenance is not confined just to roads but applies also to the provision of transport services. *Sustainable Transport* (World Bank 1996) emphasized that ensuring the long-term sustainability of transport requires that all assets be maintained adequately. In the management of public infrastructure, this is frequently hampered by inadequate budgeting and follow-up for maintenance, accentuated when governments

take the “soft” option of deferring maintenance during a debt crisis (Heggie and Vickers 1998). In the supply of transport services, regulated prices can be set at levels that are too low to provide for the adequate maintenance of equipment. Nevertheless, where the Bank Group has been involved in concessioning, once any backlog of maintenance has been attended to and a financial model put in place, few further maintenance problems have been reported. The greatest challenge still remains with roads, most of which fall within the public sector domain.

Road maintenance activities worldwide are normally financed through one of two approaches: through the budget or by means of a road fund. Budget allocations to the road sector result from a political process that assigns priorities to alternative uses. It can also form part of a multiyear expenditure framework.² Road funds, in contrast, are

outside the budget and based on the principle that road users should pay for the cost of the roads and that revenues generated should be applied to cover such costs. A key reason for setting up a road fund is that road maintenance is not a politically attractive use of government revenues, even though road maintenance yields the highest economic return.³

The Bank's Approach

In practice, the Bank has supported channeling revenues from road user charges to finance road maintenance expenditures in many countries. Such road funds, commonly known as "second-generation" funds,⁴ commenced in 1993 with the Zambian Road Fund. A more detailed account can be found in appendix B.

Over the years there has been vigorous debate about the merits and demerits of such funds. Some macroeconomists, including in the International Monetary Fund (IMF), take the view that extrabudgetary funds fragment the budgetary process and create unnecessary risks in the allocation of resources. Eventually the Bank and the IMF agreed on a formal coordination procedure

Second-generation road funds have improved road management and accountability.

regarding the establishment of such funds.⁵ The Bank has been pragmatic and tends to promote road funds when the budget approach has failed.

The road fund approach, when broadened to include the principles embodied in the 1995 Heggie Report (World Bank 1995), can better be described as a commercial approach. The perceived road maintenance crisis, with its impact on the cost of infrastructure and the operation of transport services, required bringing roads into the marketplace, putting them on a fee-for-service basis, establishing a surrogate market discipline, and managing them like a business. Coupled with the creation of a road fund, there has usually been a

Road funds are promoted when the budget approach has failed.

semi-autonomous executive road agency to manage the primary network, along with a public-private board to run it. The board's extensive monitoring and auditing oversight

has generally helped significantly to ensure that user charges to support maintenance are duly collected and devoted to the intended purpose. Local contractors have benefited from long-standing efforts to support their development and now handle most of the maintenance work. In Tanzania, the road board also helps address the previously neglected problem of weak capacities of district and urban councils to manage maintenance of the extensive networks for which they are formally responsible.

Project-Level Results

In a few countries where second-generation funds have been introduced *and* where information is available, there has been evidence of a significant increase in the percentage of roads in good condition. For example, in Benin, the increase has been 9.4 percent per year since the creation of the road fund. In Guatemala, the percentage of roads in poor condition dropped from 40 percent in 1994 to lower than 20 percent in 2001.

However, country progress varies widely. As recently reported from an SSATP study (Benmaamar 2006), the existence of a road fund does not mean that it is either fully efficient or fully autonomous. There are currently 27 road funds in SSATP member countries, and in only one-third of the cases are such funds regularly meeting routine expenditure needs.

The IEG review used three different sources to assess the performance of road funds: existing evaluations; IEG's database, including findings in individual project assessment reports; and a survey of Bank staff responsible for road projects in countries with road funds. Information from each of these sources is limited, and none individually permits the derivation of conclusive results.

Historically, projects have assessed performance by comparing road fund objectives to achievements or changes between the start of the road fund and the situation a few years later. No evaluation, however, compares a road fund with a control case where the budget finances road maintenance expenses. Studies reviewed included Balcerac de Richecour and Heggie for ten African countries (1995), Gwilliam and Kumar for seven African

countries (2003), Zietlow for six Latin American countries (2004), and an internal report for two African and two Asian countries in 2005.

The outcome of Transport Sector Board project objectives concerning maintenance remains disappointing, with only 25 of 47 objectives (53 percent) rated as moderately satisfactory or better. However, there is a 5 percent improvement during the period fiscal 2001–06 over fiscal 1995–2000. Often the overall project is rated higher because the better outcomes of the other development objectives mask the shortcomings in maintenance. The real concern is with the sustainability of these projects. In the Africa Region in particular, sustainability is rated as likely in less than 62 percent of cases. In several projects caveats are attached to the assessment, to the effect that the project will be sustainable only if sufficient funds are allocated for maintenance in the future.

Although the introduction of road funds in some countries may have improved the likelihood of sustainability, there are other countries where this will not happen because of economic or political instability. This risk is sometimes mentioned in ICRs (for example in Niger, Sierra Leone, and Togo), but often it is impossible to predict when and where future civil disturbances will occur. This means that the sustainability information is almost certainly not as robust as it first appears.

Another clue to this overreporting is found in the appraisal reports of active follow-on projects, where system sustainability tends to be less enthusiastically portrayed than in the ICRs of completed projects. Individual conversations between Bank engineers and IEG staff also elicited a gloomier prognosis of sustainability. With the benefit of hindsight and judging from PPAR assessments, it is evident that between 4 percent and 5 percent of projects rated “likely” at the time of completion would now be rated “unlikely”; the difficulty is predicting which ones will fail.

A European Commission evaluation observed that ensuring adequate maintenance of the road networks in developing countries is still work in progress because most road funds do not

yet collect sufficient revenues, and insufficient capacity in domestic construction industries is a continuing problem. Performance contracting, however, as indicated in the previous chapter, is an unambiguous success story.

Projects with objectives related to maintenance have been less successful than expected because many road funds have insufficient income.

Experience with Financing Maintenance

Key lessons from IEG’s study of road funds are that this approach will only be successful if there is government commitment to off-budget financing of maintenance and to commercially oriented reforms of road management. A road fund should not be contemplated if there is a high level of corruption and little likelihood of having independent audits and transparent procurement. The financing of road maintenance should be viewed in the broader context of road management, which means that monitoring and evaluation should start with credible assessments of road condition, past trends in the allocation for road maintenance, and the efficiency of road maintenance operations. Private sector participation on road boards has also proved to be an effective way to improve transparency and accountability in the use of road maintenance funds.

The European Conference of Ministers of Transport discussed additional lessons, such as the role of the process in ensuring stability and security of the fund-

Developing countries have the most to gain from the use of road funds.

ing flow, and noted the improved effectiveness of funds disbursed as a consequence of the possibility of multiannual budgeting arrangements. However, European Conference of Ministers of Transport countries for the most part have well-managed budgetary processes, better-maintained infrastructure, and a well-established private sector contracting capability. Their needs are more related to the establishment of business-oriented road agencies. Developing countries have the most to gain from the road fund approach, especially those that have a history of chronic underfunding of asset maintenance.

Box 5.1: Performance-Based Contracting of Road Maintenance in Argentina

Following promising pilot efforts in performance-based contracting of maintenance, in 1995 the Argentine Dirección Nacional de Vialidad negotiated 11 3-year contracts for routine maintenance of 3,600 km of paved roads. Building on this experience, it then developed the Contratos de Recuperación y Mantenimiento (CREMA), assigning responsibility for rehabilitation on stretches where it was needed, followed by maintenance of the section for 5 years. Sixty such contracts, covering 11,000 km of roads, were competitively awarded in 1996–97. Detailed engineering of the rehabilitation work was to be done by the contractors, and, apart from initial start-up payments, they were to be paid based on the state of the roads under their charge. That would be verified by monthly visual inspections.

These contracts were mostly completed by the end of 2002. The share of the roads in poor condition had been reduced from 41 percent to 6 percent; the higher standards of maintenance had also reduced the rate of road surface deterioration. Costs had been kept very close to budget and were some 12 percent to 18 percent lower than for comparable works using traditional contracting. The ERR on the program was about 60 percent because of the significant effect of the improvements on vehicle operating costs. Coverage of the program was recently extended through a second phase to a further 8,200 km of national roads; the same approach is now being applied by some of the provinces with Bank support.

Experience to date highlights several lessons:

- Although the system can only yield the desired results if the flow of funds is sufficient to make timely payment to the contractors, adoption of the system—which implies commitments to a wide range of contractors—helps to ensure that funds flow and avoids their diversion to uses of lower economic priority.
- CREMA's effectiveness depends on the availability of contractors and road agencies experienced in contract management and road maintenance; it also depends on the existence of adequate management information systems covering road condition, maintenance needs, and costs.
- It is important to avoid trying to place risks on contractors in excess of their capacities.
- Major rehabilitations are likely to require detailed engineering in advance and contracting on more traditional lines, but incorporation of more standard rehabilitations within longer-term maintenance contracts has advantages: stimulating contractor innovation and ensuring more efficient distribution of expenditure on a road over time.
- Moving CREMA-type contracts toward design, build, finance, and operate operations, with the private sector providing a higher share of the investment required by the road network, depends principally on development of the local capital market. Initial hopes in Argentina along these lines proved unrealizable because of borrowing uncertainties and high interest rates, which led to unacceptably high bids.

Sources: World Bank (2005b), Zeitlow (2004), discussions with Bank staff.

There is merit in supporting more government-donor assessments of road network needs.

The approach to road maintenance continues to evolve. Originally, many road authorities used in-house force account units to perform maintenance work. This was a very expensive way of carrying out this activity, because the real costs were hidden in the departments' often complex accounting and reporting structures. Over time this began to give way to more efficient method-based contracting, whereby a bid system was used to select contractors through tenders for specified work.

The system also helped to develop local contracting industries.

In the past decade, however, several countries have moved beyond this level to performance-based contracting, which involves explicitly linking payments for the management and maintenance of road assets to certain clearly defined minimum performance indicators. This has proved successful in some transition countries, such as Estonia, and in middle-income countries, such as Argentina (box 5.1), Brazil, South Africa, and Uruguay. It may be, however, inappropriate for countries at an earlier stage of development,

where government capacity and the contracting industry are relatively weak and the supporting legal framework is less well defined.

Over the years the Bank's approach has become more flexible regarding the standards and technology necessary to achieve road condition sustainability in differing circumstances. In some countries with hilly terrain, the rate of gravel loss can be dramatic and low-cost paved roads have worked. In others there has been more focus on turning seasonal roads into all-weather roads by concentrating on bridges and drainage. Without maintenance, gravel roads can deteriorate in 2–3 years in some climates. The Bank has usually resisted financing routine maintenance costs.

However, there are examples of upgrading projects linked to a covenant that the government must set aside funds for routine maintenance for an agreed time period (Lesotho). In one sense, the Bank indirectly finances at least some routine maintenance whenever it agrees to fund the rehabilitation of a road earlier than would have been the case had the road been properly maintained. IEG believes there may also be some merit in pursuing a greater number of coordinated initiatives with other financial institutions with joint government-donor assessments of network needs, including maintenance (appendix B).

An indirect effect of poor capacity experienced in several countries, especially in Africa, is excessive road damage caused by overloaded vehicles. The knowledge exists to control truck overloading; the main impediment to enforcement of axle load regulations is usually the limited capacity of the traffic police. Because the damage caused by overloading rises exponentially with each additional ton of overload, the damage to the roads can be enormous. Consequently, this is an area where further investigation by sector staff could easily be justified.

Two options are possible—either stronger pavements, where enforcement is unlikely to improve in the short to medium term, or greater assistance with the improvement of vehicle testing and overload control. However, this is oversimplified be-

cause there are numerous other factors that also need to be taken into account, including regulations, accuracy of weighing equipment, avoidance of corruption, and appropriate fines (Lauridsen and others 1994). According to IEG's analysis, success in this area is limited in developing countries. More attention needs to be paid in future strategies—taking into account local administrative capability—to customizing an appropriate balance between highway construction standards and enforcement of overloading to minimize overall total costs.

The Importance of Good Governance

The Bank views good governance, and therefore anticorruption activities, as central to its poverty-reduction mission. Consequently, it focuses on ensuring organizational integrity, preventing corruption in Bank-funded projects, and helping countries to improve their governance and control corruption. In February 2006, the leaders of the major multilateral development banks reached consensus on the broad policies and practices necessary to address corruption.⁶

Corruption negatively impacts infrastructure projects (including transport) through higher costs, but evidence based on contract awards can be hard to find and even harder to prove. Major differences between expected and actual costs, for example, were the foundation of a 1998 report on the status of corruption in Tanzania that resulted in the subsequent arrests of those implicated. Although the case was in the High Court for more than 3 years, the alleged corruption was impossible to prove because cost increases can be attributed to so many different factors.

Completion reports in the transport sector sometimes refer only obliquely to potential malpractice, because there is always the possibility that the client has failed to understand Bank procedures. In the rehabilitation and upgrading of Aden

Vehicle overloading is a particular problem on African roads in part due to lack of enforcement.

Evidence of corruption in infrastructure projects can be hard to find and harder to prove.

Airport, for instance, there was a delay of more than a year because the Bank insisted that the contract be awarded to the lowest technically sound tender, whereas the tender board wished to make a different choice from among the remaining bidders. A similar experience was recorded for urban roads in Burkina Faso.

However, other cases are more straightforward. In the Northern Uganda Reconstruction Project regular Bank supervision uncovered irregularities that led to further audits and ultimately to a request for a government investigation. Eventually a project manager was indicted by the Ugandan judicial system. The ICR for a Kenyan urban transport project describes how suspicion of corruption⁷ led to a forensic audit that found significant control weaknesses in the project as well as multiple indicators of fraud and corruption. This led to the suspension of the project and the dismissal of the Bank task team leader.

Anticorruption models must be customized.

The stronger focus on the need to root out corruption has, according to IEG stakeholder feedback, heightened understanding by Bank staff and borrowers as to what constitutes corruption. This greater awareness has led to ideas of how corrupt practices can be identified. In October 2005 the Transport Anchor sponsored a workshop that included increasing the participants' knowledge of improving governance in PPP highway concessions. It also organized an infrastructure governance roundtable in March 2006; during this event a number of countries shared their experiences in identifying governance issues and in building institutions

The Bank needs to help its clients achieve a new level of governance and institutional capacity, but this requires a multisector approach and an evaluative framework.

and processes for good governance. The WBI has also been active in sensitizing senior government staff to governance issues.

Regions are now taking practical steps to combat corruption. The Europe and Central Asia Region has developed some diagnostic an-

ticorruption tools, while the Trade and Transport Facilitation Program in southeast Europe introduced measures and equipment to reduce smuggling and corruption at border crossings. The East Asia and Pacific transport team recently developed an anticorruption framework based on its experience in the Indonesian road sector; the framework was presented to and discussed by the Transport Sector Board.

Corruption issues are often unique to individual countries, and although sharing experiences among countries and Regions will be useful, a single model will not suffice. Building ownership within countries and gaining high-level political commitment could be the way to achieve more success, but at this stage no evaluative evidence in support of this strategy is available. Nevertheless, new initiatives have commenced in Cambodia, the Philippines, and Vietnam.

Good governance is not just about reducing corruption; it is the whole process by which governments are held accountable. It also covers the capacity of governments to manage their resources efficiently, including the ability to formulate, implement, and enforce sound policies and regulations. Steps to improve governance may be pursued in many different ways, such as through the accountability of professional institutions; the introduction of market-related salaries; and greater transparency, including budgetary disclosure, open meetings, and freedom of the media. Similarly, the introduction of improved financial management and procurement systems should assist. At this stage, however, there is no framework for evaluating the relative merit of these measures, which are still largely works in progress.

An IMF paper (Kaufmann 2005) argues that it is sometimes possible to quickly and significantly improve a state of governance, citing Bosnia, Ghana, and Sierra Leone as examples. However, governance shortcomings in some countries are entrenched, and it would be naïve to think that governance will not continue to be a problem. Continued vigilance will be essential.

Building Capacity

A previous IEG evaluation of capacity building (IEG 2005a) observed that the international development community, including the Bank, has traditionally treated public sector capacity building as a collateral objective—as a byproduct or instrumental measure to advance near-term project outcomes—rather than as a goal in its own right. As a result, capacity building is not a well-defined area of development practice that has an established body of knowledge about what works in meeting different needs under different country and sector conditions. However, it should at least encompass the three elements of institutional development, regulatory reform, and training.

In the transport sector, technical assistance has frequently been used merely to fill skills gaps to manage Bank-funded projects, sometimes with limited lasting impact on strengthening client capacity (Bangladesh, Dominica, and Lesotho—see box 6.4). In general, technical assistance has been most effective when used for discrete and well-defined tasks and in the context of a comprehensive strategy (Ethiopia, Ghana, and Nicaragua).

Some projects reviewed supported only general training of individuals. While such projects have frequently achieved set targets, as in Albania and China, there has been little subsequent assessment of the effectiveness of this training or determination of whether the organization retained the staff concerned. Evidence from other project assessments after intervention (Russian Federation and the Republic of Yemen) suggests there may be a high turnover of such staff. A further downside is that there is seldom synchronization between the timing of the training intervention and the necessary organizational changes needed to improve public sector performance.

Some positive results, however, are also evident, such as the establishment of 25 provincial road institutes in Peru. Results for urban transport development projects with institutional objectives have also generally been more successful and often sustainable, as in the decentralization reforms in Brazil. In Lao PDR a proliferation of

fragmented project implementation units was dismantled, and responsibility for implementation shifted to the government, thus ensuring that capacity was strengthened in the appropriate line ministry. Other measures were added to ensure that a devolution of responsibilities was then extended to the provincial departments. IEG rated the outcome of this project as highly satisfactory.

Supporting Institutional Development

Of 251 closed Transport Sector Board projects with institutional objectives, 62 percent had a moderately satisfactory or better outcome. The transport sector, with its strong engineering cadre, is particularly good at resolving technical issues and introducing management systems. But institutional objectives cover a broad spectrum, ranging from organizational and regulatory reform to training and technical studies. For the sector as a whole, institutional development outcome results varied by topic (see table 5.1). Technical issues were satisfactory in 85 percent of cases; planning objectives achieved a success rate of 78 percent. Other scores were: studies/safety, 68 percent; management capacity building, 61 percent; environmental matters, 64 percent; organizational restructuring and regulatory change, 63 percent; training, 52 percent; and monitoring and evaluation, an unsatisfactory 38 percent.

A problem reported in several projects, including Cape Verde, Indonesia, Lesotho, the Russian Federation, and Turkmenistan, was lack of realism on both sides about the rate at which change could be accomplished. It was often much slower than envisaged at appraisal, sometimes leading to several extensions before projects could be closed. Areas where the transport sector could improve its performance in institutional development are as follows: First, make a more rigorous assessment of the institutions' existing capability and willingness to change; second, ensure that the regulatory framework can

The Bank's support to institutional development has had mixed success.

Institutional change takes time, and the Bank needs to be realistic about this.

Table 5.1: Analysis of Performance by Institutional Development Objectives, Transport Sector Board Projects, Fiscal 1995–2006

Subobjective	No. of objectives rated by IEG	Objectives rated moderately satisfactory or better	
		Number	Percent
Management capacity building	64	39	61
Environmental management	22	14	64
Monitoring and evaluation	8	3	38
Maintenance	47	25	53
Training	21	11	52
Planning	18	14	78
Technical issues	20	17	85
Studies and safety	19	13	68
Restructuring, decentralization, and regulation	32	20	63
All institutional development	251	156	62

Source: World Bank data.

support the changes proposed; and third, look for opportunities to make such interventions sustainable beyond the horizon of the immediate project through a more programmatic approach. Continuity of engagement is also important.

In some instances (such as Indian Railways or Tanzanian roads) the Bank has withdrawn when faced with little or no apparent progress with reform issues. But in time new factors have come into play and the situation has changed. The Bank can only hope to influence a new direction if it stays involved.

Protecting the Environment

An IEG evaluation of environmental sustainability in development noted that many developing countries view international concern over environmental problems in their countries as intrusive and likely to impede development. They argue that developed countries have overexploited the environment, refused to take full responsibility for mitigation of their own impacts, and want to shift that responsibility to developing countries without adequate compensation. This perception has substantial validity and has complicated the role of the Bank. At the same time, public tolerance for inadequate compliance by the Bank of its own policies is low. The transport sector has had

heightened awareness of environmental issues since the well-publicized Brazilian *Polonoroeste* program in the 1980s, when upgrading the BR-364 highway led to an explosion of uncontrolled deforestation speculation in the absence of effective environmental controls.

During the review period the transport sector has performed reasonably well in most projects with environmental objectives. But while the sector received a 94 percent score from QAG on Quality at Entry for the quality of environmental management planning and for assessment of environmental risks (based on 53 projects), the IEG outcome results for environmental objectives are less positive. Fourteen of 22 closed Transport Sector Board projects with environmental objectives (64 percent) returned a moderately satisfactory or better outcome. Several were involved with establishing a local environmental capability, including setting up environmental units and training in diverse areas such as environmental protection activities and handling resettlement and compensation issues. Special attention in some projects was on reducing negative environmental impacts such as noise and air pollution (box 5.2).

The majority of transport projects with environmental objectives in the past decade have been

Box 5.2: Lessons on Reducing Urban Pollution

Issues such as air pollution have gained importance in recent years. In Dhaka, highly polluting three-wheeled taxis with two-stroke engines were removed under the Bank's Air Quality Management Project. This made a significant difference to air pollution. However, the recommended social measures to alleviate the adverse impacts on the livelihood of affected drivers were disregarded.

Special measures to cope with two-wheeled traffic are also needed in many South Asian countries such as Thailand and Vietnam. An important Bank publication on the air pollution issue, *Reducing Air Pollution from Urban Transport* (World Bank 2004a), provides a practical framework of guidelines and principles on how to select appropriate policies and take mitigation measures against

the worsening poor urban air quality. WHO has estimated that 650,000 people died prematurely from urban air pollution in developing countries in 2000. But Bank involvement is still small and arguably should be greater, especially in Asian cities.

The adverse effects of air pollution often fall disproportionately on the poor, compounding other environmental problems such as lack of clean water and sanitation. Energy savings are also under the spotlight; in Brazil more than a third of the country's cars run on either pure ethanol or gasoline-ethanol blends. Natural gas to power public transportation is becoming more common, and many cities have programs to eliminate leaded gasoline.

Source: World Bank (2004a).

classified as category B or C. Category A projects are likely to have significant adverse impacts that are sensitive, diverse, or unprecedented. Category B projects can have potentially adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats. Category C projects are likely to have minimal or no adverse environmental impacts.

An example of recent progress is the Chinese Fujian Provincial Highway. In this project a full environmental assessment was carried out and the environmental management plan covenanted in the loan agreement. The provincial road authority established a new environmental unit and worked closely with Bank staff, whose supervision team (including two environmental specialists) was also diligent in following up on the implementation of the environmental mitigation actions. The monitoring program and outcome were comparable with industrial country standards.

But there is room for improvement in this area. The environmental impacts of infrastructure projects have long-term implications (often 50–100 years), while national plans usually look forward 20 years or so, and project appraisals typically have a 5- to 15-year horizon. A concern is that once projects are completed, Bank supervision (including en-

vironmental supervision) ceases. Resources available for fully incorporating environmental concerns into project design and evaluation are constrained.

There is a need to look “beyond the fence” to what the IFC characterizes as the area of impact. In transport this would be the longer-term impacts on expanded land use; the deforestation of rural areas; and impacts, especially in the cities, of increasing motorization such as traffic congestion causing increased air pollution, noise, and traffic accidents. IFC is able to go further than IDA and IBRD with its environmental surveillance, continuing its oversight until the loan is fully paid off or the equity is sold.

Only six Bank projects related to the urban environment and air quality in 10 years have been completed and evaluated. One of these was the Transport Air Quality Management Project for the Mexico City metropolitan area. The project, which had a satisfactory outcome and was assessed by IEG in a PPAR, led to a significant decrease in ambient concentrations of pollutants and resulted in fewer

Transport projects with environmental objectives have performed reasonably well.

Increasing motorization, traffic congestion, and expanding land use will continue to require concerted attention.

respiratory illnesses and other acute syndromes of poor quality air. More of these projects are needed.

More projects to encourage energy savings and clean air are needed.

Urban planning programs that integrate public transport, land use, and air quality strategies have been promoted for many years. Curitiba, Brazil, and Bogotá, Colombia, where people's mobility has been supported through use of private vehicles, have long been recognized as instructive models for urban planners, but such achievements resulted from exceptionally strong leadership. The Bank has shown that extending and modernizing commuter rail systems and bus corridors is an effective way to alleviate heavy urban traffic congestion (Brazil). Attention is also increasingly being given to the installation of centralized traffic management systems (Bangladesh and Vietnam) to regulate traffic flows as efficiently as possible. Parking strategies can also improve traffic flow, generate revenue, and discourage car usage. In a few cities special arrangements have been made for nonmotorized transport (in Bangladesh and the Philippines).

Whether and how transport can influence behavioral change in established industries and by consumers to meaningfully address climate change trends remains an open question. Given the expected growth in the vehicle population, the demand for road space by private vehicles will inevitably have to be constrained through pricing mechanisms and physical restrictions.

Several solutions are already technically possible, but the extent to which measures that constrain vehicular use will be supported politically is uncertain, given their likely unpopularity with the public. Europe appears to be moving in the right direction. This is a long-term problem to which the Bank will need to devote more serious attention and even advocacy. Currently, there tends to be more focus on safeguard issues up front in project design; that avoids doing immediate and visible harm but is arguably weaker on addressing longer-term policy and incentives to bring about substantial impacts. Issues such as this will need to be vigorously addressed in a synergistic way by the newly integrated Infrastructure and ESSD Network.

Chapter 6: Evaluation Highlights

- Both urban and rural poverty can be reduced when transport improves accessibility and affordability for the poor.
- The distributional impact of transport projects is underresearched.
- Regardless of who implements the project (communities or works departments), sustainability remains a major issue.
- Pro-poor passenger transport pricing needs more attention for accessible transport to reach the poorest.
- In fragile states the risks of intervention are high, but the returns can sometimes be substantial.
- Where there is low institutional capacity, Bank staff tend to underestimate the time needed to implement reforms, build capacity, and build institutions.



Transport and Poverty

This review began by showing the importance of transport in achieving poverty reduction and its potential contribution to the MDGs. Transport effects on poverty reduction are largely indirect and not easily quantified. The connection between transport and poverty reduction is that when transport improves accessibility for the poor, it unlocks employment opportunities in construction and other areas, and more importantly enables essential trips to service centers, health and educational facilities, and markets.

In this chapter the experiences and lessons emanating from transport projects designed to reduce poverty are discussed, first in the rural context and then in the cities, where accessibility and affordability are also crucial issues. Finally, Africa is given special attention, because the Bank's poverty-reduction agenda in recent years has put a spotlight on this continent. Africa has a greater share of fragile states than any other Region, not only because of its demographics and geography, but also because of weak governance and political instability.

Rural Transport and Poverty

The causes of rural poverty are complex and multidimensional. They include issues regarding culture, gender, climate, markets, and public policy. Rural poverty accounts for nearly 63 percent of poverty worldwide, reaching 90 percent in some countries, such as Bangladesh, and between 65 and 90 percent in Sub-Saharan Africa (Khan 2001). The ways in which policies affect the rural poor

are through markets, transfers (both public and private), and both services and infrastructure.

Transport falls in the latter category; roads are normally provided through public funding and the vehicles by both the public and private sectors. Nonmotorized transport in a wide variety of forms plays an important role in many countries.

Although some of the Bank's main intercity highway projects (especially in China) also include district and even local road components, most rural road projects involve basic access roads, many using labor-intensive construction. A labor-intensive approach is popular with donors because it generates employment, but it also requires good technical assistance support and strong client commitment, which is sometimes lacking. But such roads are in high demand by the rural population and, in

Most rural road projects focus on access, and many use labor-intensive construction.

Box 6.1: Improving Road Access in Rural Lesotho and Ghana

The Lesotho Road Rehabilitation and Maintenance Project (approved in 1996) assisted with the rehabilitation of 414 km of rural access roads. An impact study found that the rural residents considered better access to be of great value, a finding that was confirmed by an IEG mission. Employment during construction was also important, and most participants were able to work on these roads for an average of 3 months.

Although the baseline data were sketchy, it is clear that the upgraded roads led to a range of small businesses being established. The affected communities also mentioned the improved access to economic and social services. These positive impacts are consonant with both the Lesotho PRSP and the Lesotho Vision

2020 Plan. A more rigorous follow-on pilot project has recently been completed in the Senqu River Valley, where village mobility maps have been created (Lesotho Ministry of Public Works and Transport and World Bank 2005). This will give important information about the impact on poverty and gender.

A similar study in Ghana analyzed travel patterns of villagers by mode. It showed that the majority of trips were by nonmotorized means, including on foot, but that motorized trips were more likely to be made for trips to markets or health centers. Gender is important in these analyses because rural access improvements may be particularly beneficial to women and children.

Source: World Bank (2006b).

Lesotho, for example, have recorded positive impacts (box 6.1).

Typically, some of these roads are constructed under the district works department and in the Bank fall under the Transport Sector Board, while others are part of community-driven or social fund projects. In the latter case they may be a component of a package of infrastructure improvements ranging from water and sanitation to new community centers. Community projects within the Bank fall under sector boards other than transport. The works-managed projects, where appropriate technical staff were used, were generally more successful than the community projects, with 26 of 36 (72 percent) rated satisfactory. The main reasons given for the less satisfactory performance in the other 28 percent of cases were insufficient finance, poor technical skills and capacity, and insufficient priority given by government.

In Indonesia it was also demonstrated that large structures built using labor-intensive methods

Projects have generally performed better when construction is managed by the district works department.

could cost about one-third less than equivalent works constructed through government agencies. In the Philippines it was proven that small infrastructure works such as foot trails,

spillways, and hanging bridges could benefit large numbers of people (37,000 households in this case). Improvements of farm-to-market roads in India (Assam) showed that cropping intensity improved by as much as 45 percent, which led to a substantial increase in employment. Another study in India indicated that expenditure on roads had by far the largest impact in reducing rural poverty. For every \$22,000 invested in rural roads, 163 people were lifted out of poverty (Fan, Hazell, and Thorat 2000).

Although the contribution of transport operations to poverty reduction is generally indirect, most direct poverty-targeted interventions such as schools, clinics, nutrition programs, and even credit extension depend on transport in one way or another. The distributional impacts of transport projects and their effects on poverty are relatively underresearched and are often anecdotal rather than results-based, but there is evidence that village road improvements significantly affect school enrollment and attendance. According to studies by WHO, between 40 percent and 60 percent of people living in developing countries live more than 8 km from health care facilities; in rural areas this distance can be even greater, and this is especially problematic in the case of accessing maternal and child care (WHO 2005).

Recent work in Bangladesh using household-level panel data confirms the importance of rural access and suggests that road investments are pro-poor, meaning the gains are proportionately higher for the poor than the nonpoor (World Bank 2006c). Bank research in Morocco showed that investments in new roads had gender implications; safer roads encouraged parents to send their daughters to school, thus increasing female primary school enrolment. In Bhutan the travel time involved in getting to and from school was substantially reduced, and in one village school attendance increased eightfold.

Bank community-based projects often involve much deeper engagement with the local people, but the difficulty in assessing the effectiveness of such projects is that they frequently fall under sector boards other than transport. The evaluation rating (59 percent moderately satisfactory or better) reflects the entire project in which the transport component may be a fairly small part. Typical reasons for failure are, however, very similar to works-managed projects because sustainability is less assured.

In Moldova the road component was poorly targeted at reaching the poor, and in Lebanon construction goals were not met because of difficulties in getting landowner agreement and because of issues related to maintenance responsibility. A recent QAG assessment of the quality of transport components under other sector boards confirmed IEG's findings that in multisector projects the quality of preparation for technical and sustainability issues is subsumed by community participation issues. QAG looked at the Quality at Entry of 16 projects and found that only 25 percent were satisfactory. As it is not cost effective to have a transport team member on all such projects, QAG's proposal that the Transport Sector Board draw up guidelines for handling future transport components in multisector projects is a sensible suggestion.

Sometimes a major leap forward in poverty reduction can be achieved by going beyond the "grassroots" village project. The opening of significant areas of rural potential may depend on a

large-scale transport investment. In such cases a major infrastructure project can make a huge difference to poverty reduction; the Jamuna River Bridge in Bangladesh is a fine example of a multifunctional structure that led to improved income for a significant number of people (box 6.2).

Urban Transport and Poverty

Much of the growth in the world's population for the foreseeable future will take place in the cities and towns of the developing world. In 2000 the world's urban population in developing country cities was 2.1 billion; it is expected to reach at least 2.9 billion by 2015. Cities in developing countries with a population exceeding 1 million numbered 268 in 2000, but by 2015 the figure is predicted to rise to 358 (World Bank 2001; UN Habitat 2001).

Over the next 20 years, many countries will for the first time become more urban than rural. In part at least, urban poverty is created by the efforts of the rural poor to escape the poverty trap by moving to the cities, where they perceive that better opportunities exist. Although the benefits that urbanization brings cannot be overlooked, the speed and scale of this transformation presents many challenges. Urban transport projects cover construction or rehabilitation of urban roads, bridges, and interchanges; improvements to traffic management and systems; and (in a few cases) support to suburban rail transport and renewal of bus and trolley-bus fleets. Performance indicators have included increased passenger and fleet capacity, reduced travel and waiting times, and improved passenger comfort and safety.

Bank emphasis has often been on encouraging the design of urban transport projects to improve the

The distributive impact of transport projects is relatively underresearched.

Community-based projects often fall short on sustainability.

Large-scale investments that can open significant areas of rural potential can have substantial impacts on poverty reduction.

Box 6.2: Bangabhandu Jamuna River Bridge, Bangladesh—How Transport Infrastructure Can Stimulate Development

This project aimed to establish an efficient and reliable multimodal transport link across the Jamuna River to connect Bangladesh's less-developed northwestern region with its more developed eastern region. The intention was to accelerate economic growth in the northwest and to integrate the area more fully into the economy of the nation.

The bridge, which is nearly 5 km long, carries a four-lane highway, rail line, utility connections, and fiber optic cables; it was opened in June 1998. This structure, which cost \$962 million, was financed by the government of Bangladesh with the support of several international financial institutions, including the World Bank, the Asian Development Bank (ADB), and the Japan Bank of International Cooperation. The rail component financed mainly by ADB added value by including improvements to the rail system, such as connecting two different rail gauges, constructing 99 km of

new connecting track, and assisting with institutional reforms in the Bangladesh Railway Company.

Before the bridge was constructed the only connection was a slow-moving ferry; traffic jams at the ferry terminals often lasted for several days. The completed project has reduced journey times and transport operating costs and has stimulated interregional trade. Computer simulations have predicted major shifts of persons out of abject poverty locally with wider distributional improvements to both local and national welfare.

IEG rated the project outcome as highly satisfactory. The physical works were completed without major implementation delays, the quality of construction met international standards, and the environmental and resettlement plans were largely successfully accomplished. Even though the road was tolled, the level of traffic has been 41 percent higher than expected.

Sources: IEG (2000), ADB (2005), Luppino and others (2004).

Urban growth predictions are spectacular; the concern is whether transport investments can keep up.

integration between services and to increase the access of urban poor to employment centers, health centers, and educational facilities (table 6.1). A new contingent of policy makers is assuming the diverse responsibilities of urban governance—as many national governments decentralize and devolve their functions; and programs in poverty, health, education, and public services are increasingly being placed in the hands of hitherto untested municipal and regional governments.

Many of the Latin American urban transport projects based on urban railway restructuring or public transport reform have been de facto instruments

The Bank's emphasis in urban transport has often been on the integration of services to increase access for the poor.

to catalyze broader institutional reform, such as the creation of metropolitan authorities, modal coordination, resource generation for the development of activity poles, and the private concessions of operations. In some Brazilian cities improve-

ments in access to metro stations through introducing connecting minibus services lines with subsidized fares have proved successful. However, poor people often live too far away from these public transport corridors to benefit from such projects. This is also an international problem because the urban poor, whether in Moscow, Paris, or Johannesburg, tend to live on the city peripheries where land is cheaper, but where travel distances are longer, more costly, and less convenient.

Some of the early projects that included components on bus deregulation and privatization proved unsustainable (Sri Lanka), and in recent years the Bank has resisted bus replacement, unless accompanied by significant regulatory reforms to achieve longer-term sustainability (for example, in Uzbekistan and Kyrgyz Republic)—a strategy validated by project performance. Moreover, the Bank has discouraged metro and light rail construction worldwide (with a few exceptions) in favor of more cost-effective solutions such as buses, bus priority measures, and exclusive busways. It has, however, supported improving the capacity (Korea) or connectivity (Brazil) of existing metros. Competitive contracting has also been actively encouraged.

Pro-poor fare pricing with targeted subsidies, such as the *vale transporte*, has been successfully promoted in Brazil, where it is an important social safety net (this subsidy is a compulsory requirement for employers; through this they finance part of the commuting costs of their employees). Without the *vale transporte*, millions of formally employed users earning \$300 per month or less would have trouble paying their fares. However, the *vale transporte* does miss the poorest people, and a future challenge is how to extend its benefits to the informal employment sector. Decisions on appropriate fare structures also have to be taken in the context of trading off cheaper fares and poorer services; in the Kyrgyz Republic it was demonstrated that the poor may sometimes be willing to pay more for better service. The Bank staff has solid guidance for dealing with the various pricing techniques from *Cities on the Move* (2002a) and other publications.

In a 2003 IEG evaluation summary of urban transport¹ 30 Bank interventions in urban transport over the preceding 20 years were reviewed; 87 percent were found to have had satisfactory outcomes. The reestimated average ERR was found to be 30 percent, compared with 43 percent at appraisal. These results are slightly higher than those covered by the review period of this study (1995–2005), whereby 30 of 40 (75 percent) had a moderately satisfactory or better outcome.

However, inspection of the objectives shows that later projects have had more institutional content. In terms of upgrading physical infrastructure, most projects achieved or even surpassed their physical objectives, while traffic management programs were more successful in countries that have the ability to enforce traffic regulations, such as Brazil and Korea. Projects that tried to bring about better integrated development, such as in Belo Horizonte and Recife, sometimes took longer than expected to implement because of exogenous factors (Brazil imposed severe fiscal constraints after 2002 following the macroeconomic upheaval in Argentina). Sustainability was considered likely, however, in more than two-thirds of all urban transport projects assessed.

Although a few projects have tackled the issue of integrating nonmotorized traffic and pedestrians in motorized cities, this can be a difficult challenge because the incumbent professionals have often been trained in Western countries or follow developed country philosophies toward the control of transport in developing cities. Sometimes a change in locally accepted notions of appropriate city planning is warranted (Tiwari 2002). Nonmotorized transport projects are still comparatively rare, given the huge numbers of nonmotorized transport users. Current estimates show, for instance, that there are 1.4 billion bicycle users worldwide, including 500 million in China.²

Considering the current huge growth in developing cities (in East Asia and Pacific, 70 percent of Regional economic growth), the number of urban transport projects appears comparatively low (see table 6.1). Over the fiscal 1995–2005 period, such projects have only accounted for between 5 percent and 8 percent of the transport portfolio and appear to be declining slightly rather than increasing, as might be expected. Chapter 7 argues that this is partly due to insufficient capacity and/or priority in the Bank’s transport network and sometimes to taking on too few large, complex projects that require lengthy preparation time; this important issue deserves serious attention by management. Given the successful outcome results reported (above 75 percent), the longer preparation time with more consultation does appear to produce more positive outcomes.

