VIETNAM'S INFRASTRUCTURE CHALLENGE

Workshop Edition

Infrastructure Strategy

Cross-sectoral issues

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As Vietnam becomes richer it faces challenges in adapting its infrastructure policies and institutions. While the old challenges of providing basic services to all remain, new challenges are emerging, such as accessing new sources of finance, refining planning processes, preparing for rapid urbanization, improving the efficiency of infrastructure service providers, developing stronger institutions to encourage private finance of infrastructure or direct private provision of infrastructure, and developing more targeted approaches to poverty alleviation.

This report on Infrastructure Strategy – Cross Sectoral Issues is one of six volumes dealing with *Vietnam's Infrastructure Challenge*. It deals with cross-sectoral issues that are common to all infrastructure sectors, and provides an overview of recent achievements and emerging challenges. Other volumes deal with Water and Sanitation, Electricity, Transport, Telecommunications, and Urban Development. The work for these volumes was carried out between 2004 and 2006 by World Bank staff and consultants.

This workshop edition of the report has been prepared as a means of inviting feedback on its contents from the Government and other stakeholders, prior to final publication.

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Abbreviations

ADB	Asian Development Bank
BCC	Business Cooperation Contract
BOT	Build-Own-Transfer
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
DAF	Development Assistance Fund
EVN	Electricity of Vietnam
GSO	General Statistics Office of Vietnam
HIFU	Ho Chi Minh City Investment Fund for Urban Development
IBRD	International Bank for Reconstruction and Development (the World Bank)
ICOR	Incremental Capital-Output Ratio
IDA	International Development Association (the World Bank)
IPP	Independent Power Producer
ITU	International Telecommunications Union
JBIC	Japan Bank for International Cooperation
LDIF	Local Development Investment Fund
MARD	Ministry of Agriculture and Regional Development
MCF	Marginal Cost of Public Funds
MOF	Ministry of Finance
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
MTEF	Medium Term Expenditure Framework
OBA	Output Based Aid
ODA	Official Development Assistance
PER-IFA	Public Expenditure Review and Integrated Fiduciary Assessment
PIP	Public Investment Program
PPI	Private Participation in Infrastructure
SEDP	Socio-Economic Development Plan
SOCB	State-Owned Commercial Bank
SOE	State-Owned Enterprise
VHLSS	Vietnam Household Living Standards Survey
VITRANSS	Vietnam's Transport Strategy Study
VND	Vietnamese Dong
VNPT	Vietnam Post and Telecommunications Corporation
VRA	Vietnam Road Administration
WDI	World Development Indicators

Executive Summary

Over the past decade Vietnam has made spectacular progress in GDP growth and poverty reduction. Per capita growth has averaged 5.9%, the eighth highest in the world over the decade. Since 1990, poverty measured at the $1 a day threshold has fallen from 51% of the population to just 8%. A critical part of this success has been a high level of investment in infrastructure. Around 9-10% of GDP has been invested in transport, energy, telecommunications, water, and sanitation in recent years, a very high level of infrastructure investment by international standards. Microeconomic studies provide evidence of a strong link between this infrastructure investment and Vietnam's growth and poverty reduction. The road network has more than doubled in length since 1990, and its quality has improved substantially. All urban areas and 88% of rural households have access to electricity. The number of fixed and mobile phones per 100 people has multiplied nine-fold since 1995. Access to improved water grew from 26% of the population to 49% between 1993 and 2002, and during the same time access to hygienic latrines grew from 10% to 25% of the population.

Vietnam's existing infrastructure strategy has been a success. And yet, the strategy needs to evolve and adapt. Various developments in the economy pose new challenges in four areas: financing, planning, improving efficiency, and addressing poverty.

Rapid growth has brought with it rapid increases in demand for infrastructure investment. Despite high investment in electricity and roads, blackouts still occur, roads are increasingly congested, and urbanization and industrialization have brought environmental degradation. Productive investments can be identified across the infrastructure sectors requiring even higher levels of finance than in the recent past. In the next decade Vietnam is likely to lose much of its concessional aid financing as Vietnam's GDP per capita exceeds donor thresholds. Vietnam must develop new sources of finance to replace concessional financing and to meet increased investment needs. Greater use of private finance would reduce the burden on public finance, and could potentially release funds for use in other sectors. Among financing sources there is a need to shift from sources that are ultimately funded by taxpayers towards sources that are ultimately funded by users.

The planning process needs to adapt to achieve a more refined assessment of investment priorities, and needs to better integrate budgeting decisions with investment plans. There are general problems of horizontal coordination across ministries and vertical coordination across levels of government. If not resolved, these problems are likely to become more serious as Vietnam's urbanization increases, since urban development requires rapid responses to market-led developments and the needs of new immigrants.

Across all infrastructure sectors, in project selection, investment, operations, and maintenance, there is room for efficiency improvement. As the stock of infrastructure increases in Vietnam, the potential gains from efficiency improvements will increase.

Realizing efficiency improvements is one of the great challenges around the world, with much attention focused on reforms that enhance decision-makers incentives to maximize profits, which implies keeping costs down. The possibilities include corporatization of state-owned infrastructure enterprises, introducing greater competition, introducing greater private participation, improving regulatory incentives for efficiency, and reducing corruption.

Vietnam's approach to the reduction of poverty has been one of general reliance on growth, but with investments being geographically spread to ensure that all regions participate. This approach has worked well in the reduction of general levels of poverty. But pockets of poverty remain in rural areas where service provision is costly, and new pockets of poverty are emerging in urban areas as a result of migration. Careful review across infrastructure sectors is required to determine how existing subsidies could be better targeted to address these new concentrations of poverty, without wasting poverty alleviation funds on the non-poor.

This report deals with cross-sectoral infrastructure issues. Chapter 1 introduces the main challenges, Chapters 2 to 5 deal with the four main issues identified above—financing, planning, service efficiency, and poverty—and Chapter 6 concludes with a discussion of reform prioritization. The report is accompanied by five further volumes dealing with transport, electricity, telecommunications, water and sanitation, and urban planning issues.

Investment Needs and Financing

Table sets out estimates of the recent levels (ca. 2002/2003) of investment in infrastructure, and the financing sources for that investment. Overall, infrastructure investment has accounted for roughly 9.4% of GDP in recent years.

Looking to the future, sectoral plans and forecasts suggest future annual infrastructure investment summing to 11.4% of GDP, an increase of 2% of GDP over recent levels:[1]

- In September 2005, the Ministry of Transport estimated future financing needs in a Medium Term Expenditure Framework, which matched proposed investment with potential financing sources. The proposals

Table 1:
Sources of Infrastructure Investment Finance (c.2002/2003)

Finance Source	Transport (% GDP)	Electricity (% GDP)	Telecoms (% GDP)	Water (% GDP)	Total (% GDP)	Percentage of Infrastructure Financing
Users		0.9	0.3	0.1	1.3	14
ODA	1.7	1.2	0.3	0.3	3.5	37
Budget	0.8	0.1		0.1	1.0	11
Govt. Bonds	1.2				1.2	13
SOCBs	0.1		0.2		0.3	3
Private	0.2	1.2	0.6		2.0	21
Community				0.1	0.1	1
Total	4.0	3.4	1.4	0.6	9.4	100

Source: See Table 2.2.

1. In 2005, 2% of GDP was about VND 15,250 billion (US$ 966 million). Estimates of investment as a proportion of GDP assume that GDP grows at 7% annually.

for capital spending in 2006 to 2008 amounted to VND 69,186 billion (US$ 4.3 billion) over the three years, and averaged 4.1% of GDP per year.

- In the electricity sector, investments required to meet the Fifth Power Master Plan amount to VND 215,078 billion (US$ 13,743 million) in the years 2005-2010, or about 3.9% of GDP. This figure is now regarded as an underestimate, because of higher than expected demand growth in recent years. The financial model used by EVN to plan future investments suggests that during 2005-2010 capital expenditure will amount to VND 237,246 billion (US$ 16 billion), which in annual terms is about 4.7% of GDP.
- In the water and sanitation sector the Government has set coverage targets to achieve its 2010 development goals. The targets are 85% for urban water and sanitation, and 75% for rural water and sanitation, which would require investment of VND 57,547 billion (US$ 3.62 billion) during 2005-2010, or 1.2% of GDP annually.
- In the telecommunications sector, in October 2005 the Ministry of Post and Telematics adopted a target of 32-42 total telephone lines per 100 population by 2010. To achieve 35 lines per 100 population would require about VND 57,000 billion (US$ 3.6 billion). Spread over the period 2006-2010, this would amount to around 1.4% of GDP annually.

The forecasts should not be interpreted as an endorsement of sectoral investment proposals. Closer analysis of the individual sector plans may find ways of economizing on investments, increases in user tariffs could reduce demand and hence defer investment, and budgeting decisions could result in indefinite deferral of some investment proposals. Nevertheless, investments dealing with electricity, water, and telecommunications access targets are largely unavoidable if the government's stated objectives are to be met and should generally yield high returns. Failure to keep pace with the growth of demand for electricity would likely have high economic costs. And the transport investment proposals have already been prioritized to match existing sources of finance.

So, for purposes of thinking about finance mobilization, a figure of 10-11% of GDP seems reasonable. Nevertheless, a more definitive appraisal of the appropriate level of investment would require a concerted effort to monitor investment and maintenance activities and evaluate their financial and economic returns.

The proposals for increased investment suggest a case for mobilization of new finance sources. This case is strengthened with recognition that Vietnam could commence "graduation" from concessional donor funding between 2010 and 2013. Donors currently finance around 37% of Vietnam's infrastructure investment. The present value of government repayments on concessional loans from the World Bank is about 20% of the borrowed funds. As this concessional element of donor funds is removed, countries typically reduce their borrowing from donors. Developing alternative finance sources will take time, so there is a need to start the process now.

Within the existing level of investment there is significant room to increase the proportion of non-budgetary and non-ODA financing. This would free up budget and ODA resources, permitting either an increased level of infrastructure investment or spending on other government priorities. Moving to alternative financing sources would help to shift the ultimate payment burden towards consumers, through either direct user charges or financing backed by future infrastructure revenues. In turn, this would help to slow demand growth and hence restrain the investment burden. And alternative financing sources may also bring greater commercial discipline to the selection of projects. Giving higher priority to high-return

projects would help to maximize the social return on infrastructure investment.

Need to Increase Cost Recovery

A prerequisite for alternative financing mechanisms is cost-covering tariffs. Ensuring full cost recovery through tariffs opens up a range of financing options that are otherwise generally impossible. The proportion of costs recovered differs from sector to sector, and only in some sectors can it be increased.

- The principle is well established in telecommunications and electricity.
- Charges associated with road transport, such as vehicle registration and petrol tax, more than cover road maintenance costs, but do not cover the full cost of capital invested. There is scope to increase these charges, and there are many possibilities for revenue to be raised from toll-roads.
- In the water sector, cost-covering tariffs have been embraced in the water sector in Ministry of Finance guidelines for water tariffs, and the principle is being considered for implementation in a draft Government decree. But current water tariffs typically only cover operational costs, while capital costs can occupy 80% of total costs of a water utility. Considerable tariff increases would be required in the sector to achieve full cost recovery.
- In areas such as sanitation, waste water treatment, and solid waste management, the ability to raise revenues is constrained by consumer willingness to pay. The social benefits of these services typically exceed private willingness to pay, so a level of budget support is appropriate. In these sectors the key to mobilizing alternative financing is to provide clear and predictable rules for the allocation of budget support, so that the future public revenue stream provides sufficient security to mobilize investment. It is possible to combine user payments with budget revenues to meet the costs of service by means such as competitive bidding for service delivery on a least-subsidy basis.

Other Sources of Finance

Wide-ranging reforms are required to develop stronger institutions for infrastructure finance.

Governance reforms are needed for the **state-owned commercial banks** to eliminate informal pressures for "policy-lending", otherwise known as lending to projects that are not commercially justified. In any case, direct lending by banks is likely to play a relatively small role in infrastructure financing, because of the mismatch between short-term deposits held by the banks and the long-term needs of infrastructure.

Bonds are a useful form of financing for infrastructure, since they can provide long-term financing. The Government is making good progress in this area, but more needs to be done in the way of information disclosure concerning the ability of public authorities to repay debt; and to increase the secondary activity and liquidity of the government bond market through enhancements to the legal framework, improved debt issuance and management by the Treasury, and strengthened intermediary functions. As a means of limiting fiscal risks it would be desirable for the Government to shift from general obligation bonds (backed by taxation powers) to revenue bonds (backed by infrastructure revenues) where possible.

Decentralization has shifted greater investment responsibilities to **provincial governments.** The extent to which these governments have the financial resources to meet their new responsibilities is unclear. The system of transfers from the central government should not undermine the incentives of local governments to raise their own revenues.

Limits on their borrowing should be assessed based on their ability to repay debt, rather than the current limits based on investment budgets. An expansion of property taxes could serve as a useful tax base to efficiently consolidate a variety of existing charges, and to provide a reliable source of local government revenue.

Both central and provincial governments have established **specialist investment institutions**, with an emphasis on infrastructure investment: the DAF and the 13 local development investment funds (LDIFs). Rationales for these institutions include pooling finance from a variety of sources (reducing the risks taken by the individual financing sources), and providing centers of technical capacity for developing infrastructure financing schemes. But:

- They also expose the governments to certain fiscal risks in the event of financing defaults. Measures are needed to distance these institutions from the governments through clearer governance arrangements, install professional management practices, and improve reporting is required to ensure that the institutions' liabilities are taken into account in assessments of the government's fiscal position.
- In the case of the DAF, on-lending occurs at subsidized rates. If investment subsidies are to be offered, differing levels of subsidies should be offered to different sectors in accordance with the extent of externality or other public finance rationale, and according to objective criteria.

Equitization is a potential means of raising a limited amount of infrastructure financing. Equity inputs can be used to increase investment, or to retire public capital for use elsewhere. But the highest financing benefits will not be realized if investors discount the price they pay for the risks arising from inadequate disclosure of accounting information, or if investors are unable to obtain management control rights.

There is great potential for more **private investment** in infrastructure. But taking advantage of this potential requires careful transaction preparation and sound regulatory environments. Vietnam should experiment more with private financing than it has in the past, developing a number of transactions across sectors, using competitive bidding, and carefully monitoring the lessons learned.

Allied to the use of private financing, Vietnam should develop a **risk management framework** that permits the appropriate use of contingent liabilities (such as guarantees) in attracting finance, but monitors and limits the government's exposure.

Finally, **efficiency improvements** in procurement and operation of infrastructure services can be thought of as an alternative to the mobilization of finance. Improvements in efficiency can increase output from existing and proposed facilities, and thereby lessen the need for new investments.

Planning and Coordination

The importance of economic criteria for choosing between investment projects will increase as the infrastructure stock increases. Identifying high return projects was easy when much of the population lacked access to infrastructure services. As the access rollout advances, choosing between investments that upgrade the quality of service will become more difficult.

Better processes need to be developed for assessing investment priorities across sectors and across projects. Ideally this would entail estimation and monitoring of rates of return, permitting an ordering of projects that could be achieved within financing constraints. A serious effort to build capacity in assessing economic and financial rates of return will take time. In the short term, a high priority should be to

improve the quality of feasibility studies, providing decision-makers with better information about the relative merits of proposed projects.

The link between Vietnam's socio-economic development goals and investment planning could be improved with the use of a results framework which specifies goals to be achieved (e.g. improve access to hygienic sanitation), strategies for achieving these goals (e.g. investment in sewerage systems in urban areas) and key performance indicators measuring progress towards the goals (e.g. number of urban households with sewerage connection). The goals should be comprehensive, and projects would only be approved if they mapped into the strategies. Project financing decisions could provide resources to monitor performance indicators.

With improved criteria for distinguishing between projects, a framework within which to consider projects' potential contribution to development goals, there will then be a need for a governmental process that is capable of allocating funds to the highest priority projects, with lower priorities receiving funding only to the extent of available funding. Projects that could be financed privately should be given low priority for receiving public funding.

Budgeting processes need to be better integrated with investment planning. There has been a problem with budget discipline in the past, with transport projects being commenced without budget financing authorization. Questions are also raised about whether an appropriate balance is being struck between new investment and maintenance, particularly in the transport sector. The Transport Ministry's recent experience with preparation of budget proposals within a medium-term expenditure framework (MTEF) has been a useful development in terms of fitting proposed investments within the available financing envelope and giving greater consideration to maintenance costs. The MTEF experience should be developed to extend to non-budget finance sources, and to provide better information about the trade-off between new investment and maintenance (ie the relative rates of return earned by spending in these areas).

The need for more refined appraisals of rates of return to different investments extends to an assessment of the spatial balance of investments. Vietnam has done well over the past decade, balancing high-return investments in major centers of economic activity with rural investments aimed at reducing poverty, and achieving high aggregate growth with only a slight increase in inter-provincial inequality. But migration to major urban centers has been important in restraining inter-provincial inequality. Continued migration may overwhelm planning capacities in the major centers resulting in congestion, inadequate provision of basic services, and environmental degradation. One response would be to provide much more resources to urban planning in the major cities. An alternative would be to divert migration to mid-sized cities, but this would require wide-ranging policies extending beyond mere spatial and sectoral master plans. Assessing whether such policies might be worthwhile would require much better information about the relative social rates of return across different urban areas.

Urban planning is poorly managed at present. Centrally prepared spatial plans set unrealistic standards, and partly for this reason are frequently ignored in practice. There needs to be more flexibility in centrally developed spatial plans, and more enforcement of those plans at the local level. Ideally spatial planning should be devolved to a more local level, and should be more responsive to local communities' desires and market developments.

There are general problems of coordination across government ministries, with a need to improve coordination between spatial plans,

financing constraints, and sectoral master plans for specific types of investments, particularly in urban areas. Greater effort needs to be made to integrate environmental issues and assessments of social impacts (particularly resettlement issues) into the overall planning environments. While environmental impact assessment may occur for individual projects, plans for a series of investment projects similarly need to be subject to assessment. While individual projects may have only marginal impacts, and thus be approved, the aggregate effect of a series of projects may be much larger, and require modification of investment plans.

The process of decentralization is ongoing, with a gradual reallocation of spending and investment planning responsibilities from the national government to provincial and local governments. Decentralization brings various risks of failure to coordinate between lower level governments (eg failure to take account of environmental effects on neighbors, or failure to coordinate investments). There is a need for the central government to monitor areas requiring coordination and to develop fiscal tools (such as matching grants) that would help to coordinate sub-national decisions with national objectives.

Efficiency

In general, Vietnam's infrastructure services are provided relatively efficiently. But as in all countries, there is room for improvement in reducing the costs of service. There are various mechanisms that could be used to provide stronger pressure for improved service.

Public Infrastructure Enterprise Governance. Central to improving efficiency is a governance structure that improves the focus on the commercial objectives of increasing revenues and reducing costs.

These are the basic goals of private enterprises, and the governance structures that are appropriate to these goals are the structures developed for private enterprises. Many governments have "corporatized" their public enterprises by subjecting them to private corporations law. In Vietnam, subjecting infrastructure enterprises to the proposed Unified Enterprise Law may help to install the basics of corporate governance and should be a minimum step. Additional possible measures include specific statements of corporate objectives, and additional reporting beyond that required by the Enterprise Law.

Governments typically have additional non-commercial goals for their infrastructure enterprises, and these can be achieved by explicit contracting between the Government and the enterprises, with payment for particular services provided.

Competition is the economic force most likely to deliver sustained efficiency improvements. But the possibility to introduce competition is limited in most infrastructure industries. Telecommunications and electricity generation are exceptions.

In telecommunications international experience strongly suggests that the speed of network rollout is accelerated by greater competition. Several new entrants have been authorized to compete with VNPT in fixed line and mobile services, but VNPT remains dominant. Effective regulation, in particular spectrum management and resolution of interconnection disputes, will be important in facilitating the progress of the new entrants. Faster progress could be made by allowing the entry of foreign firms. In this respect, the United States has obtained an early advantage, obtaining preferential access for its firms under a Bilateral Trade Agreement. But even these advantages limit foreign ownership to 49% and 45% in the mobile and fixed line services markets. These limits may unnecessarily inhibit market entry.

The 2004 Electricity Law sets out plans for a phased transition over 20 years to direct

competition in electricity generation, with eventual choice of generators for consumers. There are various obstacles to the implementation of these plans, including the difficulty of encouraging private investment in IPPs (a major sectoral priority) when the future market structure is uncertain. Managing the transition to a competitive electricity sector will be one of the most difficult policy challenges in infrastructure.

Private participation. In most other infrastructure sectors, competition can only be introduced in the form of "competition for the market": competitive bidding among private investors for a the right to provide an infrastructure service over a fixed period of time. Done well, with well-prepared competitive bidding and appropriate regulatory environments, concessions, leases, and management contracts can be strong tools for performance improvement as well as investment financing.

Vietnam already has experience in the use of BOTs, but at least some of the existing BOTs have been negotiated with a preferred operator. Competitive bidding would provide a higher probability of minimizing procurement costs. A number of BOTs have been negotiated with state-owned construction companies. While local financing has advantages in terms of foreign exchange risks, the use of foreign enterprises with specialist infrastructure experience could provide more ideas for management improvement and utilization of new technology. And a difficulty with state-owned enterprises is that weak governance structures may provide weak commercial incentives. There is scope for greater openness toward foreign private enterprises in infrastructure investment. Vietnam is currently revising its BOT decree. A revised decree should entrench a requirement for careful preparation and competitive bidding of BOT contracts.

Beyond the construction of new facilities, various forms of public-private partnerships can help to improve efficiency of existing facilities. Vietnam should conduct pilot projects across different sectors to gain experience in the use of public-private partnerships other than BOTs. An effective process would entail a pipeline of projects, and a dedicated unit associated with the development of public-private partnerships.

Equitization, the sale of shares primarily to workers and managers, has been used as a tool for efficiency improvement in many state-owned enterprises. However, the worker motivation incentives that have been effective in smaller enterprises may be weaker in large infrastructure enterprises, where there are greater possibilities to profit from the efforts of others (free-riding). Accordingly, it is important that equitization of infrastructure enterprises should involve sales of controlling interests to general investors, and that it be supplemented by mechanisms to provide stronger management incentives, such as stock exchange listing.