African Transport and Poverty

Africa is the world’s poorest continent, and Sub-Saharan Africa is the Bank Group’s largest Region with the most client countries and the highest

The Bank has tended to discourage light rail and metros in favor of more cost-effective bus transport.

Enforcement capacity was central to successful traffic management programs.

Considering the rate of urban growth, the Bank seems to invest too little in urban transport.

Table 6.1: Distribution of Urban Projects and Components, Closed and Active (1995–2005)

	1995–2000	2001–06	1995–2006
Total number of urban projects	41	37	78
Components	78	77	155
Urban roads	27	24	51
Traffic management and safety	10	9	19
Institutional, regulatory, and planning	12	19	31
Nonmotorized transport, urban poor	7	7	14
Urban environment, air quality	3	3	6
Public transport	19	15	34

Source: World Bank data.

volume of IDA lending. The UN Food and Agriculture Organization recently warned that in 2006 some 27 countries would urgently need food aid (BBC 2006). However, the Bank's 2005 annual study of the continent shows that 30 percent of African states have managed to achieve a growth rate greater than 4.5 percent since the 1990s and that the number of African conflicts has fallen from a peak of 16 in 2002 to 5 in 2005. An important development has also been debt relief for

The Bank has recognized the need to improve feeder roads.

the heavily indebted poor countries, many of which are in Africa. In several cases (Ghana, for example) the savings in debt relief have made available additional funds for poverty-reduction expenditure programs.³

Sustainability is a major issue in Africa.

In the transport sector two initiatives are particularly relevant; first, the World Bank Group Africa Action Plan (box 6.3), which provides a result-oriented framework to achieve clear goals (such as the MDGs), and second, the SSATP, a program specifically designed to improve transport performance in Sub-Saharan Africa (discussed under the section on Donor Cooperation; see box 3.1).

Bank Transport Project Performance in Africa

The Bank has recognized the need to improve feeder roads in addition to national networks, as

demonstrated in Burkina Faso, Ethiopia, Mali, and Nigeria. Ratings for completed Bank transport projects in Africa at first appear favorable—78 percent were assessed as having a moderately satisfactory outcome or better. However, only 61 percent received a sustainability rating of likely or better, and only 57 percent received a substantial or better institutional development impact rating.

A closer look at outcomes also shows that one-third of the positive ratings were only moderately satisfactory, and in 10 projects the sustainability ratings were categorized as nonevaluable, usually because of political uncertainty or doubts about institutional capacity. Recently there has been some focus on multimodal regional corridor projects to reduce bottlenecks at international borders and to harmonize customs and trade policies. These projects, though, have not yet been evaluated by IEG.

However, some success is evident in the Bank Group's increased effort with the legal and regulatory frameworks to encourage more private sector investment (Cameroon, Mozambique, Tanzania, and Zambia). In Cameroon, for example, the Ministry of Public Works was restructured to include units specifically for rural roads, and the Ministry of Transport was refocused on planning and policy regulation.

Relatively few outcome objectives were directly focused on poverty reduction, although indirectly

Box 6.3: The World Bank Group Africa Action Plan

The Bank Group's Africa-led action plan starkly observes that Sub-Saharan Africa continues to present the world with its most formidable challenge. During the past two decades the number of poor in Africa has doubled, from 150 million to 300 million, more than 40 percent of the Region's population. It has the highest poverty incidence among all developing regions, and extreme poverty is twice the global rate. Only 34 percent of Africa's rural population lives within 2 km of an all-season road. Africa is also the only Region that remains behind on most of the MDGs.

In this plan, a number of components have direct links to transport. They include closing the infrastructure gap, creating an export push, developing the private sector, supporting Regional integration, and improving governance and institutional capacity. Other issues are the extent of improvements to rural accessibility, the potential impact of reductions in freight costs, and the

amount of the sector's contribution to health issues, such as reducing the role inadvertently played by transport in spreading HIV/AIDS and reducing the unacceptably high road accident rate. Many of the countries in Africa are fragile states, also known as low-income countries under stress (LICUS).

These countries share a common fragility in two respects. First, state policies and institutions are weak, making them vulnerable in their capacity to deliver services, control corruption, and provide proper accountability. Second, they face risks from wars and political instability. A problem that the Bank and others are only beginning to grapple with but that badly affects the transport sector is the difficulty of retaining college-educated professionals. In Sub-Saharan Africa skilled workers make up only 4 percent of the total workforce, and more than 40 percent of these educated people leave their countries in search of jobs overseas.

the poor benefited through improved accessibility and the opening up of markets. Physical upgrading was generally satisfactory at 72 percent, and railway and port concessions have been particularly successful at 82 percent. Other activities scored lower, with maintenance objectives scoring 60 percent and road safety 50 percent. Successes included institutional improvements to improve efficiency and accountability, such as the establishment of road funds and road agencies; the phasing out of force account maintenance in favor of small contractors; and training initiatives for these emerging enterprises. Zambia, for example, generally had positive experiences in these areas, but it could not sustain similar efforts in road safety. A road safety action plan was compiled but not implemented because of lack of capacity, and the accident record actually worsened. Road safety continues to be a concern in Africa. The Bank needs to deploy more resources in this direction.

Bank Transport Sector Performance in Africa

Road Management and Maintenance

The Bank has had some success in moving forward with road management, especially in countries where responsibility for this function has been vested in road agencies. What is difficult to pre-

dict, however, is whether the progress that has been achieved will be undone later by political unrest. Setbacks in road management caused by conflicts or governance issues abound, including in Côte d'Ivoire, Guinea-Bissau, Liberia, Niger, Rwanda, and Zimbabwe.

Despite the fact that 27 road funds have been established in Sub-Saharan Africa, the efficiency of these funds is highly variable. In only one-third of the cases are the funds able to cover routine maintenance needs.

Lack of Capacity

A 2000 multidonor evaluation of experiences in the road sector in Ghana concluded that the main constraint to more rapid improvement of the integrity of the road network was the lack of capacity in the Ministry of Roads and Transport (appendix B). The road program was too ambitious for both the funding capacity of the government and the absorption capacity of the ministry. In

Most transport projects were structured to indirectly benefit the poor.

The Bank has had some success with asset management in African countries with established road funds.

Box 6.4: Lesotho Road Rehabilitation Project—Limited Capacity Impedes Reform

Experience from four earlier Bank-financed road projects in Lesotho showed that ongoing road maintenance activities were constrained by a lack of sustained operational and institutional capacity in the implementing agencies. The Lesotho Road Rehabilitation Project (approved in 1996, completed in 2003) was thus designed not only to restore sections of the road network that had reverted to poor condition but also to strengthen the capacity of the road sector agencies through policy and institutional reforms.

The outcome of the project was rated moderately satisfactory. Although some progress was made in enhancing the condition of the overall network, improving access to several remote communities, and developing emerging contractors, the institutional objectives were not fully achieved. At midterm, only 20 percent of the project funds had been disbursed, so \$14 million of the credit was cancelled, which meant that the upgrading program had to be cut back.

Institutional development impact was rated modest. An action plan for policy reform was agreed to during preparation, but progress was laborious. Two separate rural road agencies were successfully combined under the Department of Rural Roads and a road fund established, but only about 60 percent of the required funding has been provided.

Sustainability was rated nonevaluable because of continued uncertainty with regard to the substance and effectiveness of the reforms. A proposal for a semiautonomous roads agency was put to the Cabinet but rejected. A new, scaled-down proposal was then developed, envisaging a Roads Directorate within Ministry of Public Works and Transport. It took into account the ongoing decentralization effort and ensured that a substantial reduction in staff would be effected. Although the current proposal is less ambitious, it addresses some of the core deficiencies of the current arrangements and will provide a platform for a further projects, which can provide support during the implementation of the new institutional arrangements.

Source: World Bank (2006b).

Where there is low institutional capacity, Bank staff tend to underestimate the time needed to make reforms, build capacity, and build institutions.

countries with low institutional capacity, operational staff tend to be overly optimistic about how long it will take to achieve legislative and organizational change and to build human capacity. Bank staff and clients alike sometimes frame institutional objectives and milestones that are impractical for a typical 5-year project.

This is illustrated by the very slow, incremental progress with institutional reform in Lesotho (box 6.4). Progress with reform in this case was hindered by weak government capacity and procrastination on key decisions. Continuity and timing of support, as exemplified in Burkina Faso urban development and Tanzanian railways projects, coupled with lessons learned through previous projects, are equally important.

Because the quality of capacity building is crucial in Africa, greater efforts are needed to ensure that CASs include the specific capacity needs of the transport sector. There appears to be a tendency to favor more successful countries to the neglect of weaker ones that need more help and that have significant numbers of desperately poor people. Weak capacity leads to poorly maintained infrastructure, lack of enforcement of traffic regulations, and appalling road traffic safety records.

Fragile States

More than half of the African countries that have made limited progress in the transport sector are also fragile states (formerly called low-income countries under stress [LICUS])⁴ and many are also in the lower rankings of the 2006 Corruption Perceptions Index.⁵ Although the share of lending and trust funds to fragile states in the Africa Region relative to their population is higher than other regions, IEG estimates that fragile states in the Africa Region have the lowest number of ESW

products per country and a lower share of the administrative budget. ESW for transport in African fragile states is minimal, but this is partly explained by the extent of work carried out under SSATP.

IDA's performance-based aid-allocation mechanism has meant that IDA financing has been a relatively limited source of aid to fragile states. Nevertheless, according to a 2006 IEG evaluation of fragile states (IEG 2006c), some experts believe that the potential returns from aid in such states can be extraordinarily high if a policy turnaround is achieved, even though the risks of failure are also substantial. Selectivity and a clear strategy are obviously important.

Liberia is a case where the recent changes in government have presented an opportunity to seek a major reversal in the economy, and the transport sector is seen by the government and the Bank as pivotal to that effort. This opportunity for fast-track assistance should be carefully monitored. The Bank clearly can be stronger on donor coordination in fragile states but needs to give much more focused attention to capacity building. Other similar transport-focused reconstruction projects are active in Angola, the Democratic Republic of Congo, and Sudan.

Programmatic Lending

More programmatic lending or SWAps designed to achieve specific capacity-building objectives may be appropriate. Special initiatives under the umbrella of SSATP to share experiences could also be encouraged. A capacity-building strategy for the transport sector in each African country could also be considered to help transport projects be more sustainable. Such a strategy could help to inform and guide the efforts of the country programs and should include the SSATP, the

WBI (with one-third of its initiatives in the Africa Region), and the African Capacity Building Foundation,⁶ which has not yet found an effective way to link the ad hoc programs it funds to individual country needs.

HIV/AIDS

HIV/AIDS has severe demographic, economic, and social impacts that run counter to poverty reduction efforts and the transport sector is a major vector for the disease. Long-haul truck drivers are the highest risk group in the road sector (World Bank 2004c). HIV/AIDS prevention components have been included in some of the more recent active transport projects in Africa. Moreover, an HIV/AIDS framework has been developed for the sector and draft standard clauses for works contracts drawn up.

HIV/AIDS prevention initiatives show promise but will need systematic evaluation upon completion.

An innovative HIV/AIDS Abidjan-Lagos Transport Corridor Project was entirely designed around using corridor transport as a means to provide active awareness, prevention, and treatment services to corridor users, truck drivers, and border communities. In Ethiopia, a country with one of the highest number of people infected by HIV/AIDS in Africa, the Bank, together with the Ethiopian Roads Authority, has launched a comprehensive HIV/AIDS strategy for the roads sector with three components: (i) information, education, and communication; (ii) care and support; and (iii) capacity building and policy development. As baseline studies are carried out, it will be possible to gauge the outcome of this initiative. So far this undertaking looks promising, but it is still too early to assess the overall impact.

Chapter 7: Evaluation Highlights

- Results measurement, monitoring, and evaluation all need to be improved.
- The transport sector is now handling nearly twice the volume of commitments with fewer staff than it did in fiscal 2000.
- Staff resources need to be redeployed and strengthened.
- There appears to have been a partial avoidance of projects that require longer and more costly preparation.



Internal Bank Performance Factors

In November 2004, QAG completed an analysis of the transport portfolio for 26 of 44 projects based on Quality at Entry.¹ The analysis found relatively few significant differences for the major dimensions between overall transport sector performance and the Bank average.

Project Preparation

On the positive side, the transport sector did well on implementation arrangements, Bank processes, risk assessment, environmental aspects, economic justification, and arrangements for poverty and social mitigation. This undoubtedly reflects the training of the engineers and transport specialists, many of whom are experienced project managers. In general, lessons learned extracted from IEG reviews of ICRs concur with these results. On the negative side, the transport sector was less successful than the Bank average at clearly defining development objectives for assessing the extent of client ownership and political willingness to carry out reforms, and in arguing the project concept based on lessons of experience.

For this review IEG added the results for the latest round of QAG Quality at Entry assessments (nine new projects). Overall, there was only a 1 percentage point change, which was not significant. However, the analysis also shows that improvements have occurred in partnering with donors, realism of financial planning, and attention to gender issues. But the quality of Bank

documents, such as appraisal reports and legal documents, has gone down slightly.

Another aspect of project preparation is the amount of conditionality in lending documents. The Bank's use of such conditions has declined sharply over the past decade because there has been a stronger focus on country ownership of reforms. The use of conditions in the transport sector appears to be above average, but this may be due to less AAA work being carried out in the sector compared with other sectors. Such advisory work provides an effective way to reach agreement with

Good performance on supervision is attributable to transport staff knowledge and experience.

clients through policy dialogue. In general, the larger clients attract more dialogue on transport issues, so it is generally in the smaller countries where greater use is made of conditions.

Project Supervision

With regard to supervision, QAG showed, based on 51 assessments of Quality at Supervision, that

the performance of the transport sector is excellent—better than the rest of the Bank in all categories. The latest figures for Quality at Supervision, which include an additional 12 projects, continue to show remarkably good supervision performance by the transport sector. IEG found that because transport experts tend to have technical backgrounds and many years of project experience, they are usually familiar with the necessary requirements to ensure the delivery of well-prepared and robust projects.

Lending Instruments

The choice of lending instrument is important. IEG analyzed the kinds of instruments selected for transport projects over the past 10 years (see appendix A, tables A.4 and A.5 and figure A.13). Comparing the period fiscal 2001–06 with fiscal 1995–2000, there has been a definite swing away from using Specific Investment Loans—from 70.2 percent down to 62.4 percent. More programmatic type loans are now chosen, such as the Adaptable Program Loan, which provides phased support for long-term development programs—each phase builds on the lessons of the previous phase—as well as Programmatic Sector Loans and Programmatic Structural Adjustment Loans. In IEG’s view, the move toward programmatic loans is a positive step because it enables a broader view to be taken and enhances country ownership. Preliminary results from other sectors such as health suggest that programmatic loans lead to better policy dialogue and a better approach to capacity building.

Results Measurement

Monitoring and Evaluation

Results measurement is still one of the weaker areas of Bank performance in the transport sector even though there are signs that an effort is being made to improve this situation. Very few projects completed and evaluated by IEG had *specific* monitoring and evaluation development objectives; of

Results measurement remains weak but is improving.

those that did, paradoxically, only one-third of the outcomes were satisfactory. QAG, on the other hand, rated monitoring and eval-

uation as satisfactory *at entry* in 67 percent of projects reviewed. IEG observed that there are serious attempts in more recent projects to include a considered matrix of development indicators and a log-frame in the appraisal document and ICR, but many of these projects are still active and have yet to be reviewed by IEG.

The main problems remain a lack of baseline information and a lack of capacity to undertake the monitoring function. In some instances IEG observed that indicators proposed at appraisal were abandoned when it was realized that they were impractical. New indicators were then formulated but were sometimes compared with projections in the last project status report rather than the original appraisal benchmark.

In some instances the focus continues to be on outputs rather than outcomes. The Middle East and North Africa Region had a workshop in 2004 to develop pilot indicators for rural access. The idea was to demonstrate to borrowers the value of establishing and maintaining performance indicators. Morocco was used as an example (appendix B). In this case the benefit of the indicators was demonstrated and resulted in an extensive rural access program. However, the case study shows that a comprehensive approach is needed to gather data and that government ownership is critical. In the future the revised ICR guidelines are expected to lead to a behavioral change with respect to results measurement, because staff will be aware that the performance of projects in monitoring and evaluation is to be specifically assessed.

Transport sector management has committed to strengthening sector indicators in line with the infrastructure action plan, and the first “headline indicator” established is for rural accessibility. “Sustainable access to rural transport” measures the number of people who live within 2 km of an all-season road. Results from 31 countries representing 83 percent of the total rural population in all IDA countries show that, on average, 64 percent of rural dwellers have access to the transport network. Other indicators under development include urban mobility (mean time for

journey to work), road condition (percentage of network in “good” and “fair” condition), and trade logistics (composite index comprising inventory, transit time, customs, and handling productivity). The SSATP is also undertaking work in this area, as the Africa Region data are often particularly poor.

Setting Clear Objectives

Another important measurement area is performance against development objectives. Over the review period, IEG found projects with vague objectives (Burkina Faso, China, and Comoros) and overly ambitious objectives (Turkmenistan) and a case where the development objectives and indicators were not formally revised despite major changes in project direction and scope (Bangladesh). Other projects had objectives that were difficult to meet because they were too specific (Zambia) or just too numerous (Rwanda had 14). But there are also many examples where just the right balance seems to have been achieved (among them Lao PDR and Mauritius). The QAG score of satisfactory or better for the clarity, realism, and scope of the project’s development objectives is 64 percent (8 points lower than the Bank average), which supports IEG’s findings.

In the transport sector in general (except for revenue-earning entities) there is a shortage of good global and regional supporting data in comparison to, for example, the agricultural, health, or housing sectors where a UN agency takes responsibility for the data-gathering function. At the local level it would be extremely useful if task team leaders were able to assess changes in road freight rates on completion of road projects—this was done very effectively in Peru. Similarly, urban and rural public transport service frequency and accessibility can be used to assess the effectiveness of new investments.

In the past, when the focus was often on intercity roads, the standard engineering models would suffice. But increasingly there is a need to look at the rural access and urban situations where a different kind of information is needed. This is clearly a serious gap in the transport sector approach at

present. Data for railway, port, and aviation projects are normally adequate because of the scale and accountability requirements of the operations and the collection of data, either because the data are nationally owned or because the operators process their traffic through a national data collection agency, such as customs or immigration. It has been part of the Bank’s role to try to ensure that any uneconomic services are transparently identified so that it is clear how such services are being subsidized. This is not always easy to unravel from railway accounts, where there are numerous joint costs attached to different services.

Assessing Efficiency

Most Bank-financed road projects are justified by an economic appraisal based on transport cost savings. Net present values and ERRs are often calculated using the Highway Development and Management System known as HDM-4. For low-volume roads the Roads Economic Decision Model performs an economic evaluation of road investment options using the consumer surplus approach. Neither of these models looks at the distribution of the benefits or at the wider impacts and multiplier effects on the economy.² For impacts on the poor some information is available from the impact studies undertaken in Brazil and Morocco (appendix B); further information may be available soon from Ghana. Table 7.1 shows ERRs before and after for a sample of 96 transport projects.³

Of note is that, on average, the ERR for road projects was similar at appraisal and completion, but the ERR for rail and port projects tended to underestimate the costs and overestimate the benefits at appraisal. Given that IEG looks for a minimum ERR of 10 percent on infrastructure projects, the results below in general look good. But the cutoff at this level is possibly too low⁴ because so many projects qualify and the

The development of project objectives suffers from lack of management attention.

Most transport projects calculate rates of return but seldom consider the wider distribution of project benefits.

Table 7.1: Average Economic Rate of Return of Transport Projects, Approval Years 1995–2005

Mode	No. of projects with ERR estimates at appraisal	ERR at appraisal (%)	ERR range at appraisal	No. of projects with ERR estimates at completion	ERR at completion (%)	ERR range at completion
Multiple modes	13	36	(16–91)	11	31	(14–78)
General transport (urban)	11	26	(13–40)	8	30	(13–60)
Roads and highways	59	29	(12–65)	53	29	(10–79)
Trade facilitation	1	19	19	1	27	27
Railways	7	32	(15–68)	5	22	(–14–64)
Ports and waterways	5	26	(18–37)	4	16	(11–22)
All transport	96	30	(12–91)	82	28	(–14–79)

Source: IEG data.

Note: ERR = economic rate of return.

HDM-4 factor for time savings on road projects may be exaggerated, according to some experts (Carruthers, Bajpai, and Hummels 2003).

Results measurement could also be used more effectively to settle important areas of controversy. The sustainability of the strategy of using road funds and road agencies will continue to be questioned until there has been a thorough study to measure their impact over a period of years, preferably in Africa. Until now the evidence has been positive but not conclusive. A good example may be Ethiopia, where a Monitoring and Evaluation Unit has now been established. The SSATP has also commissioned further work on this topic.

Transport Sector Staffing

Fiscal 2000 commitments by the transport sector were \$1.7 billion (18 additional projects to the active portfolio); by fiscal 2004 they had increased to \$3.7 billion (31 additional projects) and appear to be stabilizing at \$3.5 billion. In contrast, in June 2000, the total number of Bank transport professionals was 141, but by June 2005 the number had

Lending has more than doubled in the past five years, while the staff complement has stagnated.

fallen to 133. Although there is a trend toward larger projects, the average workload per staff member has clearly increased. According to the 2006 strategic update staffing paper (World Bank 2006f),

the number of staff Bank-wide has been in decline since fiscal 2004; projections for rebuilding the Bank's skills base have not materialized because of continued business uncertainties. Some infrastructure sectors such as transport, however, appear to have been hit harder by flat or lower budgets because their commitment rate was rising at the time the budget constraints were introduced.

The IEG (fiscal 2006) interviews of a sample of 36 of the 122 specialists and task team leaders (excluding managers) found that Washington-based staff working in operations spend, on average, 4.6 months on mission. (The figure for Anchor staff is 3.6 months and for country office-based staff is 3.7 months.) About 53 percent of respondents said this was too long, and there was a close correlation between persons spending more than 4 months away from home and those who believed they were overloaded. No comparable figures were available for the Bank as a whole; the 2006 strategic update staffing paper (World Bank 2006f) does discuss the heavy demands of travel, which often takes time away from weekends and holidays, especially in Regions where missions are longer. Recuperation and family time after long missions are often minimal.

Respondents indicated that three areas suffer when a high workload is perceived. The first is the ability of the staff member to keep up with new

developments in his or her area of expertise and to participate in thematic discussions. The second is the time to disseminate his or her knowledge in the field, and the third is a tendency to avoid overly complex projects. Some commented that while “financial productivity”—in the sense of the time to move a project from identification to approval or the operational cost per project—has improved, there may be a hidden price for this result, both in quality and in what can no longer be done in other areas.

The “high pressure” created by this situation has also been a recurrent theme in the QAG panels’ criticisms of transport operations. Those criticisms include excessive narrowness and lack of ambition. For example, one urban transport project in the Philippines was described as “technically sound, but narrowly conceived.” The project missed an opportunity to address broader, long-neglected policy issues, as this was the first urban transport project in a decade in the country, and no urban specialist was consulted by the transport team. IEG findings, including feedback from staff and stakeholder interviews, confirm the general perception that complex, high-impact projects are sometimes deferred in preference for simpler projects with shorter lead times that have less impact.

When staff interviewees were asked, for example, what in their opinion constrained the sector from undertaking more urban transport projects, the response was invariably the time taken to prepare projects in a complex environment in which there were multiple stakeholders, and environmental and safeguard issues, including the relocation of many more project-affected persons.

The recent referral of the Mumbai Urban Transport Project to the Inspection Panel⁵ was cited as an example of the hazards of increasing complexity. However, the results of the work on resettlement in Mumbai may prove in time to be more valuable than the physical outcome of the project. Some staff indicated that there was no internal incentive for them to get involved in more difficult, time-consuming, and risky projects; indeed, the nature of complex projects with many safeguard issues acted to discourage task team leaders. Others said there was a tacit understanding in some

countries that because the Bank’s processes were elaborate, other financiers might be preferred for urban projects. *Apparent “productivity gains” have hidden costs.*

A further factor has also been the restriction on subsovereign lending. There is currently an ongoing discussion as to how the Bank Group can establish a Sub-National Development Program, and further investigation of risk-sharing, legal, and other issues on this matter is in progress. Although the Bank urban strategy review *Cities on the Move* (World Bank 2002a) provided a broad strategic framework for dealing with urban transport projects, sector management has not yet finalized a plan to fully operationalize this framework.

The main risk of undertaking *Attrition due to retirement is a concern.* more complex projects is that because of longer preparation time, fewer projects overall will be completed with the same resources. It is also possible that the number of successful projects will decline because there are more factors that can go wrong and more stakeholders to be satisfied. Nevertheless, the world is inexorably becoming more complicated, and this means that the Bank must prepare itself to meet such complexities head on. Although this is a riskier strategy, it is clearly the right way to go.

Another area of concern is the number of senior staff approaching retirement—some 17 percent of the current professionals are due to retire in the next 5 years; this pattern is not unique to the transport sector, as the Bank as a whole is anticipating an increase in attrition. However, the loss of experienced personnel is a concern, especially because based on past experience, only a few staff are likely to be retained as consultants after retirement. Some respondents also mentioned the apparent long lead time to replace lead international experts. These problems are being addressed through targeted recruitment of new experts and batch recruitment of specialists and task team leaders. But respondents in general recognized that they were working in a difficult environment because of the shortage of senior staff and the implementation of a strict cost-containment regime.

Excessive controls may do more harm than good.

Some transport interviewees indicated a lack of commitment to the matrix management system or believed it did not add sufficient value. Others were more concerned that the lack of resources restricted the Anchor's capacity to provide guidance in key areas. Several country office-based staff believed that decentralization had not gone far enough and that there should be more delegation to staff working at the country level. There was a measure of reluctance on the part of headquarters staff to consider working in country offices, especially in fragile countries, because they felt it damaged their career prospects and negatively affected their families in a number of ways.

Other issues raised by staff included a need to work more efficiently and smartly, as well as a need for greater flexibility in the application of safeguard policies. On this last point QAG refers to the "par-

adox of compliance," in other words spending great effort doing no harm, but at the cost of doing little good. The example cited in an urban transport project was the extraordinary admission that "to comply with safeguard policies, the team has dropped all components with major resettlement." Although this is an extreme case, in IEG's view, based on the portfolio analysis and interview results, the issue remains a serious concern.

Very few staff seemed to have considered an alternative paradigm in which greater selectivity of projects is made. The quantity of projects would be reduced, but the quality of Bank output would improve substantially. The selection of projects currently tends to be demand driven, but there is a case that if the Bank entered into greater dialogue with its borrowers about future transport sector scenarios, there might be a small but significant shift in the mix of projects and AAA work undertaken.



Findings, Lessons, and Recommendations

This final chapter reviews the findings and lessons from the IEG evaluation. It also provides recommendations to management to improve Bank effectiveness in the transport sector. It recognizes that the world is changing rapidly and that the Bank will have to be flexible and adapt its support programs to meet the emerging challenges.

Findings and Lessons

Current World Bank transport strategy is founded on the three pillars of private sector involvement, continuing sustainability, and development of an appropriate urban strategy. This foundation remains relevant today but requires adjustment to the more complex emerging environment. The past is not necessarily a guide for the future, even when a sector has a solid record of achievement. It will be necessary to shift from a “cylindrical” or “silo” approach to a more sector-interlinked approach. This may or may not require more resources, depending on the relative priority of transport to competing needs, but it will certainly entail a smarter use of resources.

Role of the Public and Private Sectors

The Bank’s encouragement of greater private sector participation in the transport sector where feasible is supported by this evaluation’s findings. International experience generally—and Bank Group experience in particular—shows that this approach has usually led to significant improvements in transport sector performance. However, for various reasons, some countries prefer

not to opt for full privatization in favor of more modest models of private sector participation.

Bottlenecks in transport result from inefficiencies in the use of available resources, lags in the engineering and managerial technologies applied, and failures to make timely investments in capacity expansion. This evaluation indicates that the most positive impact of changes in the public-private sector balance will be cases that can either sharply reduce such inefficiencies or significantly raise the productivity of the capital stock already invested in the sector. Improvements in trade prospects and technological advances (such as electronic pricing techniques or the increasing scale of ships and aircraft) suggest that there is still substantial scope for further gains of this sort.

The impact of privatization has usually been more significant when the privatization process includes measures to reduce the amount of regulation of the mode concerned and when the structures offered to private bidders are designed to sustain competition. At the same time, for impact, appropriate measures need to be taken to ensure

access of competing providers to any facilities with local monopoly characteristics. Although there is less scope for private sector involvement in the poorest countries, a major reason for the success of several concessions has been the Bank's willingness to fund retrenchment costs and programs to improve opportunities for workers who now have to make a different choice of livelihood.

Full transport concessions remain concentrated in middle-income countries, where the volumes of traffic are attractive and there is sufficient public sector capacity to engage with the private sector. IEG recognizes, however, that the positive impact of even one or two concessions in a lower-income country can have a dramatic effect. Actual possibilities of attracting private capital into transport infrastructure vary greatly over time and among countries. But there are instances in ports and large bridges, where even poor countries with uncertain prospects have been able to attract foreign private sector interest at certain stages in the financial markets' cycle. A further aspect to consider is that several countries, especially in East Asia and the Pacific, are poised to attain middle-income country status. This means that the Bank must remain competitive in the assistance it can offer with respect to PPPs.

One aspect in which the public sector frequently needs strengthening is strategic and structural planning, most particularly when increased private participation is being considered or is undergoing its running-in period. Government has an irreplaceable planning role in transport. This is partly because of the need for active consensus building among the different modes to maintain an effective integrated system. But it is also due to the importance of transport infrastructure, and especially the road and rail networks, in structuring land use and regional development more generally. Multimodal strategic planning is particularly crucial at the national and metropolitan levels of government.

In parts of Asia and Africa where the study team inquired into reasons for the absence of reforms that have proved productive elsewhere, the main obstacle to progress appears to be local fears

among labor, but also among concerned bureaucrats and less dynamic enterprises, of losing their acquired positions. This problem is often exacerbated by laws and regulations, often dating back several decades, which may never have been sound but have built up over time an array of supporting interests. Bringing about changes in public-private balance requires multiple scarce political skills, particularly of communication to generate wider understanding of the opportunities being missed; of alliance building, to gather political support; of negotiation, to win the tolerance of those who expect to suffer; and of effective implementation, including respect for the rights of all concerned.

Considering distributional as well as environmental aspects of projects, there would seem to be a need for more combinations of larger-scale public and private financing than is so far generally undertaken in developing countries, more along the lines of some recent projects in continental Europe. This can bring the advantages of private management into areas that have high economic priority but cannot be expected to become financially viable rapidly.

Maintenance, Institutional Development, and Environmental Protection

Improving the strength and efficiency of the private sector role in road maintenance is a matter that remains important in all countries, as different stages of development are achieved and new techniques are developed. Key components on the public side include serious commitment at the highest level within each concerned body to the elimination of corruption and achievement of high standards of governance; development and continuous updating of the management information systems; both central and decentralized capacities for planning and contract management; adoption and systematic enforcement of transparent competitive bidding practices; financial flows to the different levels of government involved; and gradually increasing use of performance-based contracting. Important contributions from the private side (with public support) are training, development of commercial equipment-supply enterprises, and an effective contractor association.

Linked to this is the effectiveness of governance and capacity building in the sector. By and large, technical assistance to strengthen client capacity has had modest results in low-income countries but better results in middle-income countries. While the road agencies and some of the railway reorganizations have demonstrated continuing support and success, in many other cases training has been aimed at assisting the immediate project and is therefore less likely to have any sustained impact. Typically, the timing of training interventions is not always synchronized with the necessary organizational changes needed to improve public sector performance. Institutional change takes time, and often the life cycle of the project intervention is relatively short—about 5 years; this is often insufficient to ensure lasting results. Institutional objectives need to be designed more realistically and be pursued incrementally; that kind of continuing support program will often extend beyond the transport sector itself.

A further lesson is the need to choose a single clear criterion for selecting a prequalified bidder. Contention among interested parties and at the political level seems to be minimized by using the relatively simple and straightforward criterion of maximum payment (or minimum subsidy demanded) for the right to provide services. Services must meet the performance standards specified in the tender documents.

There is sufficient evidence to show that the use of second-generation road funds, especially in Africa and Central America, has met with modest success—in a few cases substantial success. The Bank has learned to be pragmatic and tends to promote road funds only when the budget approach has failed. The Bank has learned as well to take into account the different circumstances prevailing in each country. In some countries where second-generation funds have been introduced, there is evidence of an increase in the percentage of roads in good condition. However, in one-third of Sub-Saharan African countries with road funds, the income is insufficient to cover routine maintenance costs. Nevertheless, the flow of funds has become more stable and predictable.

Road funds, however, should not be contemplated where there is a high level of corruption or where there is little likelihood of having independent audits and transparent procurement. It would be beneficial if a rigorous study of the impact of the successful road funds could be undertaken to show why they have succeeded.

Nevertheless, road funds often come as part of a package that leads to improvements in road department accountability. This can be attributed to the establishment of road agencies and road boards and contracting out to the private sector, not only of construction and rehabilitation but also of routine maintenance, design, and general supervision. Transparently competitive tendering of works against performance-based specifications has been a very significant step forward, as has the representation of the public and user groups on road boards.

In general, both client perspectives and pertinent documents show that there is positive support for the Bank's actions in ensuring environmental sustainability and providing safeguards for people affected by new projects. There is also general support for capacity-building activities and assistance with coordination between institutions and even different tiers of government. The demand for roads is likely to continue unabated, but there is recognition, at least in middle-income countries, of the importance of environmental, social, economic, and institutional issues related to city growth. Stakeholders saw relative neglect of both urban transport and intermodal efficiency. Some also perceived slowness in the Bank's decision-making processes.

Poverty Reduction

There has been an important shift in mind-set. The old mind-set said that the objective of a transport system in a developing country is to build the best transport system that can be afforded. Now the objective is to design a system that optimizes transport as an intermediary good to achieve a sound poverty-reduction strategy, obviously within resource constraints. Poverty-reduction projects are often multidisciplinary, and experience shows that when the transport component is small and

the project falls under a sector board other than transport, the outcome is often unsatisfactory. The need for guidelines for and/or oversight of these components is apparent.

When a country has very limited resources and severe capacity constraints, a programmatic approach to roll out development assistance, in consort with other donors, may be the most effective way to proceed and build capacity. Capacity building, especially in fragile states, takes time, and it is necessary to be realistic about what can be achieved and how it can be achieved. A phased approach appears to yield the best results, because each phase can build on lessons from previous phases; the work plan may also have to go beyond the immediate project and sector to be fully successful. Clear milestones are essential.

The needs of the transport sector are changing, and the composition of the sector portfolio may be cause for concern, with its heavy emphasis on intercity highways. Analysis of input from stakeholders and staff elicited a view that the Bank should perhaps be taking on more projects in rural access, urban transport development, and multimodal transport. Given the implications of this for achieving the MDGs, there should be a more informed debate about relative priorities when CASSs are prepared. Because the Bank finances just 2 percent of total infrastructure spending in developing countries (Oxford Analytica 2005), it should try much harder to achieve the best balance between financing high-priority but less-challenging projects and ones that will demonstrate new ideas and approaches.

Evidence from both IEG and QAG suggests that over the past 10 years transport in general has been an efficiently run but sometimes insular sector. The present operational strategy will not necessarily continue to be appropriate in the future. In particular, the relative neglect of knowledge dissemination, both internally and externally, is significantly less than would reasonably be expected from such a large sector. Although some important AAA work has been carried out in several countries, the effort is spread rather thin, and awareness of this high-quality work is not as widespread as it should be. Better linkages

could also be made with research institutions, and internally the sector needs to change the perception that it has few research needs. Firmer information is needed about the relationships between transport and poverty, as well as about the added value the Bank can deploy when it supports such projects.

Future Challenges

Sector leadership, in IEG's judgment, has correctly identified the future challenges of the 21st century in its draft update of strategic priorities. Through the strategy it wishes to support the MDGs more fully by refocusing emphasis on issues such as the provision of clean, affordable, and safe transport. This does not imply that the demand for traditional highway financing is expected to decline but rather that emerging additional priorities will have to be addressed and customized on a Regional and country basis. Such a shift would not be a unilateral decision by the Bank; it would result from a gradual concerted effort to encourage clients to put forward more projects relating to emerging issues. Inspection of the list of projects now in preparation shows that this is already happening.

The arguments in support of improving transport affordability are strong. Affordability cuts across the entire transport spectrum and the suggested increased focus on the rural and urban poor fit well with the poverty-reduction agenda. This will entail closer cooperation with the health and agriculture sectors and with experts in the social, gender, urban, rural, and human development fields. More projects aimed at removing cross-border trade barriers will also reduce freight costs and improve the affordability of consumer goods and inputs into the productive sectors. The interface here is with industry, trade, energy, finance, and resource management. The shift toward more multimodal operations, including supply chain management, is already apparent.

The greater emphasis on safety also supports those MDGs that address health issues. Every year more than 1.2 million people are killed and up to 50 million more are injured on roads worldwide; the prediction that by 2020 road accidents will become the third-largest contributor to the global

burden of mortality and injury is hardly surprising. Bank-financed projects until recently have rarely tackled road safety holistically, but there is evidence that new road safety approaches are being pursued in all Regions—not just in urban areas but also on intercity highways and rural roads.

Add-on safety components in rehabilitation or construction projects may have resulted in the introduction of some safety features or the elimination of accident “black spots,” but they were never going to introduce significant, meaningful institutional change. An alternative approach, based on large multisector projects involving education, policing, health, works, and other departments, is under development, but more coordination is necessary to achieve improved results through better standards, implementation, and enforcement.

Aviation safety has become an important and even controversial topic as well because certain developing country airlines with poor safety records have been banned from the airspace of industrial countries. There is now a move to substantially upgrade both aviation safety and security in developing countries, especially in Africa, and the Bank is expecting to sustain the recent increase in projects of this nature.

Air quality has assumed new importance with the growing number of motor vehicles contributing to the volume of greenhouse gas emissions (Stern 2006). Road transport alone accounts for nearly a quarter of the man-made gases believed to be contributing to climate change. Pollution, noise, ugliness, and wasted time caused by traffic congestion also impose substantial societal costs. This is a powerful reason to increase support to urban transport; it provides opportunities not only to reduce air pollution and other environmental damage but also to explore ways to reduce the long-term energy demand through traffic management and pricing, constraints on the use of private cars, and greater support for mass transit systems and public transport in general.

London has successfully introduced a central city access charge,¹ while Austria, Germany, and Switzerland have created electronic systems to charge trucks for the costs that their movements

impose on the roads. Such advances in technology are expected to spread at least to middle-income countries in the near future.

The Bank has already discovered that it can obtain greater leverage from sources of funding such as the Global Environment Facility and the UN Environment Program. Carbon finance initiatives in future years also have the potential to fund global research projects. The UN Environment Program recently launched a multimillion dollar public transport project covering three polluted cities in Latin America. In Europe an emissions trading scheme, which imposes carbon dioxide emission limits on factories and power stations, has been introduced as the mainstay to meet its Kyoto Protocol goals. Transport will be included in 2013.²

However, caution is needed in the approach to these issues, especially in smaller countries. In Madagascar, the authorities did not see clean air as one of the country’s most pressing priorities, and this aspect was dropped from the project. An area of controversy as to whether the Bank should be adopting OECD best practice emissions technology or older technology for developing countries has probably also not yet been fully resolved. The Bank needs to reach internal consensus on how it should advise its clients.