Regulation. One form of light-handed regulatory pressure for efficiency improvements is benchmarking. Vietnam has made significant progress in benchmarking water utilities, encouraging better performance by highlighting well performing companies that serve as examples for others. This experience could be copied in some other infrastructure sectors, for example urban environment companies, port operators, or electricity distribution operations. Greater attention to international benchmarking could also be used as a spur to improved performance.

More generally, performance standards and regulated prices, in addition to their implications for investment and financing, can be used as tools to improve infrastructure service performance. This is more likely to be effective in infrastructure enterprises with

stronger commercial focus, such as private firms. Getting prices right is a complex task, requiring specialist skills.

Regulatory institutional and capacity building is required, especially in the areas of cost auditing and economics (to set prices at efficient levels). A high priority is support for the newly established Electricity Regulatory Authority, since lessons learned here will have implications for other sectors. In the telecommunications sector, the Ministry of Post and Telematics' ownership of VNPT creates a conflict of interest in its regulation of the sector, for example in the resolution of disputes over access to VNPT's network by new operators. An agency independent of the Ministry would be desirable.

Addressing Corruption. Corruption raise the final costs of infrastructure services, and is a source of inefficiency. Opportunities for corruption arise at most stages of the infrastructure project cycle. In recent years Vietnam has been making greater efforts to address corruption. Recent reforms have focused on detection and punishment, but have been of general application. Closer review could identify particular infrastructure activities at risk, and develop appropriate responses. Reforms to increase competitive pressures in infrastructure are likely to complement measures against corruption, but should be buttressed by anti-collusion measures.

Poverty

Road and water investments are good means of targeting particular provinces in which rural poverty levels are high, suggesting a need to maintain high priority for these investments.

Urban poverty is likely to increase in coming years. Because of the pace of migration and urban development, addressing emerging urban poverty issues will require improvements in the local planning process to ensure that infrastructure networks are installed "just in time", and in the right places.

There are many different ways of subsidizing use of infrastructure services by the poor:

- Currently, Vietnam uses increasing block tariffs in water and electricity. While the details need to be studied carefully, such schemes typically provide greater subsidies to the relatively well-off, rather than the poor.
- It would be useful to refocus subsidies on connection, rather than consumption, since those with connections are typically less poor than those without connections.
- Output-based methods for subsidy delivery should also be explored. A classic output-based scheme involves competitive bidding among private operators for the right to provide a service (encouraging cost reductions in service provision), and payment of the subsidy only when the requisite outputs have been achieved (transferring the implementation risk to the private sector).

A general subsidy strategy should be developed for infrastructure services, identifying whether subsidies are to be delivered to the poor, and if so, how best to maximize the benefits of those subsidies.

Reform Prioritization

It would be difficult for the Government to implement all of the recommendations identified in this report simultaneously. Accordingly, there is a need to set priorities. Factors that could be taken into account in setting priorities include the extent to which particular sectors act as constraints to Vietnam's international competitiveness, simple estimates of the potential benefits of different sorts of reforms, and the administrative capacity of

different ministries to handle reform.

In the central ministries of Finance, Planning and Investment, and Construction, a major priority should be the development of improved mechanisms for project selection, monitoring, and evaluation. The central ministries could take the lead in cross-sectoral capacity building to improve the quality of project feasibility studies and monitoring and evaluation activities. The aim should be to obtain high quality economic analyses indicating expected and attained rates of economic return. These estimates should be used as central criteria in selection of projects for public financing and investment approval.

Chapter 3 highlights the need for a better integration of financial planning with other aspects of planning. A mechanism needs to be found by which available taxpayer funds are allocated to infrastructure projects where necessary, by which taxpayer funds are not involved where not intended, and which provides financing alternatives for socially profitable investments where taxpayer funding is not required. These processes should be tied to results frameworks providing strategies that link individual projects to development goals, and which should be prepared by sectoral ministries.

Reforms of capital markets identified in Chapter 2 will require a series of reforms, many within the responsibility of the Ministry of Finance. Among these reforms, preparing the way for private infrastructure investment is a particular priority, given the proposed importance of the private investment in the electricity sector and for its potential role in financing and improving efficiency in other sectors. Here the Ministry of Planning and Investment will have a key role. Reform of the BOT legal framework is one step, but much better project preparation and improved regulatory institutions will also be required. Efforts to build regulatory expertise could begin with improved emphasis on rules-based regulation within the public sector.

Among line ministries, the sectoral priorities differ in nature.

- In transport, where the emphasis has been on road building, increased attention must be given to road maintenance and maintenance of other transport infrastructure.
- In electricity, the private sector will play a large role in meeting new investment needs. Adequately preparing projects for private investment will be the biggest challenge in the coming years.
- In telecommunications, the priority should be to encourage greater levels of competition through greater private sector entry and entry by foreign firms and through improved regulation, particularly regulation of interconnection terms and conditions.
- In water and sanitation, investment targets will be driven by Vietnam's development goals. A contribution to financing will come from increased user tariffs, but particularly in sanitation where user willingness to pay is lower, there will be a need to determine an appropriate public contribution to investment and appropriate mechanism for it to be delivered.

1. Achievements and Challenges

Vietnam's overarching economic goals are to promote strong economic growth and to ensure that the benefits of growth are equitably distributed. In the infrastructure sectors these broad goals are supplemented by goals of providing universal access to basic services. This Vietnam Infrastructure Strategy provides a set of proposed policy reforms and actions aimed to improve the achievement of these goals. It proposes a framework under which Vietnam can better evaluate which investments to undertake, and how to finance them, how to improve the performance of infrastructure services, and how to target infrastructure interventions to the needs of the poor.

At first glance it may appear odd to suggest that Vietnam's approach to infrastructure should change. With infrastructure playing an important role in Vietnam's 7% economic growth rate and in the reduction of poverty, the Government's strategy over the past decade has served the country well. Of course, no matter how well the strategy has worked in the past, there is always room for improvement. But in addition there are important changes under way in the economy that demand refinements to the strategy for the years to come. Among the changes are the approaching end of concessional sources of finance, increasing urbanization, an emerging need for increased maintenance, and increasing inequality between provinces. These changes have implications for the sources of infrastructure finance, the way investments are planned, how infrastructure services are managed for efficient operation, and how the Government will address issues of inequality and poverty.

1.1. Growth and Poverty Reduction

Over the past decade Vietnam has been remarkably successful in stimulating growth and reducing poverty. The average rate of GDP growth in the ten years 1994-2003 was 7.4%, while average growth of per capita income was 5.9%.[2] Figure 1.1 compares Vietnam's growth performance with some of Vietnam's neighbors. It should be borne in mind that regional competition in terms of GDP growth is strong: Vietnam's average GDP growth in 1994-2003 was eighth best in the world.

A key factor in this success is considerable government emphasis on investment, and investment in infrastructure in particular. As seen in Figure 1.2, since 1997 infrastructure investment has outpaced GDP growth, boosting the economy's productivity. Table 1.1 illustrates that Vietnam's total investment and infrastructure investment have been high relative to other regional countries in recent years (and East Asian countries have high investment rates compared to the rest of the world). The Government's focus on infrastructure is illustrated by the fact that between 1997 and 2002 about 44 percent of total state investment was directed to infrastructure.[3]

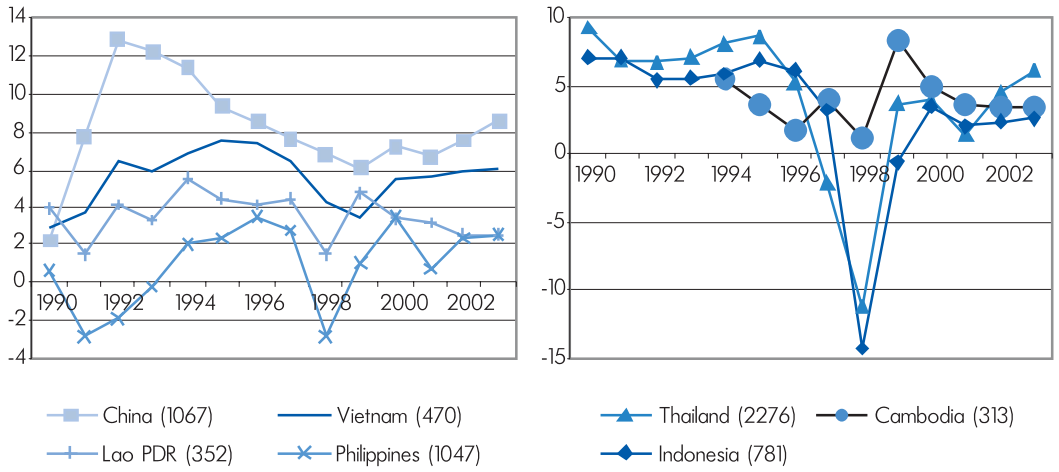
2. Source: WDI (April, 2005).

3. Source: Government Statistics Office. State investment includes the following categories: State budget, State credit and owned outlays by state enterprises.

Vietnam's investment strategy has played a crucial part in delivering economic growth. There is no real doubt about this. Increasing the economy's capital stock boosts output. The size of the boost is determined by the marginal productivity of capital and by the size of the increase in the capital stock. Numerous micro-economic and macro-economic studies have demonstrated high rates of marginal productivity of infrastructure; and Vietnam has had large increases in the stock of infrastructure by comparison with other countries. Even if other matters were the ultimate causes of growth, lower levels of infrastructure would have severely constrained Vietnam's growth potential.[4]

The linkage between large-scale infrastructure and growth has been confirmed in micro-economic studies. In 2003, the Government and international donors undertook a comprehensive review of large-scale infrastructure investment in the country in preparing the Comprehensive Poverty Reduction and Growth Strategy (CPRGS). The review examined the socio-economic impact of a number of key large-scale infrastructure projects, including the improvements to the National Highway No. 1, the My Thuan bridge, the Hanoi-Hai Phong

Figure 1.1: Growth of GDP per capita 1990-2003

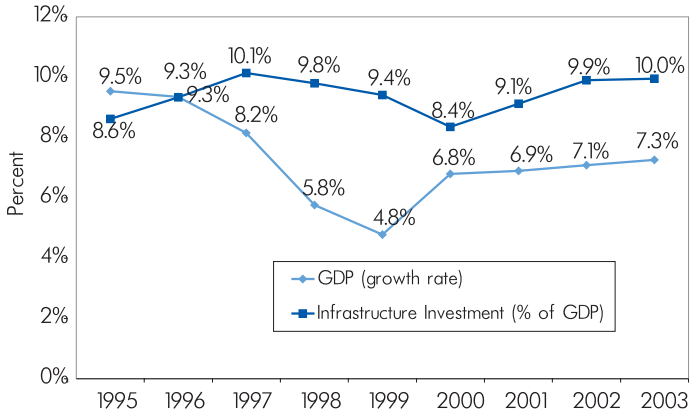


Source: General Statistics Office (GSO). Infrastructure investment includes transportation, telecommunications, water, gas and electricity

4. In the standard Solow-Swan model of economic growth the economy is specified as a production function $Y=AF(K,L)$, where Y is output, A is a technology factor, F is a concave function, K is the capital stock and L is the labor stock. There is a mechanical boost to output when K is increased exogenously, which in the short term shows up as growth. In the longer term, however, the growth rate is given by $g = a + n$: growth is the sum of the rate of technological growth plus growth of the labor force. After a short term boost to the growth rate from increased capital accumulation, the economy continues to grow at its steady state rate, g, albeit at a higher level of GDP. Issues of theoretical debate include: whether higher levels of infrastructure boost a, the rate of technological/organizational innovation, and thus the long term growth rate; and whether underlying institutions explain why some countries invest in infrastructure more than others (in which case it is institutions not infrastructure that "cause" growth). A more empiric question in Vietnam is the extent of the relative contributions to growth of capital accumulation versus other contributions, such as agricultural reform or opening up to foreign trade. But there is little doubt that infrastructure investment has played a significant role, at least in the short term.

My Thuan bridge

Figure 1.2: Growth and Infrastructure Investment, as percent of GDP



Source: General Statistics Office (GSO). Infrastructure investment includes transportation, telecommunications, water, gas and electricity

transport corridor (see Box 1.1) and the North-South 500 kV electricity transmission line (GRIPS Development Forum, 2003). Overall, the study confirmed the critical role played by trunk infrastructure in opening up new business opportunities, and promoting income diversification and off-farm employment. The study also showed that trunk infrastructure facilitated the spread of economic linkages between growth centers and their surrounding rural areas, proving the vital importance of connecting remote areas with power grids, and trunk roads with feeder roads to achieve poverty-reducing growth.

Strong growth has played a crucial role in lifting millions out of poverty. Among the comparator nations of Figure 1.3 Vietnam has the strongest performance in reducing poverty measured at the $1 a day poverty line, lifting 43% of its population out of poverty and reducing poverty to a forecast 8% of the population in 2005. The poverty headcount at the $2 a day level fell by 39 percentage points, surpassed among the comparators only by China's reduction of 40 percentage points. The

Table 1.1:
Investment in East Asia (% of GDP)

	Investment (2003)	Expenditure on Infrastructure (1998)	Expenditure on Infrastructure (2003)
Cambodia	22	2.9	2.3
Indonesia	16	3.1	2.7
Philippines	19	5.6	3.6
Lao PDR	20	1.7	4.7
China	44	2.6	7.3
Vietnam	35	9.8	9.9
Thailand	25	5.3	15.4

Note: Investment is gross capital formation as a % of GDP, source: WDI (2005). The source for expenditure on infrastructure is ADB, JBIC and World Bank (2005), "Connecting East Asia," Appendix A, Table 7. The infrastructure data include capital and recurrent expenditure, although in some cases some expenditure elements may not be included. See source for details.

BOX 1.1: The Hanoi-Hai Phong northern transport corridor

Hanoi (the national capital) and Hai Phong (with the largest international port in the north of the country) are the two growth centers in northern Vietnam.

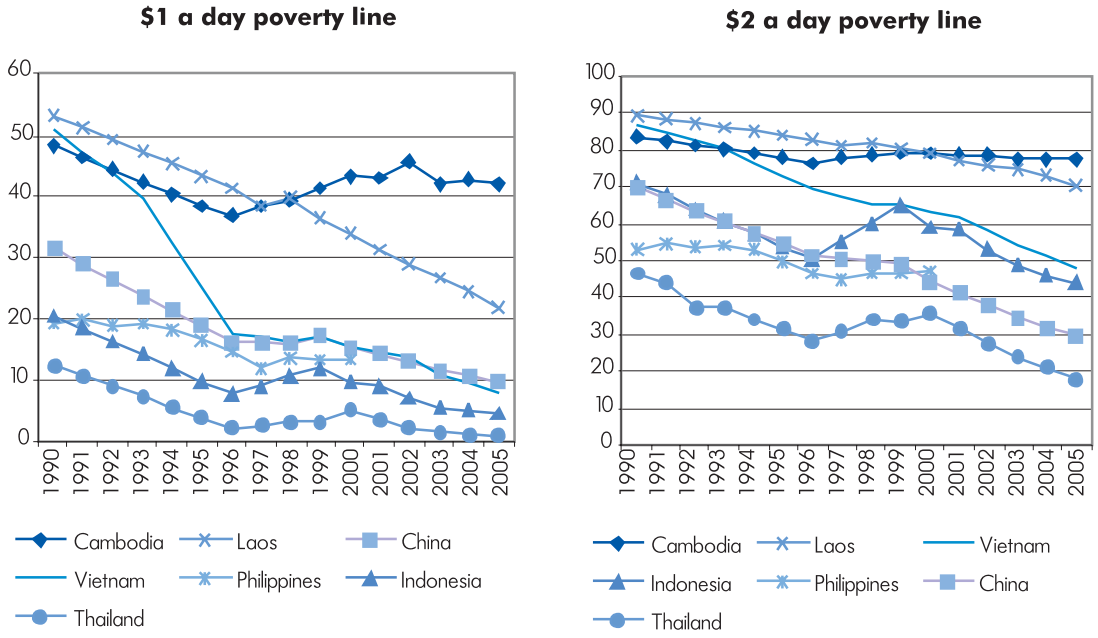
In recent years, the provinces along the Hanoi - Hai Phong transport corridor have demonstrated dynamic economic performance. With the improvement of National Highway No.5 and the expansion of Hai Phong Port, the transport corridor has reinforced the link between the two growth centers, and has enhanced the access of Hanoi to global markets by improving land and sea transport.[5] Foreign direct investment (FDI) in major industrial zones has increased significantly, particularly since 2000, driving industrial and export growth in the north. An interview survey with over 70 FDI firm managers suggests that nearly 90 percent of new investments would not have been realized without the improvement of National Highway No. 5 and the Hai Phong port. The survey indicates that those managers were attracted by the benefits, such as (i) cost reduction in transporting imported inputs, (ii) time-saving in delivering raw-materials and final products, (iii) improved coordination of production and sales schedule.[6] Many new jobs were created by the new FDI.

Moreover, growth has spread to neighboring areas, particularly Hung Yen and Hai Duong provinces (located between the two economic hubs), while the rural economy has experienced major transformation. Rural households have diversified their agricultural production (from rice to fishery and poultry) and have been increasingly engaged in new business opportunities. More convenient transportation has also spurred demand for tourism in Ha Long Bay (in effect, there is now a Hanoi-Hai Phong-Ha Long development triangle).

As a result, most of the provinces in the Hanoi-Hai Phong corridor achieved faster growth in per capita income and reduction in the number of poor households, compared to the average for the Red River Delta or the whole country.

Source: GRIPS Development Forum (2003).

Figure 1.3: Percent of Population Living in Poverty



Source: World Bank (2004). "East Asia Update, November 2004". Missing data have been interpolated.

5. Improvement of National Highway No.5 and the expansion of the Hai Phong Port was financed by Japan (JBIC) and Taiwan. The parallel improvements in rural feeder roads were financed by the World Bank, DFID and JBIC.

6. Source: JBIC/ IDCJ (2003), "Impact Assessment of Transport Infrastructure Projects in Northern Vietnam".

reduction in poverty rates is particularly evident in the mid-1990s, when a large cohort passed the $1 a day poverty line. Enthusiasm about the reduction in poverty rates should be tempered by the realization that this cohort remains close to the poverty line and would be vulnerable to any economic downturn. Almost 50% of the population remains poor at the $2 a day level. While Vietnam has made remarkable progress, much remains to be done to eliminate poverty.

The role of infrastructure investments in these reductions in poverty has been examined by Larsen, Pham and Rama (2004). The average provincial poverty rate in 1998 was 41.7% of provincial population, with a maximum of 97% and a minimum of 2.2%. Analyzing provincial data they find that an additional US$ 50 million spent on infrastructure investments is associated with an average reduction of about 2% of the poverty rate (on average, about 0.8 percentage points reduction in the headcount measure of poverty). They further find that the impact on poverty is greater in the poorest provinces and lesser in the richest provinces. Disaggregating the figures for infrastructure investment they find that investments in water and sanitation very strongly reduce poverty, transport projects strongly reduce poverty, and electricity investments make virtually no impact on poverty in the local province. This last finding can be understood when it is noted that power infrastructure frequently benefits many outside the province in which it is located.

1.2. Improved Access

Vietnam's program for infrastructure investment is necessarily large: investment must reduce the infrastructure deficit facing Vietnam in the early 1990s at the same time as meeting the needs of a fast-growing economy. Each sector has seen impressive growth in terms of access to services.

- Vietnam's road network has expanded from 96100 km in 1990 to 205,782 km in 2002.[7] National level roads expanded from 15,100 km with 36.6% in good condition in 1997 to 17,300 km with 44.8% in good condition in 2002.[8]
- Access to improved water grew from 26% of the population to 49% between 1993 and 2002. Access to hygienic latrines grew from 10% of the population to 25% between 1993 and 2002. [9]
- Teledensity (number of fixed and mobile lines per 100 people) increased from 1.08 in 1995 to 9.19 in 2002.[10]
- All urban areas in Vietnam are electrified. In rural areas, electrification grew from 51% to 88% of households between 1996 and 2004.[11]

That Vietnam's high level of infrastructure investment has delivered improved access is further revealed in a regional comparison.

Rural Electrification

7. Sources: WDI (April 2005) for 1990 figure; JBIC Sector Study for Transport Sector in Vietnam August 2003 for 2002 figure.

8. Source: VITRANSS.

9. Source: Vietnam Development Report 2004, World Bank, constructed using GSO data. Note that access estimates differ substantially in Vietnam, as discussed in the water and sanitation sector chapter.

10. Source: ITU.

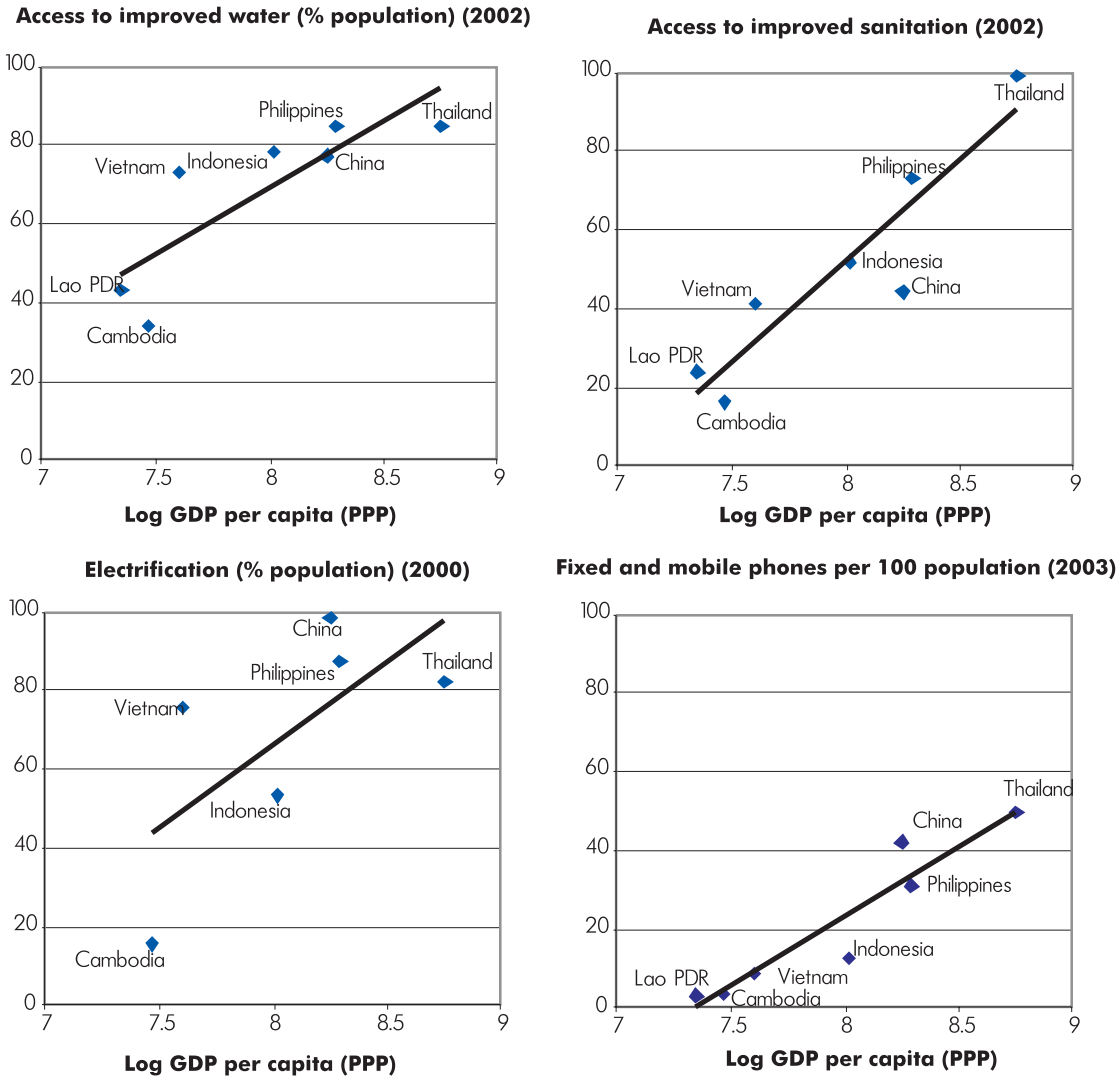
11. Source: EVN.

Vietnam's access levels for improved water and electricity approach those of richer countries in the region. For sanitation and telephones the access levels are some distance behind the best regional performers, but controlling for income Vietnam does better than average for sanitation and about average for telephones (see Figure 1.4).

1.3. Changing Circumstances

Despite Vietnam's success over the past decade in the provision of infrastructure services, changes are required in the way that infrastructure is supplied and managed in order to deal with important shifts in the economy. Increasing urbanization will bring particular challenges for the planning process. In the next ten years Vietnam will probably lose much of its concessional financing, so it must begin to find alternative financing sources. Where once the main challenge was one of access—just ensuring that people were provided with infrastructure services—increasingly the emphasis will be on ensuring that the service provided is at a reasonable price an quality. There will be an increasing need to ensure

Figure 1.4: Access to Infrastructure Services



Source: WDI (2005). National output per person is expressed as the natural logarithm of the purchasing power parity measure, expressed in constant 2000 international $).

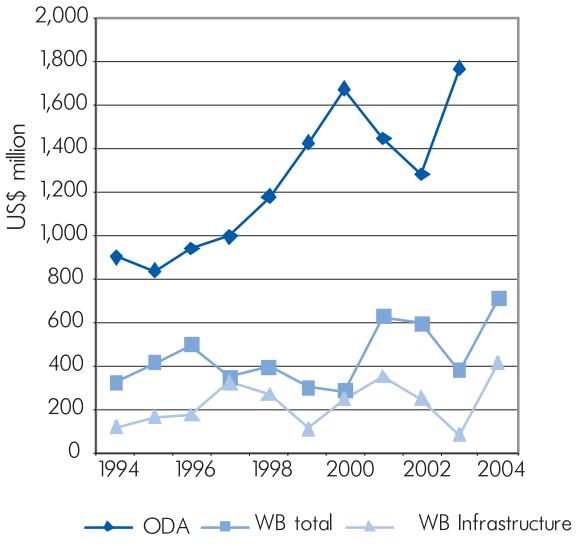
adequate maintenance and operational efficiency to minimize costs, and effective regulation to distribute costs appropriately across current and future taxpayers and consumers. And finally, there is evidence of increasing inter-provincial inequality, which will require new approaches to ensure inclusive development.

1.3.1. Impending Loss of Concessional Financing

Over the next decade Vietnam is likely to lose access to the cheapest sources of donor funds, resulting in a large increase in financing costs. An increase in the cost to government of donor assistance has important implications for the cost of infrastructure investment overall.

Figure 1.5 indicates the level of foreign development assistance received by Vietnam since 1994. ODA has averaged 4.4% of Vietnam's GDP. Over the same period, World Bank commitments to Vietnam have averaged 1.5% of GDP, of which commitments to infrastructure projects have averaged 0.77% of GDP. Apart from an $11 million grant from the GEF in 2002-2003 and $75 million of project guarantee at 0.75% in 2003, all of the World Bank lending was by IDA, which lends at low concessional rates.

Figure 1.5: Foreign Aid in US$ million



The threshold for IDA borrowing currently stands at a GNI per capita of $895. Countries that exceed this threshold begin a transition period of several years in which they progressively lose the right to borrow at IDA's concessional rates, and 'graduate' to borrowing from IBRD. In 2003, Vietnam's GNI per capita was $480. Over the period 1995-2003, the growth of GNI per capita expressed in US dollars averaged 10.5%, while in the five years to 2003 the average growth rate was 6.6%. Supposing that GNI per capita continues to grow at somewhere between these two rates and that the threshold remains unchanged, Vietnam will commence the graduation process between 2010 and 2013.

Graduation greatly increases the present value of loan repayments on new loans although it does not affect repayments on the stock of existing loans. A typical IDA credit has a duration of 40 years, with a grace period of 10 years, no interest payable, and a service fee of 0.75% per annum. A typical IBRD loan has a duration of 25 years, a 3 year grace period, an interest rate currently in the order of 2.3%, and a service fee in the first four years of 0.85%. Table 1.2 sets out the present value of the future stream of repayments for a hypothetical loan of

Table 1.2:
Present value of repayments on a $1 loan from the World Bank Group

	Governmen's Discount Rate		
	5%	10%	15%
IDA	$0.45	$0.20	$0.11
IBRD	$0.74	$0.48	$0.34

Note: These calculations are indicative only, based on standard lending conditions. Loan terms for specific countries may differ from those assumed here. Calculations for IBRD assume a fixed spread loan with an interest rate of 2.3% and constant principal repayments.

$1 from IDA or IBRD. The table indicates that if the Government of Vietnam has a discount rate of 10%, when it borrows $100 million from IDA, all the future repayments spread over 40 years have a present value to the government of just $20 million. But borrowing $100 million from IBRD, the cost to the Government in present value terms more than doubles to $48 million.[12]

IDA eligibility also has implications beyond the cost of borrowing from the World Bank. The World Bank's classification is the starting point for consideration for concessional funds and debt restructuring terms by other multilateral and bilateral institutions. Consequently within the next ten years the cost of borrowing from other donors is also likely to increase.

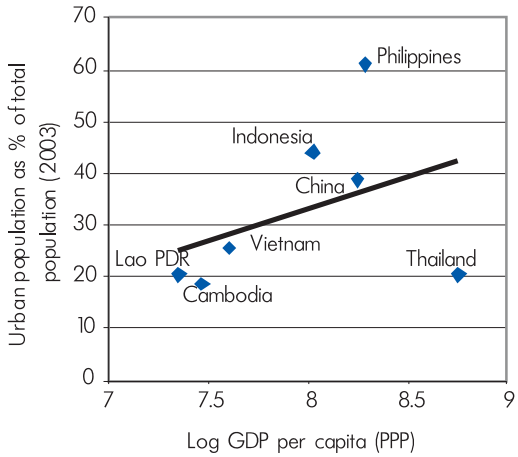
It should be noted that even for IBRD loans the present value of repayments is less than the present value of the loan funds received. Provided the money is invested in sound projects, it makes good sense to borrow as much money as possible under these terms. After graduation Vietnam should still find it financially attractive to borrow as much as possible from the Bank Group, but in doing so the social cost of repayments will represent a higher proportion of GDP. Consequently, the Government will need to generate more financial resources to maintain the same level of physical infrastructure investment.

To give a very rough indication of the importance of the increase in financing costs, we can consider the 1996-2000 Public Investment Program (PIP). Donors provided VND 76,090 billion (around US$ 4.8 billion) for transport, energy, water and sanitation projects in the PIP.[13] This sum represented 72% of funding for these PIP projects. If all of this funding had been on IDA terms and if the government's discount rate were 10%, the cost of the borrowing in present value terms would have been VND 15,218 billion; if all donor funding had been on IBRD terms, the cost would have been VND 36,523 billion. The difference is VND 21,305 billion, or about 1.2% of total GDP during the period.

1.3.2. Urbanization

High urban population growth is anticipated to be the primary driver of future infrastructure investments. Currently Vietnam's population is predominantly rural, reflecting its current level of development. In 2003 the population was 25 per cent urban. But as Vietnam's economy grows, it is likely to follow most of its regional

Figure 1.6: Urbanization in East Asia



Source: WDI (2005). GDP per capita data from 2003.

12 The arithmetic of these calculations can be understood supposing a very simple loan arrangement, where principal (P) plus interest (r) are repaid in one single payment after n years. Using the government's discount rate (), at the time the loan is incurred the present value (PV) of the future repayment is thus:

$$PV = \frac{P\ x\ (1 + r)^n}{(1 + \delta)^n}$$

Provided the government's discount rate is greater than the interest rate, the present value of money repaid is less than the principal. The greater the discount rate, the smaller is the present value of repayments. The logic follows through to the case of multiple repayments.

13. Larsen, Pham and Rama (2004.

neighbors towards higher rates of urbanization (see Figure 1.6). Already Vietnam's cities and towns account for about 70 per cent of total economic output, and most foreign direct investment is directed towards cities. Economic opportunities in urban areas currently attract about one million people migrating from rural areas each year. As a result the urban population is currently growing at a rate of 2.9% per year, compared with a total population growth rate of 1.1%.[14]

Estimates by the Government of Vietnam suggest that the urban population will grow exponentially over the next 15 years, catching up with the level of urbanization of China by 2020, when urban dwellers are expected to account for 45% of Vietnam's population.

Urban settlements are categorized into six classes by the Ministry of Construction, based on physical criteria, population, population density, level and nature of economic activity, GDP, and infrastructure provision (see Table 1.3). The smallest towns to be classified as urban centers (Class V) have a population of more than 5000, with over 65% employed in non-agricultural sectors. The average population of each urban classification is expected to triple between 2000 and 2020. The Government's strategy is to promote urbanization of district towns and some rural areas as a means of reducing migration to the large cities. But urbanization projections suggest a decreasing proportion of the urban population is expected to live in Class IV and V district centers and towns.

The major growth triangles can be identified in the Red River Delta bounded by Hanoi, Haiphong and Halong in the North; the Mekong Delta anchored by Ho Chi Minh City in the South; and a Central triangle based on Danang. Fast growth in urban population is expected to strain current urban infrastructure capacity, revealing major bottlenecks in infrastructure service provision. These bottlenecks are likely to be particularly pronounced in and around the major urban areas such as Ho Chi Minh City, Hanoi, Haiphong, and Danang.

Urbanization presents an opportunity to reduce the costs of infrastructure provision, through economies of scale. However, this advantage requires that new investments be well planned. If new infrastructure can be put in place in peri-urban areas before development occurs, the costs will be much lower than trying to retro-fit infrastructure in areas that are

Table 1.3:
Urbanization Forecasts

Urban Class	1998		2010		2020	
	Number of Cities	% of urban population	Number of Cities	% of urban population	Number of Cities	% of urban population
Hanoi & HCMC Special Cities	2	37%	2	39%	2	40%
National Cities Class I	3	9%	3	10%	3	11%
Regional Cities Class II	12	15%	12	16%	12	17%
Provincial Cities Class III	16	7%	18	8%	20	9%
District Towns Class IV	58	14%	62	13%	66	12%
Townlets Class V	612	18%	1172	14%	1831	11%

14. Source: WDI (2005). Data for 2003

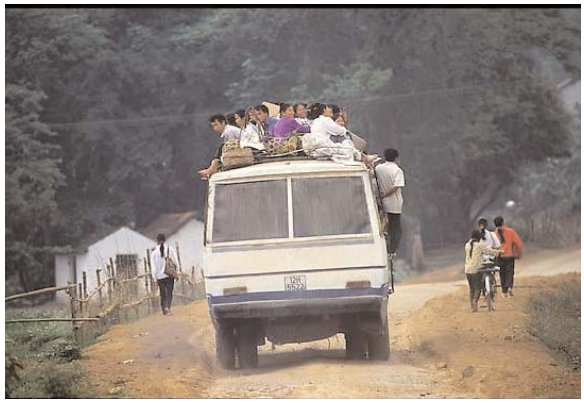
already populated. Urbanization presents a variety of challenges for the planning system.

Despite the opportunities for cost reduction presented by more dense networks, the overall needs of the growing urban population are likely to require large increases in investment amounts at the municipal level. At present only half of urban residents have access to piped water, no cities treat wastewater, and urban transport is already being threatened by greater congestion. Addressing the infrastructure backlog at the same time as catering for new urban residents will require mobilization of large amounts of finance, requiring the government to look beyond current sources of finance, and new fiscal arrangements between different levels of government.

Urbanization also presents challenges for how Vietnam addresses poverty and inequality. The percentage of people in poverty is lower in urban areas than rural areas. But there are more poor per square kilometer in urban areas. Poverty in urban areas, both in percentage and density terms, is likely to increase, at least in the medium term, as more of the rural poor migrate. Because of the economies of scale in cities addressing the infrastructure needs of urban poor will be less costly than addressing the needs of the rural poor. At the same time, it seems likely that pockets of rural poor will remain as the poorest sections of the country. Addressing the infrastructure needs of these remaining pockets will pose difficult policy problems concerning the extent to which expensive subsidies are merited for small pockets of the community.

1.3.3. Larger Stocks of Infrastructure

The emphasis of infrastructure policy over the past decade has been the rollout of new



Rural Gravel Road Improving Access

infrastructure, providing access to new consumers. As seen above, the task of providing access is still far from complete. Nevertheless, as the stock of infrastructure increases, it is possible that there will begin to be diminishing returns to infrastructure investment, there will certainly be an increased need for maintenance, and as the task of ensuring universal access draws to an end increasing attention should be turned to ensuring that the installed infrastructure is efficiently operated and maintained.

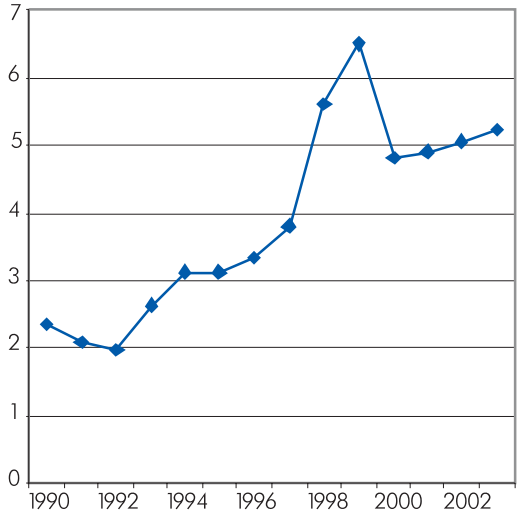
There are high social returns to the initial provision of infrastructure networks. The average economic rate of return on the World Bank's four completed infrastructure projects in Vietnam during 2000-2003 was 30.2%.[15] But there are also likely to be diminishing marginal returns beyond a certain point. For example, providing a gravel road to a rural village for the first time could yield a high marginal benefit as a result of increased access to markets. Subsequently sealing the road may yield additional benefits, but probably not as great as the original marginal benefit. The average economic rate of return across World Bank infrastructure projects in the East Asia and Pacific region during 1990-2004 is 21%, providing suggestive evidence of lower returns in other countries where infrastructure networks are more developed.

15. Economic rates of return calculated at evaluation, on FY2000 power development (19%), FY2000 power sector rehabilitation (38.8%), FY2002 highway rehabilitation (38%), and FY2003 2nd highway rehabilitation (25%).

It is possible to interpret Vietnam's increasing incremental capital output ratio (ICOR) (see Figure 1.7) as evidence of diminishing returns from infrastructure investment. ICOR is measured as annual investment divided by the annual increase in output (GDP). Other things equal, the more productive is investment, the greater the increase in output associated with a unit of investment, and the lower is the ICOR. The increase in ICOR during recent years can be seen as suggestive of diminishing returns to investment, of which infrastructure investment is a large component. Infrastructure investments directed to providing access to infrastructure will tend to have high returns, but the increasing ICOR suggests that greater scrutiny is particularly warranted for investments that are not directed to the access agenda.

Vietnam needs to increase the efficiency with which investments are selected, and, once investments are made, to increase the efficiency with which infrastructure services are managed. Investments to increase access to infrastructure services are relatively easy to identify (find sections of the population without access) and have high social returns. Once universal access is achieved, it will become increasingly difficult to identify which projects should be allocated investment funds. Improved planning processes will be required, to ensure that limited funds go to the projects with the highest rates of return.

Figure 1.7: Vietnam's Incremental Capital Output Ratio



Source: WDI (2005). ICOR is calculated as gross capital formation (constant LCU) divided by the annual change in GDP (constant LCU).

Efficient management of services is a question of eliminating waste, lowering the cost of service provision, and improving quality. There appears to be considerable scope for improving efficiency in service provision. For example, a benchmarking exercise carried out in the water sector highlights that CAPEX efficiency gains of the order of 43% of total capital costs could be made in achieving the goal of 100% urban coverage if water utilities were to catch up with the industry top quartile performers. Improving such aspects of service provision will require, among other matters, improved incentives for infrastructure managers.

Another implication of the transition from providing access to providing efficient services is an increased need for maintenance. This is particularly likely to be true for roads. With the road network fairly new, there has been relatively little need for maintenance. But as the recently-built roads age, there will be an increasing need for maintenance spending. Between 1998 and 2002 VRA spent an average of US $23 million on periodic maintenance of national roads and US $12 million on routine maintenance. These figures represent less than half the maintenance needs as estimated by VRA under its Ten-Year Strategic Maintenance Plan.

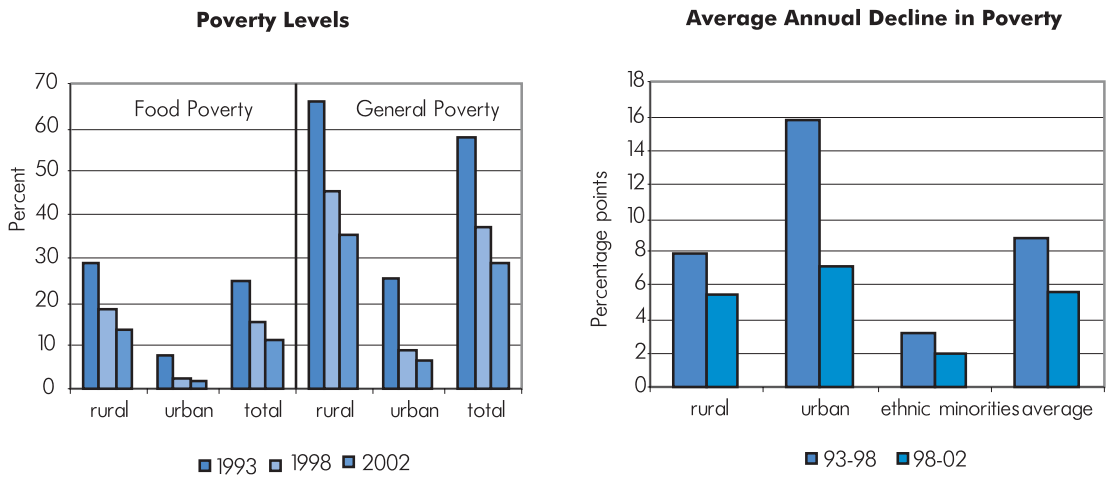
1.3.4. Rising Inequality

Although Vietnam has done much to ensure that the benefits of growth are spread across the country, national measures of inequality have increased in recent years. The national Gini

coefficient has risen from 0.34 in 1992/93 to 0.35 in 1997/98 to 0.37 in 2002.[16] The ratio of the top to the bottom quintile's per capita expenditures has risen from 4.6 to 4.7 to 5.3 in the same years. Examining just the rural population or just the urban population, the Gini coefficients have stayed broadly stable, indicating that the rising inequality is mostly due to increasing inequality between rural and urban populations. Rural areas are poorer and the decline in poverty has been smaller in rural areas than in urban areas (see Figure 1.8). The Figure also indicates that ethnic minorities are constrained from participating in economic opportunities, signaling a potential disconnection between growth and poverty reduction in remote and disadvantaged areas.

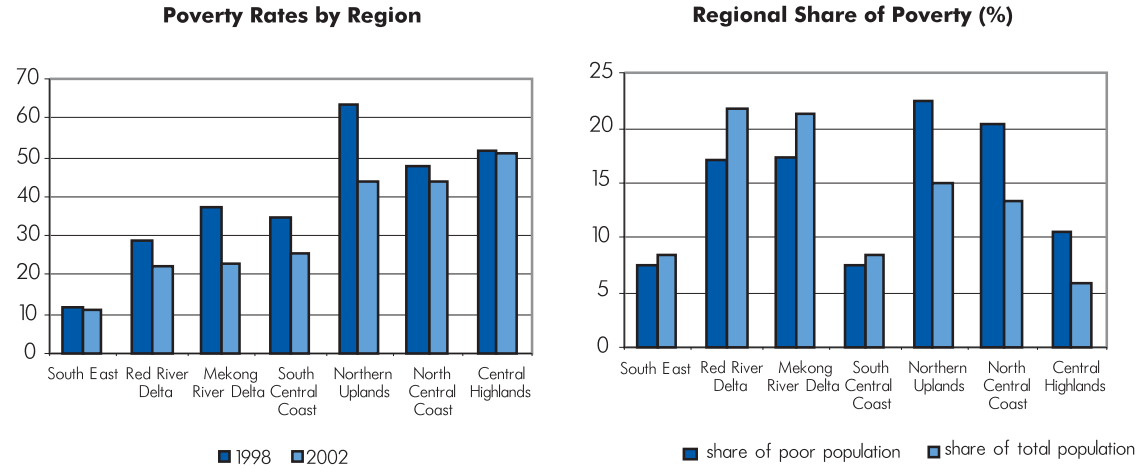
Poverty is unequally spread across the regions. Fifty-three percent of the poor live in three regions that account for 34% of the total

Figure 1.8: Rural/Urban Poverty Levels and Changes (1993-2002)



Source: GSO. Note: ethnic minorities exclude Kinh and Chinese groups.