The rapidly increasing interaction between transport and other sectors is an important matter; there is no doubt that transport is developing into a complex multisectoral business. But it is not yet clear whether the present deployment of internal resources available to the transport sector will be sufficient to meet these additional challenges as well as the substantial demand for the more traditional road-related projects. To IEG it appears unlikely that these new priorities can be achieved meaningfully without either scaling up support or reassessing sector priorities and engaging with greater dialogue with borrowers.

The next generation of projects will increasingly be located in urban areas, and the Bank will be expected to provide more support to the larger municipalities, metropolitan centers, and peri-urban areas. This will require working across sectors

through multisectoral teams and will generate increasing complexity in business. IEG notes that this trend has already begun; in table A.7 it can be seen that for projects in the pipeline there is already a clear evolution toward more multimodal projects and fewer roads and highways.

Nonlending assistance in the transport sector appears to be of good quality but in quantity is insufficient. If it is to progress beyond its present status, it needs to be planned more strategically with better resources and more interaction with both staff and clients. This implies much more effective sharing of resources between networks; clearly the recent merging of the Infrastructure with the ESSD Network is a positive step in this direction.

An additional factor to consider is the pace of change in the business environment. For example, in the coming decade many East Asia and Pacific countries will attain middle-income country status, effectively changing the nature of the demand for Bank services. Examples of where the Bank is proactively offering new products and services to remain competitive in comparison with other international financial institutions in this domain include reimbursable technical assistance in Saint Petersburg, Russian Federation, and knowledge partnerships with Thailand. Although these initiatives have not been formally evaluated, the trend toward more innovation is clear.

Other potential growth areas include introducing subnational lending through a new facility (subject to the caveat that some national governments are worried about subnational debt sustainability). Capacity at the subnational level varies considerably. For example, in the Middle East and North Africa, few cities would contemplate taking on additional debt. However, in other cases there is a great opportunity because the Bank's comparative advantage lies in helping build capacity at a subnational level in support of national governments. This strength is expected to leverage additional finance for infrastructure.

The anticipated increased dialogue with clients on all these issues will have to be supported by in-

creased ESW activity, especially with respect to PPPs, including greenfield projects. More knowledge service products with mechanisms such as peer-to-peer exchanges and twinning arrangements will provide an environment for better outcomes; but they will also carry greater risks for successful implementation because of increasing complexity and multiple stakeholders. The higher reward-higher risk mix may affect the measured portfolio quality in the future, although complex urban transport projects have historically shown consistently good results. It is clear, however, that if more complicated projects consume a greater quantity of resources, then fewer projects can be completed overall.

More programmatic lending and SWApS may be one way to help the Bank use resources more effectively and productively. The possible advantages of pursuing this approach are stronger country ownership and leadership, better policy dialogue between the partners and stakeholders, greater focus on results in a programmatic framework, economies of scale, and likely a better approach to capacity building. Possible difficulties with SWApS include disconnects between the agendas, policies, and procedures of participating donors. Transport sector SWApS have commenced in several countries; the proposed self-evaluation of their outcomes and the sustainability thereafter will be further studied with great interest. Finally, the unique efforts in Africa through SSATP to promote knowledge sharing will also need to be independently reassessed in the near future.

Recommendations

- Ensure that the focus of the Bank's transport operations goes beyond intercity highways and gives more attention to issues of growing urgency, including environmental damages, energy efficiency and climate change, traffic congestion, safety, affordability, and trade. This could entail a trade-off between a portion of the traditional highway business and the newer, more complex challenges.
- Prepare a Bank Group transport strategy with a sixfold emphasis: (i) greater attention to air and water pollution and realizing environ-

mental gains; (ii) achieving greater synergies across relevant sectors—building on the merging of the Bank’s ESSD and Infrastructure Networks; (iii) enhancing knowledge sharing and analytical and advisory services and their contribution to country strategies; (iv) continuing to support private sector participation through close coordination among the Bank, IFC, and MIGA; (v) increasing attention to governance and corruption issues; and (vi) redeploying staff and budget resources accordingly.

- Build up the sector’s monitoring and evaluation efforts and align them with the new strategy, including through (i) the development over the next year of relevant intermediate indicators applicable to the broad range of projects; (ii) the launching of an enhanced program of rigorous impact evaluations for selected programs; (iii) a comprehensive self-evaluation of the experience with SWAps within 3 years; and (iv) an independent overview of the SSATP Program within 2 years.

APPENDIXES

APPENDIX A: STUDY LOGIC AND STATISTICS

The full background papers and country case studies are available as separate documents. A complete list of active projects is also available, and is summarized in table A.9.

Methodology

This study is the first Independent Evaluation Group (IEG) evaluation of the entire transport sector. In the past only subsectors such as urban transport, railways, and ports have been reviewed. The evaluation uses the IEG-World Bank objectives-based evaluation methodology in which performance is evaluated by measuring the Bank's progress toward its transport objectives. There are four such objectives: (i) encourage competitive markets and help to balance the roles of the public and private sectors; (ii) help clients achieve sustainable management of the sector; (iii) support transport investments to contribute to poverty reduction; and (iv) respond to changes in the environment to meet new challenges such as globalization.

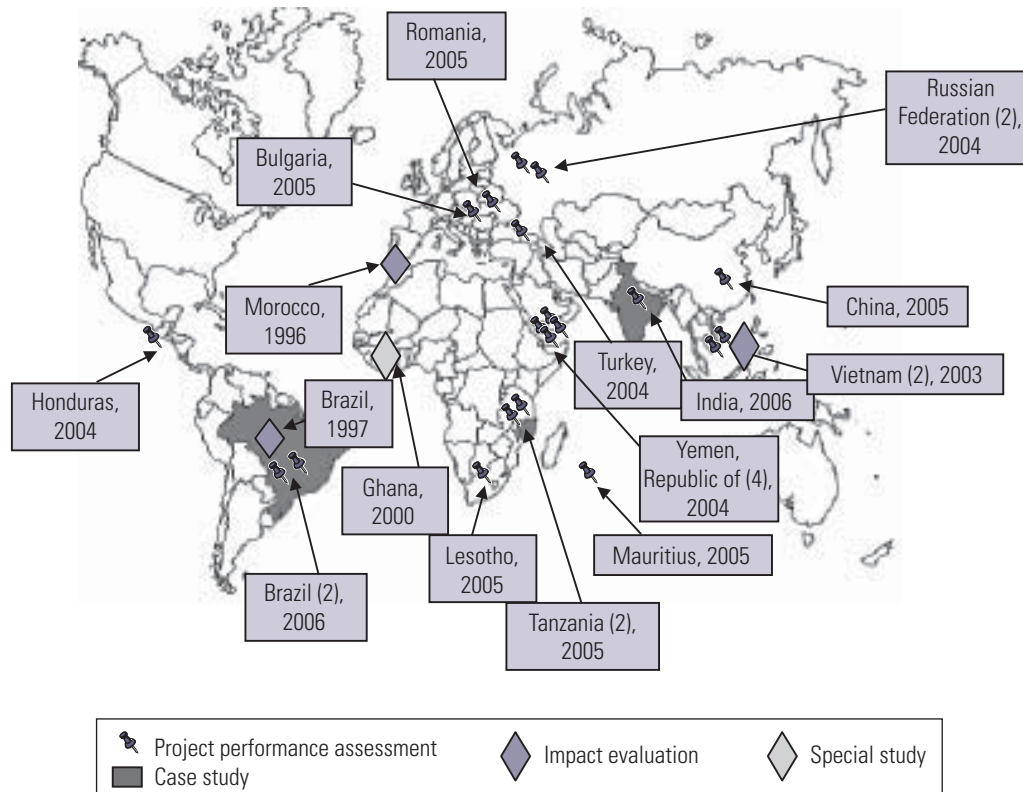
The review covers the period from July 1995 to June 2006, during which time there were 642 projects with transport components in the portfolio. Of these, 335 have closed and 284 have been evaluated by IEG; 307 projects are still active. The extensive, customized database covering all transport modes provides the foundation for the analysis of project performance, their results, and the lessons learned from that experience. Bank transport projects are considered first in terms of projects formally allocated to the Transport Sector Board and second for completeness of all projects containing a transport component, irrespective of which Sector Board is responsible. This covers project components under the urban, rural, private sector develop-

ment, public sector governance, social development, environment, poverty-reduction, and other boards. However, interpreting the results of these projects requires caution, as most ratings in these cases refer to the main project and not necessarily to the transport component.

The portfolio analysis is complemented by a review of the academic and professional literature on transport issues in developing countries as well as by nonlending assistance in the form of World Bank economic and sector work (ESW) and strategy documents. With regard to public and private financing of transport infrastructure and services, it was necessary to first undertake a background review of evolving global experience since 1995, against which the Bank's endeavors could be benchmarked.

To gain insights into operational issues and performance, particular attention was given to IEG transport Project Performance Assessment Reports (PPARs). Field visits for these evaluations were undertaken during the study period; 20 completed between 2003 and 2005 were specifically selected with this study in mind. These reports provide a spread of results across the main modes and the six Bank Regions.¹ In addition, three transport country case studies were selected for more detailed analysis: Brazil, India, and Tanzania; information from two completed impact studies in Brazil and Morocco, a special multidonor evaluation in Ghana, and an African multidonor assistance program known as the Sub-Saharan Africa Transport Policy Program (SSATP) are included as well. Other case studies are included as boxes to illustrate particular examples of successful interventions. The map in figure A.1 shows the location of cases and

Figure A.1: Location of Supporting Studies



project assessments; for more detailed information on all the above reports, see annex B.

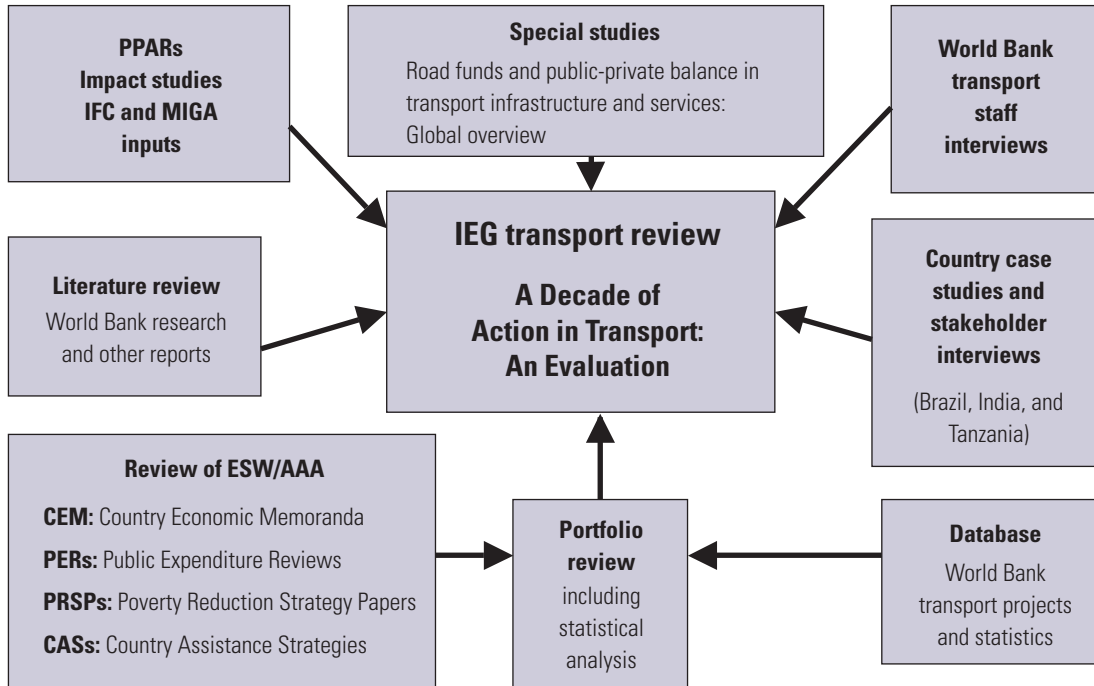
An area of particular interest to the Bank is the effectiveness of road funds, an instrument used to redress the long-term underfunding of road maintenance. Over the past 10–15 years many Bank projects or sector reviews (especially in Africa) have supported the restructuring of road management and road maintenance finance, including creating independent road boards, establishing road agencies, and setting up road funds. Because of the importance of this issue, a background paper on this topic was commissioned as an input to the study.

The methodology also includes the results from structured interviews of one-third of Bank transport network staff. These were used to understand staff views on the performance of the transport portfolio, as well as issues arising from their ex-

perience and ideas about how to improve Bank efficiency, and to try to understand the pressures under which they work. Both open-ended and specific questions were put to the 36 randomly selected staff members, covering task team leaders and specialists in the transport network encompassing all Regions, including the Bank headquarters in Washington, DC, and country offices.

The views of a selection of key stakeholders were obtained using local consultants, one in each of the case study countries, to understand the perceptions of government officials, users, providers of transport services, and interested parties such as consultants and academics about the Bank’s assistance and influence in the transport sector in each of the countries concerned. Finally, a panel of transport sector experts was convened to advise the study team and to review key evaluative documents and the final study report.

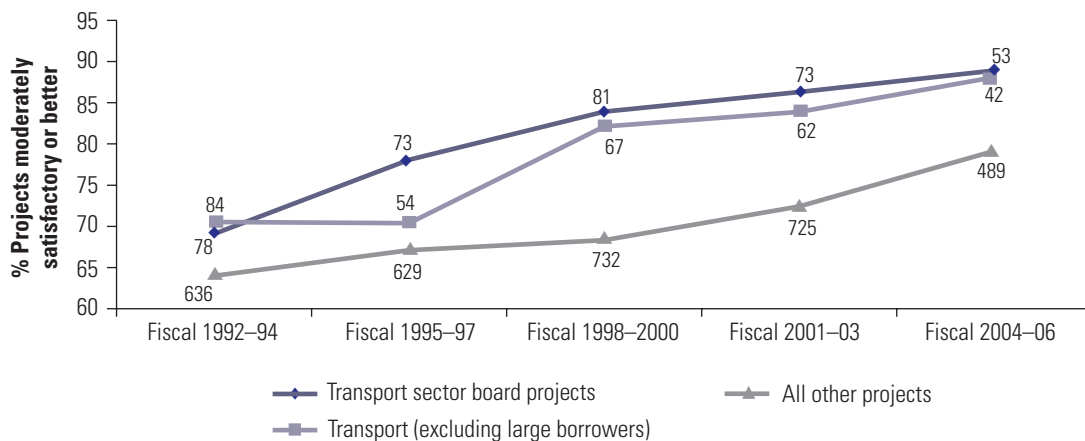
Figure A.2: IEG Transport Review: Inputs to the Evaluation



Note: AAA = analytical and advisory assistance; ESW = economic and sector work; IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency; PPAR = Project Performance Assessment Report.

Additional Tables and Figures

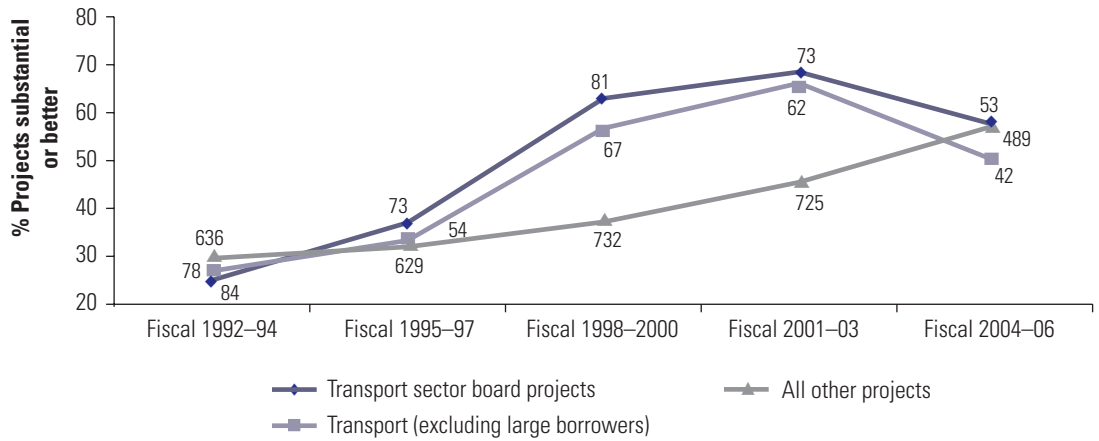
Figure A.3: IEG Ratings of Overall Project Outcome Transport Sector Board Projects versus All Other Projects by Exit Year, 1992–2006



Source: World Bank database.

Note: Numbers on figure indicate number of projects evaluated.

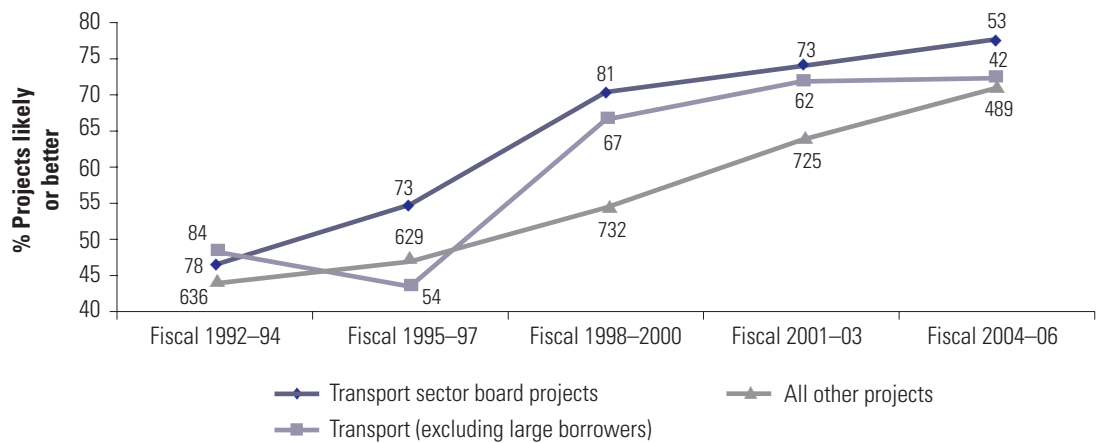
Figure A.4: IEG Ratings of Institutional Development Transport Sector Board Projects versus All Other Projects by Exit Year, 1992–2006



Source: World Bank database.

Note: Numbers on figure indicate number of projects evaluated.

Figure A.5: IEG Ratings of Sustainability of Project Outcomes Transport Sector Board Projects versus All Other Projects by Exit Year, 1992–2006



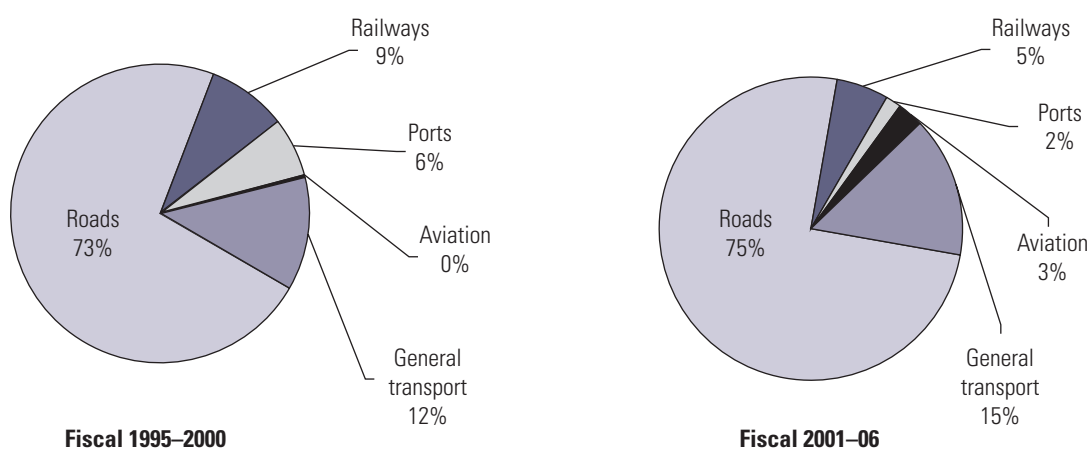
Source: World Bank database.

Note: Numbers on figure indicate number of projects evaluated.

**Table A.1: IBRD/IDA: All Nontransport Commitments (\$ billion):
Share of Top 5 and Top 10 Countries, Fiscal 1995–2000 and Fiscal 2001–06**

Country	Commitments for Fiscal 1995–2000	Share of total (%)	Country	Commitments for Fiscal 2001–06	Share of total (%)
China	10.9	9	Turkey	8.6	9
India	9.4	8	India	7.5	8
Argentina	7.9	7	Brazil	7.5	8
Russian Federation	7.8	7	Mexico	6.4	7
Mexico	7.1	6	Argentina	4.5	5
Korea, Republic of	7.1	6	Pakistan	3.7	4
Indonesia	6.3	5	China	3.2	3
Brazil	5.3	5	Colombia	3.2	3
Turkey	3.2	3	Vietnam	3.1	3
Thailand	3.1	3	Bangladesh	2.5	3
Total (all other countries)	48.7	41	Total (all other countries)	45.7	47
Total	116.8	100	Total	95.9	100
Share of top 5 countries		37			37
Share of top 10 countries		59			53

Figure A.6: IBRD/IDA Commitments and Share by Transport Mode



Source: World Bank data.

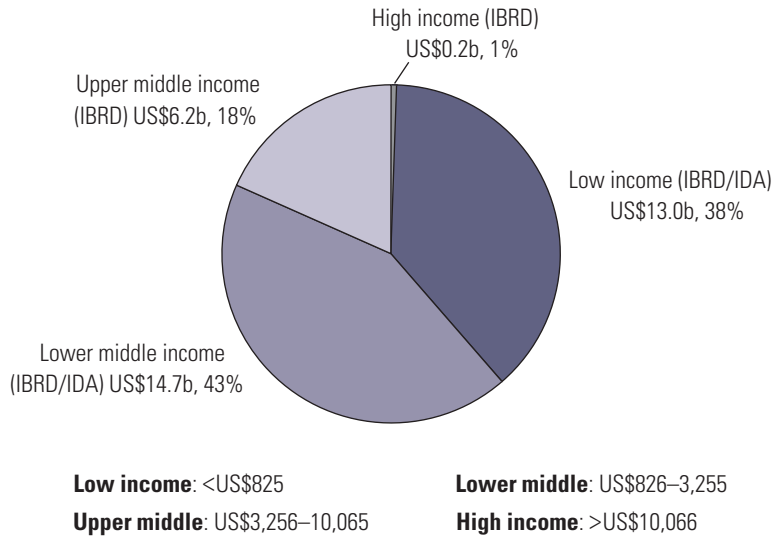
**Table A.2: IBRD/IDA Commitments for Transport on Per Capita Basis—
Selected Recipient Country Rankings (Fiscal 1995–2006)**

Fiscal 1995–2000				Fiscal 2001–06			
Country	\$ per capita fiscal 1995–2000	Rank (per capita World Bank transport commitments)	Rank (top 10 recipients of World Bank transport commitments)	Country	\$ per capita fiscal 2001–06	Rank (per capita World Bank transport commitments)	Rank (top 10 recipients of World Bank transport commitments)
Croatia	47	1		Croatia	41	1	
Uruguay	39	2		Uruguay	32	2	
Argentina	32	3	6	Azerbaijan	30	3	
Panama	30	4		Madagascar	19	4	
Macedonia, FYR	27	5		Mozambique	16	5	
Mauritius	24	6		Honduras	16	6	
Albania	22	7		Lebanon	16	7	
Lebanon	20	8		Nicaragua	15	8	
Lesotho	18	9		Mongolia	14	9	
Senegal	17	10		Argentina	13	10	5
Poland	11	24	10	Colombia	8	20	8
Brazil	10	26	2	Congo, Dem. Rep. of	7	27	9
Russian Federation	8	29	4	Vietnam	6	35	6
Mexico	6	40	7	Egypt, Arab Rep.	5	39	10
Vietnam	6	42	9	Mexico	4	46	7
Bangladesh	4	54	8	India	4	49	1
China	3	58	1	Brazil	4	53	4
Indonesia	3	59	6	Indonesia	3	55	3
India	1	71	3	China	2	63	2

Source: World Bank database.

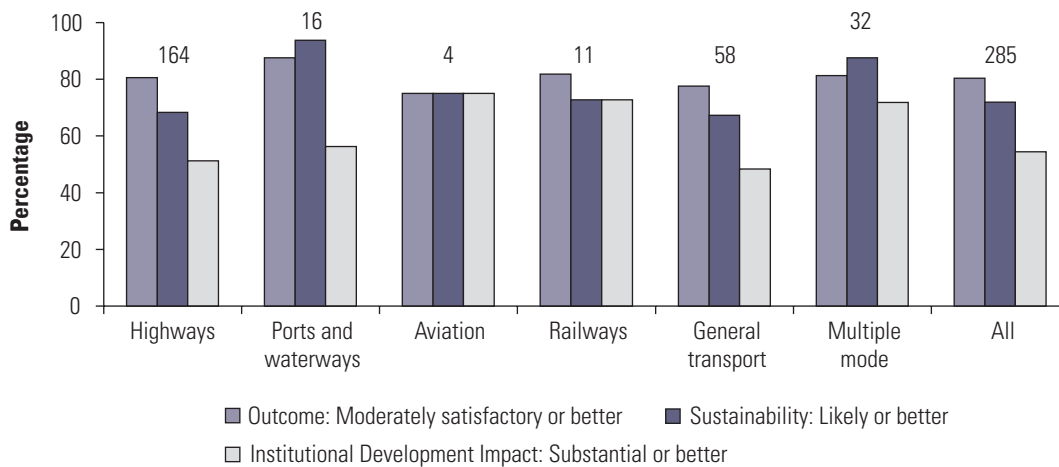
Note: Excludes countries with population less than 1 million as of 2000; countries in bold also listed in table 3.1 in main text.

Figure A.7: Distribution of IBRD/IDA Transport Commitments by per Capita Income (Fiscal 1995–2005)



Source: World Bank data.

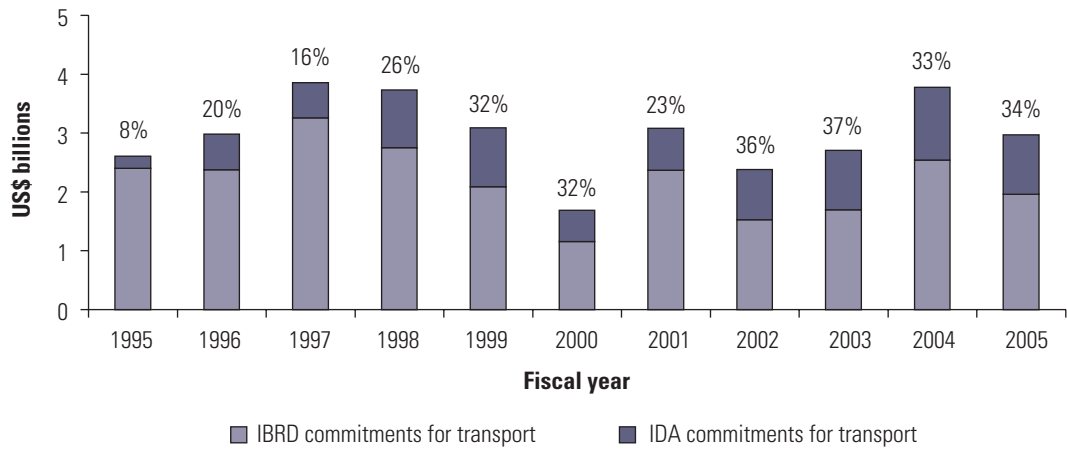
Figure A.8: IEG Transport Ratings by Mode: Approval Year 1995–2006



Source: IEG data.

Note: Numbers in figure represent number of projects rated.

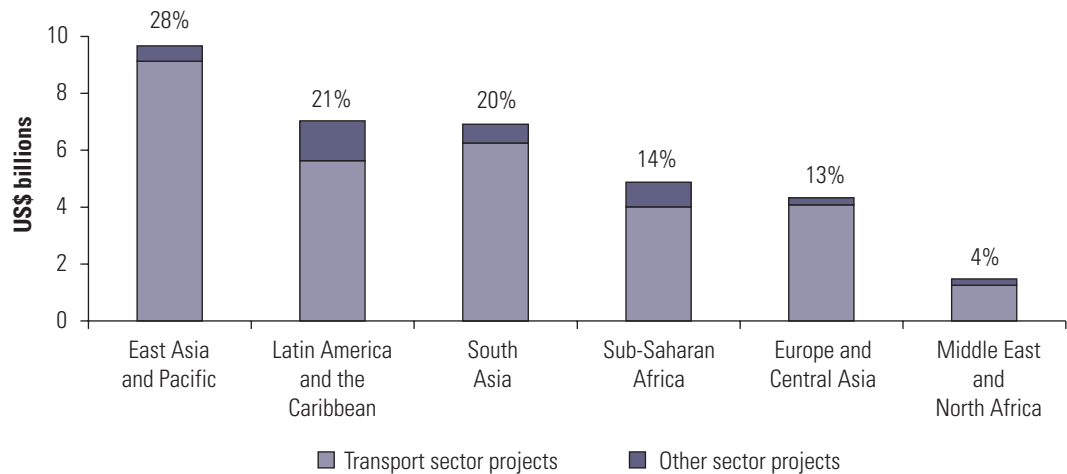
Figure A.9: Trends in IDA Share of Bank (IBRD and IDA) Commitments for Transport (Fiscal 1995–2005)



Source: World Bank data.

Note: Percentages indicate IDAs share of total commitments.

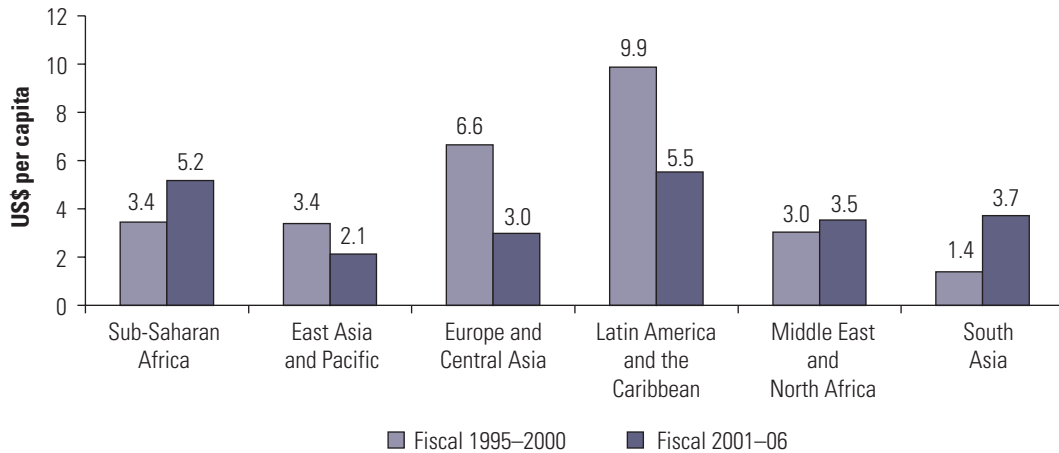
Figure A.10: IBRD/IDA Commitments for Transport by Region (Fiscal 1995–2006)



Source: World Bank data.

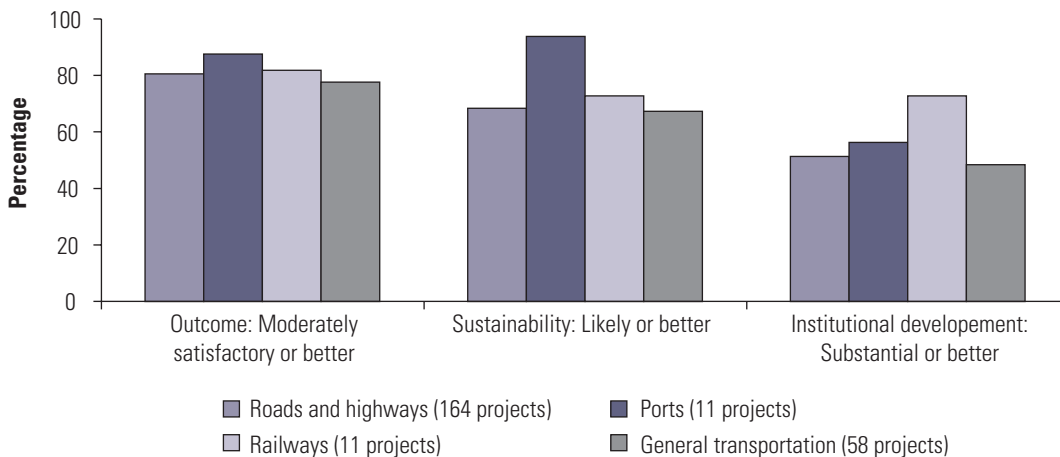
Note: Percentages indicate other sectors' share of total commitments.

Figure A.11: IBRD/IDA Commitments for Transport Per Capita by Region (Fiscal 1995–2006)



Source: World Bank data.

Figure A.12: IEG Ratings for Outcome, Sustainability, and Institutional Development for Transport Projects by Mode (Approval Year Fiscal 1995–2006)



Source: IEG data.

Note: Aviation (four projects) had favorable ratings of 75% across all three rated attributes.

Table A.3: Most Frequently Discussed Transport Issues in CAS Development Priorities

Transportation general	Institutional reforms	Intercity highways	Rural access roads
Transport bottleneck elimination	Need for institutional reforms	Poor quality and condition of road network	Rural mobility
Transportation infrastructure and policy	Capacity building	Insufficient capacity (road network)	Missing links between main roads and rural roads
Sustainability	Restructure or concession railways, public transport, and ports	In-time road rehabilitation	Roads, bridges, and drainage improvements for all-weather access
Financing/regulation	Establishment of road funds	Lack of maintenance	Funding for rural access roads
ECA—upgrade to EU accession standards	Poor maintenance management	Inadequate financing for road maintenance	
Building adequate and reliable transportation network in support of economic growth	Border transit improvements	More focus on road safety	
Regional integration and transport corridors	Reduce overstaffing	Roads supporting tourism	
Easing of urban traffic congestion		Private sector contracting	
Improved accessibility for poor in cities			

Source: World Bank data.

Note: CAS = country assistance strategy; ECA = Europe and Central Asia Region; EU = European Union.

Table A.4: Number of Transport Projects by Lending Instrument (Fiscal 1995–2006)

Fiscal Year	Adaptable Program Loan	Development Policy Lending	Emergency Recovery Loan	Financial Intermediary Loan	Learning and Innovation Loan	Poverty Reduction Support Credit	Programmatic Sectoral Loan	Sector Adjustment Loan	Structural Adjustment Loan	Specific Investment Loan	Sector Investment and Maintenance Loan	Technical Assistance Loan	Total
1995			2					2	1	34	4	1	44
1996			1	1				1	2	40	3	2	50
1997			2					1	6	52	3	2	66
1998	1		6	2	3			2	3	46	4	1	68
1999	8		6	1	6			3	1	41	1		67
2000	10		3		3		1	1	1	25			44
2001	7		3			1		1	3	40	2	3	60
2002	7		8				1		3	25	1	2	47
2003	4		4	1			1		3	32	1	3	49
2004	7		3	2		1	2		1	39	4		59
2005	8		7				3		1	31		1	51
2006	4	4	1	1			1	1		22	1	2	37
Total Fiscal 1995–2006	56	4	46	8	12	2	9	12	25	427	24	17	642
Subtotal fiscal 1995–2000	19	0	20	4	12	0	1	10	14	238	15	6	339
Subtotal fiscal 2001–06	37	4	26	4	0	2	8	2	11	189	9	11	303

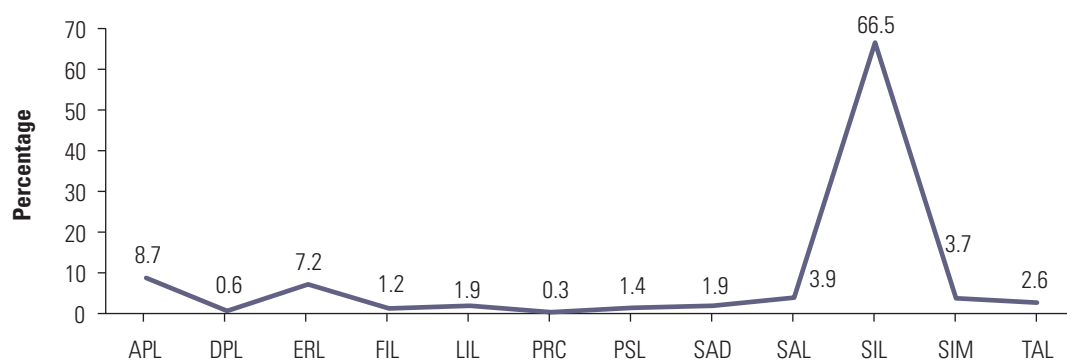
Source: World Bank database.

Table A.5: Percentage of Transport Projects by Lending Instrument (Fiscal 1995–2006)

Fiscal Year	Adaptable	Development	Emergency	Financial	Learning	Poverty	Programmatic	Sector	Structural	Specific	Sector	Technical	Total
	Program	Policy	Recovery	Intermediary	and	Reduction	Sectoral	Adjustment	Adjustment	Investment	Investment and	Assistance	
	Loan	Lending	Loan	Loan	Loan	Credit	Loan	Loan	Loan	Loan	Loan	Loan	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
1995	0.0	0.0	4.5	0.0	0.0	0.0	0.0	4.5	2.3	77.3	9.1	2.3	100
1996	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	4.0	80.0	6.0	4.0	100
1997	0.0	0.0	3.0	0.0	0.0	0.0	0.0	1.5	9.1	78.8	4.5	3.0	100
1998	1.5	0.0	8.8	2.9	4.4	0.0	0.0	2.9	4.4	67.6	5.9	1.5	100
1999	11.9	0.0	9.0	1.5	9.0	0.0	0.0	4.5	1.5	61.2	1.5	0.0	100
2000	22.7	0.0	6.8	0.0	6.8	0.0	2.3	2.3	2.3	56.8	0.0	0.0	100
2001	11.7	0.0	5.0	0.0	0.0	1.7	0.0	1.7	5.0	66.7	3.3	5.0	100
2002	14.9	0.0	17.0	0.0	0.0	0.0	2.1	0.0	6.4	53.2	2.1	4.3	100
2003	8.2	0.0	8.2	2.0	0.0	0.0	2.0	0.0	6.1	65.3	2.0	6.1	100
2004	11.9	0.0	5.1	3.4	0.0	1.7	3.4	0.0	1.7	66.1	6.8	0.0	100
2005	15.7	0.0	13.7	0.0	0.0	0.0	5.9	0.0	2.0	60.8	0.0	2.0	100
2006	10.8	10.8	2.7	2.7	0.0	0.0	2.7	2.7	0.0	59.5	2.7	5.4	100
Total fiscal													
1995–2006	8.7	0.6	7.2	1.2	1.9	0.3	1.4	1.9	3.9	66.5	3.7	2.6	100
Subtotal fiscal													
1995–2000	5.6	0.0	5.9	1.2	3.5	0.0	0.3	2.9	4.1	70.2	4.4	1.8	100.0
Subtotal fiscal													
2001–06	12.2	1.3	8.6	1.3	0.0	0.7	2.6	0.7	3.6	62.4	3.0	3.6	100.0

Source: World Bank data.

Figure A.13: Percentage of Transport Projects by Lending Instrument (Fiscal 1995–2006)



Source: World Bank data.