Figure 1.9: Regional Poverty Rates



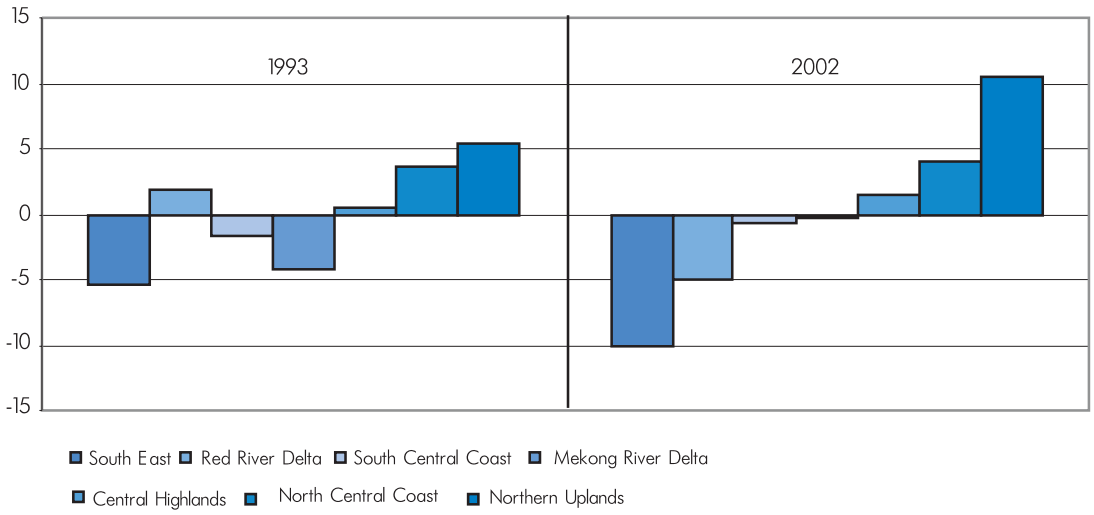
Source: GSO.

16. Source: VHLSS.

population: Northern Uplands, North Central Coast and Central Highlands (see Figure 1.9). Since 1993 the benefits of growth have been unequally spread across regions, and migration has also redistributed the incidence of poverty across regions. Figure 1.10 illustrates that poverty has become more concentrated in the three poorest regions, while the poor have become a smaller proportion of the population in the South East region.

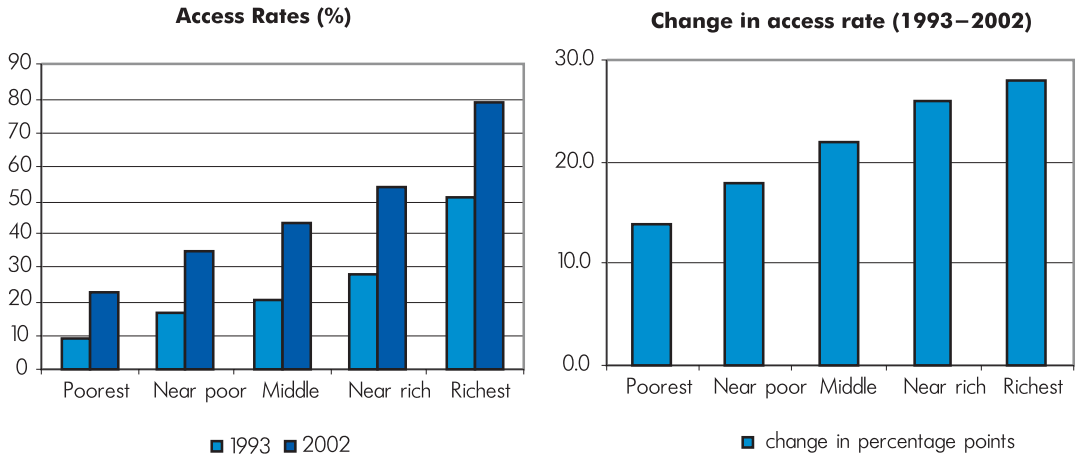
There is also evidence of increasing inequality in access to infrastructure services. Figures 12 and 13 illustrate that not only do the rich have greater access to clean water and hygienic latrines, but the increase in access between 1993 and 2002 has been greater for the rich than for the poor. Measuring access to roads in rural areas by the percentage of households living in a village that a car can drive to, the story is a little more complicated (see Figure 1.13). But it remains true that the poorest households are more likely to live in villages without road access, and that the

Figure 1.10: Evolution of Contribution to Poverty (percentage points) 1993-2002



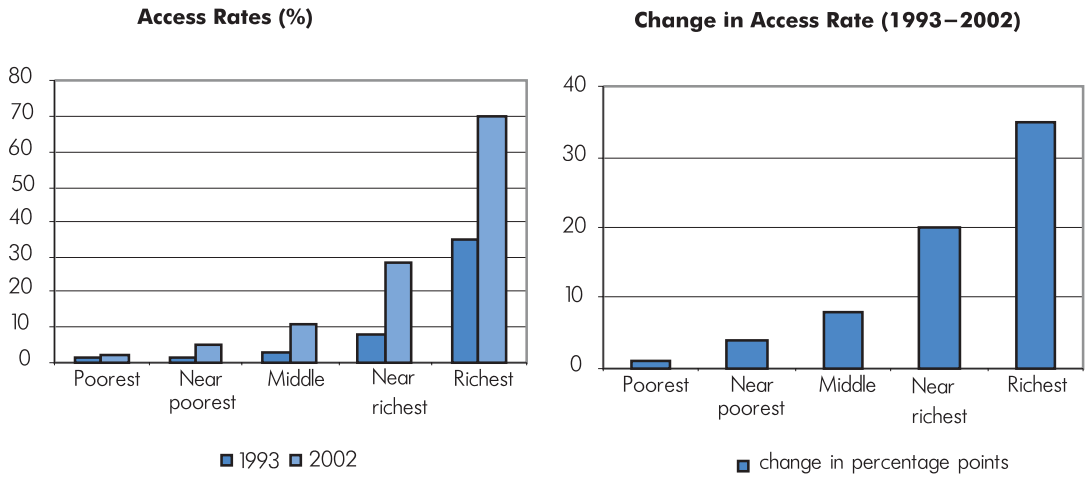
Note: The figure shows each provinceÕs contribution to poverty which is defined as the difference between the provinceÕs share of the poor population and the provinceÕs share of total population.

Figure 1.11: Access to Clean Water, by Income Quintile



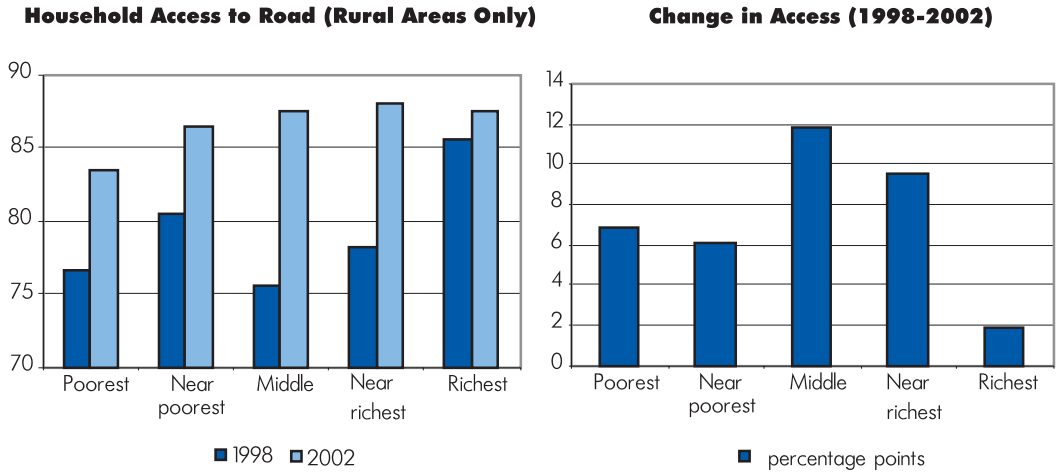
Source: Joint Donor Report (Vietnam Development Report 2004).

Figure 1.12: Access to Hygienic Latrines, by Income Quintile



Source: Joint Donor Report (Vietnam Development Report, 2004)

Figure 1.13: Households living in rural villages with road access, by income quintile



Source: Vietnam Household Living Standards Surveys (1998, 2002)

increase in poor or near poor households with road access has been smaller than for middle or near rich households. It seems likely that inequality of access will continue to increase in the medium term, since the poorest households are the least willing and able to contribute to the cost of infrastructure connections.

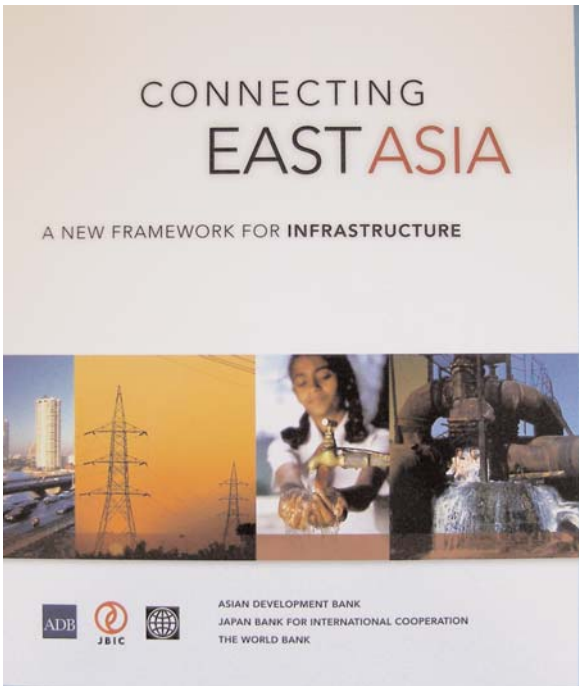
To the extent that inequality is a policy concern for the government these various trends will require the design of tailored policy responses to minimize increases in inequality across the country.

1.4. Shared Challenges

Dealing with Vietnam's changing circumstances requires an evolution of Vietnam's infrastructure strategy. New financing sources must be mobilized to permit accelerated implementation of desirable

projects, and to prepare for the transition to non-concessional donor assistance. Investment criteria should be improved to focus on economic rates of return, and planning processes need to be streamlined. Infrastructure procurement and service efficiency need to be improved. And revised approaches to subsidy delivery are needed to deal with the changing characteristics of poverty in Vietnam.

These challenges are shared by many of Vietnam's neighbors. The ADB, JBIC, and the World Bank recently examined the region's infrastructure challenges in a flagship study, "Connecting East Asia". The flagship study organizes infrastructure challenges into three main themes: inclusive development; coordination; and accountability and risk management.



- Inclusive development is concerned with the goals of generating growth and ensuring its benefits are shared across the community. The role of Vietnam's infrastructure in generating growth and reducing poverty have been discussed in this chapter, and additional measures that can be taken to effect a more equitable distribution of benefits are discussed in Chapter 5.
- Coordination concerns the State's ability to generate strategic vision and translate that vision into infrastructure outcomes. This is the subject matter of Chapter 3, dealing with planning. Chapter 6, dealing with reform prioritization, is also intended to assist the planning process.
- Accountability and risk management address the interaction of the various players, including the State, consumers, service providers, and investors, and how it can be guided to ensure appropriate infrastructure outcomes. Accountability involves rewarding good performance and punishing bad performance. Risk management involves ensuring that the potential costs and benefits of actions are equitably and sustainably allocated. These issues are addressed in Chapter 2, on financing and investment decisions, and Chapter 4, dealing with mechanisms for improving efficiency.

These common themes underline the potential to learn from regional neighbors, and more generally from international experience. This report illustrates particular ideas for reform with examples from international experience.

2. Financing

Issues

(i) Financing of new infrastructure investment currently amounts to about 9-10% of GDP. An increase to 10-11% would seem to be justified for the coming five years, based largely on the goal of providing increased access to electricity and water, and keeping pace with demand growth in electricity.
(ii) Currently donors meet around 30% of the ultimate burden of the investment program, and consumers ultimately pay for around 50%, with the Government budget bearing the remainder. In future the contribution of donors is likely to diminish, and greater burden should be placed on consumers.
(iii) Diversification of financing mechanisms would allow more investment to be brought forward in time. To achieve such diversification will require wide-ranging reforms in capital markets, as well as greater cost recovery in some infrastructure sectors.

Financing needs are a function of the growth and equity objectives sought to be achieved by planning decisions, and the efficiency of resulting investments. They are thus the outcome of matters addressed in subsequent chapters. However, before planning proceeds too far there is a need to take into account the financing possibilities; the budget envelope. So it is useful in this chapter to take stock of possible financing needs and the sources of finance available to meet them, before moving on to the details of potential infrastructure reforms in subsequent chapters.

2.1. Level of Infrastructure Financing

Table 2.1 provides rough estimates of recent investment levels in the different infrastructure sectors. The greatest investment has been in transport and energy, with roughly 3-4% of GDP each; while water and sanitation and telecommunications infrastructure investment have been in the order of 1.4% and 0.8 % of GDP respectively. Across sectors, these investments sum to about 9.4% of GDP, without taking account of gas sector investment.

Looking to the future, sectoral plans and forecasts suggest future annual infrastructure investment summing to 11.4% of GDP, an increase of 2% of GDP over recent levels:[17]

- In September 2005, the Ministry of Transport estimated future financing needs in a Medium Term Expenditure Framework, which matched proposed investment with potential financing sources. The proposals for capital spending in 2006 to 2008 amounted to VND 69,186 billion (US$ 4.3 billion) over the three years, and averaged 4.1% of GDP per year.

17. In 2005, 2% of GDP was about VND 15,250 billion (US$ 966 million). Estimates of investment as a proportion of GDP assume that GDP grows at 7% annually.

- In the electricity sector, investments required to meet the Fifth Power Master Plan amount to VND 215,078 billion (US$ 13,743 million) in the years 2005-2010, or about 3.9% of GDP. This figure is now regarded as an underestimate, because of higher than expected demand growth in recent years. The financial model used by EVN to plan future investments suggests that during 2005-2010 capital expenditure will amount to VND 237,246 billion (US$ 16 billion), which in annual terms is about 4.7% of GDP.
- In the water and sanitation sector the Government has set coverage targets to achieve its 2010 development goals. The targets are 85% for urban water and sanitation, and 75% for rural water and sanitation, which would require investment of VND 57,547 billion (US$ 3.62 billion) during 2005-2010, or 1.2% of GDP annually.
- In the telecommunications sector, in October 2005 the Ministry of Post and Telematics adopted a target of 32-42 total telephone lines per 100 population by 2010. To achieve 35 lines per 100 population would require about VND 57,000 billion (US$ 3.6 billion). Spread over the period 2006-2010, this would amount to around 1.4% of GDP annually.

The forecasts should not be interpreted as an endorsement of sectoral investment proposals. Closer analysis of the individual sector plans may find ways of economizing on investments, and budgeting decisions could result in indefinite deferral of some investment proposals. Nevertheless, there is a reasonable

Table 2.1:
Vietnam's Recent Investment in Infrastructure

	1999	2000	2001	2002	2003
VND billion					
Water & Sanitation	2,132	2,306	2,532	2,778	
Telecommunications					8,422
Electricity			13,517	18,172	19,548
Transport	11,219	11,660	17,871	21,576	
US$ million					
Water & Sanitation	153	163	172	182	
Telecommunications					543
Electricity			918	1,189	1,260
Transport	805	823	1,214	1,412	
% GDP					
Water & Sanitation	0.53	0.52	0.53	0.52	
Telecommunications					1.39
Electricity			2.81	3.39	3.23
Transport	2.81	2.64	3.71	4.03	

Note: Blanks indicate missing data. The water & sanitation data are estimated based on statements in the water and sanitation strategy paper that over the past 10 years US$ 1.003 billion was spent on urban water, and during 1999-2002 VND 3160 billion was spent on rural water and sanitation; and supposing that annual investment grew at a smooth rate of 7%. Telecoms figures based on VNPT's investment budget in 2003 of $133 million, and a BCC for $230 million of foreign investment. While BCCs are irregular, this figure is close to the annual average of BCC investment since 1994. Electricity data are taken from a financial model of EVN, using historic data prepared according to international accounting standards, to which are added PPI database figures for investment in the Phu My II and III BOTs, supposing that contracted amounts were split equally across 2003 and 2004. Investment in gas pipelines is not included. Transport data are taken from the PER, Table 11.7, subtracting recurrent spending from total spending. Official exchange rates from WDI.

case for some increase in investment levels. Even using the outdated Fifth Power Master Plan estimates, annual electricity investment would need to increase by about 0.7% of GDP. Annual investment in water and sanitation would need to increase by about 0.7% of GDP if the Government's development goals are to be reached. In the telecommunications sector, it seems likely that increased competitive pressure on VNPT will decrease its profit margins and hence ability to finance investment. If sectoral targets are to be met, telecommunications investment will need to stay at roughly the same level as a proportion of GDP, requiring mobilization of alternative finance, notably increased private investment.

For purposes of thinking about finance mobilization, a figure of 10-11% of GDP seems reasonable for investment in transport, electricity, water and sanitation, and telecommunications. This financing target is based on the goals of satisfying demand in electricity, and meeting Government targets for access to electricity, water, and telecommunications, and the transport MTEF estimates which seeks to match proposed investments with available sources of finance.

New Bridge in Halong replacing slow ferries

Nevertheless, given macro-economic concerns about declines in the marginal productivity of investments (see section 1.3.3 on the ICOR), these estimates should be subject to further scrutiny. Individual investment decisions should be justified at the micro-economic level, on the basis of good feasibility studies and estimated rates of return. In the absence of project monitoring that measures the financial and economic impact of infrastructure

Table 2.2:
Infrastructure Investment Financing Mechanisms (% of GDP)

Finance source	Transport	Electricity	Telecoms	Water	Total
Users		0.9	0.3	0.1	1.3
ODA	1.7	1.2	0.3	0.3	3.5
Budget	0.8	0.1		0.1	1.0
Govt. Bonds	1.2				1.2
SOCBs	0.1		0.2		0.3
Private	0.2	1.2	0.6		2.0
Community				0.1	0.1
Total	4.0	3.4	1.4	0.6	9.4

Source: Own calculations based on data from the following sources: Transport: Ministry of Transport and Department for International Development, "Strategic Review of Transport Donors' Support to the Government of Vietnam's Socio-Economic Development Plan (SEDP) for 2006-2010", June 2005; Electricity: EVN financial model; Telecommunications: crude estimate of proportions of VNPT's investment, based on statements in Zita (2005) that ODA contributed about 35% of investment in 1993-2001, and that Vietindebank lent around $63 million in 1999 supposing that these levels of financing continued in subsequent years; Water: data in the water chapter of this Infrastructure Strategy. The estimates are derived from 2002 and 2003 according to data availability, and various assumptions have been used in their calculation. Funding from DAF is incorporated according to the original source of funding.

investment, the Government cannot be sure that it is earning a good return on its infrastructure investment. Given the magnitude of the investment program, improved monitoring and evaluation is a matter of some urgency.

2.2. Who Pays for Investment, and When?

Table 2.2 sets out information concerning the mechanisms used to finance infrastructure investment in recent years. Figure 2.1 reports the use of different financing mechanisms as a percentage of total infrastructure financing.

Notwithstanding the use of particular financing instruments, ultimately all infrastructure investment is paid for by consumers, taxpayers, or donors. For example, when private financing is used, consumers bear the ultimate burden since investors recoup their investments through user tariffs. When donor loans are used, taxpayers are responsible for repayment of the debt, but only pay a part of the present value of the loan. Using the information about the financing mechanisms, an impressionistic attribution of the ultimate payment burden of infrastructure investment can be obtained:[18]

15% *Current consumers* pay when infrastructure enterprises use retained earnings to finance their investments or when communities finance their own water and sanitation projects.

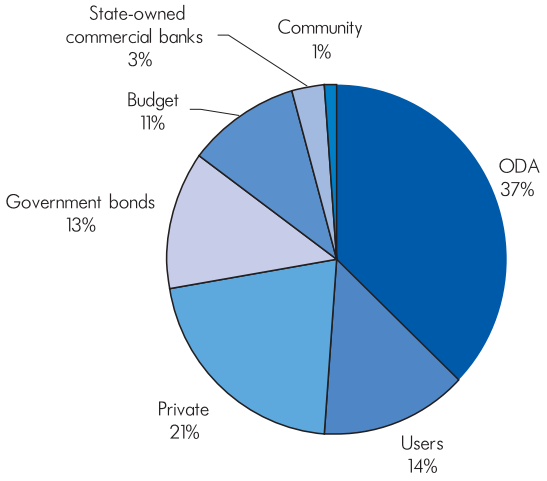
37% *Future consumers* pay when infrastructure enterprises raise money by issuing bonds, by borrowing, or by raising equity for a private investment, since the principal must be repaid from future earnings. Future consumers of electricity also bear the burden when the government receives ODA for electricity projects. The government requires EVN to repay the loans at a market interest rate, so that debt service must be built into future tariffs.

11% *Current taxpayers* pay when the government uses budget revenue to finance investment.

7% *Future taxpayers* pay when the government borrows money, either from donors or by issuing bonds, and repays the debt from future tax revenues, but their burden is reduced by the margin made by the Government in on-lending ODA to EVN.

30% *Donors* pay for the grant component of concessional loans, and Vietnam also benefits from the difference between market interest rates facing donors and

Figure 2.1: Infrastructure Investment Financing Mechanisms (% of Investment Finance)



18. These calculations are not precise: donors' loan terms differ, the boundary between the present and future is not precise, in some cases ODA loans to the transport sector may be supported by project revenues rather than taxpayer revenues, and the underlying data on finance sources is only approximate in any case.

Vietnam. As discussed earlier, if the Government of Vietnam has a 10% discount rate and borrows from IDA; the present value of the repayments is just 20% of the amount borrowed, so that donors can be interpreted as bearing the ultimate burden of 80% of the sums lent.

Consumers (current and future) bear 52% of the overall financing burden for infrastructure investment, while taxpayers (current and future) bear 18%. As between consumers and taxpayers, a greater proportion of the investment burden should be placed on consumers (present and future) though either direct user charges or borrowing backed by infrastructure revenues:

- One argument for this position is that increasing the amounts paid by consumers serves as a means of limiting demand growth, and hence reducing the financing burden. Taxpayer funded infrastructure is perceived as free by consumers, resulting in potentially excessive demand from a social viewpoint.
- Another argument is that where revenues can be raised from consumers they should be, in order to free tax funds for use in other sectors where cost recovery is lower.
- Another argument rests on an idea of fairness: between otherwise equal people it seems fair that one who benefits from a service (a consumer) should pay for it, while those who do not benefit (non-consuming taxpayers) should not pay.
- And finally, diversification of financing mechanisms (to liberate government capital for alternative uses) will be limited when the ultimate burden is borne by taxpayers. Payments from government revenues occur through annual budget allocations, and are inherently uncertain. Medium and long term financing is more readily arranged when the ultimate burden is borne by consumers, and the ultimate risk is commercial. As a group, consumers are more predictable than the political process.

There is a case for government revenues bearing some of the burden of infrastructure investment. For example, it is generally impractical to collect tolls for the use of rural roads, and the social benefits of sanitation and waste water treatment generally exceed private willingness to pay for these services. The challenge for the government is to gradually increase the contribution of consumers, while limiting the contribution of government revenue to the relatively few cases where it is necessary.

The breakdown of who bears the ultimate burden of infrastructure investment is also revealing in respect of the allocation across time. Current consumers and taxpayers pay for 26% of infrastructure investment, while future consumers and taxpayers pay for 44%. Increased use of alternative financing instruments would enable a greater proportion of the burden to be borne by the future. For example, increased borrowing or private equity investment would enable investment to be brought forward in time. With more finance available, the level of infrastructure investment could be increased, or government finance could be withdrawn for use elsewhere while maintaining the same level of infrastructure investment.

Funding by donors pays for a significant amount (30%) of infrastructure investment, raising the issue of how to manage the transition to the situation when concessional funds will not be available on the same scale. Countries typically respond to the end of concessional funds by borrowing less from official development agencies. Vietnam should take advantage of concessional finance while it remains available, using the time to put in place the necessary reforms to mobilize alternative financing sources.

2.3. Financing Institutions and Mechanisms

Meeting current investment plans with an increased level of investment, and preparing for the transition away from concessional donor financing, both suggest a need to mobilize new sources of finance. Even without these developments, the arguments of section 2.2 suggest a case for shifting the sources of investment finance. Diversification of financing sources, notably with greater reliance on private financing, would also help to decentralize financing decisions reducing the burden on central planning organizations and potentially improving the efficiency of investment decisions. The following discussion examines desirable reforms that would allow diversification of infrastructure financing.

Reform of infrastructure services themselves is important to the financing possibilities. Ensuring cost-covering tariffs for infrastructure services, where feasible, provides infrastructure enterprises with not only the possibility of self-financing using retained earnings, but also opens the possibility for alternative financing sources that rely on future revenue streams. And reforms that improve the efficiency of infrastructure procurement and services can help to defer the need for new investment, reducing the overall financing needs.

2.3.1. User Payments

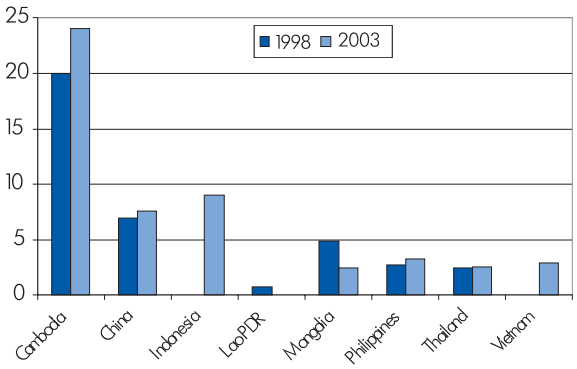
By the estimates of the previous section, retained earnings of infrastructure enterprises account for around 30% of all infrastructure financing. A prerequisite for self-financing is that tariffs more than cover the costs of operation. Cost recovery is also a necessary step towards diversification of financing sources, since most financing institutions seek to earn a positive return on their investment. The ability to diversify finance sources across infrastructure sectors differs according to each sector's ability to set cost-covering tariffs.

In the transport sector few data were available on cost recovery for this report. Saigon Port's operating ratio (operating expenses/operating revenue) gradually increased from 0.78 in 1995 to 0.91 in 2002, indicating that the port's operating revenues covered its operating costs, but by a smaller margin over time.[19]

Over the same period the port's return on equity declined from 24.7% to 6%. Declining margins may reflect increased competition from the nearby private VICT terminal. Can Tho Port's operating ratio increased from 0.86 in 1989 to 1.28 in 1993, declining again to 0.95 in 1995.[20] Combined, these data provide weak evidence that Vietnam's ports operate a policy of recovering operating costs, but generally do not self-finance major investment.

Vietnam Railways made losses in the mid 1990s, but between 1999 and 2003 revenues increased at 15% per annum. VR now basically

Figure 2.2: Spending on Energy Services (% Household Expenditure)

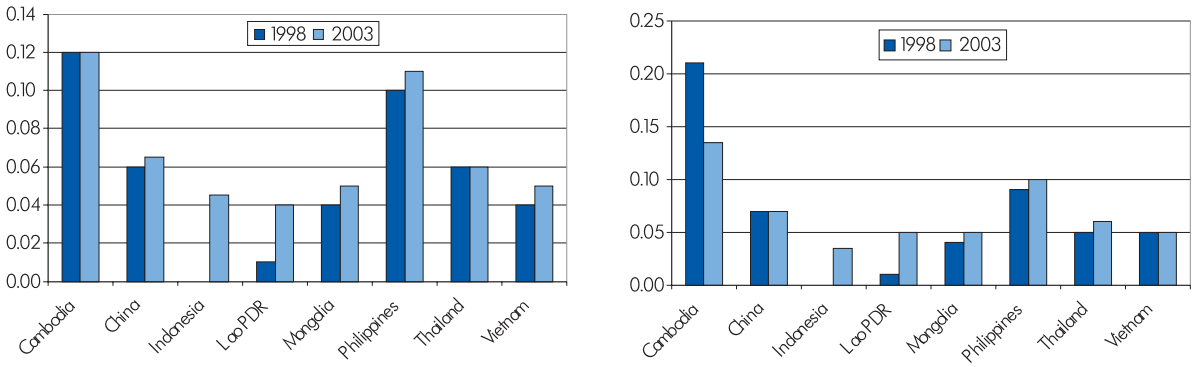


Source: IDB, JBIC, & World Bank (2005), Annex 1.

19. ADB (2003).

20. World Bank, Inland Waterways and Port Rehabilitation Project, Project Appraisal Document, p.108.

Figure 2.3: Average Electricity Tariffs (US$/kWh)



Source: IDB, JBIC, & World Bank (2005), Annex 1.

covers its operating costs including a contribution of 10% of its revenues to the maintenance of infrastructure. Arguably, however, insufficient funds are spent on maintenance.

Road user charges (fuel surcharge, license and inspection fees and toll charges) amounted to VND 5,671 billion in 2001, more than covering road maintenance costs. These revenues generally pass directly into the state budget, so there is no necessary link with the actual level of maintenance spending.

In the electricity sector, EVN is self-financing. World Bank loans to the sector are on-lent by the Government to EVN, and EVN is required to repay the debt at a market interest rate. Tariffs have been set to cover costs, including capital. Nevertheless, tariffs will need to increase to meet future investment needs. Much of the planned new investment can be financed with additional debt, but in turn this requires an equity contribution to keep the gearing ratio reasonable. Tariffs will need to increase to generate the cash to make this equity contribution. Figure 2.2 shows that an average Vietnamese households spend 2.9% of their income on energy services. This is not especially high regionally. In Figure 2.3, Vietnam's average residential and industrial tariffs of US$ 0.05/kWh are less than the regional residential average of US$ 0.068/kWh and the regional industrial average of US$ 0.069/kWh. These figures suggest there is some room for increasing tariffs without encountering significant affordability or business competitiveness obstacles.

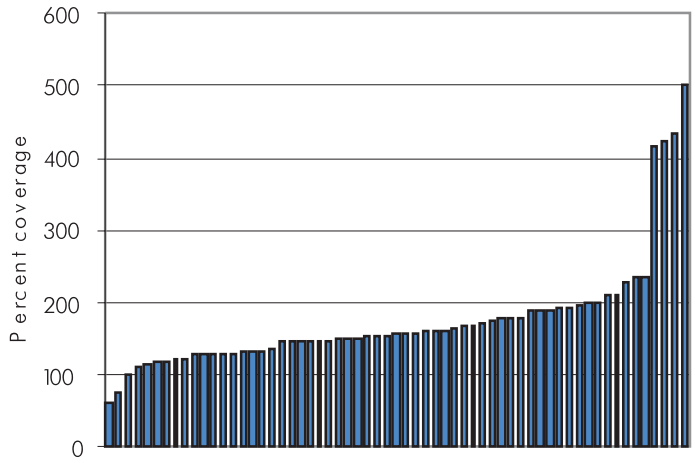
In the telecommunications sector, VNPT fully covers its costs. It funds its own investments (from retained earnings, donors, and commercial bank borrowing), and makes enough profit to contribute to the State budget with dividends. In 2003, the contribution to the State budget was VND 3,450 billion (US$ 222 million), according to the VNPT website.

Figure 2.4 illustrates that all but two

Electricity Meters to ensure cost recovery

Vietnamese water utilities covered their operating costs in 2003. In developing countries this is a rare positive achievement. Nevertheless, capital costs can account for around 80% of water utilities' full costs, so that there may be a considerable gap between covering operating costs and full cost recovery. In November 2004 the Ministry of Finance and Ministry of Construction issued Joint Circular 104/2004/TTLT-BTC-BXD requiring all water supply companies to set tariffs based on the full and accurate inclusion of all O&M costs, depreciation, debt payment, and return on investment. The speed of implementation of this decree remains to be seen. Provincial People's Committees are responsible for reviewing and approving water tariffs proposed by water utilities. Tariff adjustments have been irregular in the past, and have sometimes taken several years to implement.

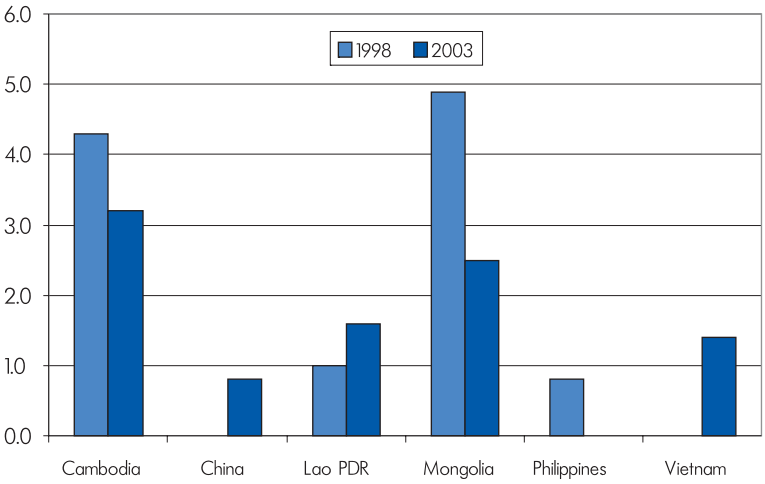
Figure 2.4: Operating Cost Coverage for 61 Vietnamese Water Utilities



Each bar reports operating revenue as a percentage of operating costs for an individual utility. Data for 2003.

Source: Benchmarking data from Vietnamese Water Supply Association

Figure 2.5: Household Spending on Water Services (% Household Expenditure)



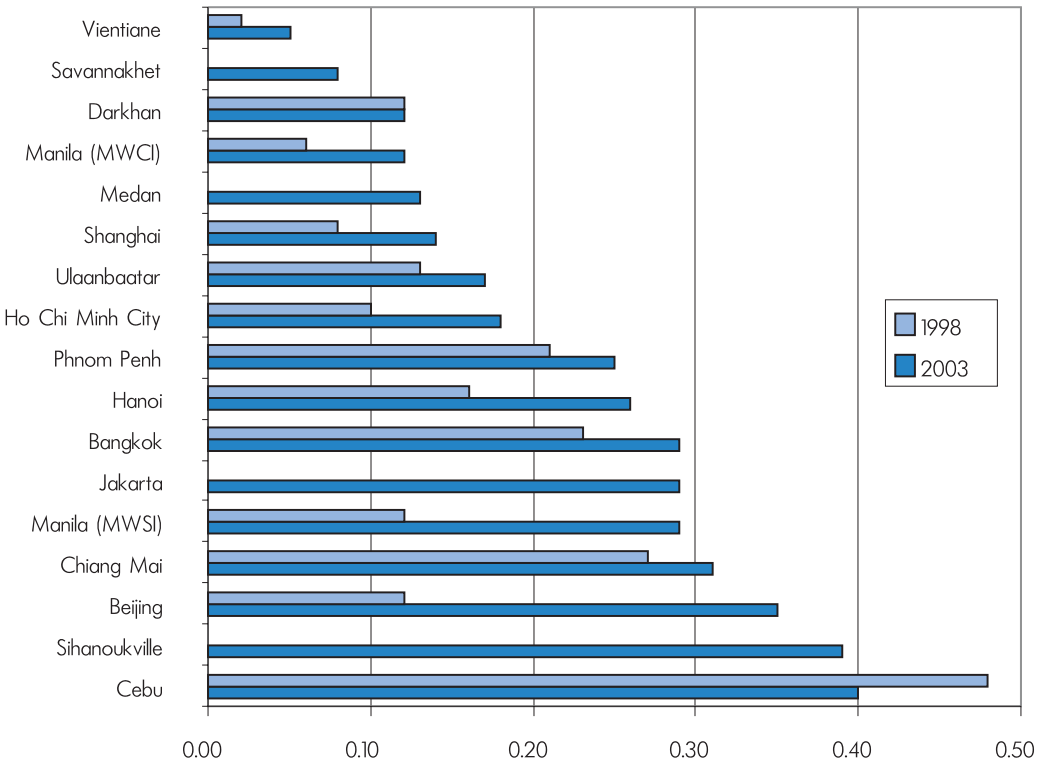
Source: IDB, JBIC, & World Bank (2005), Annex 1.

Some indication of the feasibility of improving cost recovery by increasing water prices can be obtained from comparisons of household spending and tariffs. Figure 2.5 compares household spending on water across the region. Vietnamese households devote on average 1.4% of their spending to water, less than the 2003 average of 1.9% in the sampled countries. Figure 2.6 compares the average water tariffs in Hanoi and Ho Chi Minh City with other major regional cities. In 2003 the average tariffs were $US 0.26 in Hanoi, US$ 0.18 in Ho Chi Minh City, compared with a regional average of US$ 0.22. Figure 2.7 suggests that water is cheaper in most Vietnamese towns than in Hanoi and Ho Chi Minh City. Together these indicators suggest some scope for improving cost recovery.

2.3.2. Efficiency Improvements in Procurement and Service Provision

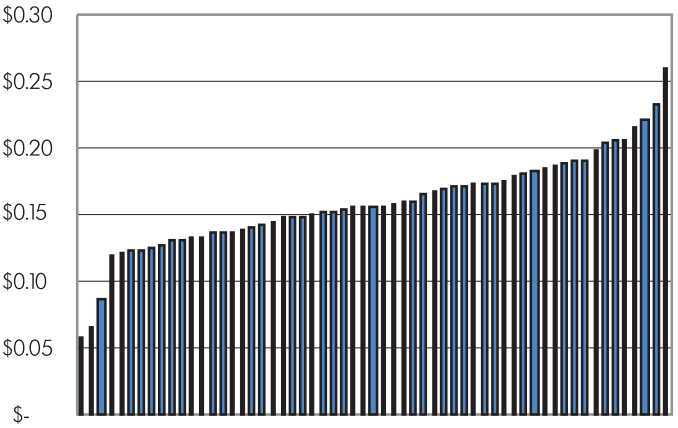
While not a direct financing mechanism, efficiency

Figure 2.6: Average Water Tariff (US$/m³)



Source: IDB, JBIC, & World Bank (2005), Annex 1.

Figure 2.7: Average revenues for water (US$/ m³) in 60 utilities



Each bar represents a separate utility. A further utility (Than Po, Ho Chi Minh City) reported revenue of $1.71/m3, but is not shown in the graph because it would reduce the visible variation between other utilities. Data from 2003. *Source:* Benchmarking data from Vietnamese Water Supply Association.

improvements can reduce the overall investment burden. For example, a reduction of 1% in electricity transmission and distribution losses would be the equivalent of an increase in system capacity of 1%, or a 112 MW power plant costing around US$ 100 million. Improving procurement processes, notably through greater use of competitive bidding and with greater checks on corruption, could similarly significantly reduce investment costs. Chapter 4 deals with means of improving efficiency.

2.3.3. Budget Funding

Budget funds are limited, and so need to be allocated to their most productive uses. Spending budget funds on

infrastructure means there is less of the budget available for other areas of government activity. And since budget funds are drawn from tax revenues,[21] and taxation imposes welfare costs on the economy, there is a real cost imposed on the economy whenever budget funding is used (see Box 2.1 on the marginal cost of public funds). For both of these reasons it is desirable to try to use alternative financing sources to the maximum extent possible, and to limit the use of budget funding to only those projects for which it is necessary.

There is, however, a strong case for budget funding in some cases. In particular, the social benefits of some forms of infrastructure exceed the private benefits. For example, private individuals' willingness to pay for treatment of waste water is low, but there are public health and environmental benefits that would frequently be sufficient to justify investments in waste water treatment plants. Similarly, since addressing poverty is a high priority for the Government, investments which provide benefits for poor communities, greater than the communities' ability to pay, may be socially justified. Considerations such as externalities or social equity may thus justify the provision of government funds, without a requirement for repayment.

In an ideal public finance system, the set of

BOX 2.1: The Marginal Cost of Public Funds

In general, households obtain economic "surplus" when they purchase goods and services. They value their purchase more highly than the money paid, or they wouldn't make the purchase. When governments raise money through taxes, households lose not only the tax revenue that is paid to the government, but also the economic surplus they would have enjoyed if they had used that revenue to purchase goods and services.

For this reason the social cost of raising a unit of public funds through taxation usually exceeds one unit. A commonly quoted estimate of the "marginal cost of public funds" (MCF) in the United States is 1.30, which means that the welfare cost of raising one dollar of tax revenue is the dollar transferred to the government plus 30 cents of lost surplus.

Taxation is socially worthwhile only if the government spends the resulting funds on projects that yield public benefits greater than the social cost. For the United States this would mean that publicly-funded projects should yield social returns greater than 30%.

The MCF usually increases as taxes increase, while the marginal benefits of public spending usually decrease since the government concentrates on high return projects first. In an ideal public spending system, government spending would be increased to the point where the marginal benefit of public spending equated the MCF. In practice no country bases its decisions about government spending on estimates of the MCF. One problem is that measures of the MCF are not sufficiently reliable.

For purposes of this report an estimate of the MCF in Vietnam was generated, using the computable general equilibrium model of Warlters and Auriol (2005). Supposing that tax rates on domestic goods, exports, imports, capital, and labor were each increased by 1% of the tax rates, the resulting estimate of the MCF is 1.10. The methodology used is too simplistic to serve as a reliable measure (it is likely to be an underestimate, because among other matters non-tax distortions are not modeled), but it is useful for policy-makers to bear in mind that funds raised by taxation are not free. A minimum rate of return on public investment must be earned, simply to offset the distortionary costs of taxation used to

21. General government revenue amounts to about 23% of GDP, of which tax revenue constitutes about 57% and oil revenues about 30%. When the Government seeks to adjust its level of spending it must ultimately adjust its tax collection, since its sales of oil are driven by commercial conditions. Consequently the marginal dollar of budget revenue is usually thought of as being derived from taxes.

projects eligible for budget support would be limited to projects where:

- Cost recovery through user charges is achieved to the maximum extent possible, but this is not sufficient to ensure financial viability of the project using non-budgetary financing; and
- The social benefits of the project have been shown to exceed private benefits by reason of externalities or social concerns.

Projects within this set would then be ranked in descending order of social benefit, and funds allocated to projects until the social benefit of the marginal project were equal to the marginal cost of public funds.

While Vietnam may not achieve such a public finance system in the near term, planning processes could be adapted so that projects that can demonstrate a large gap between social benefits and private benefits are more likely to receive budgetary support, and projects for which non-budgetary finance could be accessed receive lower priority in budget allocations. Adaptations to the planning process could be supported by guidelines indicating what sorts of projects are likely to exhibit the greatest externalities, and how to calculate these benefits. The budgeting and planning processes are discussed further in Chapter 3.