Note: APL = Adaptable Program Loan; DPL = Development Policy Lending; ERL = Emergency Recovery Loan; FIL = Financial Intermediary Loan; LIL = Learning and Innovation Loan; PRC = Poverty Reduction Support Credit; PSL = Programmatic Sectoral Loan; SAD = Sector Adjustment Loan; SAL = Structural Adjustment Loan; SIL = Specific Investment Loan; SIM = Sector Investment and Maintenance Loan; TAL = Technical Assistance Loan.

Table A.6: Number of Transport Projects (1995–2006)

By mode	Total fiscal 1995–2006	Fiscal 1995–2000	Fiscal 2001–06	Pipeline
Roads and highways	380	202	178	45
Ports, waterways, and shipping	29	19	10	3
Aviation	9	4	5	0
Railways	18	9	9	6
General transportation	120	64	56	20
Multimode	69	33	36	18
Total	625	331	294	92

Percentage share of transport projects (1995–2006)				
By mode	Total fiscal 1995–2006	Fiscal 1995–2000	Fiscal 2001–06	Pipeline
Roads and highways	60.8	61.0	60.5	48.9
Ports, waterways, and shipping	4.6	5.7	3.4	3.3
Aviation	1.4	1.2	1.7	0.0
Railways	2.9	2.7	3.1	6.5
General transportation	19.2	19.3	19.0	21.7
Multimode	11.0	10.0	12.2	19.6
Total	100.0	100.0	100.0	100.0

Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
Region: Africa												
P000117	C2924	TRANSPORT SECTOR INVESTMENT PROGRAM	Benin	1997	TR	TATP	40	80	32	S	L	SU
P035645	C3073	Social Fund	Benin	1998	SP	TA	17	8	1	MS	L	SU
P057345	C3098	BORGOU PILOT RSP	Benin	1998	RDV	TA	4	24	1	S	L	SU
P035648	C3234	1ST DECEN. CITY MGMT.	Benin	1999	UD	TA	26	39	10	S	L	H
P061577	C3479	BJ—PERAC (Publ Expend. Adjust. Credit)	Benin	2001	PS	TZ	10	5	1	MS	L	M
P000276	C2332	Transport Sector Adjustment Program	Burkina Faso	1992	TR	TZ				S	L	H
P038801	C2668	EMERG. ASSIST PR.EAP	Burundi	1995	PSD	TA	15	7	1	S	UL	NR
P035599	C2703	TRANSPT SECTOR TA	Cameroon	1995	TR		10	0	0	S	L	SU
P000393	C2869	CM-Transport Sect Prj (FY96)	Cameroon	1996	TR	TA	61	86	52	S	L	SU
P054443	C3102	Cameroon—SAC III	Cameroon	1998	EP	TP	180	37	67	S	L	SU
P051059	L7020	CM-TD/CM Pipeline (FY00)	Cameroon	2000	EMT	TATPTW	53	12	6			
P000438	C2864	PRIVATE/FINANCIAL SE	Cape Verde	1996	PSD	TP	11	2	0	S	L	SU
P050956	C3027	ECO. REFORMS SUPPORT	Cape Verde	1998	EP	TZ	30	7	2	S	L	SU
P075700	C3587	Structural Adjustment Credit	Cape Verde	2002	EP	TVTZ	15	34	5	HS	L	SU
P060092	C3305	CF-Fisc Consolidation Credit SAD (FY00)	Central African	2000	PSD	TA	20	13	3	U	UL	NEG
P044975	CN030	SAC II	Chad	1997	EP	TZ	25	8	2	S	L	SU
P044305	L4558	TD-TD/CM Pipeline (FY00)	Chad	2000	EMT	TATPTW	40	12	5			
P044824	C3011	KM-Social Fund SIL (FY98)	Comoros	1998	SP	TA	12	23	3	MS	NEV	M
P047250	C3468	KM-Infrastr. Water & Env Prj (FY01)	Comoros	2001	TR	TA	11	54	6	NR	NA	NR
P000567	C2635	Economic Recovery Credit	Congo	1994	EP					MU	HUL	M
P075660	CH005	DRC Emergency Early Recovery Project	Congo, Democrat	2002	PSD	TA	50	29	15	S	L	SU
P000568	C2775	PRIVATIZATION & CB	Congo, Republic	1996	PSD	TZ	9	15	1	MU	NEV	M
P037575	C2704	MUNICIPAL SUPPORT	Côte d'Ivoire	1995	UD	TA	40	29	12	U	HU	M

P001165		ERC	Côte d'Ivoire	1995	EP	TP	100	33	33			
P001212	C2843	PRIVATE SECTOR DEVEL	Côte d'Ivoire	1996	PSD	TP	180	11	20	MS	L	M
P040115	C2786	RAILWAYS REHAB	Côte d'Ivoire	1996	TR	TW	20	100	20	S	L	H
P001194	CN022	CI-IVC PNGTER Rural Land (FY97)	Côte d'Ivoire	1997	ENV	TA	41	16	7			
P001177	C3100	CI-Transp Sec Adj (FY98)	Côte d'Ivoire	1998	TR	TATPTZ	180	59	106			
P044651	C2945	ER ROAD SECTOR ENGINEERING PROJECT	Eritrea	1997	TR	TA	6	31	2	S	L	SU
P044674	C3434,CH051	ER-Emerg Reconstr ERL (FY01)	Eritrea	2001	FSP	TA	90	20	18			
P000755	C3032	ET-Road Sec. Dev. Program Support Proj.	Ethiopia	1998	TR	TA	309	92	284	S	HL	SU
P035595	L3777	TRANSPORT SECTOR TA	Gabon	1995	TR	TZ	5	35	2	S	L	SU
P035626	L4387	PILOT COM. INFRA. UP	Gabon	1999	UD	TA	5	64	3	MS	L	SU
P000957	C2858	gh High Sector Invest Prog	Ghana	1996	TR	TA	100	85	85	MS	L	SU
P000973	C2836	GH-Urban Env Sanitation 1 (BD FY06)	Ghana	1996	UD	TA	71	5	4	MS	UL	M
P041150	CN020	Ghana:VILLAGE INFRASTRUCTURE	Ghana	1997	RDV	TZ	30	22	7	S	L	SU
P040557	C3228	GH -ERSO II	Ghana	1999	EP	TZ	178	12	21	U	UL	NEG
P050624	C3330	URBAN 5	Ghana	2000	UD	TZ	11	23	2	S	NEV	M
P000961	C2555	Agriculture Sector Investment Project	Ghana	1994	RDV					U	HUL	NEG
P049690	C3021	PUB.EXP.MNG.ADJ.CRD- ICR	Guinea	1998	PS	TA	70	4	3	U	UL	M
P001074	C3196	Third Urban Development Project (APL)	Guinea	1999	UD	TA	18	40	7	S	L	SU
P035915	C2748	TRANSPORT AND URBAN INFRASTRUCTURE	Guinea-Bissau	1995	UD	TATP	22	62	14	HU	UL	NEG
P001334	C2884	SAC I	Kenya	1996	EP	TZ	90	22	20	U	UNC	NEG
P035691	C2812	KE—NAIROBI MOMBASA ROAD	Kenya	1996	TR	TA	50	93	47	S	L	SU
P001319	C2811	KE-Urb Transp (FY96)	Kenya	1996	TR	TA	115	74	85	MU	L	NEG
P056595	C3120	EL NINO EMERGENCY PROJECT	Kenya	1999	UD	TA	40	63	25	S	L	M
P069501	C3406	Kenya Economic & Public Sector Reform	Kenya	2001	PS	TZ	150	15	23	U	L	M
P001403	C2857	Lesotho ROAD REHAB. & MAINT	Lesotho	1996	TR	TA	40	76	30	MS	NEV	M
P058050	C3308	Community Dev. Support	Lesotho	2000	SP	TZ	5	8	0	U	NEV	NEG
P035669	C2778	SOCIAL FUND 2	Madagascar	1996	SP	TA	40	20	8	S	UL	M
P001582	C2937,CN012	SAC I	Madagascar	1997	EP	TV	70	17	12	S	UNC	M

(Table continues on next page)

Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P048697	C2968	MG-Urban Infrastructure Project	Madagascar	1997	UD	TZ	35	36	13	S	L	SU
P057378	C3218	SAC II	Madagascar	1999	EP	TV	100	8	8	MS	L	SU
P064305	C3180	MG-Third Social Fund Prj (FY99)	Madagascar	1999	SP	TZ	15	20	3	MU	NEV	M
P052208	C3364	MG-Transp Sec Reform & Rehab (FY00)	Madagascar	2000	TR	TATPTV	65	44	29	S	L	SU
P080345	C3716	MG-Emerg Econ Recovery Crdt (FY03)	Madagascar	2003	PS	TZ	50	30	15	S	L	M
P034489	C2696	MALAWI RAILWAYS REST	Malawi	1995	TR	TPTW	16	100	16	S	L	SU
P001750	CN004	ML-Urb Dev & Decentr (FY97)	Mali	1997	UD	TZ	80	42	34	MU	UL	M
P035617	CN037	Mali:GRASSROOTS HUN/POVT	Mali	1998	SDV	TA	22	16	3	MS	NEV	M
P083799		ML-Econ. Policy & Public Fin. Mgt (FY06)	Mali	2006	EP	TA	25	10	3			
P001866	C2726	FINANCIAL & PRIVATE	Mauritania	1995	PSD	TP	30	6	2	MS	L	M
P034106	C2835	URBAN INFRASTRUCTURE & PILOT DEC.	Mauritania	1996	UD	TA	14	20	3	S	L	SU
P001875	C2965	Mauri:RAINFED NAT RES MGT	Mauritania	1997	RDV	TA	18	4	1	S	L	SU
P044711	C3272	MR-Irrigated Agr Integr Dev APL (FY00)	Mauritania	2000	RDV	TA	38	4	2	MS	L	SU
P001926	L3908,L3909	PORT DEV. & ENV PROT	Mauritius	1995	TR	TATP	31	95	29	HS	L	SU
P075070	L7115	LKD Mauritius—PERL	Mauritius	2002	PS	TZ	40	13	5	MS	L	SU
P035922	CN010	ERC III	Mozambique	1997	EP	TW	100	7	7	MS	L	SU
P070432	C3336	Flood Emergency Recovery Project	Mozambique	2000	PSD	TZ	30	20	6	S	NEV	NEG
P049878	C3709	MZ-EMPSO	Mozambique	2003	EP	TZ	120	25	30	MS	L	M
P001770	C2065	Beira Transport Corridor	Mozambique	1990	TR	TATP				S	L	SU
P001790	C2374	First Road and Coastal Shipping Project	Mozambique	1992	FS	TATP				S	L	SU
P001802	C2454	Maputo Corridor Revitalization Project	Mozambique	1993	TR	TP				S	L	H
P001777	C2628	Second Economic Recovery Credit	Mozambique	1994	FS					MS	L	SU
P001974	C2939	PUBLIC SECTOR ADJ.	Niger	1997	PS	TZ	30	11	3	MS	UL	M

P035608	C3026	NE TRANSP. INFRA. REHAB	Niger	1998	TR	TA	28	99	28	MU	UL	SU
P051931	C3138	Community Reintegration (CRDP)	Rwanda	1999	SP	TZ	5	20	1	MS	UL	SU
P002364	C2681	P.S. ADJUSTMENT & CO	Senegal	1995	EP	TP	40	13	5	S	L	SU
P044383	CN024	URBAN TRANSPORT REFORM TA PROJECT	Senegal	1997	TR	TZ	7	55	4	MS	L	SU
P002365	C3006	URB DEVT & DECEN PRO	Senegal	1998	UD	TZ	75	16	12	HS	L	H
P057996	C3315	SN-Natl Rural Infrastr (FY00)	Senegal	2000	SDV	TZ	29	20	6			
P002383	L3551	Environment and Transport Project	Seychelles	1993	TR	TA				MU	L	M
P002420	C2895	SL-Transport Sector SIM (FY96)	Sierra Leone	1996	TR	TATPTV	35	93	33	MS	NEV	M
P002407	C2451	Roads Rehabilitation and Maintenance Project	Sierra Leone	1993	TR	TA				MU	L	SU
P002433	C2511	Freetown Infrastructure Rehabilitation Project	Sierra Leone	1993	UD	TA				MS	UL	M
P002669	L3807	SZ-Urb Dev (FY95)	Swaziland	1995	UD	TA	29	14	4	S	L	M
P002758	C2867	TZ—Urban Sector Rehabilitation	Tanzania	1996	UD	TA	105	30	32	HS	L	SU
P002821	C2967	SAC I	Tanzania	1997	EP	TP	125	22	28	S	L	SU
P002822	C3379	TANZANIA PSAC I	Tanzania	2000	PS	TZ	190	13	25	S	L	SU
P002784	C2095	Second Port Modernization Project	Tanzania	1990	TR	TP				S	L	SU
P002757	C2267	Railway Restructuring Project	Tanzania	1991	TR	TW				U	NEV	SU
P002875	C2989	ROAD TRANSPORT PROJECT	Togo	1998	TR	TA	50	93	47	MS	UL	SU
P052263	C3195	Pilot Social Fund	Togo	1999	SP	TA	5	8	0	U	UL	M
P057007	C3064	UG EL NINO EMERG RD REP	Uganda	1998	TR	TA	28	100	28	S	L	M
P059223	C3203	UG-Nakivubo Channel Rehab SII (FY99)	Uganda	1999	UD	TA	22	6	1	S	L	M
P050438	C3510	UG-PRSC 1 (FY01)	Uganda	2001	PS	TA	150	8	12	MS	NEV	M
P003236	C2993	ROAD SEC. INVESTMENT PROG. SUPPORT PROJ.	Zambia	1998	TR	TATZ	70	90	63	S	L	SU
P035076	C3042	ZM-Power Rehab SIL (FY98)	Zambia	1998	EMT	TA	75	1	1			
P063584	C3355	ZM-ZAMSIF (FY00)	Zambia	2000	SP	TA	65	18	12			
P003227	C3433	ZM-Railways Restructing SIL (FY01)	Zambia	2001	TR	TW	27	25	7	S	NEV	SU
P003246	C2515	Transport Engineering and Technical Assistance Project	Zambia	1993	TR	TZ				S	L	SU

(Table continues on next page)

Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P003222	C2577	Economic and Social Adjustment Program	Zambia	1994	EP					MS	UNC	M
P045029	CN019	PILOT RDC	Zimbabwe	1997	UD	TA	12	34	4	U	UL	M
P003318	C3083	PARK REHAB & CONSERV	Zimbabwe	1998	ENV	TA	63	23	14	NR	NA	NR
Region: East Asia and Pacific												
P037088	C2739	KH-SOCIAL FUND (Project closed)	Cambodia	1995	SP	TA	20	10	2	S	L	SU
P058841	C3216	KH-NORTHEAST VILLAGE	Cambodia	1999	RDV	TA	5	22	1	S	UL	M
P050601	C3179	KH-SOCIAL FUND II	Cambodia	1999	SP	TA	25	20	5			
P073394	C3472	KH-Flood Emergency Rehabilitation Proj	Cambodia	2001	RDV	TA	35	50	18	S	L	SU
P003493	L3910	Inland Waterways	China	1995	TR	TP	210	97	204	S	L	SU
P003571	L3897	CN-7TH RAILWAYS	China	1995	TR	TW	400	99	396	MU	L	M
P003612	L3787	XINJIANG HIGHWAY PROJECT	China	1995	TR	TA	150	99	149	S	HL	SU
P003569	L3929	Shanghai-Zhejiang Hwy	China	1996	TR	TA	260	97	252	S	L	SU
P003649	C2834	CN -SHANXI POVERTY ALLEV	China	1996	RDV	TA	100	10	10	MS	HL	SU
P003652	L3986	CN-2nd Shaanxi Prov Hwy	China	1996	TR	TA	210	84	176	S	L	SU
P040513	L4027	Second Henan Provincial Highway Project	China	1996	TR	TA	210	99	208	S	L	SU
P003590	CN028,L4187	CN-QINBA MOUNTAINS REDUCTION	China	1997	RDV	TZ	180	3	5	S	HL	SU
P003643	L4099	CN-Second Xinjiang Highway Project	China	1997	TR	TA	300	98	294	S	L	SU
P003654	L4124	CN-Nat Hwy2/Hunan-Guangdong	China	1997	TR	TA	400	100	400	S	L	SU
P036949	L4327	CN-Nat Hwy3-Hubei	China	1998	TR	TA	250	99	248	S	HL	SU
P049700	L4354	Irrigated Agriculture Intensification II	China	1998	RDV	TA	300	7	21	HS	L	SU
P063123	C3169,L4438	YANGTZE FLOOD EMERGENCY REHABILITATION	China	1999	RDV	TA	80	51	41	HS	HL	SU
P041890	L4453	CN-Liaoning Urban Transport	China	1999	TR	TATZ	150	96	144			
P003653	L4444	CN-Container Transport	China	1999	TR	TP	71	100	71	MS	L	SU
P050036	L4421	CN-Anhui Provincial Highway Project	China	1999	TR	TA	200	98	196	S	HL	SU

P003504	L3748	Hebei/Henan National	China	1994	TR	TA				S	L	SU
P003951	L3854	ID-KALIMANTAN UDP	Indonesia	1995	UD	TA	136	20	27	S	NEV	M
P034891	L3888	VILLAGE INFRASTRUCTU	Indonesia	1995	TR	TA	73	25	18	HS	L	SU
P004008	L3984	ID—NUSA TENGGARA DEV.	Indonesia	1996	RDV	TA	27	20	5	MU	UL	M
P004011	L4007	ID—SULAWESI AGRI AREA	Indonesia	1996	RDV	TA	27	29	8	MU	UL	M
P004016	L4054	ID-Strategic Urban Rds	Indonesia	1996	TR	TA	87	81	70	MS	L	M
P039312	L4017	IND-EAST JAVA UDP II	Indonesia	1996	UD	TA	117	29	34	MS	UL	M
P004026	L4106	ID-Railway Efficiency	Indonesia	1997	TR	TW	105	100	105	U	UL	M
P036047	L4155	ID-BALI URBAN INFRA.	Indonesia	1997	UD	TA	110	15	17	MS	L	M
P036053	L4105	ID-SUL2UDP	Indonesia	1997	UD	TA	155	20	31	U	UL	NEG
P040521	L4100	VILLAGE INFRASTRUCTURE II	Indonesia	1997	TR	TA	140	21	29	HS	L	SU
P037095	L4306	MALUKU REG. DEV	Indonesia	1998	RDV	TP	16	9	1	NA	NA	NAPP
P045337	C3453,L4330	ID-KECAMATAN DEV FUND	Indonesia	1998	PS	TZ	225	21	47	S	L	SU
P003993	L4307	ID-SUMATRA REG'L RDS	Indonesia	1998	TR	TA	234	91	213			
P040061	L4290	ID—BENGKULU REGIONAL DEVELOPMENT	Indonesia	1998	RDV	TA	21	10	2			
P003890	L3749	Semarang Surakarta Urban Development Project	Indonesia	1994	UD					MU	UL	M
P004173	L3793	KR-Ports Dev & Environment	Korea, Republic of	1995	TR	TP	100	92	92	S	L	M
P004175	L3828	KR-PUSAN URB TRANSPORT	Korea, Republic of	1995	TR	TZ	100	90	90	MS	UL	SU
P004210	C2943	LA-Third Highway Improvement Project	Lao PDR	1997	TR	TA	48	98	47	HS	L	SU
P064821	C3481	LA-Road Maintenance	Lao PDR	2001	TR	TA	25	97	24	S	HL	SU
P041741	C2947	BANKING & ENT-BESAC	Mongolia	1997	FSP	TZ	10	9	1	U	UL	M
P055446	L4316	EMERGENCY EL NINO DROUGHT RESPONSE	Papua New Guinea	1998	RDV	TZ	5	48	2	U	L	M
P037079	L4109	PH—AGRARIAN REFORM COMM	Philippines	1997	RDV	TA	50	35	18	S	L	SU
P040981	L4111	PH-SECOND SUBIC BAY	Philippines	1997	PSD	TATP	60	40	24	S	L	SU
P051386	L4300	SZOPAD SOCIAL FUND	Philippines	1998	SP	TA	10	22	2	S	NEV	M
P058842	L4522	MINDANAO RURAL DEVELOPMENT PROJECT	Philippines	2000	RDV	TA	28	48	13	S	NEV	SU
P052293	C3193	WS-Infrastructure Asset Management	Samoa	1999	TR	TATV	14	66	10	S	L	H
P004800	L3968	TH-Highways V	Thailand	1996	TR	TA	150	98	147	S	L	SU

(Table continues on next page)

Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P004842	CN013	VN-2nd Hwy Rehab	Vietnam	1997	TR	TA	196	93	182	MS	NEV	M
P039021	C2929	VN-Rural Transport	Vietnam	1997	TR	TA	55	98	54	MS	L	M
P004843	C3000	VN-INLAND WATERWAYS	Vietnam	1998	TR	TP	73	92	67			
P004833	C3125	VN-URBAN TRANSPT IMPRVT	Vietnam	1999	TR	TATZ	43	80	34			
P004832	C2549	Highway Rehab	Vietnam	1994	TR	TA				S	L	M
Region: Europe and Central Asia												
P008267	C2732	RURAL ROADS	Albania	1995	TR	TA	15	74	11	S	L	H
P008273	C2680	RURAL DEVELOPMENT	Albania	1995	RDV	TA	6	10	1	S	L	H
P036060	C2888	NATL ROADS	Albania	1996	TR	TA	25	100	25	MS	L	M
P040818	C3068	DURRES PORT	Albania	1998	TR	TP	17	97	16	MS	L	SU
P040975	C3066	LAND DEVT	Albania	1998	UD	TA	10	17	2	S	L	M
P051309	C3164	COMMUNITY WORKS	Albania	1999	SP	TA	9	20	2	S	L	SU
P068853	C3303	EMG ROAD REPAIR	Albania	2000	TR	TA	14	79	11	S	UL	M
P070078	C3427	TRADE & TRANS FACIL IN SE EUR	Albania	2001	TR	TA	8	25	2	MS	L	M
P035765	C2776	HIGHWAY	Armenia	1996	TR	TA	16	91	15	HS	L	SU
P044829	C3375	TRANSPORT	Armenia	2000	TR	TATW	40	94	38	S	L	M
P055155	C3107	URG ENV INVST	Azerbaijan	1998	ENV	TA	20	6	1	MU	NEV	M
P044393	C2905	EMG LANDMINE CLEARANCE	Bosnia and Herzegovina	1997	TR		8	0	0	HU	HU	NEG
P045484	CN032	EMG TRANSPT RECON 2	Bosnia and Herzegovina	1998	TR	TA	39	99	39	S	L	M
P056192	C3191	LOCAL DEVT	Bosnia and Herzegovina	1999	UD	TZ	15	28	4	S	L	M
P070079	C3466	TRADE & TRANS FACIL IN SE EUR	Bosnia and Herzegovina	2001	TR		11	0	0	S	L	SU
P008315	L3922	RAILWAY REHAB	Bulgaria	1996	TR	TW	95	100	95	MS	NEV	SU
P070086	L4553	TRADE & TRANS FACIL IN SE EUR	Bulgaria	2000	TR		7	0	0	S	L	SU
P067051	L7158	PAL	Bulgaria	2003	PSD	TW	150	5	8	S	L	SU
P008329	L3869	HIGHWAY SECTOR	Croatia	1995	TR	TA	80	91	73	U	L	M

P044457	L4104	EMG TRANS/MINE CLR	Croatia	1997	TR	TATPTW	102	70	71	S	L	SU
P039161	L4433	RAILWAY MOD & RESTRCT'G	Croatia	1999	TR	TW	101	65	66	MS	L	M
P070088	L4582	TRADE & TRANS FACIL IN SE EUR	Croatia	2001	TR		14	0	0	MS	L	SU
P082278	L7330	PAL	Croatia	2006	EP	TW	185	20	37			
P008328	L3760	Emergency Reconstruction Project	Croatia	1994	UD	TA				MS	L	M
P035775	L7008	TRANSPORT	Estonia	2000	TR	TA	25	95	24	S	L	SU
P008417	C2658	MUN INFRA REH	Georgia	1995	UD	TZ	18	26	5	S	L	M
P039892	C2809	TRANSPORT	Georgia	1996	TR	TATW	12	75	9	HS	L	SU
P050910	C2976	MUN DEVT	Georgia	1998	UD	TZ	21	29	6	S	L	M
P056514	C3129	TRANS MIN RESTRUCT	Georgia	1999	TR		2	0	0	S	L	SU
P040556	C3357	ROADS	Georgia	2000	TR	TA	40	99	40			
P008494	L3903	BUDAPEST URBAN TRANS	Hungary	1995	TR	TZ	38	100	38	S	L	SU
P008449	L3032	Second Transport Project	Hungary	1989	TR					S	L	M
P008465	L3549	Roads Project	Hungary	1993	TR	TA				MS	UL	M
P008511	L3725	Urban Transport	Kazakhstan	1994	TR					MS	UNC	SU
P050719	C3410	KYRGYZ URBAN TRANSPORT PROJECT	Kyrgyz Republic	2001	TR	TA	22	99	22			
P034584	L3964	MUN SERVICES DEVT	Latvia	1996	UD	TZ	27	61	17	MS	UL	M
P008532	L4145	HIGHWAY	Latvia	1997	TR	TA	20	99	20	HS	HL	H
P066153	L7007	PSAL	Latvia	2000	PS	TZ	40	6	2	S	L	SU
P008551	L4084	HIGHWAY	Lithuania	1997	TR	TA	19	99	19	S	L	SU
P035802	L4481	MUNI DEVT	Lithuania	1999	UD	TZ	20	25	5	U	L	M
P008407	L3868	TRANSIT FACILITATION	Macedonia, FYR	1995	TR	TA	24	93	22	HS	L	SU
P050589	L4439	TRANSPORT	Macedonia, FYR	1999	TR	TATW	32	100	32	MS	L	M
P070089	C3402	TRADE & TRANS FACIL IN SE EUR	Macedonia, FYR	2001	TR		9	0	0			
P044840	C3170	SIF	Moldova	1999	SP	TA	15	22	3	S	L	SU
P036061	L4080	PORT ACCESS & MGMT	Poland	1997	TR	TATP	67	98	66	S	L	SU
P035082	L4208,L4209	MUNI FIN	Poland	1998	FSP	TA	22	25	6	U	L	M
P053796	L4264	FLOOD EMERGENCY	Poland	1998	UD	TA	200	12	24			
P058202	L7013	RUR DEVT	Poland	2000	RDV	TA	120	23	28	S	L	SU
P040795	L7054	RAIL RESTRCT (PKP)	Poland	2001	TR		101	0	0			
P036013	L3976	RAILWAY REHABILITATION	Romania	1996	TR	TW	120	100	120	HS	HL	H
P065041	L4560	TRADE & TRANS FACIL IN SE EUR	Romania	2000	TR		17	0	0	MS	HL	SU

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Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P008791	L4752	PAL	Romania	2005	EP	TZ	150	10	15	S	L	SU
P008771	L3593	Transport Project	Romania	1993	TR					HS	L	SU
P008808	L3706	Highway Rehabilitation And Maintenance	Russian Federation	1994	TR					MU	NEV	M
P008806	L3885	URBAN TRANSPORT	Russian Federation	1995	TR	TZ	329	97	319	S	L	M
P008827	L3850	HOUSING	Russian Federation	1995	UD	TA	400	17	68	MU	UL	M
P035764	L3990	BRIDGE REHABILITATION	Russian Federation	1996	TR	TA	350	93	326	MS	L	M
P042720	L4144	ST PETERSBURG REHAB	Russian Federation	1997	UD	TA	31	14	4	MU	NEV	M
P050491	L4261	SAL 2	Russian Federation	1998	EP	TP	800	13	104	U	L	M
P042722	L4427	HWY REHAB & MAINT 2	Russian Federation	1999	TR	TA	400	85	340	NR	NR	NR
P053386	C3037	POST CNFLT RECONSTRUCTION	Tajikistan	1998	TR	TA	10	52	5	S	UL	M
P059055	C3123	EMG FLOOD ASST	Tajikistan	1999	UD	TA	5	68	3	U	UL	NEG
P038091	L4048,L4049	ROAD IMPRVMT & TRAFFIC SAFETY	Turkey	1996	TR	TA	250	94	235	MS	L	M
P058877	L4388	EMGY FLOOD RECOVERY	Turkey	1999	UD	TA	369	6	22	S	L	M
P034083	L4170	URBAN TRANSPORT	Turkmenistan	1997	TR	TZ	34	68	23	MU	UL	NEG
P034581	L3985	HOUSING	Ukraine	1996	UD	TA	17	10	2	NR	NR	NR
P050508	L4547	URBAN TRANSPORT	Uzbekistan	2000	TR	TZ	29	98	28			
Region: Latin America and the Caribbean												
P006018	L3877	AR PROV DEVT II	Argentina	1995	PS	TA	225	20	45			
P006060	L3860	AR MUNIC DEVT II	Argentina	1995	UD	TZ	210	44	92	S	L	M
P035495	L3957	SOCIAL PROTECTION	Argentina	1996	SP	TA	152	4	6	S	L	SU
P005980	L4093	AR PROV ROADS	Argentina	1997	TR	TA	300	97	291			
P055935	L4273	EL NINO EMERGENCY FLOOD PROJECT	Argentina	1998	WS	TZ	42	44	18	S	UL	M
P052590	L4295	AR NAT HWY REHAB&MAINT	Argentina	1998	TR	TA	450	97	437			
P006058	L4398	AR-Social Protection 4	Argentina	1999	SP	TA	91	15	14			
P044447	L4578	AR Catamarca Provincial Reform	Argentina	2001	PS	TA	71	8	6			
P069913	L4634	AR Santa Fe Provincial Reform	Argentina	2002	PS	TA	330	7	23			

P039292	L4142	BZ- SOCIAL INVEST. FUND	Belize	1997	SP	TA	7	15	1	MU	L	M
P040150	L4575	BZ ROADS AND MUNICIPAL DRAINAGE PROJECT	Belize	2001	TR	TA	13	50	7	S	UL	M
P037005	C2647	REGULATORY REF & CAP	Bolivia	1995	PS	TV	15	15	2	S	L	SU
P006202	C2772	RURAL COMMUNITIES DE	Bolivia	1996	RDV	TA	15	9	1	S	L	SU
P055974	C3057	BO EL NINO EMERGENCY	Bolivia	1998	TR	TA	25	19	5	S	UL	M
P057030	C3143	BO REG REFORM ADJ CREDI	Bolivia	1999	PSD	TZ	40	8	3	S	L	SU
P055230	C3235	BO ABAPO-CAMIRI HIGHWAY	Bolivia	1999	TR	TA	88	99	87			
P006564	L3916	BR BELO H M.TSP	Brazil	1995	TR	TATW	99	93	92	MS	L	SU
P035717	L3917	RURAL POV. (BAHIA)	Brazil	1995	RDV	TA	105	30	32	S	L	SU
P038882	L3915	BR RECIFE M.TSP	Brazil	1995	TR	TATWTZ	102	98	100	MS	L	SU
P038884	L3918	RURAL POV.- CEARA	Brazil	1995	RDV	TA	70	23	16	HS	L	SU
P038885	L3919	RURAL POV.-SERGIPE	Brazil	1995	RDV	TA	36	23	8	S	L	SU
P040028	L4046	RAILWAYS RESTRUCTURG	Brazil	1996	TR	TW	350	99	347	S	L	SU
P037828	L4060	BR (PR)R.POVERTY	Brazil	1996	RDV	TZ	175	22	39			
P006562	L4140	Bahia Municipal Inf. Dev't. and Mgm't.	Brazil	1997	UD	TZ	100	13	13	S	L	SU
P038896	L4120	R.POVERTY(RGN)	Brazil	1997	RDV	TA	24	22	5	HS	L	SU
P042566	L4122	R.POVERTY(PE)	Brazil	1997	RDV	TA	39	22	9	S	L	SU
P043871	L4121	(PIAUI)R.POVERTY	Brazil	1997	RDV	TA	30	23	7	S	L	SU
P039196	L4139	BR RGS ST.REF	Brazil	1997	PS	TA	125	9	11	MS	L	M
P048870	L4189	BR MT STATE PRIV.	Brazil	1997	PSD	TA	45	16	7	S	L	SU
P006532	L4188	BR FED HWY DECENTR	Brazil	1997	TR	TA	300	92	276			
P034578	L4165	BR RGS Highway MGT	Brazil	1997	TR	TA	70	77	54			
P006559	L4312	BR (BF-R)SP.TSP	Brazil	1998	TR	TZ	45	86	39	HS	HL	SU
P040033	L4318	MG STATE PRIV.	Brazil	1998	PSD	TA	170	10	17	NR	NR	NR
P051701	L4252	BR MARANHAO R.POVERTY	Brazil	1998	RDV	TA	80	20	16	S	L	SU
P039197	L4211	BR RJ ST.PRIV.	Brazil	1998	PS	TZ	250	100	250	S	L	M
P050875	L4626	BR Ceara Rural Poverty Reduction Project	Brazil	2001	RDV	TA	38	25	9			
P057649	L4623	BR Bahia Rural Poverty Reduction Project	Brazil	2001	RDV	TA	54	25	14	S	L	SU
P080827	L7218	BR Loan for Sust. and Equitable Growth	Brazil	2004	PSD	TZ	505	25	126	S	L	SU

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Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P006378	L3547,L3548	Santa Catarina State Highway Management Project	Brazil	1993	TR	TA				S	L	SU
P006661	L3833	CL THIRD RD SCTR	Chile	1995	TR	TA	120	100	120	S	L	SU
P006676	L3974	CL SECANO AG DEV I	Chile	1996	RDV	TA	15	10	2	S	L	M
P082412	L7315	CL -Santiago Urban Transport Adj	Chile	2006	TR	TZ	30	100	30			
P006872	L4021	CO Urban Transport	Colombia	1996	TR	TATZ	65	91	59	HS	HL	H
P006861	L4345	CO URBAN INFRASTRUCTURE	Colombia	1998	UD	TZ	75	20	15	S	L	SU
P046031	L4371	CO MAGDALENA MEDIO	Colombia	1998	SDV	TA	5	10	1	HS	L	SU
P039082	L4370	TOLL-ROAD CONCESSION	Colombia	1999	TR	TA	137	100	137	U	UL	NEG
P081397	L7309	CO Prog Dev Policy Ln for Sust. Dev	Colombia	2005	ENV	TZ	150	10	15			
P006856	L3157	Second Rural Roads Sector Project	Colombia	1990	TR	TA				S	UNC	M
P006873	L3453	Third National Highway Sector Project	Colombia	1992	TR	TA				S	UNC	SU
P077680	C3610,L7099	Emergency Recovery Project	Dominican Repub	2002	UD	TPTV	3	60	2	S	L	M
P078841	C3851	DM ERSO	Dominican Repub	2004	PO	TP	3	10	0	S	L	SU
P035722	L4127	DO NATIONAL HWY. PROJ.	Dominican Repub	1997	TR	TA	75	91	68	MS	UL	M
P063201	0	DO Hurricane Georges Emergency Recovery	Dominican Repub	1999	PSD	TA	111	20	22	S	L	M
P040198	L4407	GT FIS II	Guatemala	1999	SP	TA	50	12	6	MS	NEV	M
P054462	L4432	GT LAND FUND (APL)	Guatemala	1999	RDV	TA	23	13	3			
P007318	C2691	RD MAINT & RHB	Haiti	1995	TR	TA	50	90	45	HU	UL	NEG
P031828	C2670	EMERGENCY ECONOMIC R	Haiti	1995	PSD	TZ	40	20	8	HS	L	SU
P089873	C4029,CH142	HT Economic Governance Reform Adj. Ope.	Haiti	2005	EP	TZ	61	12	7			
P007388	C2458	Transport Sector Rehabilitation Project	Honduras	1993	TR	TATV	65	83	54	S	L	SU
P007387	C2816	HN PUB SEC MOD SAC	Honduras	1996	PS	TV	55	12	7	MU	L	SU
P064083	C3159	HO HURRICANE EMERGENCY	Honduras	1999	PSD	TZ	200	20	40	S	L	NEG

P064895	C3443	HN FIFTH SOCIAL INVESTMENT FUND PROJECT	Honduras	2001	SP	TA	60	25	15			
P074758	C3941	HN PRSC	Honduras	2004	PO	TZ	59	10	6	S	NEV	SU
P039029	L4088	JM- SOC. INVEST. FUND	Jamaica	1997	SP	TA	20	20	4	S	UL	M
P007702	L3790	SECOND DECENTRALIZATION	Mexico	1995	PSD	TA	500	33	165	S	L	SU
P040685	L3937	INFRA. PRIVATZTN TA	Mexico	1996	PSD	TZ	30	30	9	S	L	SU
P043163	L4206	FEDERAL ROADS MODZTN	Mexico	1997	TR	TA	475	89	423	NR	NR	NR
P064887	L7038	MX DISASTER MANAGEMENT (ERL)	Mexico	2001	ENV	TZ	404	23	93	HU	HU	NEG
P070479	L7043	MX Edo.de Mexico Structural Adjustm Loan	Mexico	2001	PS	TA	505	10	51	MS	L	M
P065779	L7042	MX FEDERAL HIGHWAY MAINTENANCE PROJ.	Mexico	2001	TR	TA	218	98	214			
P007694	L3543	Transport Air Quality Management for Mexico City Metro Area	Mexico	1993	TR					S	L	SU
P007723	L3628	Highway Rehabilitation and Safety Project	Mexico	1993	TR	TA				S	NEV	M
P007788	C2871	ROAD REHAB & MAINT	Nicaragua	1996	TR	TA	25	84	21	HS	L	SU
P007790	C2918	NI RURAL MUNICIPALITIES	Nicaragua	1997	RDV	TZ	30	19	6	MS	NEV	SU
P053705	C3085	NI TRANSPORT II	Nicaragua	1998	TR	TA	47	82	39	HS	L	SU
P064084	C3158	NI HURRICANE EMERGENCY	Nicaragua	1999	PSD	TZ	50	20	10	S	L	NEG
P007837	L4191	PA—FIS	Panama	1997	SP	TA	28	10	3	MU	NEV	M
P053706	L4393	SECOND ROADS REHAB	Panama	1999	TR	TA	85	97	82	NR	NR	NR
P037047	L3962	RURAL RDS. REHAB & M	Peru	1996	TR	TA	90	96	86	HS	L	SU
P040125	L4068	PE-FONCODES II	Peru	1997	SP	TA	150	2	3	S	L	M
P054667	L4250	EL NINO EMERGENCY LN	Peru	1998	TR		150	0	0	MU	L	SU
P082871	L7203	PE Program. Decent. & Competitiveness	Peru	2004	PS	TP	150	10	15	S	L	SU
P083949	L7267	PE PROGRAMATIC REFORM FOR GROWTH II	Peru	2005	PSD	TZ	100	25	25			
P062668	L4418	St. Kitts & Nevis—Disaster Management	St. Kitts and Nevis	1999	PSD	TZ	9	20	2	S	L	SU
P077684	L7101	Emergency Recovery Project	St. Kitts and Nevis	2002	UD	TPTV	4	59	3			
P070430	C3151,L4419	Saint Lucia—Disaster Management	St. Lucia	1999	PSD	TZ	6	20	1	S	L	SU