2.3.4. Banks

Vietnam's financial sector has a wide range of financial institutions (see Box 2.2), but is dominated by four major state-owned commercial banks (SOCBs), accounting for about 80% of the capital, lending and assets of

BOX 2.2: Vietnam's Financial Sector

FORMAL FINANCIAL SYSTEM

Banking financial sector

- 5 State-owned commercial banks, of which
  - 4 large SOCBs:
    Bank for Foreign Trade (Vietcombank)
    Industrial and Commercial Bank (Incombank)
    Vietnam Bank for Agriculture and Rural Development (Agribank)
    Bank for Investment and Development (BIDV)
  - 1 small SOCB
    Housing Development Bank for the Mekong River Delta
- 1 Social Policy Bank
- 25 foreign banks' branches
- 6 foreign banks' sub-branches
- 40 foreign credit institutions' representative offices
- 5 joint venture banks
- 36 domestic joint-stock commercial banks
- Central People's Credit Fund System and 32 branches
- 888 local credit funds
- 7 finance companies, of which 5 are affiliates of large corporate groups (General Corporations)

Non-bank financial sector

- 18 insurance companies
- 8 finance leasing companies: 3 of which are joint ventures with foreign investors or wholly foreign owned; 5 of which are subsidiaries of SOCBs
- 1 postal savings system, the Vietnam Postal Savings Service Company
- 2 stock exchanges: Ho Chi Minh City Securities Trading Center; Hanoi Securities Trading Center.
- 4 investment funds
- 1 Debts and Assets Trading Company (DATC) established in 2003, belonging to the Ministry of Finance

INFORMAL FINANCIAL SYSTEM

- Moneylenders, relatives and friends
- Rotating savings and credit associations (ROSCAs)

Source: Hoang Tien Loi (2004), QInsolvency Systems and Risk Management in AsiaÚ, paper presented at the Forum on Asian Insolvency Reform 2004, the Oberoi Hotel, New Delhi, 3-5 November 2004.

Bank for Investment and Development (BIDV)

the banking system. Over the past decade the SOCBs have evolved from specialized policy-lending vehicles to more commercially oriented financial intermediaries.[22]

With the exception of firms in the transport sector, infrastructure enterprises have not borrowed large amounts from the SOCBs. But illustrating the weaknesses of the current system, when transport construction firms have borrowed from SOCBs, the outcome has not always been happy. During 1999-2002 about 35% of transport commitments had been approved by the Prime Minister's office, but not allocated funding. The Ministry of Transport contracted state-owned construction companies to undertake work on the promise of subsequent reimbursement. SOCBs were encouraged or directed to lend to the contractors to finance the construction works. SOCBs have subsequently been forced to grant loan rollovers, as in many cases the interest payments due are in excess of enterprise capitalization. Arrears in the Ministry of Transport to contractors amount to VND 1,200 billion, and those of the Transport Construction Corporation amount to a further VND 1,000 billion. This problem was the result of a mismatch between planning and financing approvals, combined with the failure of SOCBs to provide credit on strictly commercial criteria.

A practice of informally directing SOCBs for purposes of government policy and limited credit analysis capacity led to the accumulation of non-performing loans (NPLs), amounting to about 18% of outstanding loans at the end of 2003. A large proportion of NPLs were accumulated during the period 1995-98 when policy loans were made to inefficient state-owned enterprises. Since then the State Bank of Vietnam has applied stricter control including increased reserve requirements to account for NPLs, the banks have improved their credit analysis, the Government has provided state budget resources to resolve NPLs of state-owned enterprises, and has established the DAF as a specific vehicle for policy lending and the Debts and Assets Trading Company to help finance SOEs that can still trade their way out of debt. Weaknesses continue, however, with continued practices of directed credit, a low capital adequacy ratio (equity/risk assets) averaging 3.5% for the SOCBs compared to the international standard of 8%, and progress still required in credit analysis.

The mismatch between the long-term financing needs of infrastructure investment and the short-term deposits held by banks means that banks are not the ideal financing institutions for infrastructure. Nevertheless, by pooling their contributions in investment consortia the banks are likely to continue

22. There seems to be no universally accepted definition of "policy lending." It involves a formal request by the government that a bank lend to a particular enterprise, regardless of the bank's assessment of the enterprise's creditworthiness. In some cases these credits are backed by designated funding, some with explicit or implicit government guarantees. Typically these loans have lower margins than purely commercial lending.

playing a role in infrastructure financing, and it is important that the financing is directed towards projects with the highest returns.

The SOCBs should be established on a more clearly commercial basis, free of political direction. Credit should be given only to projects with sound fundamentals. Risks need to be properly accounted. Credit rating agencies could be established to assist in the process. The SOCBs currently have a non-performing loan portfolio of 10-15% of total loans, or 5-8% of GDP. Systemic bank lending to risky projects played an important role in the East Asian financial crisis of 1997 and in Japan's long economic stagnation. The dangers are clear; Vietnam needs to reform its banking system.

2.3.5. Bond Issues

There are three relevant types of bond issuers: the national government, provincial governments and infrastructure enterprises. National government bonds are backed by the Government's power to tax. Provincial governments' bonds are similarly backed by those governments' general revenue-raising powers. Corporate bonds are backed by the ability of the enterprise to raise revenue by selling its products.

The national Government has been working to develop the government bond market, in part to directly finance investment, including infrastructure, and more broadly to serve as a benchmark for broader capital market development. It plans to raise VND 63 trillion (US$ 4 billion) by 2010 to be used mainly to finance infrastructure and education projects including the north-south Ho Chi Minh Highway, roads along the borders with China and Cambodia, and irrigation projects in the disaster-prone central provinces. In 2004 the Government issued about VND 5 trillion of bonds for infrastructure development and VND 2.5 trillion for the education sector, representing about 0.7% of GDP. Bonds of 2 years and 5 years maturity have carried coupons of around 8%. In October 2005 the Government issued its first overseas government bonds, raising US$ 750 million at a rate of 7.125%.

The bonds are kept off-budget, to comply with the State Budget Law's limit on the budget deficit of 5% of GDP. Including off-budget bonds and SOCB recapitalization would raise the official level of public debt by about 3 percentage points, from its current level of around 33% of GDP. The overall level is not currently worrying from the viewpoint of macroeconomic stability, but as the bond program expands the contribution to the level of public debt will increase. Clearly the bond issues should be reflected in official statistics of public debt, and if the bonds make economic sense the State Budget Law's limit on the deficit should be amended.

The principal purchasers of bonds have been SOCBs and insurance companies. To ensure full subscription, the government has directed SOCBs to purchase bond issues. Insurance companies are obliged to invest in bonds or bank deposits. These investors would, if they could, seek alternative investment opportunities. Obliging financial intermediaries to invest in bond issues is not the ideal fashion to ensure the highest returns for the country's savings.

At the provincial level, the first municipal bonds were issued by the Ho Chi Minh City government in 2003, in the form of a general obligation bond, raising US$ 127 million. In 2004, a provincial government-owned investment fund (HIFU) managed the issue of another US$ 127 million of municipal bonds. The rules for issuance of municipal bonds are not yet clear, and they do not always provide the right incentives to the issuers. Disclosure rules for the public offerings either do not exist, or are very weak. The stock of sub-national government debt in Vietnam is not currently a

threat to fiscal stability. But plans for increased investment are likely to see sub-national debt increase significantly, requiring national oversight.

Issuance of corporate bonds for infrastructure development was pioneered by EVN, which issued bonds for the development of the Ialy hydro-electric power plant in 2001. On May 5, 2005 EVN began issuing bonds to raise VND 200 billion to finance a 500 kV transmission line project in the Central Highlands region. The coupon rate is 8.8% for the first year of the five-year bond, while in the following years the interest rate will be equivalent to the average interest rate of the four major SOCBs plus 1.1%. Between now and 2010, EVN plans to sell more than US$ 1.6 billion worth of registered bonds on local and international markets.

Overall the market for bonds is poised for significant development but important institutional reforms, addressing governance and transparency in particular, are required to permit this potential to be realized.

2.3.6. Government Investment Funds

In recent years specialist government investment funds have been created at the national and provincial level, with significant roles in infrastructure financing. At the national level, the key public financing institution for infrastructure is the Development Assistance Fund (DAF), established in 2000, with branches throughout the country. At the provincial level, twelve provinces have followed the lead of Ho Chi Minh City (see Box 2.3) in establishing local development investment funds (LDIFs).

These investment funds serve as mechanisms for aggregating and managing funds from a variety of sources, financing a range of projects not confined to infrastructure. An important difference between the DAF and the LDIFs is that the DAF raises its funds solely

BOX 2.3: Ho Chi Minh City Investment Fund for Urban Development (HIFU)

Established in 1997 as a pilot program, HIFU is the most advanced of Vietnam's thirteen local development investment funds. One of HIFU's functions is the management of funds provided by the city/provincial government, helping to transform state subsidies in areas such as new area building into budget lending with full repayment. On the basis of its success as a funds manager, HIFU has also been entrusted with the management of the Pollution Minimization Fund of Ho Chi Minh City and the Revolving Fund for environmental improvements.

HIFU lends to urban infrastructure projects in transportation, water, health, education, housing, and industrial parks. HIFU is beginning to take the lead position in syndicates, raising capital from commercial banks, financial institutions, and organizations and individuals as it puts together financing packages for large scale projects. In syndicated projects HIFU's capital contribution has been about 20% of the loan amount.

Ho Chi Minh City has also provided HIFU with funds raised by issuing municipal bonds, backed by the city's general revenues and taxing powers. Bond issues of US$ 127 million each were made in 2003 and 2004. HIFU is now examining the possibilities for issuing bonds backed by project revenues.

HIFU can invest directly in joint stock companies that invest in infrastructure fields. In 2001 it established the Ho Chi Minh City Infrastructure Investment company (CII), contributing 15% of the initial US$ 20 million equity capital and mobilizing the remainder from the public. CII has itself invested in two toll-road concessions, the Phu My Bridge BOT, the Kenh Dong water treatment plant, and Tan Phu Industrial Zone. With CII now on a sustainable footing, HIFU is considering selling its shares in CII.

Other direct investments made by HIFU include the Kenh Dong Water joint stock company, the Ho Chi Minh City Securities Joint Stock Company, the Song Tan Industrial Zone Infrastructure Investment Joint Stock Company, and the Thu Duc BOO Water Joint Stock Company. HIFU's strategy is to contribute about 10-20% of the initial capital of these investments, and then withdraw the capital for reinvestment when the companies stabilize.

from public sources, and lends to public enterprises. One of the motivations for the LDIFs is to provide a legal structure for organizing joint ventures with private investors, and the LDIFs can also make equity contributions to projects.

The financial resources involved are considerable:

- The DAF is the biggest financial institution in the country. In 2004, the DAF stock of loans outstanding was around 12 percent of GDP, and its capital amounted to VND 94,145 billion (US$ 6 billion), including contributions from ODA (39.9%), Government bonds (14.8%), domestic trust funds (12.1%), social security fund (10.2%), postal savings (5.9%), Treasury bills (4.2%), state budget (3.6%), capital mobilized by DAF's branches (3.1%) and State credit (1.4%). Of the resources mobilized domestically, about 80 percent has been on-lent to SOEs.
- In 2004 the total capital channeled through LDIFs was approximately US$ 400 million. The four most active LDIFs are located in Ho Chi Minh City (HIFU), Dong Nai (DNIF), Binh Duong (BDIF) and Hanoi (HANIF). The proportions of these provincial governments' investments handled by their LDIFs in 2004 were 13%, 9%, 7-8%, and 33% respectively.

Because these institutions are fairly new, their governance arrangements have not been fully developed.

- The DAF formally reports to the Prime Minister, but is also subject to oversight through its Board of Management by the Minister of Finance, State Bank of Vietnam, and the Ministry of Planning and Industry. The combination of these various lines of authority mean the DAF suffers from mixed management incentives, weak accountability, and limited supervision.
- The DAF has no reserves for bad debts, no mechanism for evaluating the credit-worthiness of loans, no portfolio limits on weighting for individual sectors or companies, and no external audits.
- Many operational aspects of the institutions, including the LDIFs, are still at an early stage of development, including credit risk management, accounting and reporting standards, information systems and supervision.

Decree 106/2004/ND-CP is a recent improvement in DAF's regulatory framework. It narrows the list of eligible borrowers, and states that only projects that are capable of direct repayment, are socio-economically efficient and have feasible business plans are eligible for DAF support. Project assets are to be used as security, and those assets cannot be assigned until loans are fully repaid. An element of risk-sharing, through co-payments by other government bodies or by commercial banks, is also required. DAF investment lending and credit guarantee cannot exceed 70% of the total capital of a project. These measures, if effectively implemented, will increase the probability that debts will be serviced and fiscal costs minimized. But other problems of governance and transparency remain.

Toll Road financed by Ho Chi Minh city Infrastructure Fund (HIFU)

The same general weaknesses in governance and transparency exist in the case of the LDIFs. The central government has plans to legislate in this area, but the decree envisaged in the 2001 Public Administration Reform Master Program remains in draft form. The absence of central regulation on governance has been a source of flexibility, allowing provinces to experiment with different structures. It is important that if or when the central government legislates the best features of each LDIF be retained. At the same time, legislation on crucial features such as governance of the funds may help to provide confidence that investors' rights will be protected, helping the funds to raise more long-term capital. One of the criticisms of the LDIFs is that they have not been very successful in leveraging their initial charter capital.

Although the institutions have a commercial focus, they can be directed to undertake projects that may not be commercially profitable at market interest rates.

- The DAF onlends its funds at interest rates that are lower than the cost of raising them. The government subsidizes the interest rate difference as well the operating costs of the DAF.
- Seven LIDFs currently actively administer "entrusted" funds, provided by provincial governments to support favored policies. These funds are not subject to the typical project appraisal process of the LDIF, and the LDIFs receive a fee for their administration.

The rationale for supporting non-commercial transactions is not clear. This sort of support is nothing less than a public subsidy, which should be subject to the normal rigors of public expenditure review. Subsidies should be justified in terms of addressing externalities, or particular poverty issues, so that subsidy rates should differ across sectors. These policies may also reduce the commercial focus of the investment funds, reducing the rigor of their project evaluations.

A weakness shared by DAF and the LDIFs is the risk posed to their respective governments' fiscal positions. Given the magnitude of their operations and the potential for making loans that are not commercially viable, there is a need to develop governance structures that places the institutions at arms' length from the governments, to discourage false expectations that projects are ultimately backed by government. Alternatively, there is a need for more public accounting of these institutions, and the inclusion of the accounts within consolidated government accounts.

Overall, these funds are helping to fill the gap in long-term finance in Vietnam's capital markets, but they pose significant risks. Various governance and transparency reforms are required to lessen these risks, and even then, it will be beyond the capacity of many provincial governments to establish effective LDIFs. These sorts of funds alone will not meet all of the needs of infrastructure financing.

2.3.7. Sub-National Government Financing

Decentralization has increased the spending obligations at sub-national levels. As decentralization has progressed, the share of sub-national governments in total government expenditures has risen from 26% in 1992 to 48% in 2002. During 2005-2010 annual requirements will be of the order of US$ 378 million for urban water supply, US$ 280 million for wastewater collection and treatment, US$ 239 million for drainage including canal rehabilitation, and around US$ 800-900 million for urban transport. This gives a total of US$ 1.7 to 1.8 billion annually, or around 3.7% of GDP over the period 2001-2010. In addition annual required spending on low income housing in urban areas, a municipal responsibility, has been

estimated at US$ 835.4 million, or 1.8% of GDP.[23]

This has given rise to a challenge to mobilize financing at sub-national level. The major avenues for provincial governments to mobilize funds for municipal infrastructure are:

- Budgetary resources, including transfers from the central government.
- Borrowing from SOCBs.
- Own-source revenues generated mostly from land use rights and partnerships with the private sector.
- State development credits from the DAF.
- Bond issues.
- LDIFs.

The potential contributions of SOCBs, the bonds market, the DAF, and LDIFs have already been discussed. The central source of funds is likely to remain transfers from the central government, but more could be done to improve sub-national governments' own revenues.

The 2005 PER-IFA examined the challenges inherent in assigning adequate revenues to sub-national governments. One potential area for reform is greater revenue autonomy at sub-national level. At present all taxes are centrally collected. The revenues from some taxes are retained 100% at the central level, some other taxes are assigned 100% to provinces, and revenues of remaining taxes are shared between the central government and the provincial governments where the taxes are collected. District and commune governments can collect certain fees such as waste collection and school tuition fees, but there are no sub-national taxes. The PER-IFA suggested the possibility of permitting provincial governments to introduce personal income taxes that piggyback on the existing national income tax, and of introducing a modern property tax at district and commune levels. At present there are many overlapping fees on different real estate assets and transactions, which could be consolidated in a single more efficient property tax. Since property development is a strong driver of demand for municipal infrastructure, property taxes are frequently seen as an efficient form of cost recovery for publicly provided infrastructure. There may also be the potential for greater cost recovery for a range of municipal services (eg parking fees).

Another area examined in the PER-IFA is the system of equalization transfers from the central government to the provinces, which plays an important role in reducing horizontal disparities between provinces arising from differing abilities to raise their own finance, in turn arising from differences in provincial wealth and differences in provincial government capacity. Greater reliance on objective formulas (rather than ad hoc negotiation) in the allocation of these transfers would provide greater certainty to the provinces over their future revenues, and would thereby enhance sub-national borrowing capacity (since lenders, too, would have greater confidence concerning the ability of sub-national governments to repay debt). It is important that such formulas are based on revenue potential, rather than actual revenues collected, to ensure that provincial governments do not have disincentives to raise their own revenues.

At present municipal governments frequently raise revenue through deals with private property developers, particularly through the sale of land use rights. As provincial governments do ad hoc deals with the private sector under less than ideal disclosure environments, possibilities exist for inappropriate behavior. There is a need for a

23. For the assumptions behind these estimates see the Urban Infrastructure Strategy paper.

basic framework at the provincial level that makes public the operational standards of the provincial government for partnering with the private sector. Ideally, the standards should be developed by each provincial government and announced to the public; alternatively, they may be proposed by the central government. These standards should impose an obligation to use competitive bidding, and should establish a transparent procedure for dealing with unsolicited proposals.

2.3.8. Non-Bank Financial Institutions

In more developed financial markets, risk pooling institutions (insurance companies) and contractual savings institutions (such as mutual funds or private pension plans) are important complements to the banks (see, for example, Box 2.4). Such institutions can help to broaden the range of maturities and risks available to investors, and thereby offer offer a wider range of maturities and risk-pooling services for investors. Currently much private domestic saving is directed toward investment in property, small-scale business ventures, gold, offshore accounts or simply held 'under the mattress'. The promotion of vehicles for long-term investment may help to promote the national returns on these savings, and would also help to provide a long-term source of finance for infrastructure.

By providing competition to the banks, non-bank financial institutions can help to promote overall efficiency. And their presence can help economies to recover more quickly from shocks to the banking sector. While the current reform priority is the banking sector, because of its

BOX 2.4: Using Pension Funds to Finance Infrastructure in Chile

To increase investment in infrastructure during the early 1990s, ChileÕs government introduced a concession program to attract private capital into the transport infrastructure sector, covering roads and highways, bridges, tunnels, and airports. The program has managed to attract over US$ 3.6 billion in private investment in infrastructure.

Chile was the first Latin American country to allow pension funds to invest in infrastructure projects. In 1981, Chile replaced its bankrupt pay-as-you-go retirement system with a fully funded system of individual retirement accounts managed by the private sector. By 2001, more than 95% of Chilean workers had joined the system; the pension funds have accumulated US$36 billion in assets; and the average real rate of return has been 10.9% per year.

Initially, pension funds were legally constrained from investing in infrastructure projects. In particular, the lack of investment grade rating for bonds or other financial instruments issued by concession companies was an obstacle. In order to facilitate investments from pension funds and insurance companies legal changes to financial and infrastructure regulations were introduced during the mid-1990s. These reforms helped pension funds and insurance companies to invest in bonds without history. As a result of these reforms, a new long-term financial instrument, the Infrastructure Bond, was created. The typical infrastructure bond offered a 20-year fixed rate bond denominated in Unidades de Fomentos (an inflation-adjusted unit of account used in Chile with a AAA local rating and a monoline guarantee. The bonds are sold exclusively to local private investors, including local pension funds, and they have been continuously oversubscribed.

Of the 16 toll road concessions awarded, 11 have opted for the alternative of Infrastructure Bonds, 3 have financed through bank loans and 2 concessions have not yet decided their financing structure. The development of the infrastructure bond market was assisted by the fact that in 1995 Chile achieved an "A-" credit rating, creating an opportunity for monoline insurance of bond issuances. In November 1998, the consortium handling the upgrade of the Talca –Chillan stretch of the nation's main thoroughfare, Route 5, issued the first US$ 150 million in infrastructure bonds. By mid-2002, a total of US$ 963 million of infrastructure bonds had been issued in five offerings. The concession program is now being expanded to fund private investment in jails and urban infrastructure.

Source: World Bank (2004)

general role in financing all businesses, some efforts could be directed to the promotion of the non-bank financial sector. Care is needed to ensure adequate prudential supervision of the sector.

2.3.9. Credit Rating Agencies

Credit rating agencies could help to improve the efficiency of various elements of financial markets, by improving the quality of information concerning the likelihood of repayment by companies or governments seeking finance. Such information would assist in more accurate valuations of financial assets such as bonds or shares, whether issued by governments or enterprises, and could be also used by banks to assist in determining credit-worthiness of firms seeking loans.

Vietnam's first ever credit rating agency, the Credit Ratings Vietnamnet Center (CRVC) was launched on June 4, 2005, by the state-owned VASC Software and Media Company. The initiative arose with VASC rather than government officials. It appears unlikely that this firm will have the resources to provide credit information on infrastructure firms. Supportive regulation may be required to establish an agency with the capacity to obtain useful information on infrastructure firms. Such regulation could include rights of access to information concerning tax and customs, or legal obligations for firms wishing to be listed or to issue bonds to have a credit rating. Newspapers report that the Ministry of Planning and Industry is seeking a foreign partner to set up another credit rating agency as a joint venture or 100% foreign-owned enterprise.

2.3.10. Equitization

Internationally, many governments have used the sale of shares of state-owned enterprises as a means of raising substantial revenue. To date, Vietnam's equitization program appears to have been directed at expected efficiency benefits, rather than as a major revenue-raising device. But as Vietnam confronts the financing challenges of its major investment program, equitization could provide an additional source of finance.