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Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P054939	C3277,L4508	LC- POVERTY REDUCTION FUND	St. Lucia	2000	SP	TA	3	10	0	MS	NEV	M
P077687	C3612,L7102	Emergency Recovery Project	St. Lucia	2002	UD	TPTV	6	56	4			
P076822	C3613,L7103	Emergency Recovery Project	St. Vincent	2002	UD	TP	3	100	3			
P039203	L4204	UY FOREST PROD.TSP	Uruguay	1997	TR	TATPTW	76	92	70			
P049267	L4395	UY TRANSPORT II	Uruguay	1999	TR	TA	65	94	61	S	L	SU
Region: Middle East and North Africa												
P004907	L3839	DZ-HIGHWAYS VI	Algeria	1995	TR	TA	130	71	92	U	UL	M
P038695	L3813	DZ-MASCARA EMERG.RECONS	Algeria	1995	UD	TA	51	14	7	S	L	M
P004978	L4006	SOCIAL SAFETY I	Algeria	1996	SP	TA	50	22	11	S	L	SU
P043724	L4143	DZ-RURAL EMPLOYMENT	Algeria	1997	RDV	TA	89	4	4	S	L	SU
P042940	L4361	DZ-LOW INCOME HOUSING	Algeria	1998	UD	TA	150	25	38	U	UL	NEG
P069947	L7023	DZ-TEERP(Temouchent Emerg. Earthquake)	Algeria	2000	UD	TA	83	2	2			
P069930	C3391	DJ-INTL. ROAD CORRIDOR REHAB. PROJECT	Djibouti	2000	TR	TA	15	91	14	S	L	M
P057704	C3074	PORT SECTOR REFORM	Egypt, Arab Rep of	1998	TR		2	0	0	NR	NR	NR
P074075	L7161	EG—Second Matruh Resource Mgmt. Proj.	Egypt, Arab Rep of	2003	RDV	TA	12	10	1			
P049581	L4215	COMMUNITY INFRA. DEV.	Jordan	1998	UD	TA	30	24	7	S	L	SU
P035997	L4214	JO-SECOND TOURISM DEV.	Jordan	1998	UD	TA	32	45	14	MS	L	M
P045676	L4482	Jordan—ERDL III	Jordan	1999	EP	TZ	120	11	13	MS	L	SU
P034037	L4092	LB: AGRI. INFRA. DEVEL.	Lebanon	1997	RDV	TA	31	32	10	S	L	M
P038674	L4065	LB-NATIONAL ROADS	Lebanon	1997	TR	TA	42	91	38	MS	UL	M
P005489	L3901	MA-SECONDARY ROADS	Morocco	1995	TR	TA	58	87	50	S	L	M
P041303	L3935	EMERG. DROUGHT RECOV	Morocco	1996	RDV	TA	100	23	23	HS	L	SU
P043725	L4128	MA-RAILWAY RESTR & PRIV	Morocco	1997	PSD	TW	85	100	85	S	L	H
P005523	L4231	MUNICIPAL FINANCE II	Morocco	1998	UD	TA	70	25	18	S	L	M
P005519	L4426	LAKHDAR WATERSHED MG	Morocco	1999	RDV	TA	4	11	0	S	NEV	M
P052247	L4464	MA-PILOT FISHERIES DEV.	Morocco	1999	RDV	TP	5	52	3	MS	L	M

P005524	L4402,L4403	FES MEDINA REHABILITATION PROJECT	Morocco	1999	UD	TA	14	52	7			
P005749	L3840	TUNISIA—RURAL ROADS PROJECT	Tunisia	1995	TR	TA	52	96	49	S	L	SU
P046832	L4202	TN-MUNICIPAL DEV. II	Tunisia	1997	UD	TZ	80	32	26	MS	L	M
P042287	L4069	ECAL I	Tunisia	1997	FSP	TP	75	28	21	S	L	M
P043700	L4357,L4358	TN-TRANSPORT SECTOR INVESTMENT PROJECT	Tunisia	1998	TR	TPTW	50	92	46			
P005733	L3691	Northwest Mountainous Areas Development Project	Tunisia	1994	ENV	TA				S	L	SU
P005806	C2177	Multi-mode Transport Project	Yemen, Rep. of	1991	TR	TA				MS	L	SU
P049735	C3298	Privatization Support Project	Yemen, Rep. of	2000	PSD					Not Applicable	Not Applicable	Not Applicable
P043109	C2878	PUBLIC WORKS PROJECT	Yemen, Rep. of	1996	UD	TA	25	10	3	S	L	SU
P041267	C2819	RY-TRANSPORT REHABILITATION	Yemen, Rep. of	1996	TR	TATV	37	95	35	MS	L	M
P048522	C2932	EMERGENCY FLOOD REHABILITATION PROJECT	Yemen, Rep. of	1997	RDV	TA	30	24	7	S	L	SU
P060132	C3168	RY Public Works II	Yemen, Rep. of	1999	UD	TA	50	23	12	HS	L	SU
P068830	C3353	RY-Second Social Fund for Dev	Yemen, Rep. of	2000	SP	TA	75	10	8			
Region: South Asia												
P077533	CH009	Emergency Community Empowerment Project	Afghanistan	2002	SDV	TA	42	23	10	S	NEV	SU
P009509	C2569	Jamuna Bridge Project	Bangladesh	1994	TR	TA	200	99	198	HS	HL	M
P009518	C2927	Second Rural Roads & Markets Improvement	Bangladesh	1997	TR	TA	133	89	118	S	L	SU
P037294	CN043	Third Road Rehabilitation & Maintenance	Bangladesh	1999	TR	TA	273	86	235	MS	L	M
P009524	C3163	Dhaka Urban Transport	Bangladesh	1999	TR	TA	177	75	133	MU	NEV	M
P010522	C2733	Assam Rural Infra	India	1995	RDV	TA	126	39	49	S	L	SU
P039935	C2838,L3992	ILFS-Private Infrastructure Finance	India	1996	PSD	TATP	205	49	100	MU	L	M
P009995	L4192	ANDHRA PRADESH STATE HIGHWAY PROJECT	India	1997	TR	TA	350	97	340	S	L	M
P045600	L4114	TA ST'S RD INFRA DEV	India	1997	TR		52	0	0	S	L	M
P049301	C2950,L4156	A.P. EMERG. CYCLONE	India	1997	PSD	TA	150	25	38	U	L	SU
P035824	C3106,L4365	Div Agri Support	India	1998	RDV	TA	130	21	27	S	L	SU

(Table continues on next page)

Table A.7: Completed Projects with Transport Components: Approval Year Fiscal 1995–2006 (continued)

Project ID	Loan/ Credit No.	Project Name	Country	Approval fiscal year	Sector Board ^a	Mode ^b	IBRD/IDA Comm (US\$ m)	Transport share	IBRD/IDA TR comm (US\$ m)	IEG outcome rating ^c	IEG Sustain- ability rating ^d	IEG institutional development rating ^e
P049385	C3103,L4360	AP ECON RESTRUCTURIN	India	1998	HE	TA	543	21	114			
P050637	L4478	TN URBAN DEV II	India	1999	UD	TA	105	17	18	MS	L	SU
P041264	C3243,L4492	Wtrshd Mgmt Hills II	India	1999	RDV	TA	135	3	4	S	L	SU
P059149	C3617,L4652	KARN SAL II	India	2002	EP	TA	100	3	3	MS	L	SU
P010509	C3008	MULTIMODAL TRANSIT	Nepal	1998	TR	TATZ	24	89	21	MU	L	SU
P045053	C3215	RURAL INFRA LIL	Nepal	1999	TR	TA	5	74	4	MS	L	SU
P010478	C2829	NWFP- COMMUNITY INFRA	Pakistan	1996	UD	TA	22	22	5	MU	UL	M
P049791	C3248	POVERTY ALLEVIATION FUND	Pakistan	1999	FSP	TA	90	15	14	HS	L	SU
P077834	C3687	NWFP Structural Adjustment Credit	Pakistan	2003	EP	TA	90	5	5	MS	L	M
<i>P010277</i>	<i>L2814</i>	<i>Fourth Highway Project</i>	<i>Pakistan</i>	<i>1987</i>	<i>TR</i>	<i>TA</i>				<i>S</i>	<i>L</i>	<i>SU</i>
<i>P010352</i>	<i>L3241</i>	<i>Transport Sector Project</i>	<i>Pakistan</i>	<i>1990</i>	<i>TR</i>					<i>MS</i>	<i>L</i>	<i>SU</i>
<i>P010375</i>	<i>L3335</i>	<i>Karachi Port Modernization Project</i>	<i>Pakistan</i>	<i>1991</i>	<i>TR</i>	<i>TP</i>				<i>S</i>	<i>L</i>	<i>SU</i>
P058070	C3301	North-East Irrigated Agriculture Project	Sri Lanka	2000	RDV	TA	27	30	8	S	L	SU
<i>P010363</i>	<i>C2183</i>	<i>Third Roads Project</i>	<i>Sri Lanka</i>	<i>1991</i>	<i>TR</i>	<i>TA</i>				<i>MS</i>	<i>UL</i>	<i>M</i>
<i>P010420</i>	<i>C2495</i>	<i>Colombo Urban Transport Project</i>	<i>Sri Lanka</i>	<i>1993</i>	<i>TR</i>					<i>MU</i>	<i>UL</i>	<i>NEG</i>

Source: World Bank data.

Note: All data for portfolio review is from July 1, 2006. The projects for which a field assessment was done by IEG and PPARs prepared are listed in bold and italics. FY = fiscal year.

a. EMT = energy, mining, and telecommunications; ENV = environment; EP = economic policy; PS = public sector; PSD = private sector development; RDV = rural development; SP = social protection; TR = transport; UD = urban development.

b. TA = roads and highways; TP = ports, waterways, and shipping; TV = aviation; TW = railways; TZ = general transportation.

c. HS = highly satisfactory; HU = highly unsatisfactory; MS = moderately satisfactory; MU = moderately unsatisfactory; NR = no rating; S = satisfactory; U = unsatisfactory.

d. HL = highly likely; U = unlikely; HUL = highly unlikely; L = likely; NA = not assessed; NEV = nonevaluable; UL = unlikely; UNC = uncertain.

e. H = high; M = medium; NEG = negligible; NR = no rating; SU = substantial.

Table A.8: Alternative Degrees of Private Sector Responsibility for Provision of Transport Infrastructure/Services

Policy and Planning	National level: Private participation in regulatory/oversight committees (e.g., Planning/Regulatory Commissions, Roads Board, Facilitation Committees)									
	Local level: Stakeholder participation in planning and monitoring committees for services, projects, expenditures									
Management	Government department	Community	State corporation	Management contract	Joint venture	Lease	Design, build, finance and operate	Build, operate and transfer	Franchise	Private company
Sources of outside finance	Budget sovereign borrowing aid	Budget self-help aid	Budget banks aid bonds	Budget aid	Budget equity bonds banks	Equity banks bonds aid	Equity banks (limited recourse) budget, aid	Equity banks (limited recourse) budget, aid	Equity banks (limited recourse)	Equity banks bonds
Examples <i>(Developing countries in italics)</i>	New Zealand: Rail infrastructure (2003)	Sweden: Most private roads <i>Numerous local roads built under Community Driven Development initiatives in developing countries</i>	UK: Highways Agency (1994) New Zealand: Air NZ (2001) Germany: Railways (DB) (1993) <i>Chile: Port Corporations (1997)</i> <i>Colombia: Bogota: Trans-milenio bus rapid transit co. (1999)</i> <i>India: Ennore Port (2001)</i>	<i>Zambia: Railways (1998)</i> <i>Uganda: Road Agency Formation Unit—RAFU (1998)</i>	<i>China: Provincial Expressway Development Companies (1998–)</i> <i>Mexico: Railways (1997)</i> <i>Mozambique: Maputo Port (2003)</i>	USA: Las Vegas Transit (1993) Australia: State Railways (1997–) Australia: main airports (1996–) <i>Mexico: Railways (1997)</i> <i>Mozambique: Maputo Port (2003)</i>	UK: Trunk Road Upgrades (1995–) UK: London Underground infrastructure (2002) UK: Portsmouth area road maintenance (2003) Portugal: motorways (1996–) Greece: Athens Airport (1995)	USA California: SR-91 (1994) Australia: Urban toll roads (1987–) France: Millau viaduct (2001) <i>Bolivia: Airports (1996)</i> <i>India: Nhava Sheva container terminal (1997)</i> <i>South Africa: Road concessions (1997–)</i>	Norway Buses UK: Train Operating Cost (1995–) UK: Bus Quality Contracts (1998–) Australia Melbourne: Public Transport (1999) <i>Colombia Bogota: Bus cos. (2001–)</i>	UK: Railtrack (1996–2002) New Zealand: Main airports (1998) South Australia Ports (2001) Italy: Autostrade Spa (1999) Germany: Frankfurt Airport (2003) <i>Mexico: ASUR (southeast) airports (1999–)</i>

Source: World Bank data.

Note: Budget = national government budget; Equity = risk capital subscribed by shareholders in venture; Aid = foreign aid, from IFIs or bilateral sources; Banks = loans from domestic or foreign commercial banks (including syndicated loans); Bonds = normally domestic bond issues (where local capital market sufficiently developed). The table is intended to apply to transport services as well as to transport infrastructure construction and maintenance. The former, including trucking enterprises, bus companies, airlines, independent train operators, shipping companies, stevedores, and other providers of individual port services, are often already in the private sector and would therefore normally belong in the last column on the right.

**Table A.9: Active Projects with Transport Components
Approval Year Fiscal 1995–2006**

Region	Number of Projects	IBRD/IDA TR Commit. (\$m)
Africa	80	3,187
East Asia and Pacific	71	5,412
Europe and Central Asia	37	1,808
Latin America and the Caribbean	48	2,510
Middle East and North Africa	24	826
South Asia	47	5,663
Total	307	19,406

Source: World Bank data.

Note: Active commitments as at July 1, 2006.

Global Transport Financing Trends

Introduction

The public and private sectors are intrinsically involved in the provision of both transport infrastructure and services, but the dividing line between public and private varies significantly from country to country and among the different modes of transport. These variations reflect a wide range of factors, such as the technologies available, the scale of their capital requirements, changing views of the relative importance of systemwide planning and management (as against customer responsiveness in improving performance), the stock of managerial and technical skills, government finances, and—last but not least—each country’s historical experience and inherited institutions.

The Bank’s 1994 *World Development Report* (WDR) (World Bank 1994b) reviewed the performance of infrastructure support and delivery globally; it concluded that in many developing countries greater reliance should be placed on the private sector for direct provision of infrastructure and services. Governments, it proposed, should concentrate more on creating and maintaining legal and regulatory frameworks to attract private providers but, at the same time, safeguard the interests of the poor, improve environmental conditions, and coordinate cross-sector interactions. This IEG summary of international trends in private sector participation in transport uses as a point of departure both the Organisation for Economic Co-operation and Development (OECD) and Latin American performance. OECD has taken the lead in private sector development in transport, and Latin America has shown the most progress

in the developing world. The summary gives a brief account of developments in the other Regions and reaches some tentative conclusions.

OECD Leaders in Reform

Recent OECD research concluded that, at the end of the 20th century, the transport sector was most liberalized in four of its member countries: Australia, New Zealand, Britain, and the United States. But the past 10 years have seen significant differences among them in the degree of private participation in the provision of infrastructure and services, as well as the extent to which it has changed. The best available figures suggest that the private share of total annual investment in transport (excluding vehicles for personal use) may have risen slightly in the United States through the 1990s to about 20 percent and strongly in Australia, to as much as 40 percent in the early 2000s.

The biggest change in the volume of private investment going into transport has been with regard to trunk road construction and maintenance. Starting from the mid-1980s, Australia has successfully completed nearly 10 urban motorway build, operate, and transfer projects (BOTs), with traffic risk taken by the private investors. Britain has had one project of this type, more than a dozen design, build, finance, and operate (DBFO) projects for upgrading the national core network, and a number of smaller projects along similar lines offered by local government bodies. A few American states, including California, Texas, and Virginia, have also been active participants in federal programs to support state public-private partnership (PPP) initiatives for the construction/operation of toll roads and lanes.

The transport mode that has seen the largest shift from government to private sector responsibility is mainline rail. Government-owned railway facilities were sold to the private sector, virtually in their entirety, by New Zealand in 1993 and the United Kingdom in 1995–97. The Australian government and four Australian states sold their railways in major part between 1997 and 2002. Numerous follow-on mergers—as were also important over the last decade in the traditionally private U.S. railways—meant that by 2004, main freight rail services in Australasia were provided by two major private transport/logistics groups. In Britain and New Zealand, however, the intended extent of government withdrawal was rolled back in the early 2000s, with the public sector again taking larger responsibility for track infrastructure.

In air transport, the main airlines have been privately owned at least since the late 1980s in all four countries, as have most of the principal airports in Britain. Major trends of the past decade have been the rise of privately owned low-cost carriers and the sale of all main airports in New Zealand and Australia. Low-cost carriers have been an important counterweight to the concentration of U.S. airlines through mergers and now account for nearly 25 percent of scheduled air traffic in the United States. They have also enjoyed very rapid traffic increases in the United Kingdom, particularly since deregulation of the European Union (EU) internal traffic market in 1997, and in Australasia since Virgin Blue was established in 2000. The resultant collapse of Australia's second conventional airline, Ansett, led to the resumption of majority government ownership of Air New Zealand (its principal owner at the time).

The past decade has also seen important changes in the organization of urban public transport in three of the four countries—but not in the United States, despite increasing concern there about high costs and low efficiency of public sector operators. Less than 10 percent of U.S. regular bus services are competitively tendered and fewer than 30 percent of school bus services. Dominant trends in Australia and New Zealand, in contrast, have been toward competitive contracting of route or area franchises, following the pattern

initiated with London bus services in the middle 1980s.¹ Increasing use has been made in all three countries of “quality contracts,” under which the private operators commit to deliver agreed standards of service in return for government commitments to improve infrastructure. Experience with new fixed-rail systems, for which significant capital subsidies have been provided to public-private partnerships, particularly in the United States, has often been disappointing in terms of traffic attracted.

Other Main OECD Countries

OECD analysis of other main member economies beyond the four just discussed concluded that they too had considerably liberalized their transport markets in the last two decades of the 20th century. Those countries' progress was at a somewhat lower level, and some EU countries lagged behind others. Private participation in the provision of transport has also grown over the past 10 years in the same three ways—opening of markets previously served by public monopolies, sale of government-owned infrastructure, and formation of PPPs to develop new infrastructure. But the pace of change has been slower, and less attention has sometimes been given to the accompanying increased private sector role with measures to ensure sustained competition among private providers.

The most widespread involvement of the private sector in the operation of transport infrastructure, and the provision of some of it, in these countries is probably in ports. Government initiatives in many European countries and Canada in the late 1980s and early 1990s modified the privileged position of dockworkers, decentralized port management, and made ports more financially autonomous. These changes opened the way for much increased private investment. Major ports have largely adopted the landlord port model, and a reasonable degree of competitive pressures on private operators appears to have been maintained. Japan, in contrast, has retained strong centralized regulation, with resultant high port charges. The obstacles that traditional rules and practices pose to effective competition in the small ports of Europe also remain a serious concern.

Private sector involvement in the management and financing of roads has varied greatly among these countries, but it has been increasing over the past decade. In continental Western Europe some 10,500 kilometers (km) of tolled motorways (about half the area's tolled network and one-fifth of all its motorways) are now under private management, mainly in Italy, Portugal, and Spain. Some untolled sections, especially in Portugal and Spain, have also been built under DBFO concessions. France has awarded a number of major new BOT contracts on an open competitive basis in the past 5 years.

The past decade has also seen considerable movement in arrangements for the provision of urban transport services, with important further effects expected in coming years. Aside from Japan, the Scandinavian countries, and, to a lesser extent, Portugal and Spain, virtually all the other continental European countries had their public transport almost entirely provided in the early 1990s by public sector agencies; the same was the case, and remains so, in Canada. Promoted by the European Commission, change spread first to the Netherlands and then to increasing numbers of towns in Germany and Italy. Local rail services have been increasingly offered as concessions to independent operators in some German states. Experiments have been under way in Norway with better targeted performance-based bus contracts. French towns have been transferring more risks to concessionaires for bus services, and foreign companies have for the first time won some of the contracts.

Japan's railways were successfully restructured and privatized in 1987, and Canadian National was sold on the stock exchange in 1995. Although the continental European railways remain in the public sector, most of them have been undergoing important reforms and reorganizations to strengthen aspects of their commercialization and to reduce costs. The European Commission has strongly emphasized the separation of infrastructure and operations, initially in accounting terms and subsequently organizationally. Independent operators, besides providing urban passenger services, as in some areas of Germany,

have also begun to develop long-distance freight services, as in Germany, Italy, Sweden, and Switzerland. Major PPP projects, supported by substantial public capital contributions, have been initiated for improving intercountry rail links, such as the high-speed lines in the Netherlands and across the Pyrenees between France and Spain.

Low-cost scheduled air services began to develop in continental Europe following the 1997 deregulation of the EU internal market. Market pressures have led to some important mergers among the previously excessive number of national flag carriers, and most of the major airlines are now traded on the stock exchange. About a dozen of the more important European airports have been partially privatized, principally those in Austria, Denmark, Germany, Italy, and Switzerland. Athens' new airport was built under a 30-year DBFO concession signed in 1995 with large capital support from the EU and the Greek government.

Latin America and the Caribbean

The past decade has seen a larger increase in the relative role of the private sector in transport infrastructure in this Region than in any other. All the large countries except Venezuela have increased private participation in most of the main transport modes, and more than half of the medium-size countries have been almost equally active. Some estimates, based on figures for the Region's larger economies, suggest that the private share of total investment in transport in the 1990s averaged as much as 50 percent. This figure mainly reflects a sharp reduction from earlier years in the volume of public investment in the sector.

Roadways

The largest volume of private investment has been in maintenance, rehabilitation, or construction of roads that were tolled on completion. Some are motorways, but most are relatively high-grade trunk roads. A survey undertaken by the United Nations (UN) Economic Commission for Latin America and the Caribbean indicated that by early 2003 Latin America had a total of some 35,000 km of roads under concessions to private operators, including nearly 11,000 km in Argentina, 10,000 km in Brazil, 6,000 km in Mexico, and about 2,400 km

each in Chile and Colombia, as well as short stretches in many of the smaller countries.

Besides these changes at the management level, Latin America has also been at the forefront of experimentation with improved methods for involving the private sector at the execution level, especially for standard rehabilitation and maintenance. For main roads with traffic insufficient to warrant conventional tolls, Argentina introduced in the middle 1990s multiyear rehabilitation and maintenance contracts. Payment was awarded to the contractor according to the road standard attained rather than for the individual maintenance interventions undertaken. Such performance-based contracting rapidly attracted international interest, and similar programs were started by the highway departments of several other Latin American countries, as well as in other Regions.

Railways

Over the 1990s almost all railways in the Region were concessioned to private operators, starting with Argentina's freight services in 1991–93 and its more substantial Buenos Aires passenger operations in 1994–95. Direct public sector management of railways is now limited principally to passenger services in a few metropolitan areas and the overall network in two or three smaller countries such as Cuba and Uruguay.

The facilities were normally concessioned as integrated operations, including track as well as services (predominantly freight). The main focus was on devising viable regional packages of the existing assets—and access rights for adjoining concessionaires—that would at the same time facilitate the offer of alternative services to shippers, especially at major traffic nodes. As in Australia, the initial concessions have been followed by some important mergers (in this Region, mostly international), which were considered consistent with market potentials and not inimical to competition.

Ports

Whereas railway reform was often motivated by the desire to reduce the fiscal burden of operating subsidies, the main object of port reform has been to enable countries to draw the full benefit from in-

ternational trading possibilities. Latin America has a long tradition of privately built and owned industrial ports, largely for export of bulk commodities. They have continued to expand in number and generally to function well. The focus of the reforms has been rather on the common-user ports, which, in the early 1990s, typically still suffered from highly centralized management, public monopoly in the provision of all services, and restrictive labor practices.

In countries such as Argentina, Colombia, and Mexico, the main common-user ports have been transformed into landlord operations. Under this model, major terminals are provided and run by global or Latin American port-operating companies, and the full range of minor services are offered by local private enterprises. But in some small countries, as in Central America, common-user ports and port services remain largely public monopolies. Most countries lie between these extremes and are still in the process of transition.

Public Transport

In Latin America, as in most developing regions, public transport continues to account for a high proportion of urban residents' movements (typically upward of 50 percent in major cities) compared with OECD countries. The service is provided mainly by privately owned and operated bus companies, loosely regulated.

Among efforts to cope with increasing traffic congestion resulting from the growth of population and private cars, several Latin American countries have been leading busway developers. An important recent initiative in this direction is the start of a citywide network (more than 50 km now of an eventual 400 km completed) in Bogota. The higher and more reliable service standards required by the private bus companies under stricter franchises, combined with public sector action to improve traffic regulation and build and operate the dedicated infrastructure, are yielding major improvements.

Airways

In air transport, liberalization has continued, and markets, both domestic and international, have

shown strong (though fluctuating) growth. Most carriers are now in the private sector. Various experiments have been made with increased private participation in management and financing of airports, and they have shown some tendency to accelerate. Main airports in Chile were concessioned individually in the second half of the 1990s and those in Argentina, Bolivia, and Mexico in multi-airport groups. BOT contracts for upgrading of individual airports have also been made in 10 other countries.

Other Regions

In the five Bank operating Regions covering Africa, Asia, Europe, and the Middle East, private participation in provision of transport infrastructure has so far been more limited than in Latin America and the Caribbean. In each of the five Regions, about one-third of the countries undertook one or more transport projects involving private capital over the course of the past 10 years. With few exceptions, the breadth of private involvement across different modes within each country has also been more limited than in Latin America and the Caribbean.

In the wake of the Asian financial crisis of 1996–97 and following an earlier initiative that had yielded limited results, the Republic of Korea revised legislation governing private participation in the management and financing of infrastructure. Procedures for bid awards were made more transparent, and tax incentives and generous revenue guarantees were introduced. In 1998 a port container terminal was offered for the first time for foreign investment.

Since then, projects aggregating some \$25 billion–\$30 billion (including government grant contributions averaging 25 percent) have been initiated, most of them transport works, including toll tunnels and highways, port developments, and rail access to Incheon airport. The revenue guarantees proved costly and were revised sharply downward in 2003. Financing of most of the projects has been managed by the government-owned Korean Development Bank. The volume of private financing involved is unclear but has probably been increasing from domestic sources, benefit-

ing from simultaneous efforts to develop the domestic capital market. But further container terminal investments have also been attracted from international port operators.

Private capital has made a marginal but significant contribution to China's recent large investments in roads (including creation of a tolled network of trunk roads of at least 20,000 km), but it is unclear whether it has contributed significantly to their efficiency. Two principal sources were tapped. The first was equity contributions from overseas (mainly Hong Kong) financial partners, which made joint ventures with provincial communication departments for construction of toll roads but played little part in operational decisions. From the mid-1990s, and especially after clarification of the law in 1997, funds were also raised from China's own stock markets; shares in packages of completed toll roads were offered (securitization). Some of the companies formed for this purpose were also able to float revenue bonds and raise bank loans against the security of their revenue streams.

Concerned about port capacity/efficiency obstacles to the country's rising international trade aspirations, the government of India finally decided in 1995 to experiment with foreign private participation. It offered a concession for construction and operation of a new container terminal at Nhava Sheva, adjacent to the modern public sector facility run by the Jawaharlal Nehru Port (JNP) Trust near Mumbai. The tender for a 30-year concession was won by P&O Ports (Australia) and signed in 1997. Following its completion in mid-1999, Nhava Sheva attracted increasing amounts of traffic from JNP. The latter responded by improving on its previous efficiency, though not to the level achieved by its competitor. The experiment was considered successful and led to a series of investments by P&O and other international operators in different Indian ports.

Confronted with the addition of some 5,000 km of international borders as a result of the breakup of the Yugoslav Federation and the obstacles these posed to international trade, the eight core countries of southeastern Europe gradually came

Box B.1: Expanding Trade by Easing Movement across Borders in Southeastern Europe

The past 20 years have seen rising recognition worldwide of the significance of logistics for international trade flows and of the contributions that better functioning of transport can consequently make: increasing exports, lowering the cost of imports, and stimulating private productive activity. It has also increasingly been recognized that achievement of real operational improvement depends crucially on improved communication among private traders and freight forwarders, transport providers, and the government services that regulate and control movements across borders.

One region that has required particular attention is southeastern Europe, where the breakup of the Yugoslav Federation added some 5,000 km to international borders. The mostly small countries of the area often face multiple border crossings for much of their international trade. Starting with an initiative sponsored by the United States and Italy in 1996 to promote regional cooperation, and assisted strongly by the EU, the eight countries that form the heart of this region (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Moldova, Romania, and Serbia and Montenegro) have gradually come together in a focused joint effort to ease border crossings and increase trade flows.

Since the program started in 2000 in most of the countries, border-crossing delays have been substantially reduced (from averages of 3–5 hours to about 1 hour) at the more than 20 locations chosen for initial focus, contributing to a rapid revival of trade. Customs performance indicators have generally strengthened, and limited survey results indicate possible reductions in the number or size of bribes that transporters were obliged to pay to cross some borders. The approach developed has introduced several important innovations in the roles of the public and private sectors in these countries:

- Formation and development of national trade facilitation committees (pro-committees)—mostly originally started under the U.S.-Italian initiative—bringing together Chambers of Commerce

and transport associations with representatives of the public agencies involved in border crossings, and organization of the regional meetings of these bodies back to back with regional meetings of the government bodies chiefly responsible for the overall program in all eight countries.

- Central focus on modernization and simplification of customs procedures, introduction of computer applications to make processes more efficient and transparent, and improvement in human resource management, all as instruments that will gradually shift the basic orientation of the customs services from obstructing easy flow of private international trade to actively facilitating it. Commonly agreed performance indicators are collected monthly (with delays from relatively few countries) and published on the Internet, which helps stimulate action toward further improvement.
- A common regional Web site has been developed, largely under leadership of the Chambers of Commerce, to promote trade facilitation, provide up-to-date information on procedures for crossing the various border points and on delay times, and to convey distance-learning programs in transport and logistics management, assisted by international associations.
- Periodic surveys of professional private sector experience and opinion surveys about border crossing and customs have been conducted by independent consultants in collaboration with the Chambers of Commerce and Internet publication. These serve as a valuable cross check to the official performance indicators and enable the authorities, as they set priorities, to give more weight to citizens' experiences.

Benefiting from this experiment, other countries—particularly in the Caucasus and Central Asia—are initiating similar efforts, and the southeastern European countries are envisaging a second joint phase, extending the effort to cover remaining road border crossings and those on railways and the region's important waterways.

together in the second half of the 1990s to launch a public-private initiative, essentially at the oversight level, to reduce border-crossing problems (see box B.1). The central focus chosen was modernization and simplification of customs procedures. Related computer applications were introduced as instruments toward gradual change

of customs officers' attitudes and performance. Agreed-on performance indicators, and much other trade-related information, are regularly published on the Internet and discussed in inter-country meetings. Delays have been substantially reduced at the targeted border points, and there is an indication of a possible reduction in the

number and/or size of bribes that transporters have to pay to cross borders in some countries.

In Africa, following a partially successful initiative in the early 1990s to create a road fund and strengthen road maintenance, Tanzania more formally established a road fund, along with a public-private board to run it, in 1999. Then, in 2000, a semiautonomous executive agency to manage the primary network (TANROADS) was established. The board's extensive monitoring and auditing oversight helps significantly ensure that user charges to support maintenance are duly collected and devoted to the intended purpose. Local contractors have benefited from long-term efforts to support their development; they now handle most of the maintenance work. In line with the legislation establishing it, the board is also helping address the previously neglected weak capacities of district and urban councils to maintain the extensive networks for which they are formally responsible.

South Africa has long experimented with toll roads, initially as public sector undertakings, but in the late 1990s also as concessioned operations. The South African National Roads Agency Limited (SANRAL) was created in 1998 as a government corporation responsible for the country's national roads. From the start SANRAL has put a strong emphasis on mobilizing the energy and resources of the private sector for road development and to strengthening local enterprises. Three major roads, each about 400 km total length, have been concessioned to joint foreign/national consortia, with transfer of existing assets, requirement to build/rebuild certain sections and improve the remainder, and full transfer of construction and revenue risks. All nonconcessioned national roads are now covered by routine road maintenance contracts, tendered competitively to consulting engineering firms against performance specifications that require 80 percent of the work to be subcontracted to small contractors that have low entry barriers and that are supported by training.

A more in-depth, global coverage of private sector transport initiatives is covered in a Bank working paper intended as a companion paper to

the evaluation (Willoughby 2007) and published simultaneously.

Results to Date

At the broadest level, this review suggests that the management improvements highlighted in the 1994 WDR have stood the test of time in the OECD countries. It also suggests that they have been quite widely pursued by developing countries and have often made a significant difference to transport sector performance. Major weaknesses that emerged in some of the earlier privatization efforts—such as Chile's urban public transport reforms, Argentina's freight railway concessions, and Mexico's toll-road development—have been largely avoided in the reform initiatives introduced in the last decade.

Pursuit of the WDR theses through an increased private sector role in trade-related port and railway infrastructure has generally had significantly positive effects on technical and allocative efficiency. This has been the case even where modifications have had to be made to the structures first chosen for increased private participation, as with railways in the United Kingdom. Positive impact has quite often been further enhanced by follow-on effects on other institutions and by postprivatization restructurings and mergers. Efficiency and service indicators have typically shown sustained improvement following the introduction of private participation, and traffic growth has tended to exceed that of the regional economy, reflecting in part the attraction of types of traffic previously handled by other modes and facilities.

The effects have tended to be more significant when the privatization was preceded or accompanied by measures to reduce nontechnical regulation of the mode concerned and its competitors, when the structures offered to private bidders were designed to sustain competition, and when appropriate measures were taken to ensure access of competing providers to any facilities with local monopoly characteristics.

In the roads field, the most clearly positive effects of the WDR principles on technical and allocative efficiency have been through their application to

the management of road networks generally: clarification of road department accountability and greater management autonomy; establishment of supervisory and consultative bodies that represent users better; and transparently competitive contracting of works to the private sector, increasingly against performance-based specifications. It is probably fair to characterize the combination of these and related elements as a revolution in road management that has been under way since the late 1980s and early 1990s. So far, however, that revolution is concentrated in only a few countries in each Region. Road funds have also been able to make a useful contribution in some countries' public expenditure management systems, but the main emphasis in the majority of countries needs to remain on improving the allocation of roads spending and its technical efficiency.

Growth of partially privately financed toll roads has clearly been an important phenomenon of the decade since the WDR, especially in developing countries. Although such roads represent tiny proportions of the network, they often carry significant proportions of overall traffic. They have also accounted for the largest share of the total investment for transport projects recorded in the Bank's public-private infrastructure (PPI) database, although that share has been steadily declining, from 72 percent in the 5 years immediately preceding the WDR to 38 percent in the period 1999–2003.

The net effects of toll roads, or the private financing of them, on the technical and allocative efficiency of the transport sector are nonetheless complex, and convincing assessment of the facts is comparatively rare. In Latin America, which accounted for more than half of PPI toll-road investments throughout the decade, it may be concluded that most of the programs had positive effects on technical and allocative efficiency. Bidding appears to have been more transparently competitive than under traditional government contracting.

Second, despite important exceptions, tolls were normally held to 1–2 U.S. cents per car-km in

maintenance concessions and to 2–4 U.S. cents on concessions involving major upgrades and new construction. Third, the huge reductions in public investment in transport that resulted from macroeconomic considerations increased the marginal value of resources raised from elsewhere.

Greater doubt surrounds some of the Asian programs, including China, which alone accounted for nearly one-fifth of PPI toll-road investments in all developing countries during the period. There is no evidence of private investment in China having introduced new or additional technical efficiency. Tolls were typically higher than in Latin America, and much higher relative to the country's lower income levels. Traffic diversion, especially of trucks, has been a significant problem. More ample public resources were available, although the private funds nonetheless constituted a useful supplement.

Not directly stemming from the management emphases in the 1994 WDR but important for their future application have been advances in charging road users for the costs that their activity imposes on society—particularly the cost of congestion, pollution, and accidents. Whereas pricing and taxing structures to deal with these externalities were largely limited at the start of the 1990s to Singapore and some experiments in Norway, a few roads (mostly privately financed) have since been developed specifically with time-varying electronic charging systems that help reduce congestion. A notable new trend has been construction of large-scale urban motorways (largely privately financed) with sophisticated tolling systems, as in Australia and Chile. London has very successfully introduced a central city access charge, and Switzerland, Austria, and Germany have all created electronic systems to charge trucks for the costs that their movements impose.

Overly centralized government-owned urban passenger services, torn between conflicting objectives, still exist in some cities of transition economies and a few developing and OECD countries. They can often benefit from a direct application of the WDR principles in their rationalization and restructuring.

A more common problem in the developing countries is development of better-regulated competition among existing private providers. They could generate a more reliable and safer set of services that link appropriately. There is stronger recognition than there was 10 years ago, in OECD and developing countries alike, of the need for integrated efforts between public managers responsible for road infrastructure, traffic flow, and parking regulations, and the normally private bus companies, with interdependent performance targets jointly set.

Finally, the pressures of increasingly open competition in the provision of international air services, and in many countries domestic air services, too, have brought improvements in the technical efficiency of air transport over the last 10 years. The rise of low-cost carriers, now extending to many of the larger developing countries, has made a significant contribution to transport's allocative efficiency. Private management of public airports is largely an innovation of the past decade, but how far this has contributed to these efficiency improvements is not yet clear.

Evaluation of Bank Support for Road Funds

Introduction

The focus of this section is road funds, an instrument several Bank operations have supported to redress the long-term underfunding of road maintenance. Over the past 10–15 years Bank projects or sector reviews have supported the restructuring of road management and road maintenance finance, including the creation of independent road boards, the establishment of road agencies, and the establishment of properly managed road funds. Such road funds are commonly known as second-generation funds.

The Bank's interest in road funds and road management originates in a long-standing "crisis" concerning the quality of road maintenance in most developing countries, especially in the lower-income ones. The failure of governments to provide adequate funding for road maintenance was seen as one of the critical factors; road infrastruc-

ture had deteriorated and countries were rapidly losing the value of their road assets. Road funds, independent of the budget and providing an adequate level of funding to finance maintenance expenditures, were seen as a possible solution.

For more than 15 years the Bank has led a multi-donor program to help Sub-Saharan African countries improve the performance of their transport systems and services. This program has supported the establishment of modern road funds and complementary reform of highway management. The Bank has also been involved in similar activities in other Regions. Three main sources have been used to prepare this section: (i) a literature review, (ii) IEG's database, and (iii) a survey of Bank staff. All three elements together provide a reasonably clear picture of the effectiveness of the road funds and the conditions surrounding them. In particular, the SSATP Road Maintenance Initiative Monitor Series provides useful data.

Road Management Reform

From the 1990s, a majority of the Bank road projects focused on maintenance. Yet progress was erratic. Most countries did not have the capacity to increase and sustain budget funding for road maintenance at the required level. In response, the Bank in 1995 issued a report suggesting that the maintenance crisis could be effectively tackled by addressing four issues:

- (i) *Ownership*: Empower road users and encourage them to take an interest in the management of roads; an essential component of this concept was creation of a roads board.
- (ii) *Funding*: Secure stable and adequate flows of funds.
- (iii) *Responsibility*: Creation of an organizational structure for managing the different components of the road network.
- (iv) *Management* of a businesslike road agency, including strong financial management and accountability.