The equitization program is a process of diversification of ownership of state-owned enterprises by sale of shares. For the most part, equitization has involved sales of shares to workers, and has been attributed with increasing workplace productivity by providing stronger worker incentives. Equitization can also entail sale to another SOE, so it is not necessarily equivalent to privatization. Equitization frequently entails a sale of as little as 15% of the shares, with the State remaining the dominant owner.

In 2003, about 450 SOEs were equitized, and a further 700 in 2004. Surveys conducted in 850 equitized SOEs found that businesses which successfully completed restructuring increased their capital by 44%, turnover by 24% and labor income by 12%. Most of the equitized enterprises have been small, with capital under VND 5 billion (US$ 300,000). Firms with over VND 10 billion capital accounted for only 13% of the equitized companies in 2004.[24]

Rules related to infrastructure under Decision 155 of 2004 include:

- The national electricity transmission system will remain State owned, but distribution and generation are open to equitization of up to 49%.
- National and international communications cables will remain State owned. There is no discussion concerning who has the right to use the cables.
- Management and maintenance of the

24. Source: Vietnam Economy (2005)

national railway network are to remain State owned, as are large airports and seaports, sewage treatment works in big cities and public lighting.

- Companies that have State capital of at least VND 30 billion and average annual contribution to the State budget of VND 3 billion and that operate in air and rail transportation will continue to be 100% State owned.
- The State will retain at least 50% of capital in large urban water companies.
- The State will retain at least 50% of the capital in companies operating in maritime transport.
- The State will retain at least 50% of the companies operating in the management and maintenance of important roads, waterways, boats and bus stops.
- Construction companies no longer appear on lists of SOEs where the State will retain at least 50% of the capital.

Thus the new Decision and the new Decree provide a legal basis for the equitization of some infrastructure SOEs. By the summer of 2005, equitization pilots had been undertaken in both electricity generation and distribution, and plans exist to equitize all of the existing power plants of EVN except for the large hydro plants, during the next three years. The Ministry of Transport and Communications has already equitized 48 enterprises, and in June 2005 announced plans to equitize 141 enterprises in 2005 and 2006. Consideration is being given to equitization of VNPT's two mobile phone subsidiaries.

Several general features of the current equitization program reduce its financing benefits. Investors will reduce the amount they are willing to pay for shares in a company if:

- There is inadequate disclosure of information about the accounting position and the business risks;
- An underdeveloped corporate governance regime does not provide adequate shareholder rights to direct managers, or does not protect minority shareholders' rights to a proportional share of profits;
- Investors in infrastructure are not able to obtain management control;
- Shares are not listed on a stock exchange, reducing the ease with which shares can be sold. Only a small proportion of equitized companies are listed. In 2005 only 28 equitized SOEs were listed on the Ho Chi Minh stock exchange, out of more than 2,400 equitized SOEs.
- Sales are frequently restricted to managers and workers, who may be willing or able to pay less for particular shares than general investors.

As the equitization process expands in size and scope, these problems need to be remedied. This could, in part, be achieved by a new comprehensive law on equitization (or on equitization of infrastructure firms), dealing with the methods of sale, legal rights of redress of minority shareholders etc. Alternatively, the government could start with pilot projects, and improve its practice as it goes on.

2.3.11. Private Investment

There is great potential for more private investment in infrastructure. Private investment, including foreign investment, offers a virtually limitless source of financing, and could go far to meeting the infrastructure investment agenda. But taking full advantage of this potential requires sound projects in which prices fully cover costs, including a return on capital; careful transaction preparation; and a sound regulatory environment. While there appears to be reluctance within government to advance rapidly toward a major program of private investment in infrastructure, a strong case can be made for increased experimentation

with private investment transactions, to determine the extent to which a broader private investment program would be desirable, and to build up the necessary experience to be able to move to a broader program.

Table 2.3 summarizes the amounts invested in infrastructure projects with private participation since 1994. Over the period 1997-2003 private participation in infrastructure (PPI) commitments amounted to about 15% of total infrastructure investments. Excluding a single project, the US$ 1.3 billion development of a gas field and pipeline, PPI commitments amount to 8.5% of total investment. That is, setting apart the gas development, private financing has historically played a quite small part in infrastructure investment.

potential template for further IPPs.

The telecommunications sector is a prime potential candidate for increased private participation. International capital markets are, for example, usually very willing to invest in telecommunications. Moreover because telecommunications markets can support strong competition they pose lesser regulatory difficulties than other sectors. Involving the private sector in telecommunications markets could increase financing available for telecommunication investment, and free public resources for investment in other sectors. More competitive telecommunications markets have also historically showed stronger jobs growth. Increased private investment in telecoms would require an acceleration of the current movement

Table 2.3:
Private Investment (Contractual Commitments)-US$ millions

	Ports	Airports	Tollroads	Telecoms	Water	Electricity	Gas
1994	10						
1995				128			
1996		15		40		205	
1997	70			714		110	
1998				237	38.8		
1999						120.5	
2000					20		
2001					154		
2002	20		10			480	1300
2003				230		412	
2004							

Source: PPI database, except for telecommunications, where BCC network investments are drawn from USAID (2005).

Energy has been the principal recipient of PPI, with the development of the Nam Con Son gas field and several BOT independent power projects (IPPs). Going forward, in the absence of other financing sources EVN will need to purchase more than half the incremental power required during 2005-2010 from independent sources, mainly independent power plants. The Phu My II experience of competitive bidding and successful closure provides a good

towards liberalization, including relaxation of the current restrictions on foreign ownership. To further accelerate the process, existing telecoms companies could be equitized, with permission for foreign participation.

The biggest single area of new investment required is in transport, of which roads represent the largest proportion of investment (about 80%). Toll roads can provide interesting possibilities for private investment. There are

many potential projects in other sectors, both large and small, that could potentially benefit from greater private finance, including water and sewerage treatment plants, bridges, and port development.

But involving the private sector in undertaking significant investments in infrastructure is a complex and difficult task. To attract private finance, investors must expect to earn a return on the capital invested commensurate with the risks undertaken, but these needs must be balanced with the protection of consumers from the market power of privatized infrastructure. This balancing act must be implemented in transaction documents (legal contracts, licenses, and laws established to induce the initial investments) and in the ongoing regulatory environment established to govern the infrastructure firm's operations. To get all of this right is a highly complex affair, requiring skilled economists, accountants, and lawyers, as well as careful political guidance. The best way of establishing these skills would be through experience, which suggests that Vietnam should, in addition to the IPP program envisaged for electricity, seek to establish pilot projects with private participation, including management control rights, in a range of infrastructure sectors.

2.3.12. Risk Management

It is desirable to advance investments through time, but doing so introduces a risk that the government will not be able to repay the advanced funds. A traditional element of risk control has been debt management, to ensure that debt repayment does not occupy an excessive proportion of government expenditure. As alternative financing instruments are increasingly embraced, greater attention will also need to be given to contingent liabilities, incurred both at the national and provincial level.

Internationally, as governments have looked to their state-owned enterprises or the private sector to assume a greater proportion of infrastructure financing, they have often provided guarantees or other forms of contingent support. For example, a state-owned enterprise's bond issue might be guaranteed by the government, or the government might guarantee the purchase of a minimum quantity of electricity from an independent power producer by its state-owned utility. The aim is to increase the *expected* returns for private investors, and hence private investment, without direct cash from the budget.

In considering whether to give contingent support to a project it is useful to distinguish between policy and non-policy risks.[25]

Policy risk is variation in a project's net returns that may result from changes in government policy. Unilateral changes by the government to laws, regulations, or even contracts, can reduce project profitability. When private investors are exposed to these risks their cost of capital is increased. When the Government bears these risks it has a stronger incentive to establish and maintain sound policies. Overall, agreements to compensate investors in the event of policy changes can reduce project costs.

Non-policy risks are those over which the government has little or no influence. Examples include the costs of construction, future demand for the infrastructure service, or the value of local currency. Internationally, some governments have given guarantees to cover non-policy risks because of the illusion that no cost is borne by the government. As with policy risks, there is a cost to the Government of bearing these risks since there is some probability that the guarantee will be called, but in this case it is not clear that the cost is any lower for the government than for private investors.

25. See Brixi (2005).

When guarantees are given, a fiscally prudent government should take reasonable steps to control the "exposure", "fiscal cost", and "fiscal risk" created. *Exposure* means the maximum possible amount the government could pay as a result of giving the guarantee. *Fiscal cost* means the expected net present value of the cash flows paid as a result of giving the guarantee, taking account of the probability that the guarantee will be called. *Fiscal risk* means the variability of the cash flows paid by the government.

Contingent liabilities can be an effective mechanism for the Government to leverage scarce budget resources, encouraging greater private financing. The fact that they involve risks does not mean they are to be avoided altogether. Rather, it suggests a need to monitor the risks, to ensure they are not excessive. Elements of an effective risk management framework include:

- Development of guidelines and criteria for the sorts of risks that should be guaranteed by the government;
- Policies that limit the government's exposure to risks to prudent levels;
- Quantitative analysis of the fiscal costs and risks of proposed guarantees and other forms of government support,
- Financial reporting that discloses government guarantees and their expected costs in the government's accounts.
- Institutional support for these policies, including staff with the appropriate skills.

Issues of risk management are likely to be encountered in the near future with the pressing need to develop IPPs in the electricity sector. The government's approach to guarantees for IPPs will have implications for other sectors. Policy in respect of IPP guarantees should be developed as part of a broader government-wide approach to risk management.

Vietnam's risk management framework should embrace the activities of the national government, sub-national governments and state-owned enterprises. In practice the Government cannot afford to have sub-national governments or major infrastructure enterprises collapse because they have assumed excessive liabilities. So either the national Government must ensure that it has adequate revenues to cover the consolidated exposure of these entities, or that each of these entities has its own adequate risk management framework.

2.4. Recommendations

Recent levels of investment in infrastructure have been around 9% of GDP. Infrastructure investment is devoted to the backlog of investment required to provide consumers with basic services combined with system expansion to keep pace with Vietnam's rapid pace of growth. Given that the backlog remains in terms of various access statistics, and electricity investment has barely kept pace with demand, there is no evidence that this level of investment has been excessive. Indeed sectoral plans suggest a possible need for infrastructure investment financing of 10-11% of GDP, although these plans need to be subjected to review on a project by project basis to ensure that each project yields positive net social returns.

Within the overall level of investment there is significant room to increase the proportion of non-budgetary and non-ODA financing. This would free up budget and ODA resources, permitting either an increased level of infrastructure investment or spending on other government priorities. The development of alternative financing reforms would also help to replace concessional ODA, as it draws to an end. A variety of reforms would help to develop such alternative financing sources, and to improve the efficiency of existing financing sources.

To assist in prioritizing, recommendations for reform are accompanied by an indication of their proposed timeframes: (S) short-term (1-2 years) and (M) medium term (3-5 years). In general,

recommendations that suggest a policy change or a simple review can be implemented within a short timeframe, whereas recommendations requiring capacity building may require a slightly longer timeframe.

Recommended actions are:

(2.1) Improve project monitoring and evaluation mechanisms to assess financial and wider economic returns achieved by the infrastructure investment program. A particular priority is the transport sector, where there are less obvious access targets to be achieved than in other sectors and where there is considerable reliance on public investment. (M

(2.2) Move to achieve greater cost recovery across infrastructure sectors, where feasible. (S)

(2.3) Establish criteria for the use of taxpayer funding in infrastructure financing limiting the use of taxpayer funds to projects where: (S)

- the social benefits have been shown to exceed private benefits by reason of externalities or social concerns; and
- cost recovery through user charges is achieved to the maximum extent possible, but this is not sufficient to ensure financial viability.

(2.4) Improve the commercial focus of public financial institutions, including SOCBs, DAF, and LDIFs. Lending decisions should be based on commercial assessments of the probability of repayment and loans should be priced to reflect the risk involved. Measures to implement this include development of appropriate governance structures and legal mandates which prescribe the conditions under which loans may be made, and technical assistance to build capacity in assessing potential returns and rating risks accurately. (M

(2.5) Improve the efficiency of bond markets by, among other matters, improving information disclosure concerning the ability of public authorities to meet debt obligations, issuing government bonds with a range of terms, to provide benchmarks for non-government financial instruments, improve debt issuance and management by Treasury, increase secondary activity and liquidity of the government bonds through enhancements to the legal framework. (M

(2.6) Establish guidelines for the issuance of government bonds to be used for infrastructure financing, giving preference to bonds backed by infrastructure revenues rather than by the Government's general revenues. (S)

(2.7) Conduct an assessment of municipal financing needs and means, comparing municipal needs with an assessment of financial resources available, and potentially available, at municipal level. (S)

(2.8) Improve municipal financing capacities. Commence with pilot exercises with lessons to be applied nationally. Elements of the pilot exercises could include: a diagnosis of existing strengths and weaknesses in municipal capacity; review of the efficiency of the levels and structures of municipal taxes and charges; explore possibilities for increased transparency and public participation in budgeting; build capacity in cost control; improve accounting systems (e.g. computerization, 'modified accrual accounting'); and develop new municipal finance instruments including bonds. (M

(2.9) Revise governance arrangements for the LDIFs to legally distance them from their owning governments, in the sense that recourse may not be had to a government for liabilities incurred by an LDIF. (S)

(2.10) Improve the regulatory framework for equitization, including enhanced information disclosure and better protection of shareholder rights; and a requirement that equitized infrastructure firms be listed on public stock exchanges. (S)

(2.11) Accelerate private involvement in the telecommunications and electricity industries, and launch pilot programs for greater private sector involvement in the water and sanitation and transport sectors. (S)

(2.12) Establish a risk management framework that establishes a cap on the government's exposure to contingent liabilities, provides guidelines for the appropriate allocation of risks between the public and private sectors in public-private partnerships, and requires Ministry of Finance approval for any public support, direct or contingent, to public-private partnerships. (M)

3. Planning and Coordination

Issues

There are three broad areas of difficulty with current infrastructure planning and coordination:

(i) The absence of economic criteria for setting priorities between different projects.
(ii) The horizontal coordination of decisions between ministries with planning responsibilities, particularly in respect of the incorporation of financing considerations and spatial development goals into infrastructure investment planning.
(iii) The vertical allocation of responsibilities across levels of government, with the principle of "dual subordination" potentially complicating or delaying approvals and with decentralization leading to difficulties of coordination across sub-national levels of government.

In addition to these issues of general cross-sectoral application, improvements are particularly needed in urban planning, where spatial planning and timing are more critical than elsewhere, and in incorporation of environmental and social considerations into the general investment planning framework.

3.1. Prioritizing Investment Decisions

The importance of economic criteria for choosing between investment projects is likely to increase as the infrastructure stock increases. Identifying high return projects was easy when much of the population lacked access to infrastructure services. As the access rollout advances, choosing between investments that upgrade the quality of service will become more difficult.

An economically efficient planning process would estimate the economic rates of return associated with each project, and accord priority according to the rate of return. Financing would be allocated to projects in accordance with their priority, until such time as budgeted public finance had been exhausted.

The current planning process is a long way from this ideal, with no explicit statement of how trade-offs are to be made between desired investments. There are no guidelines for project appraisal prior to planning approval, and the planning process does not provide for project monitoring to gain evidence on the sorts of returns obtained from different project types. The lack of economic criteria to guide priorities extends to the separation of planning for new investment versus maintenance. In some cases increased maintenance will yield higher returns than new investment, and so should receive higher funding priority.

A first step towards improved criteria for the allocation of public funds to public projects would be improved feasibility studies for proposed infrastructure projects. Even if precise rates of return could not be estimated for all projects, improved information would assist in distinguishing higher priority projects from lesser priority projects. Box 3.1 identifies areas for improvement in typical Vietnamese feasibility studies.

BOX 3.1: Common Weaknesses of Vietnamese Feasibility Studies

Appraisal Requirements	Most Frequent Shortcomings
A. OVERALL JUSTIFICATION	
Country and sector issues	Lack of national and sectoral perspective, especially in relation to master plans.
Development objectives	Usually not derived from high-level plans and strategies; generally narrow in focus.
Funding options	Top-down approach, possible overlap with other projects in case of donor funding.
B. PROJECT DESCRIPTION	
Key indicators	Logical frameworks linking actions and indicators are not commonly used.
Alternatives considered	Limited analysis of options based on technical, economic, social and environmental criteria.
C. IMPLEMENTATION AND OPERATION	
Institutional arrangements	Insufficient analysis of the commitment and capacity of the project executing agency
Sustainability	Insufficient attention to operation and maintenance aspects of the project.
Monitoring and evaluation	Usually based on outputs, not involving baselines or impact assessments.
Critical risks	Insufficient analysis of risks (e.g. difficulties in land acquisition) and mitigation strategies.
D. PROJECT SUMMARY	
Technical	Limited detail on standards, operational aspects and environmental implications.
Economic and financial	Estimates driven by cost norms; unreliable methodology for estimation of returns.
Fiduciary	Assessment of fiduciary risks and corruption mitigation strategies usually absent.
Social	Insufficient consultation and assessment of potential impacts on vulnerable groups.
Environmental	Limited use of environmental impact assessments and safeguards.

Source: Vietnam Development Report 2006, citing KFW (2005)

A second step would be the development of a results framework with clear goals and benchmarks for each sector. When developing the overall strategy direction for a sector, it is important to link strategies to goals and to link projects and policy reforms to the achievement of those goals. To determine success in achieving those goals, it is necessary to define measurable performance indicators. The Transport Strategy paper illustrates how this could operate. For example, a goal might be to improve the mobility of people in rural areas. A strategy to

achieve this could consist of investing in and maintaining all-year access to poor communes, with particular projects involving a bond issue, community contributions, and various donor projects. An indicator to measure performance might be the number of additional households provided with access to an all-weather road within 2 kilometers. The results framework should be comprehensive. Projects that are not directed to achieving particular sectoral goals should not be approved.

With improved criteria for distinguishing between projects, and a results framework providing the justification for projects, there is then a need for a governmental process that is capable of allocating funds to the highest priority projects, with lower priorities receiving funding only to the extent of available funding. The example of Malaysia's planning process (see Box 3.2) suggests that projects that could potentially be privately funded may receive low priority for public funding.

BOX 3.2: Development Planning in Malaysia

Development planning in Malaysia addresses long-, medium- and short-term planning horizons, and blends centralized and decentralized planning.

Vision 2020 was launched in 1991, spelling out the national development aspirations over a 30 year period. It is supported by 10-year outline perspective plans that provide an indication of specific programs to support the Vision. Medium-term planning occurs with 5-year development plans that set out the allocation of the public sector development program. By identifying priority sectors the plans also give guidance to the private sector in determining their own investment policies. In the middle of the 5-year planning cycles, a mid-term review (MTR) of the five-year plan is carried out. The MTR determines whether the plan is implemented in accordance with the stated targets and development schedule, and makes adjustments to sectoral policies and strategies if needed. Short-term planning (and adjustment of plans) occurs through the annual budget prepared by the Ministry of Finance.

At the national level development objectives are formulated by the National Economic Council (NEC)—a ministerial council chaired by the Prime MinisterÜand the National Development Planning Committee (NDPC)Ücomposed of top civil servants from federal ministries. The Economic Planning Unit (EPU)—located in the in Prime Minister's department—acts as a coordinating and integrating agency rather than as initiator of sectoral plans. A similar institutional arrangement exists at the state and district levels. At the state level, the State Economic Planning Units and the State Development Offices are responsible for formulating state development strategies.

At the beginning of every Plan the NEC and NDPC determines broad development policies and sectoral priorities. Ministries, departments, statutory authorities, and non-financial public enterprises are invited to submit bids for development funding for the next five years to implement the identified strategies. Sub-national agencies are required to discuss their development programs with the appropriate State Economic Planning Unit before submitting them to the relevant federal ministry. This ensures that the state governments are aware of the development proposals of the federal agencies operating within their boundaries. Submissions must include descriptions of the proposed projects, including cost estimates. On receipt of the submissions the EPU assesses and prioritizes development projects. It consults with the ministries, agencies, and state governments to review past performance and better examine the scope and cost of each program. The NDPC has ultimate jurisdiction over the selection of expenditure programs for the five-year plans.

The number and size of proposals always exceeds available resources. Accordingly the EPU has to match and prioritize the requirements with respect to sound public finance practice. Some of the broad criteria applied when prioritizing the projects are growth promotion, project viability, social obligation and needs, poverty eradication, and promotion of regional balance. Projects in urban areas that have potential for privatization are given less priority than projects with little scope for privatization. Projects in the less developed states and regions are given more weight than those in the more developed states and regions. Continuing projects are given priority over new projects.

Source: Economic Planning Unit (2004).

An important element of such processes is the monitoring and evaluation of projects to determine their developmental impacts, including collection of baseline data that indicates the situation before the project, and subsequent analysis which indicates how consumers have altered their behavior in response to the project. These results can be used to determine the economic impact of projects, and hence refine the appraisal of future projects. If detailed analysis of all projects is too costly, at least a sample of projects should be analyzed, to provide indications of what works, and what doesn't.

A complication in setting investment priorities based on rates of return is how poverty-related interventions, which may have low rates of return, should be treated. When Vietnam reaches the point of having systematic estimation of rates of return from investment projects, extra weighting could be given to projects that meet special development criteria, such as poverty reduction. In the absence of such information, broad rules of thumb may be required such as minimal investment levels in each province or in poverty-related subsidies.