The driving force for this approach was not road maintenance, but a broader perspective of the road sector. Could roads be put in the marketplace on a fee-for-service basis, like a business, as has

been done with other infrastructure services? This would be a “commercial approach” to road financing.

Financing Road Maintenance and Road Funds

Two approaches are followed: (i) *The budget approach* is the most widely used. It assumes that road expenditures (except for toll roads), including maintenance, are a public expenditure that need to be covered by the national budget. Fuel taxes, vehicle registration fees, and other levies are taken as general taxes. Extrabudgetary funds are deemed to hinder government’s efforts to allocate funding to national priorities. (ii) *The road fund approach* postulates that road users should pay for the cost of the roads and that revenue thus generated should be applied to cover road costs. The instrument is a road fund that generally becomes the main source of finance for road maintenance and other road expenditures. This approach, with variations, has been used in the United States, Japan, and New Zealand since the mid-1950s and is being used in more than 30 emerging economies. Users pay “user charges” mainly in the form of a gasoline levy, which generally provides the bulk of revenues. Income from these charges is, in principle, automatically allocated to road expenditures, especially maintenance.

Road funds meeting the “commercial approach” are known as second-generation road funds, to differentiate them from older road funds that were basically a line in the budget. However, seldom do the funds meet all the second-generation criteria. The second-generation funds operate on the principle that any extra spending on roads is financed through extra payment by road users. Therefore, second-generation funds are budget neutral; some macroeconomists disagree with this view.

Bank Policy and Practice

The Bank for many years lacked an official policy toward road maintenance finance, and in some internal reports, notably in the 1980s, generally opposed road funds on macroeconomic grounds. More recently (in 2004) it was agreed that the “Bank sometimes endorses public enterprise-style road funds to redress long-term underfunding of maintenance.” Although with variations among

Regions, Bank economic reports have become increasingly supportive of road funds, sometimes improving existing funds and at other times creating second-generation funds from scratch.

Design and Management of Second-Generation Road Funds

There are large variations from country to country. Many of the second-generation funds have been restructured frequently since they were first created. Restructuring of the fund in Benin has been effective, converting it into an autonomous agency with less staff and a competent team and providing it with adequate resources. Attempts to reform the fund in the Republic of Yemen, however, have been less successful so far. This is partly because the country has been in a financial crisis resulting in the need to keep a strict control of all income and expenditures. In Argentina, between the 1970s and 2006, there have been cycles of creating and then reforming or dismantling road funds. The existing road fund has recently been amended to compensate private toll-road operators for low toll rates.

Road Boards—Composition and Mandate

Practically all the second-generation funds have private sector representation on their boards. In more than half, the private sector representatives are in the majority. Some boards have executive and others only advisory powers.

Revenue Sources and Channeling and Allocation of Resources

Funding for the road boards is generated mainly by a fuel levy, generally set as a fixed amount per liter and complemented by other sources, such as tolls and fees. Most second-generation funds focus on routine and periodic maintenance of the national network, but some allow part of the resources to be used for road rehabilitation. Others also allocate resources to maintain municipal or provincial roads and even subsidies to road transport.

Performance of Road Funds—Outcome Indicators

In several countries the percentage of roads in good condition has significantly increased. In Benin, the increase has been 9.4 percent per year

since the creation of the road fund. In Guatemala, the percentage of roads in bad condition dropped from 40 percent in 1994 to less than 20 percent in 2001. In countries without this information, a proxy indicator is the percentage of estimated needs financed. The level of maintenance funding was reported to have increased significantly in Honduras and in Guatemala, which had a 250 percent increase over 6 years. In Uzbekistan, the resources of the road fund increased almost five times over a period of 4 years. In contrast, the experience in Africa is less positive; only one third of the 27 road funds in SSATP member countries are regularly meeting routine maintenance expenditure needs.

Performance of Road Funds—Process Indicators

- The percentage of maintenance works contracted out has increased significantly, reaching close to 90 percent in Zambia and Ghana.
- The percentage of funding for road maintenance from local rather than external sources has also increased in some Latin American countries (in Honduras, from about 20 percent in 1995 to almost 100 percent in 2000).
- Results regarding the allocation of resources have been mixed, as many countries continue to use standard formulae rather than a systematic assessment of maintenance needs. In some African countries, disbursements appear to be generally biased toward urban and main roads. In Ghana, the road fund provides funding to the districts and this is supported by the Ministry of Finance.
- In Honduras, microenterprises for carrying out routine road maintenance have been created as a result of a requirement by the road fund.
- Some of the boards have put in place measures to improve transparency. In Ethiopia, the board publishes its budget quarterly. In Zambia, any user can access information on the disbursement of the fuel levy. In most countries, bids are advertised in the local press and sometimes through the Internet.
- Few countries appear to carry out regular technical assessments of the works. Ghana is an exception, as its road fund regularly produces technical audits. In Tanzania, the road fund undertakes annual technical audits of 20 per-

cent of the work it finances; generally, administrative costs are set not to exceed 3 percent of the fund's income.

Lessons

- Second-generation funds are appropriate when the lack of finance for maintenance has led to a severe deterioration of the road network, provided there is government commitment to off-budget financing of maintenance and to commercially oriented reforms of road management.
- A road fund should not be established when there is a high level of corruption and little likelihood of having independent audits and transparent procurement.
- Financing of road maintenance should be viewed in the broader context of road management.
- Monitoring and evaluation of second-generation funds should start with credible assessments of road condition, trends in allocation for road maintenance, and efficiency of road maintenance operations.
- Private sector participation in the second-generation road boards is an effective way to improve transparency and accountability in the use of road maintenance funds.
- There is improved effectiveness of the funds disbursed through multiyear budgeting arrangements.

Country Case Study—Brazil

This case study shows the Bank's approach in the transport sector to poverty reduction in a large country that has huge potential but a skewed income distribution; Brazil also must recover from a national financial crisis.

Introduction

The transport sector represents about 2 percent of Brazil's gross domestic product (GDP). The economy is disproportionately dependent on road transportation; more than 60 percent of the country's freight in terms of ton-km moves by truck, 20 percent by rail, and 13 percent by coastal navigation and inland waterways. The paved federal highway network (58,000 km) is the cornerstone of the country's transport sector.

Brazil also has the largest railway system in Latin America (29,000 km). Trains are used primarily to carry goods—two-thirds of which are iron ore and coal. Intercity railway passenger traffic has virtually disappeared, but important developments have taken place in urban passenger transport. The privatization of the country's entire freight railway network between 1996 and 1999 resulted in substantial improvements in the rail infrastructure and rolling stock, as well as gains in efficiency, output, and the quality of services. Upgrades of the commuter rail systems in most of Brazil's metropolises have also laid the foundation for the further modernization of the sector. Nevertheless, some projects have important unfinished components because of financial (fiscal space) issues, and a few lack conditions for financial and operational sustainability.

The country has the two largest inland waterway systems in Latin America: the Amazon basin and the waterways in the south that feed into the Rio de la Plata. Brazil's 14,000 km of navigable rivers have a large but underdeveloped potential as carriers of products such as grains and minerals. The coastal shipping trade in bulk goods has increased, but its share of the cargo market is still marginal.

Given the size of the country, air travel plays an important role in long-distance passenger travel, transport of commodities with a high value-to-weight ratio, and the conveyance of mail. Brazil has 26 principal airports (13 of which handle international flights). Regarding airlines, Brazil has six major international, 10 domestic passenger, and three all cargo.

Some Key Issues

- The high cost of long-distance road transport is a critical issue for a country such as Brazil, where most freight moves by road. The insufficiency and poor condition of the road network tends to undermine the physical integration of the country, and it adversely affects its long-term economic development.
- Brazil is an urban country (83 percent of its population is urban), and its dozen large metropolises, with populations of more than 1 million, face mounting urban transport problems. In some instances, the political, technical, and financial capacity of the federal and local gov-

ernments is almost overwhelmed by the escalating problems of these cities.

- In Brazil's large metropolitan areas, motorized transportation harms the environment and has a high economic cost. The government has actively sought to reduce the air pollution caused by motor vehicles. It has integrated urban planning with air quality improvement strategies, improvements in commuter rail/bus systems, installation of centralized traffic management systems, development of vehicle fuels that pollute less (Brazil is the leading producer and exporter of sugar-based ethanol), and the promotion of nonmotorized transport. However, much remains to be done in all these fields.
- At least 38,000 people die each year in Brazil from traffic accidents; the mortality rate is among the highest in the world and three to four times higher than in developed countries. Accidents are currently the fourth leading cause of death in the country. The economic and social costs of traffic accidents are enormous (exceeding \$3.3 billion per year).
- The government's austere fiscal policy over the past 10 years has been successful in keeping inflation in check and reducing the net debt of the public sector. Lack of fiscal space, however, has led to the postponement of basic maintenance and needed rehabilitation investments in the transport sector. Only one-quarter of the federal paved highway network is now in good condition (down from more than 40 percent in 1996).²
- A major underlying cause of the problems facing highway and urban transport is the steady rise in private automobile use—a long-term pattern consistent with the worldwide trend. In urban areas, there has been a shift away from public transportation. According to a recent study by the Associação Nacional de Transportes Públicos, private cars use 12.7 times more fuel than buses (per number of passengers per kilometer transported), produce 17 times more pollutants, and occupy 6.4 times more space on roadways.
- Access by the poor to public transportation is an issue closely linked to their daily life. The bus-metro systems generally extend into the impoverished neighborhoods on the outskirts

of metropolitan regions; they constitute the main channel for low-income workers to commute to and from work and to reach health centers and schools. However, a significant share of the poor population cannot afford the fares. Thus, equity concerns (providing access and affordable transportation to the urban poor) are at odds with sustainability considerations (reducing chronic government deficits and allowing private sector providers to make a reasonable profit).

Bank Involvement in Financing Brazil's Transport Projects

Brazil is one of the Bank's major clients. Cumulative lending to the country as of June 2005 was \$36.7 billion, a total surpassed only by India and China (and equaled by Mexico). However, Bank lending to the country is marginal, relative to the size of its economy—the 14th largest in the world. Total Bank loans have averaged more than \$1.5 billion per year since 1998, but they represent only 0.2 percent to 0.3 percent of the country's GDP. The Bank has approved 43 loans to Brazil for projects focused primarily on transportation and has financed 28 other projects with smaller transport components. But since 1970, total Bank transport sector loan commitments have fallen substantially in real terms (while Brazil's population has nearly doubled).

A number of factors have contributed to the downturn in Bank lending. The government's strict fiscal policy over the past 10 years has resulted in drastic cutbacks in budget allocations for investments in the transport sector and parallel reductions in expenditures provided by external loans. Moreover, in recent years, the Bank has shifted its focus to development policy lending in support of Brazil's fiscal and financial reforms. During 1999–2005, 14 large Development Policy Loans for a total of \$10.5 billion were granted to Brazil, representing about 68 percent of total Bank lending to the country (and 94 percent in 2005). However, an underlying reason for the decline in Bank lending can perhaps be found in the fact that Brazil is now a middle-income country that is gradually becoming less dependent on development bank financing as its access to private capital markets improves. At the same time, the

government still restricts the extent of public investment in infrastructure.

Main Areas of Bank Support to Brazil's Transport Sector

Bank lending to Brazil's transport sector has primarily targeted two sectors: highways and urban transport. Bank projects have focused on supporting the implementation and consolidation of ways to reduce logistics costs at the policy level (including measures in the customs, port, railway, and road areas). In the road sector they have aimed at transforming road administrations from executing to management entities, increasing private sector involvement, stabilizing funding for road maintenance and rehabilitation, improving efficiency and effectiveness of public spending, and strengthening the states' environmental capabilities to ensure the sustainability of economic development.

In addition, Bank-supported projects have financed rehabilitation and improvement of the state and federal road networks, as well as improvement of municipal road networks, with a view to fostering regional integration. A recently evaluated state highway program in Goiás State was designed as an Adaptable Program Loan. It achieved its goals of increasing the efficiency of the state road transport system, transferred the maintenance of municipal roads to the municipal authorities, and strengthened the executing agencies. Funding for maintenance and rehabilitation of the federal paved network has increased during the present decade but has been insufficient to halt the deterioration in the network.

In the urban transport sector, much of Bank activity since 1990 has supported the government's decision to transfer the urban rail systems from the federal level to the states and municipalities. Bank projects have also focused on greater physical integration and institutional coordination in the delivery of urban transport services, including modal and fare integration. Moreover, the projects have targeted the benefits of the urban rail systems to the poor population. This has included the introduction of the *vale transporte* system (a compulsory requirement on employers to finance part of the commuting cost of their employees).

During the past decade, the Bank has been associated with all of Brazil's privatization programs in the transport sector through the provision of large loans and technical assistance.³

- The Bank supported the privatization of the federal railways through technical support underpinned by a Bank loan that financed staff retrenchment. The entire railway network, comprising more than 28,000 km of rail line, was concessioned to the private sector during 1996–99. Investments made by the concessionaires in the track and rolling stock during 1997–2005 totaled about \$2.3 billion.
- In the road subsector, the federal government has concessioned about 5,000 km of state highways, and the São Paulo state about 2,500 km. However, the process was slower after the first wave of concessions in 1994–95.
- In urban transport, the Bank has supported a number of projects aimed at advancing the transfer of the commuter rail systems to the private sector as a way to improve their performance, attract new investment, and reduce the chronic fiscal burden that these operations represent. Although in some cases (such as Belo Horizonte and Recife), private sector control of the commuter rail systems has been delayed by the fiscal crisis, in general, progress in the urban arena has had very positive outcomes.
- Management of all major ports has now been transferred to the private sector, with the government retaining control of port infrastructure. This has improved their efficiency and reduced port fees.
- The Bank has also collaborated with the government in the formulation of relevant operational reform policies, including the separation of the policy formulation and regulatory functions.

Bank Performance in Supporting the Country's Transport Sector

The ratings for outcome, sustainability, and institutional development of Bank-supported projects were low for operations carried out during the late 1980s and early 1990s—years that were very difficult for Brazil, as they were for much of

Latin America (the “lost decade”). With the upturn in the economy, project performance indicators improved during the second half of the 1990s and even more so in 2003–04. Examples of progress include the pioneering efforts to concession the suburban railways, the subway system, and the ferry boats in Rio de Janeiro, saving some \$400 million. In São Paulo the suburban railway that only supported 400,000 riders per day before the Bank project in 1992 is now transporting 1.6 million people daily.

The *relevance* of transport sector projects has been high. The Bank's analytical and advisory assistance and financial support has been consistent with Brazil's current development priorities and with the Bank's country and sector strategies. The *efficacy* of Bank lending and policy advice programs has generally been substantial. A few urban transport projects were seriously affected by the fiscal space restrictions imposed after 2002, at least until the Pilot Investment Program was created in agreement with the International Monetary Fund (IMF). These developments could not reasonably have been anticipated at appraisal. An important lesson for countries affected by fiscal space problems is that it is essential that urban transport projects be included in any Pilot Investment Program-type arrangements, as they are likely to attract strong support because of their high social benefits.

Overall, groundbreaking achievements were made in passenger transport integration and in support of the decentralization of suburban railway services. The Bank also supported the first busway project supported by the private sector. The *efficiency* of Bank-supported projects completed since 1980 has been generally rated as substantial, although the economic rates of return (ERRs) have sometimes been lower than anticipated at appraisal, again because of the impact of delays in completing the infrastructure because of the financial crisis.

Since 1995, the Bank has produced 11 reports on Brazil's transport sector, six general reports that include transport sector issues, and a number of policy notes. As lending levels to Brazil's transport

sector decrease, the relevance of Bank support to the country will become more dependent on the quality and effectiveness of its technical assistance.

In summary, the outcomes of the Bank's approach to assisting in the reduction of poverty in Brazil through the transport sector have been substantially achieved. Project investments were often a vehicle to support the government in more fundamental reforms associated with decentralization, privatization, and pro-poor urban transport measures. Maintenance issues, however, especially with regard to the federal road system, remain a serious concern.

Country Case Study—India

The Bank has tried to adjust its transport program to changing portfolio needs as India's economic growth has soared.

The Economy and the Transport System

India's economy is the third largest in Asia, after Japan and China. GDP per capita, at purchasing power parity, is estimated at \$3,100. India's population of 1.1 billion is growing at 1.4 percent per year, and the population is about 70 percent rural and 30 percent urban. About two-thirds of the population depends on agriculture for their livelihood, and about 25 percent of the population lives below the poverty line.

Transport demand in India has been growing quickly. During 1967–87, total demand for inter-city freight transport grew at an average annual rate of 5.3 percent, while GDP grew at an average of 4.2 percent. During the 1990s, freight transport demand grew at 10 percent per year, while the economy grew by 6 percent to 7 percent. Since 2000, transport demand has been accelerating. In recent years this demand has shifted among transport modes, mainly to the advantage of road transport, which today carries 70 percent of land transport demand. The overall length of the road network has more than doubled in the last 20 years. Yet only 60 percent of the villages are connected by all-weather roads, and there are large differences across the states in village connectivity.

There has also been a major expansion of the ports, with several new container terminals developed by private operators. Modernization of facilities and better management also occurred, but to a lesser extent than in the other transport modes. India's transport system remains old, saturated, and poorly maintained, providing low-quality services. This is because for many years the transport system has been managed from a supply-oriented rather than a market perspective. More than a quarter of the national highways and more than half of the state highways are in bad condition. The trucking industry, in contrast, is mostly privately owned and is highly competitive.

The government in recent years has launched a major program to improve the national highway system. The program intends to balance the needs of modernizing the road system with maximizing the benefits to the whole population. The result is many widened roads but few really modern highways. Minimizing the difficulties with land acquisition and with application of social safeguards to affected people appears to be a key reason for the widening approach. It is not obvious that, given the population already living along the roads, widening existing roads will result in less land acquisition or resettlement than constructing new expressways.

Government efforts to open infrastructure to private investors starting in the 1990s have met with limited success in the transport sector. It has succeeded mainly in the ports and is just starting to have an effect with airports. Although many small road projects have been carried out with the participation of private operators, they represent a fraction of overall road investments.

Bank Assistance to the Transport Sector

India today is the Bank's largest borrower. Lending for all Bank projects reached \$2.9 billion in fiscal 2005, more than double the \$1.4 billion of the previous year. The Bank's assistance is focused on upgrading infrastructure; improving people's access to social services, especially education and health; and building rural livelihoods. Lending for transport projects in fiscal 2005 reached \$1 billion, or almost a third of total Bank lending. Several

nontransport projects also include transport components—mainly rural roads.

Bank lending for transport in India has evolved dramatically over the past 20 years. Until the first half of the 1980s, most loans were for railways and ports; during fiscal 1981–86, 80 percent of the lending went to projects in these two modes. In the following 5-year period, road lending increased to about half of total transport lending. In the most recent period, fiscal 2001–05, the overall level of lending for transport increased significantly, and the shift toward roads became stronger.

Recent years have seen a rise in the size of the road projects focused on state networks, with several loans exceeding \$300 million. At the same time, several of these projects include large components for institutional development. The Bank has supported rural roads through state-specific or multistate rural road projects, as well as through agriculture and rural development projects. In the latter, there were cases where up to 50 percent of the project cost was to improve rural roads. There is some evidence that the country's rural roads are contributing to poverty reduction. For example, the highest rate of decline in poverty over the past 20–30 years has been in Kerala, which has one of the highest road densities among the Indian states.

The Bank's last direct loan for railways was in 1988. Since then, the Bank did, however, approve a project that aimed to improve efficiency of rail transport for containers to serve both domestic and international traffic. This 1994 project supported the reform of an offshoot of Indian Railways (IR). It helped the Bank maintain a dialogue with IR and provided a role model for other IR business.

Only one urban transport project has been approved over the past 20 years. The project, currently under way, is comprehensive and ambitious. It aims to improve the efficiency and sustainability of Mumbai's transport system

The last port project was also approved more than 20 years ago. It helped improve container fa-

cilities at the Nhava Sheva port in Mumbai. This successful operation helped modernize container facilities at the port (box B.2). Resettlement has been an important component in nearly all Indian transport projects.

Bank assistance also included the preparation of several reports that focused on sector policies and strategies and on specific topics such as highway finance and urban transport. The most significant of these is a 2002 report that covers the whole transport sector. Another useful report is a comparison of Indian and Chinese highway development, railway policies, and management.

Performance of Bank Assistance

Six of the eight projects (six road, one logistics, and one rail) closed since 1994 had satisfactory outcomes. Overall, project-financed investments, including projects deemed unsatisfactory, were economically efficient, showing a fairly high rate of return.

There were two projects that failed. First, the states' road project was a complex project that involved four states with widely varying implementation capacities. The project was satisfactorily implemented in two of the states, Maharashtra and Rajasthan. But in the two other states, Uttar Pradesh and Bihar, the performance of the public works department was weak, and implementation failed. Second, the national highway project was unsuccessful because of poor project preparation, weak implementation capability by the road agency, and weak capacity of local contractors and consultants.

Except for the two failed projects, all other projects were considered sustainable. In contrast, most of the projects had only modest institutional development objectives and, as a result, had fairly modest impacts.

Two projects achieved significant institutional development. The container transport project succeeded because, as intended, the state-owned container company became a mixed private-public company, with a significant private equity (37 percent, substantially above the original goal).

Box B.2: Gradual Incorporation of Private Participation in Indian Port Development

As Indian development policies evolved from having an emphasis on self-sufficiency in the 1980s to participating more fully in international trade in the 1990s, concerns arose about the country's trunk transport system and the obstacles it posed to trade development. Most international trade passed through 11 major ports run by Port Trusts, which provided their own services under close central government supervision. Near doubling of trade tonnage over the 1980s put the ports under severe pressure. To relieve the problem, increasing attention was given to inviting private participation, introducing modern management, and relieving government budgetary constraints. In 1994 the Ministry of Surface Transport, with responsibility for port oversight, issued a statement of intention to seek private participation. In 1996 it issued guidelines enabling the Port Trusts to lease facilities to private operators (and lease equipment owned by them) and to award competitive BOT contracts for construction of new facilities on port lands. Perceived weak private sector response to these new opportunities led to the offer in 1997 of various tax incentives and less-restrictive limits on foreign financial participation. It also led to the creation of a Tariff Authority for Major Ports, which was supposed to reassure potential private investors that they would not find the services they offered being undercut by the Port Trusts' own services.

The prime candidate for a first experiment with private participation had always been the JNP Trust, whose facilities had been constructed in the 1980s. Being new, it had no Dock Labor Board, avoided the more extreme labor tensions characteristic of the traditional ports, and had relatively modern equipment. A scheme had been drawn up in 1994 to concession the JNP Container Terminal to the private sector. Doubt among Port Trust members, however, after consultations with all affected parties, combined with the advent of a new Minister of Surface Transport more sensitive to labor concerns, led to replacement of this approach with a concession for construction and operation of a new container terminal at the adjacent Nhava Sheva site. The tender for this was launched in December 1995.

In the meantime the Port Trust leased additional equipment from private sources, as permitted under the 1996 guidelines. The tender was won by P&O Ports (Australia), with whom a 30-year con-

cession for a two-berth container terminal of 600 meters quay length was signed in 1997.

Nhava Sheva began operation slightly ahead of schedule, in April 1999, and almost immediately attracted increasing amounts of traffic away from the JNP Container Terminal. By early 2001 the facility was regularly handling more than 60,000 20-foot container equivalent per month, whereas JNP traffic had fallen to less than 40,000. But the Port Trust's strategy of introducing private participation through competition rather than takeover (of its terminal) and its extensive efforts to build consensus among the port interests, including labor, as to how to respond to the competition succeeded in spreading the management improvements introduced by the concessionaire at least to some degree to the public sector operations as well.

By 2003 Nhava Sheva was regularly handling 100,000 20-foot container equivalents per month, and JNP's throughput had doubled to 80,000. Nhava Sheva succeeded in maintaining more even and predictable levels of service (such as preberthing delays and ship turnaround time) and generally higher operating efficiency. JNP improved its practices and increased productivity compared with earlier years. Whether Nhava Sheva had beneficial effects on performance of the neighboring traditional Mumbai port is more questionable, but while the latter's scores on the standard indicators of port efficiency remain generally in the lower half among India's major ports, they have shown some improvement since 1999.

Despite continuing weaknesses in India's management of port services—especially overcentralization of authority in Delhi, but lack of effective coordination in planning among different (national and state) ports and between them and other modes (in addition to the remaining very difficult port labor issues)—the Nhava Sheva experiment has led to further private investments: by PSA at Tuticorin in 1998; by P&O at Chennai, Cochin, and Gujarat state's private Mundla port; by APM for a third terminal at Nhava Sheva; by Dubai Ports International at Visakhapatnam; and, most recently, for a potential hub port on an island off Cochin. An important move toward decentralization and increased local authority was the establishment of the Ennore port, newly completed at Chennai in 2001, as a corporate body instead of a traditional port trust.

That led to a very good financial performance. Second was the technical assistance states' road project, because it helped several states substantially strengthen the management of their road systems.

The ongoing projects seem to be attaining their development objective, with all projects being rated as satisfactory. On the other hand, most projects experienced implementation and disbursement delays, which were large in some

cases. As a result, implementation in two of the projects has been rated as unsatisfactory.

Issues

The following appear to be key issues for the design of future Bank assistance: (i) the adoption of appropriate design standards and financial mechanisms for the national highway program, which assumes a very large component of PPPs; (ii) the need for better integration of rural roads into the states' road networks; (iii) the means to continue a dialogue with the railways and eventually resume lending; and (iv) the achievement of an appropriate transport portfolio mix, to ensure that it maximizes the Bank's impact. The most critical question is the future of urban transport support, where needs are huge and potential rewards high, but projects are complex and resource intensive. An assessment of the ongoing Mumbai project should shed more light on this in due course.

Country Case Study—Tanzania

Bank support to a low-income, predominantly rural economy is assessed in this case study.

Transport and the Economy

Located on the coast of East Africa, Tanzania, with a population of 37 million, is one of the most populated countries of Sub-Saharan Africa. Tanzania's GDP per capita (at purchasing power parity) is about \$600. GDP has been growing at more than 5 percent per year in recent years. About one-third of the population lives below the poverty line, and more than 80 percent of the population is rural.

After decades of economic stagnation partly caused by a highly centralized economy, Tanzania's economy began to turn around toward the end of the 1980s, with the launching of an economic recovery program. Sustained, deeper reforms have taken place since the mid-1990s and have led to better economic growth. As a result, during the 10-year period until 2005, the economy grew at annual rates of between 3 percent and 7 percent. Despite the economic improvements, poverty in Tanzania remains deep and pervasive. The rates of poverty and rural residency are essentially unchanged.

Transport bottlenecks are a major hindrance to economic growth. Key aspects of these bottlenecks are the poor condition of the road network—more than two-thirds of the roads are not accessible year round—and constrained capacity and operations of the country's railway systems.

The strategic location of the Dar-es-Salaam port, serving a number of landlocked neighboring countries, is estimated to give transport (if bottlenecks are removed) the potential to become the country's largest foreign exchange earner, as well as the largest contributor to Tanzania's GDP.

Tanzania's geography, size, diversity, and dispersion give roads a special position in the integration of the national economy. In particular, roads serve rural areas more effectively than any other mode of transport.

Tanzania's trunk and regional road networks are managed by the road agency TANROADS. While TANROADS's roads are better maintained than those of other authorities, close to half are in poor condition and are not passable year round. Despite recent reforms, TANROADS is still far from achieving the necessary operating and financial autonomy that is required to efficiently manage the road system (box B.3).

Two railway systems operate in Tanzania. The Tanzania Railway Corporation (TRC), a 2,600-km line, was formed in 1977 after the break-up of the East African Railways. TRC connects Dar-es-Salaam with Burundi, Rwanda, the Peoples Republic of Congo, and Uganda. The Tanzania-Zambia Railway Authority (TAZARA) connects Tanzania and Zambia and is owned by both countries.

As part of the economic reforms, the government successfully transferred the container terminal of the Dar-es-Salaam port to a private operator in 2000, and the port's traffic, efficiency, and financial results have improved significantly. Attempts started about the same time to privatize the TRC railway encountered more difficulties, but a concession contract for the transfer of TRC to a private operator is nearing completion.

Box B.3: Developing Effective Road Maintenance Systems in Tanzania

Like most African countries, Tanzania has waged a long battle to develop adequate systems for maintaining the road network needed to serve a large and widely distributed population. The 1994 WDR recommended a dual approach to resolving the road maintenance problem—with equal emphasis on reliability in the flow of funds and efficiency in their use—and cited Tanzania as a best practice case.

Within a year or two, however, it became clear that institutional capacities in the country were insufficient to bring the new systems to effective fruition at the same time as implementing a large roads investment program. Serious questions arose about major corruption and misuse of funds in the Ministry of Works.

A new approach was gradually worked out, not fundamentally changing the directions adopted in the early 1990s, but filling them out and giving them a much stronger constitutional foundation. December 1998 saw a road fund formally established—in lieu of the one created by official declarations of the Finance Ministry in 1991–92. A board of nine persons (including an independent chairperson appointed by the president, four representatives from the private sector, and four senior civil servants) was set to run it. On July 1, 2000, TANROADS (Tanzania National Roads Agency) was established as a semiautonomous agency of the Ministry of Works to manage maintenance and development of the primary road network.

The mutually supportive public and private sector efforts engendered by these arrangements have shown several promising trends. The road fund board's extensive monitoring and auditing efforts help to ensure that user charges to support maintenance are duly collected and used for the intended purpose. Besides regular financial audits of recipients (and itself), a major technical audit was conducted by a Norwegian-South African consortium in 2002–03; it concluded that the board was generally receiving value for its money and that 90 percent to 95 percent of activities were achieving the required standard of output.

Annual expenditures for road maintenance, which had risen with the original road fund from a totally inadequate \$10 million or less at the start of the 1990s to the equivalent of \$30 million in 1994–95 and then fallen off with the problems of that period, reached \$48 million in 2000–01 and \$57 million in 2002–03. The increase came in part from Finance Ministry acceptance of the increase in fuel levy recommended by the board for the latter year. Whereas road works had previously been undertaken almost entirely by foreign contractors or by force account, from the early 1990s considerable effort had been devoted to supporting development of local con-

tractors, especially for maintenance. Their confidence suffered severe blows from the unexpected drop-off in funding after 1995, but TANROADS has resumed training efforts and, in line with general government policies, about 90 percent of all road maintenance efforts are contracted out.

The combined effort of TANROADS and the board has yielded a significant reduction in vehicle overloading (fines for which accrue to the road fund) in terms of both scale and incidence, such that only 6 percent of the 1 million vehicles weighed in 2003–04 were found overloaded. Coverage still needs to be extended to other roads. The long-discussed Road Maintenance Management System was finally established in one zone in 2002–03 and extended to the other three the following year. The corresponding data collection has been actively under way, with an updated network inventory completed in December 2003 and work on traffic counts and pavement quality started in 2004.

Trends in overall network condition cannot be established with a high degree of reliability, even for the primary network, because of uncertainties as to its actual extent, the predominance of gravel and earth surfaces subject to rapid change with weather conditions, and the unavoidable element of subjectivity in judgments. The most valid information available is probably that on the actual lengths (as opposed to percentages of the varying network assumed at different times) that were rated “good” or “fair” in regional engineers’ visual inspections. These numbers show relatively little change in the extent of primary network rated “fair” (from about 9,000 km in 1990 to 10,700 km in 2004) but much sharper growth and fluctuation in the extent rated “good.” That increased from less than 3,000 km in 1990 to more than 7,000 km in 1993 before falling over the second half of the 1990s and rising again thereafter to reach more than 11,000 km in 2004.

Although there is some room for doubt about the validity of the last figure (because it is much greater than the previous year's estimate even though gravel road maintenance had fallen much short of the plan in the interim), it indicates that good primary network distance may have increased as much as 8,000 km since 1990 (this can be compared, for order of magnitude, with the increase of 5,000 km in the same category in the similarly sized country of Ethiopia between 1995 and 2002).

Among further developments being considered, the most important may be ensuring the most efficient possible allocation of the scarce resources available for maintenance. A very important initiative by the board has been to start systematic financial support for maintenance of local roads by allocating 30 percent

(Box continues on next page)

Box B.3: Developing Effective Road Maintenance Systems in Tanzania *(continued)*

of road fund resources to district and urban councils, as required under the law. The board considers that these allocations are sufficient for maintenance of only about one-quarter of the approximately 50,000 km of such local roads; those for TANROADS can cover about half of the 28,000 km for which it is responsible.

The full inventory of local roads planned will clearly be very important for identifying rational priorities in use of the expanding resources maintenance badly needs—and in the development of local capacities for maintenance management, which are still very weak. TANROADS's Maintenance Management System will be of great value to this end, too.

The 2003 technical audit of board expenditures also urged greater use, in the Performance Agreements that the board negotiates each year with the agencies that manage the maintenance, of clearly defined and objectively measurable indicators of accomplishment—and greater readiness to withhold or reduce disbursements when monitoring reports show lack of progress. Although TANROADS's effectiveness has clearly benefited from its more autonomous status and the improved salary structure and stronger discipline that this made possible, consideration is also being given to the possible advantages of further increasing its independence and flexibility for meeting the firm set of overall performance targets agreed with its supervising ministry and the board.

Bank Assistance to the Transport Sector

Tanzania receives approximately \$1 billion per year in international development aid and remains one of the most aid-dependent countries in the world, relying on foreign donors for close to half of its public expenditures. For many years, Bank transport lending was cofinanced by a combination of multilateral and bilateral development agencies. In recent years, however, the level of cofinancing has radically decreased, largely because the overall assistance for transport has decreased. The most recent Bank-supported project, the 2004 road project, is cofinanced by just one bilateral agency that provides a small fraction of the funding, compared with the Bank's amount. Other development agencies also provide funding for transport, although the number of agencies and the total allocated to transport has been greatly reduced, compared with a few years ago. Most agencies are now focusing on the social sectors or on providing budget support.

Bank lending for transport over the past 25 years has followed an erratic pattern. During fiscal 1981–86, lending was limited to a small port project. The highest level of lending was achieved during the 10-year period fiscal 1986–95, when it exceeded \$50 million a year on average and included roads, ports, and railway projects. However, 40 percent of the 1994 road project was canceled, substantially reducing the Bank's actual contribution to transport during this period. There was

no lending in this sector during fiscal 1996–2000. During the recent 5-year period (fiscal 2001–05), lending for transport resumed and has reached \$122 million.

During the fiscal 1981–2005 period, lending for roads accounted for more than three-quarters of total transport lending. Most road projects financed road rehabilitation. They also provided technical assistance to the Ministry of Works, mainly to strengthen its road management and maintenance capacity.

The last railway project, in 1990, was intended to help TRC become a commercially viable enterprise, operationally efficient and financially self-sufficient. During implementation, it became evident that its parastatal framework imposed serious constraints on efficient commercial operations. In line with the economic reforms, the objective was changed from helping restructure to assisting with transferring the railway to a private operator. Bank involvement with the TAZARA railway did not commence until 2004.

Two port projects (in fiscal 1985 and fiscal 1990) had as their main objectives support of the Tanzanian ports agency and expansion and modernization of its facilities. As in the case of the railway project, the objective of the last project was eventually shifted to privatize the container terminal; this was fully achieved.

Transport projects also provided assistance to a state-owned trucking corporation, a study of urban transport in Dar-es-Salaam, the management of the Air Tanzania Corporation, and studies for the development of a rapid bus transit system for Dar-es-Salaam. Public sector management projects helped finance the process for involving the private sector in ports and railways and assisted in the creation of a new transport regulatory agency. During the period under review, the Bank did not carry out formal sector work, either for the transport sector as a whole or for individual transport modes. However, internal staff appraisal reports have generally been thoroughly prepared and contain much useful information.

Performance of Bank Assistance

Six of the nine transport projects closed since fiscal 1981 had satisfactory outcomes. These projects generally achieved their physical objectives, which were relevant to the Tanzanian economy and were mostly completed as expected and within reasonable costs. The economic return on the project investments was high, and several projects had returns of over 20 percent.

The reasons for the three project failures (a railway and two roads) varied. The railway project failed, despite improvements in operations and infrastructure, because of overambitious goals regarding improvements in operational efficiency, financial performance, and the time to complete transfer to a private operator. The unsuccessful road projects did not improve the condition of the roads to satisfactory levels, and the government showed no commitment to achieve institutional improvements. The failed railway and 1990 road projects were deemed unsustainable.

Three projects were considered to have a substantial institutional development impact: two port projects and the failed railway project. Privatization of the last and the substantial progress toward privatization of the railway were deemed to have significant institutional impact. In the port project, performance indicators after privatization confirmed that the impact had been real. Two transport projects are currently active. One is a 1994 roads project and the other a 2004 trans-

port project. Both projects appear to be meeting their development objectives and making satisfactory implementation progress.

Issues

The following appear as being of interest for future Bank assistance:

- Funding and autonomy of TANROADS need to be improved.
- The Bank needs to improve its intellectual contribution through the preparation of policy and strategy papers.
- The privatization of ports and (eventually) rail requires strengthening of the regulatory systems.
- Port privatization should advance further by transferring further facilities to private operators.

Special Study—Ghana Joint Evaluation of the Road Subsector Program, 1996–2000

In February 1996 the Ghanaian Ministry of Roads and Transport (MRT) formulated a road subsector strategy. Its principal objective was to clear the backlog of maintenance on a sustainable, long-term basis. This initiative was supported by the donor community,⁴ and at the 1999 Ghana Donors Conference the Terms of Reference were approved and a steering committee formed to oversee an evaluation of the program.

The objectives of the evaluation were to assess the achievements of the program, with a particular focus on sustainability; to identify key issues, constraints, problems, strengths, weaknesses, and successes; and to formulate lessons learned to improve future interventions in the subsector. An important aspect of the initiative was the fact that this was a joint, multiparty evaluation between the donor community and the MRT.

The road subsector program was only partly realized and was assessed as too ambitious for both the funding capacity of the government of Ghana and the donors, as well as the absorption capacity of MRT and other agencies involved. Future donor interventions would remain crucial for the program's sustainability; whereas maintenance

activities could continue to be funded from road fund income, new development would require financing from external sources. The need for further training interventions remained high.

Nevertheless, a sound financial basis for maintenance and rehabilitation works was established through the Ghana road fund, which has developed into the main provider for such funds and became operational in September 1997. Between 1997 and 1999 the number of kilometers of road in poor condition was halved. Furthermore, the private sector undertook a large proportion of the road works, and participation targets were met (except for financing). Some progress was also made toward decentralizing, downsizing, and rationalizing the road authorities.

The evaluation found that environmental and safety issues should receive greater attention and disbursement procedures to contractors needed to be streamlined, especially through shortening payment approval procedures. Greater priority was also recommended for the axle load control problem.

In a 2005 follow-up study it was reported that the implementation of the road sector program continued to be slow. The report identified that future road programs may be jeopardized if they cannot clearly indicate their contribution to national development objectives such as poverty reduction through a well-functioning monitoring and evaluation system. This could lead to a funding reduction because of perceptions by donors contributing to the Multi-Donor Budget Support System. Moreover, the need for further institutional capacity building and human resources development remained high. The retrenchment program did not materialize. Staff reductions are based on attrition, so the pace of change is protracted. The inability to launch the retrenchment program leaves the subsector and notably the Ghana Highway Authority with a staff composition unfit for the job and a salary burden that restricts the organization in attracting appropriate staff. The need for training remains high.

The experiment with greater donor cooperation was only partially successful. Donors have a vary-

ing set of priorities that, although broadly in line with Ghanaian societal needs, are not “owned” by the government of Ghana. Problems also stemmed from different donor procedures for implementation, monitoring, accounting, and reporting. The willingness to harmonize these approaches deserves further exploration, but this is clearly a serious constraint that needs to be worked through. This part of the appendix should be read in conjunction with the box 3.1 in the main text.

Impact Study—Brazil Secondary and Feeder Roads

This study dealt with feeder roads in Bahia, financed through two Bank projects approved in 1976 and 1979. Brazil’s economy had experienced large swings over the past three decades, with high growth rates until the mid-1970s, deteriorating conditions reaching negative growth rates in the early 1980s, and growth resuming thereafter. Bahia, one of Brazil’s northeastern states, relies heavily on agriculture, which represents some 20 percent of the state’s GDP.

In 1976, in support of Brazil’s rural development strategy, the Bank shifted its lending for highways from trunk roads to feeder roads in an effort to connect agricultural production areas with villages and markets. The two projects financed improvement of 1,500 km of roads, mostly in clusters or mini-networks, to be built in areas with good agricultural potential, notably for coffee, cacao, or dairy, but with inadequate infrastructure.

Study Scope and Methodology

The study grouped the roads financed under the two feeder roads projects into three regions according to their economic activity: the coffee, cocoa, and dairy regions. Out of the 63 roads financed, the study selected 20 roads (forming 15 continuous roads) with a total extension of 410 km. Neither of the two road projects identified control roads. Thus, this study focused on changes, qualitative as well as quantitative, before and after the road improvements.

The initial field work was conducted in 1993 by the Instituto Sociedade, População e Natureza (ISPAN, a Brazilian nongovernmental organization), under

IEG's direction. The ISPN team visited municipalities and conducted structured and informal interviews along sample roads. The team also collected socioeconomic and road data. Complementary field work was undertaken in 1996.

Impacts—Demographic and Regional Context

The roads covered in the study served about half a million people, about two-thirds of whom lived in urban settings and the rest in rural communities. About 20 percent of them were poor: small farmers, landless farm workers, and urban unemployed or underemployed.

The coffee region extends over a substantial part of the state of Bahia that had traditionally grown coffee on a small scale. In the mid 1960s, Bahia started to expand its coffee business. The feeder roads were an essential part of this strategy.

Cocoa was traditionally one of the most important agricultural products of the state, but the market was hindered by poor roads. Cocoa trees in the state are mostly in a tropical forest region subject to heavy precipitation, making road construction and maintenance expensive. Cocoa is environmentally friendly, as it coexists well with the forest cover.

The dairy region is located in southern Bahia. Before the feeder road program, only four wheel-drive vehicles could access the existing tracks, and then only during the dry season.

Economic Impact

The improved roads helped expand production of coffee and cacao, especially when they were first completed. Farmers were able to market their products more easily and to bring in machinery and other modern inputs. Later, a severe drop in the world market price of these two crops discouraged production output.

Production of dairy produce was also affected by a drop in prices, but to a lesser extent. The improved roads allowed the cocoa and the coffee regions to respond to the collapse in their primary commodities by diversifying production and moving into nonagricultural activities.

Social Impact

One important impact was the change in land tenure: the proportion of small landholders increased significantly in all three regions. Other indicators showing significant improvement were the availability of hospital beds per inhabitant and school attendance by school-age children. Yet, because of the lack of control roads, the extent to which these changes could be attributed to the roads is uncertain.

Traffic Impact

Overall, traffic on the roads increased substantially, although it remained below original forecasts. Traffic increased from 20 to 40 vehicles per day on most roads in the late 1970s to 100 vehicles per day in 1996 in 12 of the 20 roads in the sample. The roads with the higher traffic levels were those that became integrated with the state road networks and that were more important for long-distance travel.

Environmental Impact

Because road improvement work generally followed existing tracks, the environmental impact of road construction was minor and occurred mainly in the cocoa region. This was because of conditions that led to erosion. However, deforestation was common in all three regions.

Economic Analysis and Beneficiaries

Lack of agricultural output data and prices made it impossible to produce the economic analysis at appraisal, based on induced agricultural production. Instead, the study calculated a benefit-cost ratio based on 1996 traffic and on vehicle-operating cost savings. Twelve of 20 roads had a satisfactory benefit-cost ratio.

The initial beneficiaries were the large agricultural producers. The road improvements also helped improve standards of living and access to social services. All interviewees in the dairy region thought that the improved roads brought positive benefits; only three-quarters thought so in the cocoa region.

Sustainability

Some 10–15 years after the improvements were completed most of the roads were still in fair to

good condition. About a quarter were in poor condition. Funding for highway maintenance generally has suffered during the devolution of responsibilities from the federal to the state governments in the 1990s. Liberalization and growth-oriented policies over the past 10 years should help make the economic and social impacts sustainable.

Recommendations

The study makes the following recommendations:

- Feeder road planning could be improved by considering clusters or mini-networks of roads fitting into a state and regional development strategy and by considering social impacts in addition to economic benefits.
- Environmental assessment and mitigation measures should be launched at the road-planning stage.
- Beneficiaries, including the private sector, should be involved in the process of funding and managing maintenance of rural roads.
- A simple monitoring system, including periodic traffic counting and a few selected social indicators, should be set up to facilitate evaluation of the road investments.
- Research on the benefits from avoidance of road closures should be undertaken by a Brazilian research center.

Impact Study—Morocco: Socioeconomic Influence of Rural Roads

Despite sustained urbanization through the 1980s and 1990s, about 50 percent of Morocco's population remains rural. Rural inhabitants have benefited less from the country's economic growth over the past decade than urban dwellers; more than 70 percent of the poor population lives in rural areas. This report sought to understand the impacts that emanate from improving rural roads and how they influence the agricultural economy and the social sectors. The intention was to better assess the long-term value of investing in rural roads.

Methodology

The study assessed the impact of paving and other improvements financed under the Bank's fourth highway project (approved in March 1983

and improvements completed between 1987 and 1991) to four rural roads, originally with gravel or earth surfaces, located in three regions of Morocco. The study considered impacts on transport infrastructure and services, the agricultural economy, the social sectors such as health and education, and the environment.

For each of the roads considered, the study compared current conditions with those before the investments and conditions in the project road relative to a control road that did not benefit from improvements over the period of the study. Data were obtained from extensive surveys conducted at the farm, region, and village levels, and focus group discussions at these levels helped interpret the data.

Impacts

On Transport Infrastructure and Services

The most direct impact was elimination of frequent road closures during rainy periods. Other benefits included reduced vehicle-operating costs; use of larger, more efficient trucks; increased road passenger services, especially share-ride taxis offering frequent service; increased ownership of motorized vehicles, both of cars and trucks; and greatly reduced time to reach markets and social services. This improvement was a result of both better roads and new facilities, whose construction was made possible in part by the roads.

On Agriculture

The study found that in the road project areas overall volume of production, productivity of the land, and monetary output increased. Farmers were able to shift output from low-value cereals to high-value fruit orchards, thanks to the better quality and year-round operability of the improved roads. Livestock production shifted toward pure-bred cows, also a higher-yield undertaking. The better access conditions, moreover, resulted in an increased use of fertilizers and of agricultural extension services.

Improvements in the agricultural economy led to related economic changes in workloads and on-farm employment and the establishment of new

shops. Off-farm employment grew overall by more than six times in the project zones, compared to about three times in the control zones.

On Social Services

Enrollment in primary education increased throughout all areas covered by the study; it increased at a much higher rate in the areas where the roads were improved than in the control areas. In parallel, the quality of education improved, as it became possible to recruit teachers to staff the schools, and absenteeism of both teachers and students fell.

The rural population also nearly doubled its use of hospital and primary care facilities, and the quality of health services was enhanced as the supply of medicines improved. Health officials launched a campaign to staff rural health care centers with a doctor, and health prevention programs became easier to implement.

Some social impacts were especially large for women: Girls' enrollment in primary education trebled over the period; expanded or new maternal and child care programs were made available and accessible; and the introduction of butane at affordable prices thanks to better roads dramatically reduced women's chores of daily fuel wood collection for cooking and heating. Rural-urban interaction increased through increased family visits.

On the Environment

Changes in transport conditions and in the agricultural economy had both negative and positive impacts on the environment. Overall, no environmentally sensitive areas were put at risk by the road-improvement projects. Negative impacts resulted from the increased traffic and economic activity, especially air and noise pollution and road accidents, as well as the increased used of fertilizers and other chemicals that may contaminate the water table. Positive impacts resulted from the transformation of the agricultural economy—

notably, curtailment of extensive goat and sheep herding that damages the soil cover and increased tree plantations—and from broader substitution of butane for fuel wood, the demand for which is larger than the size of Morocco's sustainable forests.

Economic Analysis

The study quantified the savings in vehicle-operating costs compared with the original, unpaved roads, and the economic gains resulting from people and freight being able to move at any time, without the risk of road closures. Social impacts, although real, could not be quantified in the analysis. The ERRs (between 16 percent and 30 percent) were satisfactory. The analysis, however, did not demonstrate whether paving was the optimal economic solution.

Sustainability of Benefits

Historic trends showing steady traffic growth over long periods on Morocco's paved roads suggest that the stream of benefits is likely to be sustainable. The improvement of the agricultural economy is likely to be sustained, with the possible exception of the sugar beet planting in the north, which is uneconomic and may lose its market. The gains in agriculture are also dependent on government trade and fiscal policies. Social service impacts appear sustainable in view of the high value assigned to them by the direct beneficiaries and because of government policies and the increased funding it is allocating to improve social services.

Recommendations

The study recommended that consideration be given to (i) establishing a practical rural road monitoring system, (ii) increasing local community participation in rural roads, (iii) introducing mitigation measures to reduce likely increases in road accidents, (iv) adopting identification and evaluation methodologies based on multicriteria indicators, and (v) reassessing the optimal pavement width for rural roads.

APPENDIX C: MIGA SUPPORT FOR TRANSPORT PROJECTS

The Multilateral Investment Guarantee Agency (MIGA) was founded in 1988 with the mandate to promote foreign direct investment into developing countries. To fulfill this mandate, MIGA offers four products and services: it insures investors against political risks, which include expropriation, transfer restrictions, war and civil disturbance, and breach of contract. MIGA also mediates disputes between investors and governments; provides technical assistance to help governments attract foreign investment; and provides information on investment opportunities through on-line services.¹

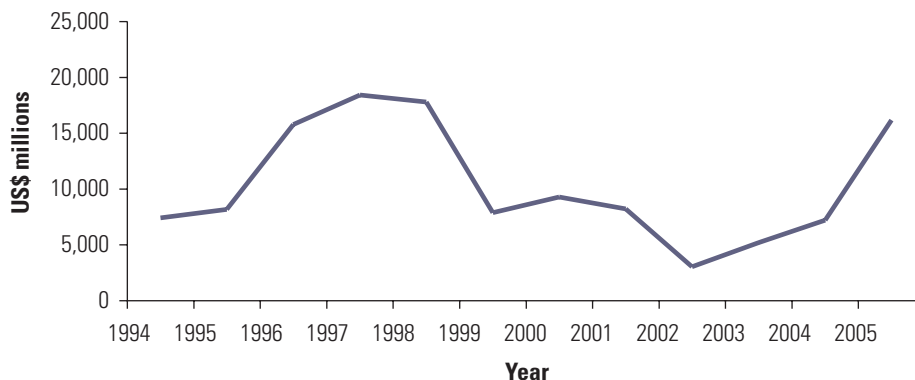
MIGA and Bank Group Strategy

As private sector interest in infrastructure and transport projects increased in the 1990s (figure C.1), the World Bank shifted toward complementing private investments with policy and regulatory reforms and institutional capacity building, and Bank lending for infrastructure and trans-

portation projects declined. Conversely, MIGA insured its first transport project in 1995, and the Agency's guarantee projects in this sector reached a peak in 2001–2003.

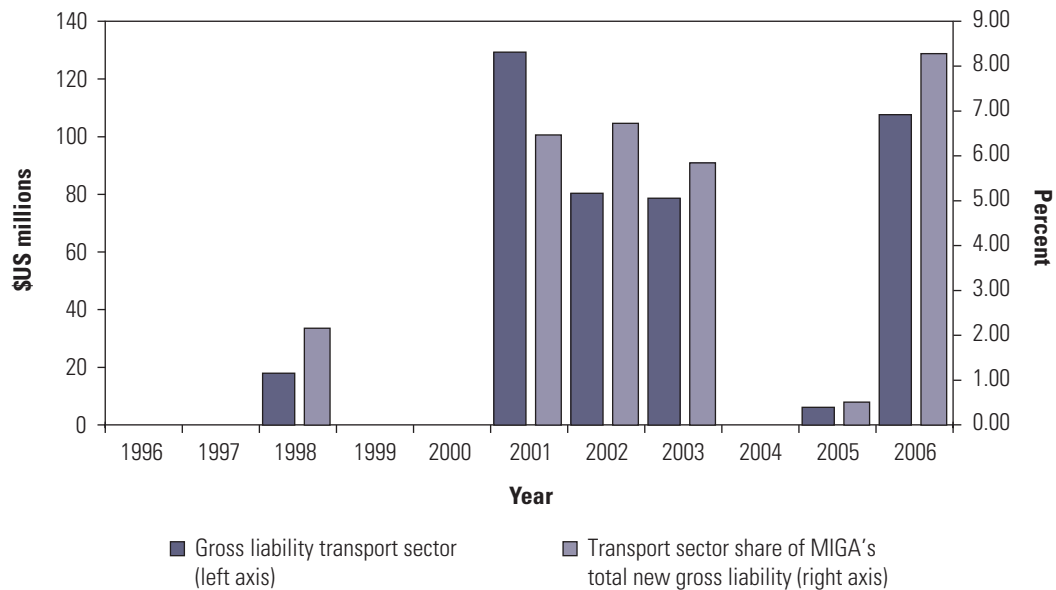
In 2000, MIGA's strategy set forth the increased facilitation of complex infrastructure projects as a priority, citing significant growth in private participation of this sector during the previous 10 years and record demand for MIGA's services. These projects were generally highly capital-intensive, had long pay-out periods of 10–20 years, and often involved concession agreements with public entities (MIGA 2000, p. 54). Within this focus on infrastructure, transport projects accounted for approximately 6 percent of new MIGA guarantees (measured by gross guarantee volume) each year during fiscal 2001–03, and over 8 percent in fiscal 2006 (figure C.2).² However, although overall MIGA guarantees for infrastructure projects have remained strong if somewhat

Figure C.1: Private Sector Investment in Transport Projects, 1994–2005



Source: World Bank PPI database.

Figure C.2: New Transport Project Guarantees, Fiscal 1996–2006



volatile, guarantees for transportation projects dropped during fiscal 2004 and 2005.

MIGA Portfolio Overview

As noted above, MIGA exposure in the transport sector has been modest. From fiscal 1990 to fiscal 2006, MIGA issued 36 guarantee contracts for 12 projects totaling \$424.2 million in this sector (figure C.2). Cumulatively, this represents 2.8 percent of MIGA historical gross exposure. As of June 30, 2006, MIGA's active transport portfolio was \$221.4 million, accounting for 4.1 percent of its outstanding gross portfolio,³ and eight of the 12 projects remained in the portfolio.⁴

Toll roads accounted for the largest share of transport projects, both in terms of the number of projects and their guarantee exposure (four projects, and 51 percent of exposure), followed by airports/airlines (three projects, 20 percent of exposure), and ports (three projects, 8 percent of exposure) (figure C.3). Three of the first five MIGA guaranteed transport projects were toll roads, but those insured after 2001 were primarily in port and airport/airline projects, followed by a large toll-road project in fiscal 2006.

Consistent with the privatization trends in the 1990s, the large majority of MIGA's exposure in transport projects (75 percent of exposure, and 8 of 12 projects) was in Latin America. The remaining projects were in Asia (21 percent of exposure and two projects), Africa (3 percent of exposure and one project), and Europe and Central Asia (1 percent and one project) (figure C.4).

MIGA's transport projects have been concentrated in middle-income countries (96 percent of exposure). Half of MIGA transport projects were in lower-middle-income countries, accounting for a gross exposure of 69 percent. These projects included key infrastructure improvements in countries such as Ecuador, Peru, and the Philippines, where perceived risk was relatively high and/or investors required specific coverage to obtain financing. Only four percent of MIGA's cumulative exposure (two projects) was in low-income/IDA-eligible countries, including one project in Sub-Saharan Africa.

While MIGA's transport portfolio was concentrated in Latin America and the Caribbean, and to a lesser extent in Asia and the Pacific, large pri-

vations or public private partnerships in Central and Eastern Europe have not obtained MIGA coverage.

Most of MIGA's transport projects involved complex concession agreements or licenses specifying tariffs, performance benchmarks, and other parameters critical to the project's viability. MIGA appears to have met a demand from foreign investors, entering a relatively new area for the private sector.

Effectiveness of Guarantee Activities

IEG-MIGA carried out ex post evaluations of two MIGA-supported transport projects—an airport facility and a toll road. Both projects involved the privatization, modernization, and expansion of existing facilities where host governments sought private financing and management. The projects were designed to meet future increases in demand and upgrade outdated facilities to current international standards in their sectors, and to improve safety. Ultimately, the projects were expected to contribute to the host country's private sector development and economic growth. The concession agreements for these projects were awarded in the 1990s, when private participation in the provision of infrastructure peaked.

IEG-MIGA's evaluations have highlighted findings on project beneficiaries, concession agreements and the sustainability of the projects, environmental and social effects, and MIGA's role and value added in the two transport projects.

Project Outcomes

Both projects helped to transform the deteriorating infrastructure into modern facilities designed and equipped with the appropriate technology and specifications to meet current international airport and highway standards. The quality of service has also vastly improved. Efficiency gains were also achieved in both projects, for instance, by greatly reducing the processing time for air cargo, benefiting exporters and importers. Similarly, the toll road has considerably cut vehicle-operating costs, travel time, accidents, and crime along the highway.

Figure C.3: MIGA Gross Expenditure by Project Type, Fiscal 1990–2006

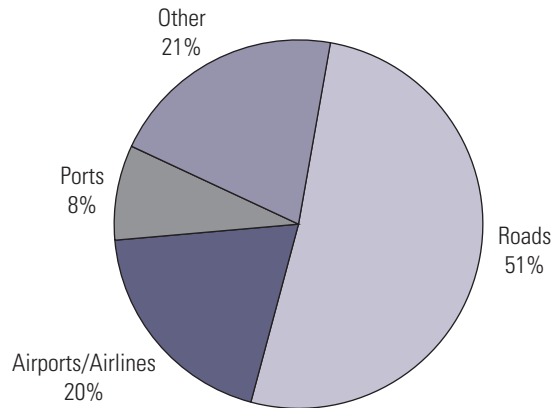
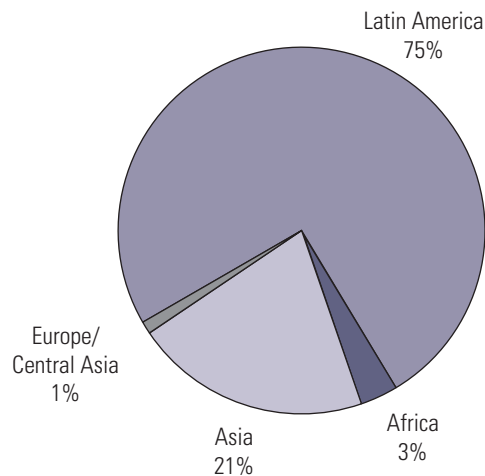


Figure C.4: Issued Gross Exposure by Region for Transport Sector Projects, Fiscal Years 1990–2006



At the same time, the modernization and privatization of these two facilities means that users have to pay higher prices for the services, compared with before the privatization, when they were operated by public sector entities. User charges have been a contentious issue in both projects. Actual volume of traffic and revenues are below expectations for both, although the revenues generated by each project are sufficient to cover operating costs, accelerated debt service, and fiscal obligations; in one case revenues also allowed payment of shareholder dividends.

Beneficiaries

The main beneficiary in the airport project has been the host government, as revenue generation was the main impetus for privatization, and the concession agreement reflects this objective. Airline passengers—both local and foreign—and air cargo companies also benefited from efficiency gains, although the net effect is smaller because of increased user charges, which are higher than for comparable airport facilities in the Region. The impact on the private sector has been limited because of the structure of the concession agreement, which restricted the entry of other providers.

In the case of the toll road, the host country's motivation for privatization was the repair of a decaying road infrastructure, which was to be the linchpin of Regional economic revitalization. The majority of the beneficiaries of the toll road are middle-income public transportation passengers, high-income car owners, and commercial users. The company has also introduced targeted subsidies to low-income transport operators. Government tax revenues have been lower than expected, as a result of lower traffic volume. That comes mainly from high tolls, an increase in gasoline prices, and an economic slowdown in the country. Although the owners of public transportation companies, trucking services, and private passengers benefit from efficiency gains, effects on the Regional economy are not yet significant. However, some commercial development of land near the toll road has started.

Concessions and Sustainability of Projects

As noted above, the majority of MIGA transport projects involved complex concessions or licenses, and both evaluated projects were covered by long-term concession agreements. In recent years, MIGA has been notified about disputes between its guarantee holders and government entities related to transport projects. Investors filed two claims that were related to provisions in the concession agreements, such as tariff rates, allegations of being in breach of concession agreements, or outright abrogation of concessions.

The concession agreements in the two evaluated projects resulted from competitive or solicited bid-

ding processes. In both cases, commercial risks are borne by the project enterprise. Affordability of tariffs or fees, which are set in the concession agreements, has been a common concern with both projects. In both cases, there have been challenges in sustaining the projects, albeit for different reasons. In the case of the airport facility, the distribution of revenues stipulated in the concession agreement is not sustainable, and it has not had the intended impact on the country's private sector development. The concession did not lead to lower prices for users and has added constraints on future competition in the sector. In the toll-road project, the main challenge is increasing usage to improve the financial performance and sustainability of the enterprise.

Environmental and Social Compliance

As required by the concession contract, the airport facility has carried out remedial pollution control works on the project site and set up an environmental and health and safety management system covering all the areas of the site under its control. At evaluation, it was in full compliance with MIGA's safeguard policies.

The toll-road project did not fully follow World Bank provisions for involuntary resettlement of affected people; at the time of the evaluation, an amended Resettlement Action Plan and Corrective Action Plan were being implemented to address these deficiencies. Although these plans rectify some of the earlier shortcomings, IEG found that the effectiveness of these plans was low, in part because of the delays in their execution and poor design and implementation of the relocation.

MIGA's Role

MIGA played a particularly important and catalytic role in the airport facility. In the toll road, its coverage was important, but it came after financing was finalized. Also, its value-added was limited to providing political risk coverage, because IFC took the lead.

In the airport project, MIGA's coverage was secured *before* the lenders provided financing; MIGA support was instrumental in that it provided coverage of a performance bond, which

was not available from private insurers on a long-term basis and was critical for the investment to go forward. Coverage was also important because of the uncertain political environment at the time the guarantee was issued.

Prior Recommendation

IEG-MIGA previously made a recommendation to MIGA covering its involvement in projects with concession agreements, which is relevant for the two

evaluated transport projects (IEG-MIGA 2006, p. 46). It recommended that MIGA develop rules of engagement for projects involving concessions and similar agreements. Considering that MIGA often gets involved in projects as an insurer after such agreements have been negotiated and signed, it needs to satisfy itself that the underlying business model, terms given to concession holders, and tariffs are sustainable and reflect sound economic policy to ensure a positive development impact.⁵

APPENDIX D: IFC'S EXPERIENCE IN THE TRANSPORT SECTOR

The International Finance Corporation's (IFC's) IEG reviewed IFC's investments in the transport sector between 1990 and 2005. IEG found several things:

- Between fiscal years 1990 and 2005, IFC made 125 transport commitments supporting projects with a capital value of \$14 billion, investing \$2.2 billion for its own account and mobilizing \$1.4 billion of B-loans.¹ On average, transport investments have accounted for about 6 percent of IFC commitments.
- Since 1998, when IFC made transport a priority as part of a strategy to support infrastructure generally, it has succeeded in increasing its transport investments in absolute terms and as a proportion of the portfolio. Two-thirds of IFC transport investment has been in the Latin America and the Caribbean Region.
- Transport projects have achieved a significantly higher proportion of positive development outcomes compared with other sectors in IFC. Their economic sustainability, environmental and social impacts, and contribution to private sector development have been particularly strong.²
- Though profitable, the returns on IFC's investments in transport projects have been lower than average. This reflects a number of factors, including IFC's instrument mix, slower than expected growth in traffic, strong competition from other transport operators, economic crises, and changes in government policy.

Transport a Strategic Sector for IFC

Since 1998, IFC has prioritized its support for transport projects in developing economies. This

reflects the importance of a country's transportation system for moving goods and people domestically; it also shows it is a prerequisite for trade with other nations. IFC has helped developing countries improve their transport systems through its investments in private sector companies that provide air, rail, road, and sea transport; port and harbor operations; and other linked services, such as warehousing. Through a process of privatization and/or the award of concession contracts, many of these private companies have assumed responsibility from governments for upgrading, operating, and maintaining a country's existing transport infrastructure.

IFC Has Increased Its Transport Investments

In the fiscal 1990–2005 period, IFC supported transport projects with a total capital value of \$14 billion. As part of its support, IFC committed \$2.2 billion for its own account that was split with approximately 90 percent as loans and 10 percent as equity. In addition, IFC raised \$1.4 billion in the form of B-loans from other lenders, a high mobilization rate relative to other sectors. The balance of project funds was raised by sponsors and other private investors. Transport investments represent an increasing proportion of IFC's portfolio, accounting for 4.1 percent of commitments in the period fiscal 1990–95, 6.1 percent in fiscal 1996–2000, and 6.9 percent in fiscal 2001–05 (see table D.1 and figure D.1). The transport portfolio is therefore relatively young, a third of all investments having been committed in fiscal 2003–05.

The proportion of IFC investments dropped between approval and commitment was much lower for transport, at 3 percent during the 1990–2005 period, compared with 16 percent for all other

Table D.1: IFC Supported a Variety of Projects within the Transport Sector

Fiscal 1990–2005 (in US\$ millions)	No. of projects	Total project size	Aggregate B-loans	Aggregate IFC loans	Aggregate IFC equity
Airports and airlines	7	797	13	132	15
Passenger and freight rail	16	1,219	136	254	26
Shipping companies	17	973	201	211	52
Transit and ground passenger transport	4	2,043	0	127	10
Oil and gas transport or pipelines	13	1,856	466	244	14
Port and harbor operations	38	2,380	196	453	30
Highway operations (including toll roads)	11	2,433	161	224	42
Other support activities for transport	13	2,095	250	297	37
Storage and warehousing	6	134	8	48	1
Total	125	13,930	1,431	1,990	227

Subsector (Figures in US\$ millions)	Fiscal 1990–95		Fiscal 1996–2000		Fiscal 2001–05	
	No. of projects	Net commitments	No. of projects	Net commitments	No. of projects	Net commitments
Airports and airlines	0	0	0	0	7	147
Passenger and freight rail	2	26	5	52	9	202
Shipping companies	7	91	2	48	8	124
Transit and ground passenger transport	0	0	3	100	1	37
Oil and gas transport or pipelines	8	105	3	87	2	65
Port and harbor operations	8	56	16	147	14	280
Highway operations (including toll roads)	1	14	8	190	2	64
Other support activities for transport	1	40	4	109	8	185
Storage and warehousing	1	6	3	25	2	18
Total	28	338	44	758	53	1,122

sectors. Cancellations of commitments were also lower for transport, at 0.3 percent versus 3.7 percent.

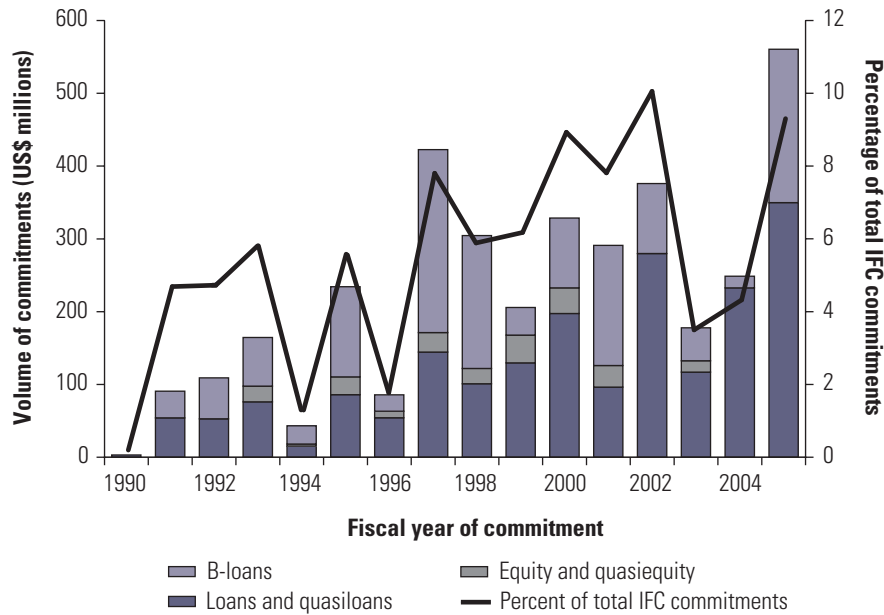
Two-Thirds of IFC's Transport Investment in Latin American and the Caribbean

IFC's transport portfolio has a strong bias toward the Latin America and the Caribbean Region, which accounts for 67 percent of transport commitments, compared with 37 percent for other sectors (see figure D.2). By extension, IFC's transport commitments are relatively underweighted in

other Regions, although there has been a noticeable increase in the Europe and Central Asia Region since 2002.

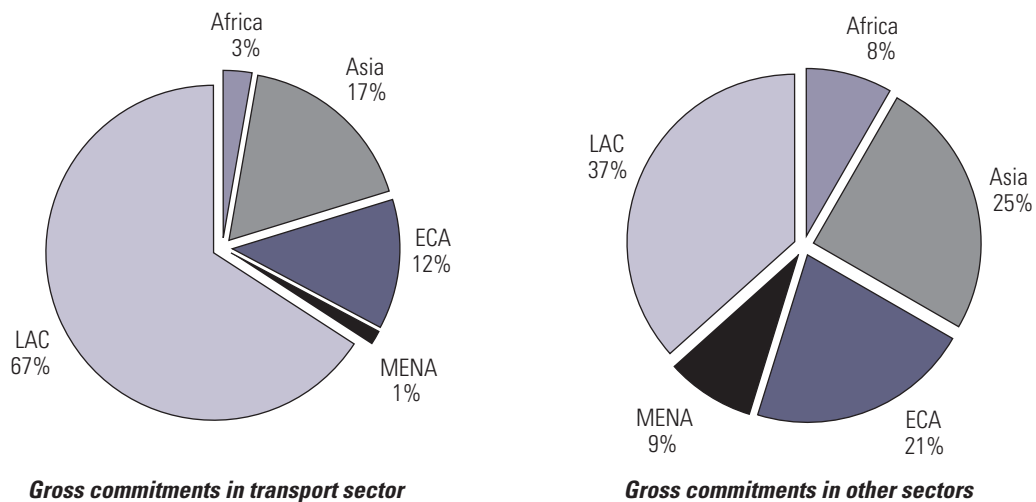
This pattern of concentration in Latin American and the Caribbean and more recently in Europe and Central Asia reflects the progress in these Regions toward privatization of transport infrastructure and contracting with the private sector to deliver transport services. Commensurate with that, they tend to have a better institutional and regulatory framework to support private investment in the

Figure D.1: IFC Investment in Transport Growing in Volume and as Proportion of Portfolio



Source: IFC data.

Figure D.2: Most IFC Investment in Transport in Latin American and the Caribbean



Source: IFC data.

Note: LAC = Latin American and the Caribbean; ECA = Europe and Central Asia; MENA = Middle East and North Africa.

Box D.1: IFC Supported Brazil's Port Privatization Program

Brazil's ports had long suffered from low productivity, high operating costs, and inadequate maintenance. Handling charges in Brazil were roughly double that of international ports, and these high charges and inefficiencies were estimated to cost Brazilian exporters up to \$5 billion per year in lost export opportunities. As part of its program to increase the competitiveness of the Brazilian economy, the government of Brazil passed a ports modernization law in 1993 that transferred port administration to state port authorities and required that the private sector operate the ports. IFC has assisted in this privatization process by providing funding to the new private operators for upgrading and expanding port facilities. For example:

- IFC supported the rehabilitation and expansion of the container terminal at the Port of Rio Grande, following the award of a 25-year lease in 1997 to a private consortium. IFC helped the company purchase four cranes, expand the length of the quay, and repair and upgrade existing facilities. The \$50 million project has enhanced transport logistics for southern Brazil, resulting in increased exports, and created local employment with more skilled and better-paid jobs. The private operator introduced new technology and know-how and achieved a 234 percent increase in productivity over a 5-year period, increasing container moves from 80,000 per annum to over 300,000, well ahead of forecasts.
- The Port of Salvador in the state of Bahia in northeast Brazil was privatized in 2000 with the award of a 25-year lease to a private company. IFC arranged funding for part of a \$20 million project to purchase two portainers and container-handling equipment, paving of the container storage area, and construction of a warehouse and administration buildings. The private operator played an important role in increasing overall container volumes by nearly 300 percent between 2000 and 2005. As a successful project in a relatively poor and less-developed part of Brazil, it played a vital role in increasing exports from the Region, attracting other firms into the area (including Continental, Bridgestone, Pirelli, Monsanto, and Ford) and inducing follow-on investments in local transportation logistics.
- The government-built (and previously unused) container and steel products terminal of Sepetiba is being operated under a 25-year lease awarded by the Port Authority of Rio de Janeiro in 1998. IFC is assisting the new private operator in a phased \$140 million redevelopment of the container terminal, including the purchase of seven cranes, conversion of an existing dolphin berth into a straight quay, and the construction of a rail connection. Largely because of the intense competitive reaction from the neighboring port of Rio, Sepetiba's operations in terms of container moves and profitability have not yet met expectations. The project has, however, helped reduce congestion at ports across southeast Brazil, and the increased competition has resulted in a dramatic drop in tariffs for importers and exporters.

sector (see box D.1). Also, in middle-income countries generally—and the large economies in Latin American and the Caribbean and Europe and Central Asia are no exception—one of IFC's roles has been to help improve the transport sector and stimulate export-led growth through trade.

As a consequence, 92 percent of IFC investment in transport has been in middle-income countries; of that, 72 percent has been to trading infrastructure rather than to mainly domestic transport systems.

Much of Technical Assistance Focused in Africa

IFC has also supported the transport sector with technical assistance and advisory services delivered

by its Trust Funds (TATF) and Advisory Service Departments. Between fiscal 1990 and 2005, TATF supported 39 projects with a total cost of \$5 million—this was about 3 percent of total TATF activity over the period in terms of number and cost.

Just over half of these projects (40 percent by cost) were in frontier countries, particularly in the Africa Region. In contrast to Latin America and the Caribbean, private participation in transport infrastructure in Africa is relatively low. Thus, establishing the right legal and regulatory framework is an important precursor to increased private investment in the future. Typically, TATF projects were related to privatizations and feasibility studies on private operation of ports and shipping, air

transport, and cargo facilities. IFC also completed 13 advisory service assignments in transport, accounting for 16 percent of total advisory activities. Again, slightly more than half of this advisory work was in Africa, and nine of the assignments were in airlines and airports.

Transport Yielded Strong Development Impacts

Among a sample of 22 IFC transport investments evaluated between 1996 and 2004, 19 achieved high development outcomes (86 percent by number and 75 percent by volume); 15 achieved high investment outcomes (68 percent by number and 58 percent by volume).³ Fifteen (68 percent by number) achieved “win-win” outcomes, indicating that at the individual investment level they made a satisfactory-or-better contribution to development in a country and yielded a satisfactory-or-better gross profit contribution toward IFC’s financial capacity for future development outreach. These results compare favorably to projects in other sectors across IFC (see figure D.3).⁴

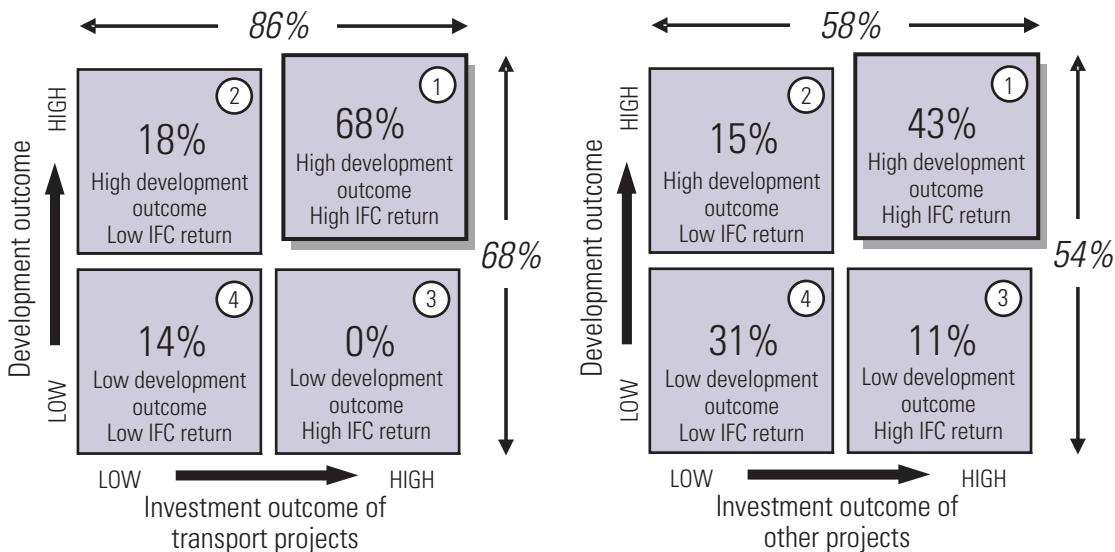
The development impacts of IFC’s projects are evaluated based on multiple attributes of their contribution to a country’s economic develop-

ment, and ratings are based on a synthesis of their performance across four underlying indicators: commercial success, economic sustainability, environmental and social impacts, and contribution to private sector development. The evaluated transport projects supported by IFC have yielded better-than-average impacts in all four indicators.

In particular, they have made strong contributions to economic growth; their ERRs have been substantial and in all cases have exceeded their financial rates of return, indicating that they have generated benefits for other members of society beyond the project company’s owners and financiers. On average, for each \$1 invested, the evaluated projects returned \$1.50 in financial benefits and \$2.25 in economic benefits.

These projects have also tended to have lasting, positive impacts on the enabling environment. An example of such a project is a concession toll road between two large cities in a South American country. Large economic benefits were unlocked by upgrading the road and enabling more efficient commercial transportation between the two cities, plus improved safety measures resulted in a significant drop in accident and fatality rates.

Figure D.3: Outcomes of Evaluated Transport Projects Compared with Those in Other Sectors



Source: World Bank data.

Moreover, the project helped improve the structuring and administration of subsequent concession contracts in the country.

Net Returns on IFC's Transport Portfolio Lower than Average

Whereas the development impacts of transport projects have been strong, the returns on IFC's investment portfolio in the sector have lagged behind those across IFC as a whole. Overall, transport investments yielded a net profitability rate of 0.4 percent, compared with 2.6 percent for IFC overall (table D.2).⁵

The lower profitability is due in part to IFC's transport loan portfolio, which has carried loss reserves above the IFC average since 2003. It is also due to IFC having made relatively few equity investments in the sector when across all sectors on average, equity investments tend to be the main contributors to IFC's profits. Moreover, where transport

projects involve concessions, the complexity of the contracts and lead time for IFC appraising and structuring its investment results in high administrative costs and further pressure on profitability.

Lessons from the evaluated projects provide further insights on the pattern of development and investment results in the transport sector:

- *Growth in traffic may be slower than forecast.* Traffic or volume forecasts prepared by sponsors may have an upward bias, possibly as a result of the competitive pressure to win a concession and possibly to make the project more attractive to investors. In practice, actual throughput can be lower than forecast or require a longer growth period to reach target levels. Hence, the income generated may not be sufficient to service the company's loans, and/or equity income for investors will be delayed (depressing rates of return). On the other hand,

Table D.2: IFC Investments in Transport Yielded a Net Profit

Net profitability rates for investments active in fiscal 1990–2005 (percent of outstanding amounts)	Transport portfolio (%)	All IFC (%)
Loan portfolio		
Average loan outstanding balance	100	100
Interest received	6.4	7.1
Fees received	0.7	0.7
Loan loss provisions	(3.2)	(1.9)
Cost of funds (before swap effects)	(3.4)	(4.4)
Administrative expenses	(2.3)	(2.2)
Loan net income	(1.8)	(0.6)
Equity portfolio		
Average equity outstanding balance	100	100
Dividend income	3.9	6.0
Realized gains on sold/closed investments	6.0	5.3
Administrative expenses	(2.4)	(2.4)
Active investments		
Current valuation (net of provisions)	8.7	19.4
Original cost or disbursement	(7.2)	(13.7)
Unrealized gains on active investments	1.5	5.7
Equity net income incl. unrealized gains	9.0	14.6
Total net income including unrealized gains	0.4	2.6

the benefits of improved services, faster journey times, and increased safety are realized immediately by users and the economy.

- *There may be competing transport infrastructure.* Many projects are expected to thrive by offering new, more efficient infrastructure and services to customers. Container ports are a good example of an unexpected and strong competitive response from existing nearby ports, which may be state owned or privately operated. Competition may take the form of substantially lower—often unsustainable—tariffs or customer tie-in arrangements, and while it may not last for an extended period of time, it can adversely affect IFC-supported projects in the early years of operation and cause financial stress. Customers, however, benefit straightaway from reduced prices and in the longer term from improved services.
- *Concession contracts may not provide the private operator with the protection envisaged.* Robust traffic projections and strong sponsors may not be enough to mitigate the negative impact of major changes in government policy, particularly in a country where the legal and regulatory framework is not well developed. Although concession contracts may allow the private operator to raise charges to end users to protect it from inflation or devaluation, such terms may be unenforceable if they are politically unpalatable, for example, at a time of economic crisis.

APPENDIX E: BANK TRANSPORT STAFF INTERVIEW RESULTS

A random selection of 36 out of 122 staff (specialists and task team leaders) was made; 20 from Washington, DC, headquarters; 16 from Regions.

Regions: All Regions and anchor¹ covered.

Dates: Interviews conducted between August 2005 and February 2006

Assessment of Client Needs (Relevance)

In which countries have you worked in the recent past? (last 5 years).

Detailed list contains 67 countries, covering all Regions.

To what extent has maintenance been a problem in these countries in your experience?

ROADS: Most interviewees confirmed that sustainability is still a problem; they mentioned weak funding flows, road funds that were only modestly successful, weak institutional capacity, lack of government commitment, maintenance based on equity or political considerations rather than need, and networks too large for available funds. Positive trends were experienced in a few countries, and there has been some success with road authorities, maintenance management systems, and capacity building both for governments and contractors. In Africa the SSATP is believed to have a positive impact. Performance management contracts have had some success, especially in Latin America (CREMA).

RAIL: Only minor problems reported.

OTHER MODES: Not seen as problem areas.

To what extent has the Bank assisted these countries in the transport sector through technical assistance and advisory services?

There is not enough ESW in some cases; technical assistance is often not done soon enough and sometimes lacks ownership; technical assistance from other international finance institutions (IFIs) (sometimes of low quality and offered on a grant basis) can be a problem; some countries are well supported by donors, and in these cases there is no shortage of funds for technical assistance—but other countries are comparatively neglected. Absorption capacity of technical assistance can be an issue, as is the lack of continuity and institutional memory. Some respondents felt that institutional and policy support was relatively less successful, but good results were reported for procurement. Most people thought that technical assistance was more effective when it was linked to investments rather than when it was a freestanding initiative. Dissemination of knowledge was often carried out on an ad hoc basis.

The Bank has a good reputation for high-quality work and is close but not necessarily at the cutting edge of knowledge in roads. It has a unique depth of resources and is particularly good at assisting with road financing. The SSATP is seen as doing good work at the strategic level.

Some countries (Iran, Kuwait) have been more focused on acquiring know-how and skills.

To what extent has the Bank encouraged these countries to get involved with the private sector? Please give examples, if possible.

Concessions were mentioned for several countries, especially in railways and ports; there were also a few toll roads. Most concessions appear successful, but some respondents mentioned difficulties caused by collusion. Some respondents noted that key success factors included being involved at the earliest possible stage, having the capacity to deal with the private sector, and having a supportive regulatory framework. The fact that the Bank can now cover the cost of redundancies in loans is seen as significant. The Bank has also had successes in assisting the development of emerging contractors and phasing out force account operations and in developing competitive bidding and procurement procedures, as well as performance maintenance contracts.

In ports there are good opportunities for contracting the cargo handling services. Trade facilitation committees involving the private sector have proved successful.

Public institutional change in Asia is less rapid, because traditional practices are valued highly and incremental change is often preferred. The “confrontational” style of Western practice (competitive tendering, staff rationalization, and so forth) is disliked by many.

Bank Approach

General Comments

Some interviewees thought the Bank was too risk averse, although others believed that a 5-year project horizon was often too short to achieve meaningful institutional change and that the Bank should not be too ambitious to achieve everything in one project.

“Continuity can be important. The Bank should think very carefully before it stops support to a borrower because of nonperformance or serious disagreement. Once we walk away, we lose our ability to influence, and other IFIs often simply take our place.”

“Business processes have become more cumbersome, and task managers have less freedom than in the past. This is partly linked to decentralization

and is complicated by safeguard issues. Greater bureaucracy has slowed decision making and placed additional burdens on task team leaders.”

“The ‘one-size-fits-all’ approach with procedures is wrong, but there are signs that this is changing. You cannot treat Zimbabwe and Poland the same way.”

“It took longer than expected to reverse the decline in transport infrastructure spending because until the Country Assistance Strategies were updated, infrastructure was not seen as a priority by some staff.”

“The Bank should be more prepared to enforce conditionality, especially where the filling of key posts is concerned; this is the call of the country director.”

“We have a special responsibility in small countries because our impact may be huge, whereas in large economies our impact is much smaller.”

Eighty percent of Bank-funded transport projects are road or road related. Do you agree with this modal split, or should we be doing more in the other transport sub-sectors and in urban transport?

Some respondents believed that what the Bank is doing reflects the needs of the borrowers and that roads were the Bank’s strength. Other respondents thought the Bank was overly biased toward roads and claimed it had gained a reputation as a “roads bank” and that certain borrowers went to other IFIs for finance for other modes.

“We should be doing more in the modes other than roads, but have we really got a critical mass of knowledge in these areas? It is interesting that now we have an aviation specialist; more aviation projects are being generated. We need to ensure we have a mix of people with the right experience.”

“We should get involved less in intercity highways and more in integrated rural development.”

“We are beginning to do more rail projects, but urban transport is neglected—this is unfortunate,

considering the extent of urban growth anticipated.”

Several interviewees believed the Bank should do more in urban transport (especially bus transport) but noted that the preparation of urban projects takes much longer and the transaction costs are high. They are more complex, and there are multiple stakeholders and safeguards issues, so they are riskier. Yet there is little incentive for task managers to take on these difficult projects, so task team leaders will not always promote them.

“We should not try to force our own agenda onto borrowers. In Madagascar the Bank was keen to put the clean air issue on the transport agenda, but this was not a priority for the government.”

Other interviewees claimed the Bank should be doing more in waterways, ports, logistics, safety, and air pollution.

Bank Performance (Efficacy, Efficiency, and Outcome)

Reasons for Project Success

- Innovative projects or aspects of projects
- Commitment and ownership by the clients
- Good supervision by experienced staff and continuity of team members
- Large impact on peoples’ lives
- Strong leadership by key implementation manager or key politician
- Adaptability to changing conditions
- Good funding streams for future sustainability.

Reasons for Unsuccessful Projects

- Lack of client commitment and ownership
- Too many objectives and design too complex for capacity of borrower
- Corruption and vested interests
- Political interference
- Implementing agency too inexperienced and not supported
- Insufficient attention to sustainability issues
- Opposition by affected communities.

How well do we monitor and measure project efficiency and outcomes? How could we do better?

“Some indicators are too easy to achieve and are not a stretch; others are impossible to measure so it doesn’t happen. Often there are too many indicators, and they can vary from project to project.”

“We focus too much on the physical aspects rather than efficiency and outcomes.”

“There is some evidence that economic analysis is manipulated if the economic rate of return is not high enough.”

“Indicators should be simple and measurable.”

“We need to improve our monitoring capacity.”

“Our rural indicators are improving, but we need more work on urban indicators. Compliance is a problem.”

“We should take more cognizance of the lessons of evaluation.”

“It is important for the borrowers to have ownership of the indicators; they often lack the capacity to monitor or consider that other priorities are more important.”

“We should put more emphasis on freight tariffs as indicators.”

“We need to do more impact assessments, but they can be expensive.”

“Project objectives should be carefully crafted.”

“The discount rate we are using (12 percent) is often too high. The Poverty Reduction and Economic Management Network sometimes uses 4 percent. The European Bank for Reconstruction and Development uses 5 percent or 6 percent.”

“There is insufficient understanding of economic analysis by some transport staff, and results may sometimes be manipulated to ensure the result is in the required range.”

“Indicators for rural roads should include accessibility and outcome (number of trips), supported by cost-benefit analysis, the Highways Design and Maintenance Model, and feasibility studies. Local access roads are better approached through cost-effectiveness analysis and ranking.”

“My perception is that we lack experience in some areas because a number of senior specialists have retired.”

“There is often a tendency to underestimate costs and overestimate benefits in the Project Appraisal Document.”

“Transport strategy should also be measurable, so that we can assess how well it is being accomplished.”

“Performance-based budgeting by ministries of finance can put pressure on transport agencies to invest in results measurement.”

“In the East Asia and Pacific Region there is a ‘gatekeeper’ who monitors indicators proposed in transport projects.”

Support for Work

From where do you receive the most support or advice when you require it, to enable you to perform your tasks effectively? Indicate those most important to you.

- Peers (95%)
- Transport anchor (60%)
- Information systems (50%)
- Guidelines/manuals (20%)
- Other: e-mail forums, support staff, Web site (5%)
- SSATP (75%, Africa respondents only)
- Brown bag lunches and other events (65%)
- Management (35%)
- Formal training (15%).

Summary of Comments

Overwhelmingly, people find support from their colleagues (peers). The anchor is considered important, and to a lesser extent management ad-

vice, training, brown bag lunches, guidelines, and systems are seen as helpful. All respondents from Sub-Saharan Africa mentioned SSATP, but there were two distinct groups—those who strongly supported it and those who thought it was not worth the resources put into it. Other points raised were as follows:

- Several people criticized the transport Web site as being out of date (even though it was steadily being upgraded during the interview period).
- Three respondents mentioned the poor quality of support staff.
- The Transport Forum and Transport Learning Week were seen in a positive light, especially by staff in the field.
- The e-mail forums whereby comments or advice were sought are seen positively, and people do seem to make use of this facility.
- Brown bag lunches are important to Washington staff. The country office staffs prefer to use videoconferencing. It was also mentioned that field staff could not file directly into IRIS [an internal Bank database], which led to a backlog building up of documents to be filed.
- Many respondents referred to a lack of resources in the anchor, which led to fewer think pieces being produced. The lack of international experts to lead thinking in the anchor, especially in roads and railways (after the departure of Ian Heggie, Lou Thompson, and Kenneth Gwilliam), was mentioned by several respondents.

Most respondents preferred to consult with peers before management for advice unless the query was of a political or strategic nature. This was partly due to perceptions that access to management is not readily available; the exception was Latin America and the Caribbean, where management was often the first choice.

Coordination/Communication with Others

To what extent is it easy to coordinate and share good practice (scale of 1–5, where 5 is very easy)?

	Average score	
	Head-quarters	Field
Between regions in the transport sector	3.3	2.7
With staff in country offices or HQ if you are in a country office	3.9	3.9
With the anchor staff	3.3	2.8
With staff in other networks	2.9	2.6
With other parts of the World Bank Group such as IFC and MIGA	2.6	2.2

Comments

The most positive aspect is the strong coordination between headquarters and the field, with both sides ranking this highest. For other areas of coordination/communication the perception in the field offices is poorer because it is more difficult for them.

Communication/coordination with other networks or parts of the Bank Group may have been scored low in some cases because there was little need for such activity on the part of some of the respondents.

Workload

How much time have you spent away on missions in the last 12 months? Do you think your workload is about right, too low, or too high?

All interviewees averaged 4.0 months on mission; headquarters-based staff working in Regions averaged 4.6 months; anchor staff averaged 3.6 months; field staff, 3.7 months; and all staff based in Washington, 4.2 months.

Fifty percent of staff spends between 4 and 9 months on mission, and there is a strong correlation between those spending more than 4 months away from home and the perception that

their workload is too high. In terms of workload, 53 percent said too high, 40 percent said about right, and only 7 percent said too low. It was observed that those who responded “too low” had only been with the Bank for a short time.

Change

If you could change the way we do just one thing in the Bank, what would it be and why? (Comments made by three or more respondents are shown in bold.)

- **Greater commitment to change poverty is necessary, especially in Africa.**
- **We need to work more efficiently and smartly. We need smart support staff that is knowledgeable about information technology, and proactive.**
- **We need to disseminate more effectively; we are all too busy to share innovation successfully.**
- **We need less pressure on task team leaders to improve operational quality and dissemination effectiveness and to ensure we stay abreast of developments in our field.**
- **The anchor needs more funding and resources.**
- **We need less micromanagement, and task team managers need to be empowered with more responsibility for decision making.**
- **Decentralized staff, such as disbursement officers in country offices, should have more responsibility.**
- Perhaps we should work less with Trust Funds—they are too restrictive.
- We need to make quicker decisions (no objections).
- **More flexibility is required in the application of the safeguards policy.**
- We need more advice, orientation, and help for new staff.
- We should take road safety more seriously.
- **More people with extensive operational experience are needed.**
- We need more effective donor harmonization should be sought.

- Ways should be devised to reduce the high transaction costs in project management such as vertical integration. If we are to scale up, it is important to streamline procurement and go beyond traditional contracting systems.
- The Transport Sector Board should have more power to intervene when things are going wrong (others opposed this and thought it ran counter to the decentralization initiative).
- We should be doing more to help people help themselves.
- We should not be funding recurrent expenditures.
- We should cut down on support personnel who do not add value.
- Good technical managers are not necessarily good administrative managers and may need further training.
- Reinvigorate thematic groups.
- **There are too many reviews, checks, and balances. In the end they become counterproductive and can reduce productivity.**
- The budget for project supervision should be linked to the complexity of the projects involved.
- **It is questionable whether the matrix system adds sufficient value.**
- Sufficient resources should be provided for training for country office staff.
- More cross-regional support work should be encouraged.
- **There should be more movement of staff between the Regions.**
- Locally recruited staff should have the same opportunities as internationally recruited staff.
- There should be more incentives for Head Office staff to work in field offices.
- **We should undertake more urban transport projects, but this requires greater preparation resources and perhaps more specialized staff.**
- We should be less prescriptive and listen to our clients.

APPENDIX F: STAKEHOLDER INTERVIEWS

Interviews with stakeholders conversant with Bank-supported activities were carried out as part of this review, complementing the country case studies of Brazil, India, and Tanzania. The structured interviews covered current and former government officials and users and providers of transport services, consultants, and academics. The main findings are reported below.

Brazil

Analysis of the respondents' answers suggests the following conclusions:

- The Bank's actions, in terms of supporting environmental sustainability and providing safeguards for the people affected by new projects, had the highest number of very positive answers.
 - Answers with a large proportion of "omitted, undecided" were analyzed for the questions about incentives to private participation, knowledge dissemination, procurement/tendering procedures, and affordability/accessibility for the poor.
 - Capacity building was one of the least criticized consequences of the Bank's actions. In contrast, the answers showing the highest degree of dissatisfaction referred to the questions about knowledge dissemination, incentives for private participation, and procurement/tendering procedures, in descending order of importance.
- Generally, the respondents had a positive view of Bank actions in Brazil. Some areas of a more specific nature are:
- The relevance and timeliness of Brazil's transport sector projects
 - The anticipation of good results from privatization, especially in the railway sector
 - The Bank's influence in project and institutional integration and coordination
 - The need to coordinate construction and maintenance aspects of projects
 - The importance of technical advice and skill building
 - The implications of subway/metro financing in less-than-optimal contexts (Recife, Belo Horizonte, Porto Alegre, and so forth)
 - The peculiarities of developing countries, vis-à-vis the context of the developed economies
 - The need to consider all aspects of sustainability, including economic, political, technological, social, and environmental
 - Inadequate coordination among projects/institutions over time
 - The fact that environmental concerns are an issue that is now being addressed in Brazil
 - The lengthy Bank approval process
 - The limited capacity of states and counties to assume debt
 - The oligopoly that has been created with respect to the Bank's knowledge and loan approval process
 - The need for greater publicity about the Bank's role, norms, and requirements
 - The use of overly optimistic data on population growth and transport demand
 - The importance of targeting assistance to medium-size cities and less-costly projects
 - How IMF demands for public debt reduction affect the financing of transport projects.

India

The main findings from the Indian stakeholders were as follows:

- The presence of the World Bank in the transport sector has had a significant impact. However, this has remained largely confined to the area of road development. The impact on the transport sector as a whole has been less pronounced.
- Bank project objectives have been fairly consistent with the country's development objectives. The absence of an effective mechanism at the national level for coordinating the sector needs and priorities has been a major handicap in taking a holistic approach for the balanced development of the transport sector.
- Bank-assisted projects have focused primarily on increasing the carrying capacity of roads rather than on improving transport sector management. Yet important achievements include creation of a valuable database for the road network; creation of Road Development Boards in a number of states; improved construction methods and maintenance practices; streamlined procurement and allied practices; emergence of alternative funding strategies, including public private participation; adoption of the International Federation of Consulting Engineers' document and large contract packages. The latter have helped the local construction industry develop.
- Weak links are urban transport and intermodal efficiency. These should be given more atten-

tion. Dissemination of Bank knowledge in this area is inadequate.

- Bank processes are complex and result in long lead times.

Tanzania

The main findings were as follows:

- Bank-funded projects have substantially helped improve port and road operations and management. Bank support of the railway was limited to mitigating operational problems without providing a sustainable solution so far.
- Stakeholders from both the public and the private sectors appreciate the Bank's support for a greater involvement of the private sector in the provision of transport services. However, some stakeholders cautioned that privatization should be done carefully, as the country does not have an adequate social safety net.
- The Bank has not been effective in disseminating its know-how. Bank experts are very knowledgeable but meet and share their experiences with few people. Stakeholders do not see regular publications and newsletters. The Internet is not accessible by many.
- There were conflicting views about the Bank's procurement system. Some stakeholders felt that tendering procedures are cumbersome, not well understood, and time consuming. However, others commended the procedures and felt that they help one get value for money.

APPENDIX G: BANK DOCUMENTS AND TRANSPORT SECTOR BOARD ACTIVITIES

Distribution of Bank Transport Documents by Mode, Theme, and Region

By Transport Mode

Among the sample of Bank papers/reports, 26 percent address sector-wide issues in transport, and 24 percent focus exclusively on roads, 14 percent on urban transport, and 11 percent on transport infrastructure in general.

By Theme

Nearly 25 percent of the sample related to broad policy/strategy; followed by finance, 15 percent; private sector development/commercialization, 11 percent; poverty, 9 percent; regulation, 9 percent; institutional development, 6 percent; and economic impact, 6 percent.

By Region

Nearly 55 percent of the sample addresses issues common to all lending regions. Africa is addressed exclusively in 13 percent of the reports, followed by Europe and Central Asia in 10 percent, Latin America and the Caribbean in 9 percent, East Asia and Pacific in 8 percent, South Asia in 6 percent, Middle East and North Africa in 1 percent, and developed and other countries in 4 percent (table G.1). Of the approximately 60 reports that relate to specific countries, the highest numbers are for Brazil and India (six each), followed by China (four), Vietnam, Poland, and Argentina (three each), Mexico, Indonesia, and Ghana (two each), and one each for 20 other countries. Forty other reports address more than one country.

Table G.1: Distribution of Core Transport-Related Papers/Reports (Total~200)

Transport mode/emphasis	%	Theme	%	Region	%
Sector-wide	26	Policy/Strategy	25	AFR	13
Roads	24	Finance	15	EAP	8
Railways	6	PSD	11	ECA	10
Ports	5	Poverty	9	LAC	9
Rural transport	8	Regulation	9	MNA	1
Urban transport	14	Institutions	6	SAS	6
Trade and transport facilitation	½ – 3 each	Economic impacts	6	All regions	55
economywide issues, aviation,		Technical issues	5		
inland waterways		Regional issues, transport services,	< 3		
		environmental issues, others	each		

Source: World Bank data.

Note: AFR = Sub-Saharan Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAS = South Asia.

Transport Sector Board Activities

Transport Sector Board

This Board has an overall responsibility for transport in Bank operations. Its core responsibilities include the development of sector strategy and related operational policies, including operational procedures and guidance to staff. It is also responsible for broad oversight of the quality of operational work, human resources, and partnerships, as well as learning and knowledge management. The Board sponsors or cosponsors various events for the purpose of learning, exchanging information, and supporting strategy formulation. Typical events include the following:

- *Transport Forum.* These Forums have been regular annual events in Washington, DC, bringing together staff from all Regions. Selected leading experts in the transport sector from outside the Bank participate, according to the chosen theme for the forum. Transport Forums have received high ratings from participants in terms of learning and professional development. Transport 2005 was held March 7–11, 2005, with the overall theme being “The Role of the Private and Public Sectors in the Supply of Transport Infrastructure and Services.”
- *Transport Learning Week.* This is held annually often following the annual Transport Forum and is an opportunity for staff in the transport network to acquire new learning or to refresh their skills and remain at the cutting edge of sector knowledge.
- *Annual “State of the Transport Sector” Meeting.* These meetings provide an opportunity to share information from the Regions, the anchor, and transport staff in other units on work plans at the beginning of the financial year. Staff have found them useful for communication across Regions.
- *Brown bag lunch series on transport sector issues.* These are informal meetings organized by staff members to exchange ideas and share learning on transport topics of interest. At least eight are held during the year; they are normally well attended by transport staff.
- *Courses and workshops.* A number of internal and external courses and workshops are held throughout the year, depending on identified needs and demand. Typical courses are on the use of economic evaluation models; poverty and transport; and project implementation, supervision, and monitoring.
- *Formal staff training.* Although formal training is customized to the needs and aspirations of individual staff members, some courses have been recommended as particularly useful learning opportunities, such as the Senior Road Executives Program at the University of Birmingham in the United Kingdom. Funding is also set aside annually by the Board for such formal training, which typically comprises a contribution toward fees or travel but does not cover time costs.
- *Thematic groups work program.* Important recent outputs have been updates of the port reform toolkit, urban transport toolkit, and rail privatization database. There has also been work on poverty impact measurement and distributional issues of transport interventions. Also, some tasks in the social responsibility area have been completed; this area was constrained by a very small budget. Other outputs included inter alia a Technical Note on road asset management, a Transport Note on PPP in highway development, and work in the aviation (strategic partnership with ICAO) and road safety fields. In the latter case, the work has been partially funded through the Global Road Safety Facility.

ENDNOTES

Chapter 1

1. The estimate for the transport contribution of global GDP includes transport services, infrastructure provision, and management. Indirect contributions through energy use and vehicle manufacturing are excluded.

2. Information pertaining to IFC is taken from appendix D, which has been published separately (IEG 2007).

3. Numerous econometric studies have identified the significance of efficient transport studies supporting economic growth. See, for example, Dunkerley and Hine (2001), for a review of macroeconomic evidence. Also *The World Development Report* (World Bank 1994b, p. 15) gives a perspective on economic returns from infrastructure investment. More recent work can be found in an article by Dollar and Kraay (2002).

4. The concept of poverty is multidimensional. It is not only related to a low level of per capita income, but also to many other conditions, such as malnutrition, ill health, illiteracy, and lack of access to basic services. For an overview of various studies, see Liu (2005).

5. As of the cut-off date, 23 projects were not yet evaluated.

Chapter 2

1. Other relevant initiatives that have provided funding for transport projects include the Public Private Infrastructure Advisory Facility, the Global Partnership for Output Based Aid, the Cities Alliance, and the Global Environment Facility.

2. From its inception, the Bank has provided support to the transport sector. Before 1960 two-thirds of Bank lending for transport was concentrated on railway and waterborne transport, mainly in loans to Japan and Europe for equipment replacement and reconstruction following World War II. After that, the emphasis shifted to new infrastructure in developing countries, many of which had recently gained independence. In

1972 the Bank reviewed its transport strategy and shortly afterward began to focus more on institutional reform. The Bank played an important role in the concessioning of the railways in Argentina but was less successful with railways in Pakistan and ports in Brazil, where government commitment to reform was weaker. During this period, highway sector lending was increasing steadily, so that by the late 1970s it accounted for two-thirds of the Bank's portfolio. However, by the early 1980s, misgivings arose about the failure to adequately maintain many of these roads. In a 1988 policy paper, "Road Deterioration in Developing Countries: Causes and Remedies" (World Bank 1988), the Bank estimated that substantial road infrastructure had been lost because of inadequate maintenance in 85 developing countries. This led to greater focus on rehabilitation and maintenance as well as institutional reform by both the Bank and other concerned agencies. A number of fiscal crises had also reduced the resource base for transport sector funding, and this led to new financial instruments such as sector loans within multi-year public investment programs and, later, sector adjustment loans directed to addressing sector policy and management issues. An IEG review of rural road maintenance (IEG 1992) recommended more use of road maintenance optimization models and better monitoring and evaluation of such projects. Urban transport lending began in the mid-1970s with an emphasis on traffic management and the development of public transport. In some Latin American countries radical measures to give buses priority over private cars were successfully implemented, and this was documented in the Bank's "Urban Transport Sector Policy Paper" (World Bank 1986).

3. Public administration includes central government and general public administration, pensions and unemployment insurance, law and justice, compulsory health finance, and subnational government administration.

Chapter 3

1. The only high-income country is the Republic of Korea, which was severely affected by the Asian financial crisis. Some oil-producing states such as Kuwait and Iran are more focused on accessing technical knowledge than on investment funding.

2. In the last 20 transport PPARs sustainability was downgraded from the ICR assessment in 20 percent of cases and upgraded in 5 percent.

3. Some comparative figures for road projects in other multilateral organizations are Inter-American Development Bank, 82 percent; Nordic Development Fund, 85 percent; and Asian Development Bank, 87 percent.

4. The consequences of neglecting maintenance are outlined in the World Bank Operational Guidance Notes, TRN-4 June 2005. As an example, the South African National Roads Agency Ltd. has estimated that deferring a repair for 3 years costs six times as much to fix than if it were carried out immediately. If the repairs are deferred for 2 more years, repair of the road will be 18 times more expensive than it would have been 5 years earlier, when the maintenance was actually required. Minor defects, such as a blocked drain, if not attended to can result in the complete failure of a road section.

5. The expression of commitment was usually made through a Letter of Intent or Statement of Policy.

6. Regional cooperation between these institutions in the transport sector includes the Asian Development Bank and the Japanese Bank for International Cooperation and Development in Asia; the Inter-American Development Bank in Latin America; the European Bank for Reconstruction and Development; the European Investment Bank (EIB) in Europe and Central Asia; and the Islamic Development Bank, EIB, and the Arab Fund in the Middle East and North Africa. In Sub-Saharan Africa a number of donors are involved both on a project basis and through the SSATP Program, including the African Development Bank and a number of bilateral agencies from Europe and elsewhere.

7. Program-based approaches apply the same approach and philosophy as sector-wide approaches but are more flexible in application in that they can apply to any coherent program, beyond the conventional notion of a sector, and range in scope from the micro to the supranational levels. In all cases high levels of donor and country coordination are necessary to achieve program goals.

8. The review also considers selected presentations by Bank and outside experts made in conferences, and Transport Forums conducted by the Bank's Transport Sector Board.

9. The count of reports has been generated from the World Bank's ImageBank—the Web-based electronic repository of Bank documents using the search options of “transport” for sector, “1995–2005” for the time period, and “Publications and Research” and “Economic Reports” for document type. This count could be understated if staff has not been diligent in filing documents in the official system.

10. The Quality Assurance Group (QAG) of the World Bank conducts annual assessments of economic and sector work covering sector reports and economic reports.

11. Sector reports with primary focus on transport covered by QAG's Quality of ESW Assessments: Russian Federation: Transport Strategy Update (fiscal 1998); Chad: Transport Sector Strategy; Guinea: Transport Poland: Transport Strategy (fiscal 1999). No transport sector reports were included in the fiscal years 2000, 2001, and 2002 assessments.

12. The course on Privatization and Regulation of Transport Infrastructure Services held in April 2001 resulted in a 44 percent increase in learning by the participants based on the level-two test administered to them.

13. Perhaps the most notable is the University of Birmingham (United Kingdom) Senior Executive Program.

14. Interviews with transport specialists revealed that many are so busy that they often do not even have the time to keep up with the latest knowledge in their own fields of expertise. Some also made a plea for stronger ties with research institutions and more joint initiatives with other sectors.

Chapter 4

1. The four main variants of PPPs are joint ventures, leases (under which a private party operates equipment or facilities leased from the public sector), and two types of long-term concession, normally referred to by the acronym DBFO (design, build, finance, and operate) or BOT (build, operate, and transfer). The main difference between the two is that under the latter, the concessionaire raises revenues directly from users of the services, whereas under the former, remuneration

comes from the government budget as users receive the services. All four partnership variants involve private capital financing, normally raised against the security of the cash flow to be generated by the services provided. They usually also involve at least some degree of government capital contribution (for example, in the form of land or existing facilities made available to the private operator).

2. The PPI database can be found at <http://ppi.worldbank.org>.

3. Investments recorded in the PPI database represent commitments and are invariably overstated. Many projects lapse or investment commitments are subsequently renegotiated downward. The total investment recorded also includes the sometimes significant portion of public sector investment committed by government or sourced from international financial institutions.

4. Analysis of Chilean Central Bank data is reported in Sharp (2005).

5. Freeports or entrepôt centers are focused on intermediary trade and transshipment. Goods in such centers are often duty free and reexported after value has been added to the products locally.

6. IFC finances only a portion, usually not more than 25 percent of the cost of any greenfield project. Most IFC-financed projects require other financial partners. One way in which the IFC mobilizes private sector finance is through the sale of participations in its loans; this is known as the B-loan program. More than 190 commercial banks and institutional investors currently participate in this program. Other sources are sponsor equity loans, investments by local banks, technical partners, and other local and international investors.

Chapter 5

1. Sunk investments are costs that have already been incurred and that cannot be recovered to any significant degree.

2. The budget approach is the most used worldwide, especially in Europe. Road expenditures, including maintenance, are considered public expenditures that need to be covered by the national budget, and in many countries this extends to regional and local budgets as well. Except when roads are congested, roads are a public good to be financed out of general taxation. Fuel taxes, vehicle registration fees, and other levies are taken as general taxes that finance the budget. Alloca-

tion of the budget to the road sector results from a political process that assigns priorities and permits flexibility.

3. The road fund approach is used in the United States, Japan, New Zealand, and many developing countries, especially in Africa. Road users pay user charges, mainly in the form of a fuel levy. Revenues from these charges are, in principle, allocated to road expenditures, especially maintenance. The users-pay approach postulates that the allocation of resources will be more cost effective and road works will have lower unit costs than under the budget approach.

4. Early road funds in the late 1970s and early 1980s were of the first-generation type, merely a line in the national budget labeled as a road fund.

5. The IMF, while expressing reservations, agreed to review the merits of road funds on a case-by-case basis and to strive for closer coordination in cases where disagreements arose.

6. The leaders of the African Development Bank, Asian Development Bank, Inter-American Development Bank, EIB, European Bank for Reconstruction and Development, the IMF, and the World Bank met on February 18, 2006, to discuss a joint approach to the problems of corruption. They agreed to standardize the definition of corruption, to improve consistency of their investigative rules and procedures, to strengthen information sharing, and to ensure that compliance and enforcement actions taken by one institution are supported by all others.

7. The lead for the audit came from an earlier investigation into allegations of abuse of consultant trust funds; three Bank staff were terminated and 11 companies debarred.

Chapter 6

1. See <http://1nweb18.worldbank.org/oed>.

2. See http://www.princeton.edu/~ina/images/infographics/transportation_big.jpg.

3. However, as the IEG evaluation update of heavily indebted poor countries points out, debt reduction alone is insufficient to ensure debt sustainability and improved net transfers for poverty relief. Additional supportive measures by both governments and external partners are usually necessary.

4. The Bank has used two criteria to define fragile states: a per capita income falling within the threshold of IDA eligibility, and performance of 3.0 or less on both the overall Country Policy and Institutional Assessment

rating and that rating for Public Sector Management and Institutions.

5. See <http://www.transparency.org>.

6. The African Capacity Building Foundation is an independent institution in Harare, Zimbabwe, that provides grants to national and regional institutions and programs to help strengthen economic policy analysis and development. It was established in 1991 by the Bank, together with the African Development Bank, and the UN Development Programme.

Chapter 7

1. Early projects from the first two QAG exercises were excluded because they contained no narrative commentary explaining the scores of the rankings assigned.

2. There has been some attempt to look at the distributional effects of urban rail projects in Brazil (Rebelo 2004), but further research is needed. The issue of the wider impacts and multiplier effects is more complicated than it appears at first. Within the Bank earlier work attempting to estimate total national income increments associated with rural road investments was found to be too difficult to apply as a formal appraisal tool, partly for data and forecasting reasons and partly because it concentrated on physical outputs rather than service accessibility. But there is also the more fundamental theoretical question of whether the extent to which and the circumstances in which the measured user benefit understate the true total benefit. The work of Burgess and Venables (2004) has taken the issue forward a little in empirical terms. The multiplier effect is a quite different issue concerning macroeconomic consequences and depends largely on the overall level of employment of resources in the economy.

3. A few “outlier” ERRs were removed from the sample. For example, there were instances of small junction improvements that would have an extremely high ERR but would distort the overall picture.

4. Some countries now use 12 percent.

5. On April 24, 2004, the Inspection Panel received a Request for Inspection related to the India-Mumbai Urban Transport Project. This request was submitted by the United Shop Owners Association on behalf of 118 residents of Mumbai who claimed to be adversely affected by the project. This was accentuated by a further submission on June 24 by three nongovernmental organizations on behalf of a further 350 residents from a separate neighborhood. On June 29, 2006, IBRD and IDA restored India’s right to make withdrawals

from the loan and credit following compliance or significant progress on the conditions under the suspension of disbursements.

Chapter 8

1. Another example is the Oslo toll cordon introduced in the early nineties, which has contributed to reducing traffic and financing new roads and “environmentally friendly” tunnels under the downtown area as well as new public transport infrastructure.

2. See <http://www.ieta.org/ieta/www/pages/download.php?docID=174>.

Appendix A

1. The World Bank Regions are Sub-Saharan Africa, East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, and South Asia.

Appendix B

1. When parts of the former London Transport were sold and route franchises were competitively tendered, costs per bus-km were halved in real terms between 1985 and 1997. Cox and Duthion (2001) record that annual traffic reached an all-time peak of 1.3 billion passenger journeys in 2000. This has been substantially boosted by the introduction of the central city access charge for cars in 2003.

2. In 2005 the government, with the support of the Bank, embarked on a major highway maintenance and rehabilitation program. The program has been assigned pilot project status under a special arrangement with the IMF that allows expenditures allocated to high-priority projects to be excluded from the estimate of the government’s primary fiscal surplus, thus freeing them from binding financial constraints.

3. The experience of Brazil and other Latin American countries in privatizing public transport services has shown that concessioning will not suffice. The countries with the greatest success in attracting private investment during 1996–2001 (Chile, Colombia, and Bolivia) were precisely those in which overall public investment in infrastructure as a percentage of GDP has remained high.

4. The participants in the Ghana road sector evaluation were the Japan Bank for International Cooperation, Kreditanstalt für Wiederaufbau, the EU, the Dutch government, Arab Bank for Economic Development in Africa, Organization for Petrol Exporting Countries,

USAID, African Development Bank, World Bank, and Danish International Development Assistance.

Appendix C

1. In 2005, approximately 4,200 transport or logistics items made up 13 percent of total on-line investment information content.

2. The share of MIGA guarantee gross exposure issued per fiscal year for infrastructure projects overall increased from an average of 17.6 percent (1995–99) to an average of 31.7 percent (2000–06).

3. Overall, the infrastructure sector accounted for 41 percent of MIGA's outstanding portfolio.

4. One project in the transport sector was cancelled by the clients because of a disagreement with MIGA. MIGA, the sponsors, and the senior lenders could not agree on technical legal issues surrounding the securities pledge. MIGA terminated guarantees for another project related to nonpayment of premium by the guarantee holders. This termination occurred within 6 months from issuing the contracts of guarantee.

5. Many of these issues are reflected in MIGA's *Guidelines on Assessing the Development Impact of Operations Supported by MIGA Guarantees* (2004), which contains a section on assessing operations where the public sector is the client.

Appendix D

1. When IFC syndicates a loan, IFC is the sole contractual lender, acting on behalf of both itself and so-called B-loan participants. Participation agreements are signed between IFC and each participating financial institution in the B-loan. The participant's relationship with the borrower is therefore indirect through IFC, with IFC as the sole lender of record and administrator of the loan. The participants' involvement, however, is known to the borrower and is included in any publicity for the transaction.

2. Each year, IFC's investment departments evaluate a random sample of investments that have reached early operating maturity and rate each operation on nine indicators. IEG independently reviews these reports and project files and verifies each rating (or rerates it as appropriate) to ensure that evaluation standards are applied consistently throughout IFC. The results described here comprise 22 projects in the transport sector evaluated from 1996 to 2004, which is a representative sample of approximately 50 percent of the 43 qualifying investments approved by the Board between 1990 and 1999 and subsequently disbursed. Qualifying investments are those made in new or follow-on projects and exclude restructurings.

3. Note that investment outcome is a measure of gross profit contribution quality at the level of an individual investment, is sample-based, and therefore does not signify overall portfolio profitability. As is common for any investment portfolio, the overall profitability of IFC's investments in transport is driven by large gains or losses on a small number of investments.

4. The performance differences that are remarked on in the text are statistically significant to at least the 5 percent level, even based on the relatively small sample of evaluated transport projects. Some caution should be exercised, however, in quoting success rates, given that a change in the rating of one project would account for an approximate 5 percent swing in the overall success rate.

5. Net profit contribution includes that from investments committed before 1990 that were active at some point in the period fiscal 1990–2005.

Appendix E

1. The transport "anchor" acts as secretariat to and supports implementation of the work program of the Transport Sector Board. Its specialists also provide operational support to transport staff.

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