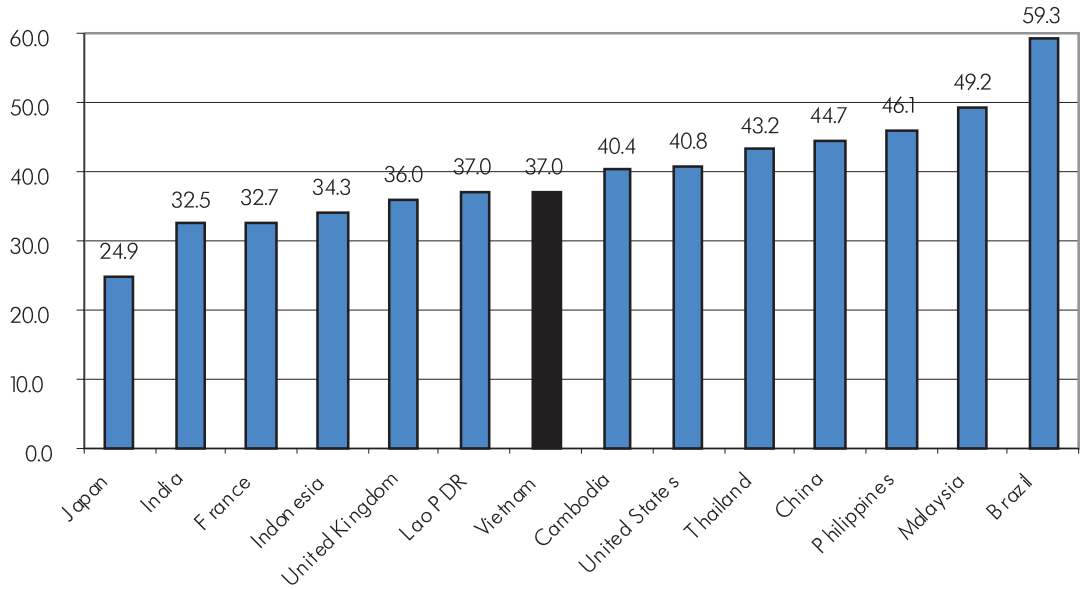
Broad success in meeting poverty alleviation goals could be verified with the national Gini Index measuring inequality (Figure 3.1). This can be calculated periodically with releases of the Vietnam Household Living Standards Survey. The Government could set a threshold index, beyond which any increases in inequality would result in a greater allocation of resources to poverty alleviation.

3.2. Coordination of Planning Across Ministries

Vietnam has an elaborate investment planning process, comprising three types of plan—socioeconomic, sectoral, and spatial—undertaken at all levels of government, over varying time frames, ranging from 1 to 10 years. While the socio-economic development plans appear to be reasonably well integrated with sectoral plans, problems arise in coordination with spatial plans and with financing possibilities.

Socioeconomic development plans (SEDPs) are guided by ten year national development

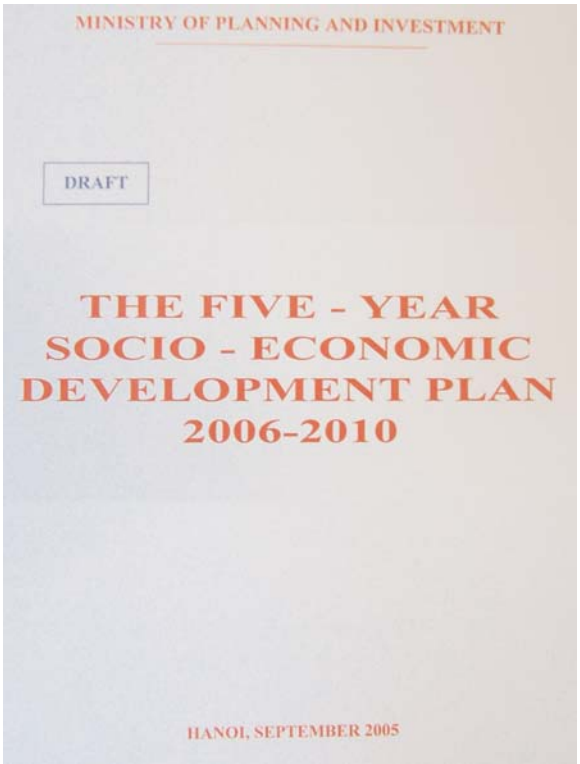
Figure 3.1: Gini Indexes



Source: WDI (2005) using the most recent observation available for each country. A Gini Index of 0 implies perfect equality. A Gini Index of 100 implies perfect inequality (the countryÕs entire income is concentrated in the hands of a single person).

strategies, defined by the National Assembly, following Party resolutions. The five year socio-economic development plan (SEDP) consists of an analytical report that assesses the progress accomplished under the previous plan, identifies the challenges faced by the economy, sets targets for a range of economic and social indicators, and makes policy recommendations. The plan covers all levels of state-led investment, including economic infrastructure. In response to a request from donors, since 1996 the five year socio-economic development plans have been accompanied by a Public Investment Program (PIP), intended to serve as a basis for dialog between donors and government, as well as to guide the allocation of ODA.

The country's Comprehensive Poverty Reduction and Growth Strategy (CPRGS)—established in fulfillment of borrowing requirements from the donor community—can be regarded as an extension of the five year plans. The Prime Minister's guidance to ministries preparing the 2006-2010 SEDP is that



the SEDP and the CPRGS should be merged. The guidelines require that the five year plan should address the Vietnam Development Goals, which should result in a more outcome-focused plan. Although the draft 2006-2010 SEDP has made progress over the previous SEDP in drawing out the linkages between broad growth and poverty objectives and specific investments, there remains room for improvement.

Sectoral investment plans, such as the Master Plans for water or electricity, are developed by line ministries and relevant SOEs. Consistency between sectoral plans and socio-economic plans is coordinated by the Ministry of Planning and Investment at central level and by Planning and Investment departments at the provincial, city and district level.

Spatial planning takes place under the direction of the Ministry of Construction and sets out spatial arrangements, building footprints and infrastructure siting at the regional, provincial, city and district level. Unfortunately spatial planning constraints are not incorporated into the preparation of sectoral investment plans. Construction approvals appear to be facilitated by SEDP investment approval, but SEDP investment approval is neither necessary nor sufficient for construction approvals to be granted. There is inadequate coordination between sectoral investment plans and spatial plans. The impact of this lack of coordination, aggravated by a divergence between national and local spatial planning, is particularly felt in urban areas, and is discussed in greater detail in section 3.4.

3.2.1. Incorporating Financing Constraints into Investment Planning

The principal failure of coordination in the preparation of socio-economic and sectoral investment plans is the failure to incorporate financing constraints into investment planning. Vietnam's system of "*dual budgeting*" entails the

separation of authority for investment and recurrent expenditure. In effect, it also entails the separation of planning from budgeting. The Ministry of Finance (MOF), and Departments of Finance (DOF) at sub-national levels, are given responsibility for preparation of the fiscal framework and recurrent expenditure, while the Ministry of Planning and Investment (MPI), and Departments of Planning and Investment (DPI) at local levels prepare the investment budget, including capital expenditure and donor funded projects.

The PIP provides a long list of investments compiled from sectoral master plans. But the PIP is prepared without reference to financing sources. It is effectively a wish-list which could potentially be implemented in the absence of a hard budget constraint. To fully implement the 2001-2005 PIP would have required investment of approximately 15 percent of GDP per year.

A central process for allocation of public funds to the PIP would be desirable, to permit all proposed projects to be considered together when financing priorities are decided. In practice, sectoral ministries obtain finance directly from the state budget (with allocations made by the National Assembly, or Provincial People's Councils), or from line ministries' own budgets, from the DAF, ODA, or from retained SOE earnings. Finally, the State Bank of Vietnam can place informal pressure on SOCBs to lend to specific projects. The absence of consistent criteria for project selection across these organizations means that there is no effective system for prioritizing the commitment of public funds to investment projects.

A better organized system for the allocation of public funds would provide greater certainty to sectoral planners when designing projects. Under the current system, uncertainties over financing lead to projects frequently change scope, size, location, and timing. There are unimplemented projects, unfinished projects, and untimely delivery.

Lack of coordination between investment and financing approvals has created serious problems in the past. During 1999-2002 about 35% of commitments for transport had received prime ministerial approval, but had not been allocated funding. The Ministry of Transport contracted state-owned construction companies to undertake work, on the promise of subsequent reimbursement. State-owned commercial banks were encouraged to advance credit to the construction companies, and to provide subsequent loan rollovers when budget funds were still not allocated. Arrears in the Ministry of Transport amounted to VND 1,200 billion, and debts of the Transport Construction Corporation to its creditors amounted to VND 1,000 billion. The Government ultimately agreed to absorb debt incurred for projects implemented in fulfillment of master-plans, but many projects had not even been the subject of master plans. The brunt of the Government's decision not to pay for these projects was borne by construction companies and by the SOCBs.

To date, the government's attempts to better co-ordinate budgeting and investment planning has focused on clarification of the respective responsibilities of the MPI and MOF, rather than better integration.

One recent step towards better matching of finances with planned projects is the introduction of pilot programs for medium term expenditure frameworks (MTEFs) (see Box 3.3) in the transport sector and other non-infrastructure sectors. A positive effect of incorporating budget constraints into the Ministry of Transport's investment planning appears to have been achieved in the Ministry's initial expenditure proposals prepared in the context of the MTEF in September, 2005. Where previous estimates of annual financing needs for potential investments had amounted to 12.4% of GDP,[26] or 8.5% of

26. The Ministry of Transport submitted a Vietnam Transport Strategy up to 2020 to the Prime Minister in December 2002. This called for investment of about VND 789,977 billion (US$ 50 billion) during 2002-2010.

BOX 3.3: A Medium Term Expenditure Framework (MTEF)

An MTEF consists of a top-down resource envelope consistent with macroeconomic stability and broad policy priorities and a bottom-up estimation of the current and medium-term costs of existing national programs and activities and an iterative process of decision-making that reconciles these costs with available resources. Annual budgets are prepared in a medium term context, reflecting what is affordable over the short term, there is a clear link between forward estimates of expenditure and the annual budget, and there are transparent rules for any reallocation of resources, both during budget formulation and execution.

Objectives sought with the introduction of MTEFs include:

- Improved macroeconomic balance, including fiscal discipline, through good estimates of the available resource envelope, which are then used to make budgets fit squarely within the envelope.
- Improved inter- and intra-sectoral resource allocation by effectively prioritizing all expenditures (on the basis of the governmentÕs socio economic program) and dedicating resources only to the most important ones.
- More efficient and effective public expenditures, essentially by allowing line ministries greater flexibility in managing their budgets in the context of hard budget constraints and agreed upon policies and programs.

MTEFs alone cannot deliver improved public expenditure management in countries in which other key aspects of budget management, such as budget execution and reporting, remain weak.

Sources: Le Houerou & Taliercio (2002), Holmes & Evans (2003).

GDP,[27] the MTEF proposal called for annual investment of 4.1% of GDP, a more feasible level. Further areas for improvement include the development of objective criteria for allocating priorities, and better budget discipline, to ensure that projects for which secure financing has not been organized are not commenced.

The direction for reforms should be to integrate financing and investment decisions, so that a project cannot be given investment approvals unless secure financing plan is in place.

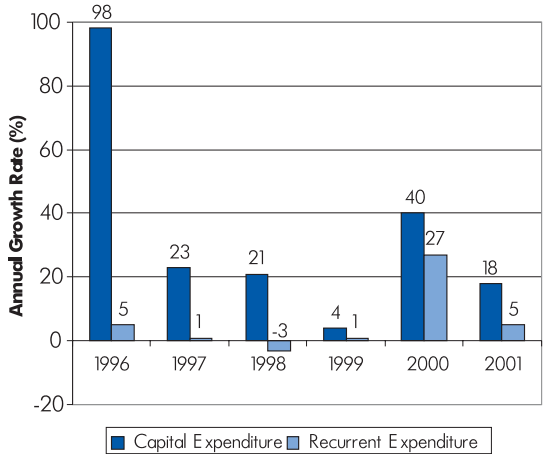
3.2.2. Integrating Recurrent and Capital Budgets

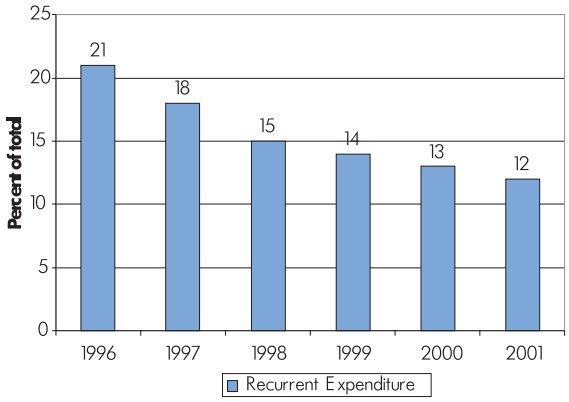
A further problem arising from the dual budgeting system is a failure to incorporate the implications of investment plans into plans for recurrent spending. As the capital stock increases as a result of new investments there is a need for increased maintenance spending. But the Government follows a rule that the growth rate of capital expenditure should be higher than the growth of recurrent expenditure. Accordingly capital budgets grow at a faster rate than recurrent budgets. In the longer term, an ever-growing share of government capital expenditure is not a sustainable strategy. There is a need to recognize that new investments carry implications for the recurrent cost budget.

Provision of insufficient funds for recurrent expenditure has been particularly acute in the transport sector. Recurrent expenditure has declined significantly as a percentage of total transport expenditure since 1996, while capital expenditure has boomed (see Figure 3.2). A recent World Bank financed Road Network Improvement Project found that were expenditure to remain at its current level, the percentage of national roads in good condition would fall to just 10% of the total network. The situation was even worse for provincial roads. In its funding request for 2003 to 2005, the

27. The Strategic Review of Transport Donors, Support to Vietnam,s 2006-2010 SEDP, released in early 2005, estimated total investment requirements of VND 361,439 billion (US$ 23 billion) during 2006-2010,

Figure 3.2: Transport Central Government Recurrent versus Capital Expenditure





Vietnam Roads Agency was able to secure less than half of the finance required to cover all maintenance needs on national highways.

Poor coordination between capital and maintenance expenditure is a common feature of countries that operate systems of dual budgeting. A recent review of developing country experience with dual budgeting sees the introduction of medium term expenditure frameworks as a first step in addressing the issue, since a medium term perspective helps to highlight the capital savings presented by adequate maintenance.[28] Nevertheless, a complete response to the issue requires integration of budget preparation for recurrent and capital spending, including staffing integration, unified budget documentation, and unified accounting and reporting systems.

3.2.3. Spatial Development Goals and Investment Planning

There is a tension between the Government's stated spatial development objectives and the practice of its investments process. The Orientation Master Plan for Urban Development to 2020, prepared by the Ministry of Construction, seeks to limit growth of the major cities, and spread urban development more widely. Specific objectives include:

- Establish population targets for cities and district towns in an urban growth hierarchy;
- Limit growth of Hanoi and Ho Chi Minh City and reduce population densities in the center of the primary cities;
- Create satellite cities for Hanoi and Ho Chi Minh City;
- Encourage growth at the urban fringe;
- Promote the development of medium and small cities and district towns;
- Create new urban areas in the more remote provinces and in proximity to major cities as a means of controlling growth of the larger cities;
- Preserve agricultural land and plan rural development.

In practice, investment planning tends to focus on specific growth centers in the north, south and center of the country. The idea is that higher returns to infrastructure investments can be obtained in areas of concentrated population

28. Sarraf (2005).

where there are stronger returns to scale and complementarities between different sorts of investments. At the same time, investments are made in rural areas to address poverty objectives. The overall spatial balance of development appears to be broadly appropriate. While inter-provincial inequality has increased (as observed in section 1.3.4), the increase has been quite small, and this is being achieved at the same time as rapid growth is enjoyed at the aggregate level.

Large migration from rural areas to the major cities has made a significant contributor to the success (in terms of generating growth without large increases in inter-provincial inequality) of the current investment strategy. The presence of large numbers of unregistered migrants in the major cities, and the urbanization forecasts of section 1.3.2 suggest that high levels of migration to Hanoi and Ho Chi Minh City are likely to continue. International experience suggests that the forces driving such migration are very difficult to counter. Overall, the spatial objectives of developing mid-sized cities and containing the growth of major cities are not being achieved in practice.

Despite the difficulty of implementing the Orientation Master Plan, the objectives should not be lightly discarded. While mega-cities may offer economies of scale, they may also suffer considerable problems of congestion, pollution, and difficulties in urban planning and infrastructure provision. To the extent that these problems become significant, the objective of maximizing economic growth and the objective of more widely-spread urban development may be consistent.

Traffic Congestion

Determining whether it makes sense to promote greater urban growth of mid-sized cities would require much better analysis of the economic rates of return to potential projects in the major cities and the mid-sized cities, taking account of a range of externalities such as congestion and pollution, as well as taking into account the transaction costs of administering large cities. If the Government were to pursue the Orientation Master Plan objectives more closely, a first step would require that sectoral investment plans be adapted to meet the spatial priorities. But successful regional development would also require a concerted development effort going beyond mere investment in regional cities. Examples of such policies might include expanding opportunities for state employment in the lesser cities, or releasing more private land to keep the price of housing and business development lower in regional cities. Overall, considerable analysis is required to determine whether the Orientation Master Plan's goals are appropriate, and if they are, how best to shape the existing strong forces for migration from rural areas to Ho Chi Minh City and Hanoi.

3.3. Allocation of Responsibilities Across Tiers of Government

Countries around the world struggle to find the appropriate allocation of powers to levels of government. There is a tension between devolving power to ensure decisions are responsive to local needs, and centralizing power to ensure that decisions are coordinated, that externalities (very broadly defined to include matters such as fiscal consequences of decisions, issues of national concern such as

poverty, environmental effects, etc) are adequately addressed and that the level of government has adequate resources (fiscal and technical capacity). Vietnam bears witness to this tension, as it deals with problems inherited from its traditional principle of "dual subordination" and newer problems arising from decentralization.[29]

Vietnam has four levels of government, with 64 provinces, 643 districts, and 10,602 communes, each with their own Assembly (or People's Councils at sub-national level) and executive (People's Committees at sub-national level). To ensure consistency of decision-making, administrative units of the executive operate under a system of "*dual subordination*": they report to their own level's People's Council, and are also accountable to the next higher level of government. The difficulty with this system is that it can lead to inefficiency in public administration. For example, up to 14 official approvals are required before investment can occur, with decisions sought at multiple levels of government. Incompatible horizontal and vertical instructions can also leave authorities to decide for themselves which instructions to treat as binding, or leave agencies to compete for authority where responsibilities are unclear (see Box 3.4).

A possible direction for evolution of the system would be for higher levels of government to prescribe guidelines or criteria for decisions made by lower level governments, and within those criteria lower level governments could make decisions without referring back to higher level governments. This could help to limit the tendency towards excessive bureaucracy and provide greater certainty about what has been decided.

The tradition of centralized state planning underwent a major reform when the 1996 State Budget Law inaugurated a process of decentralization. As a result sub-national governments' shares of total expenditures increased from 26% in 1992 to 43% in 1998 and 48% in 2002. The 2002 State Budget Law gave the provinces broad powers to organize expenditure assignments for the districts and communes within their borders. It also strengthened the prohibition of unfunded expenditure mandates from higher to lower levels of government. Services are assigned to levels of government broadly consistent with the geographic area of benefits. Sub-national spending is funded through a combination of locally raised revenue and transfers from the central budget.

Decentralization brings a range of potential coordination problems, including:

- Decentralization can result in excessively thinly spread investment, as each commune and district places pressure on Provincial People's Committees. Too many small projects at once may be a factor behind the delayed implementation of infrastructure investment, over-commitment of budget and buildup of arrears to contractors.
- Decentralization can result in unnecessary duplication of facilities. For example, almost every province has at least one industrial zone in order to attract FDI, even though foreign investors prefer to concentrate investment in clusters close to the main metropolitan areas. There is a similar risk with decisions to construct ports. In 2005 a start was made in addressing this problem by preparing regional plans for the greater metropolitan areas of Hanoi, Ho Chi Minh City and Danang, but the initiative is limited to spatial planning.
- Some communes may be too small to take advantage of economies of scale in local road

29. The following discussion draws on the PER-IFA (2005).

BOX 3.4: Weaknesses in the Coordination of Road Maintenance

The dilution of responsibility in the Vietnamese public financial management system is exemplified by arrangements for maintenance of national and provincial roads. The Vietnam Roads Authority (VRA) was established in 1993, and is formally responsible for the management and oversight of the whole roads sector, and for implementation of work on national roads. In practice, however, it is unable to effectively fulfill this role, for a number of reasons, related primarily to how financing responsibilities are allocated in the system.

The Ministry of Transport receives financing from the state budget, as well as from international financial institutions, and divides this amount between the Vietnam Roads Authority (VRA) and Provincial People's Committees (PPCs), based on the size-classification of the repairs that they undertake. The VRA takes responsibility for part of the national roads network, while the PPCs are responsible for the remainder of national roads, and their own provincial roads. The VRA delegates work on the national networks to Project Management Units (PMUs) and Regional Roads Management Units (RRMUs), while the PPCs delegate work to Provincial Departments of Transport (PDOTs). For large repairs to the national road network, between a half and a third of work is managed by the VRA's PMUs. The remainder is managed by the PDOTs. For routine maintenance and medium repairs on the national road networks, most work is managed by the RRMUs, while the remainder is managed again by the PDOTs.

The result of these overlapping jurisdictions complicates the assignment of responsibility and monitoring of results. While the VRA is formally responsible for managing the national roads network, it relies on provincial roads management units for the greater portion of work undertaken on the network. The VRA has limited control over the provincial units and is limited in its capacity to ensure that funds allocated for national road maintenance are actually spent as planned, despite the fact that the purpose of the funds is specified in detail, and distinguishes between different kinds of maintenance. This arises because parts of these funds are transferred via provincial finance departments, which can delay disbursement. The VRAs have no effective means of monitoring work carried out.

While the VRA is also responsible for planning and the setting of technical standards for all roads, it has very little oversight of roads at sub-national level, other than advising on technical standards and administrative matters. This is because the PDOTs retain direct managerial responsibility for provincial roads, and funds allocated for these roads are transferred to provinces, without direct involvement of the VRA – be it to inspect or approve plans. As a result, it is not at all clear to what extent allocated funds are actually used for road maintenance or construction.

Sources: Louis Berger (2003);

building or water supply systems. There can also be questions about the capacity of local governments to manage projects for which they are responsible. Such issues can be resolved by merger of affected communes, or by selective allocation of responsibilities to sub-national governments in accordance with size and capacity.

- Managing externalities: an upstream municipality might not be especially concerned about treating its waste water; a downstream municipality might wish otherwise.
- "Vertical fiscal imbalance": there can be a mismatch between the responsibilities of sub-national governments to spend money and the financial resources available to them. For example, most district and commune

Road Maintenance - essential for preserving capital investment

governments lack the capital funds for their needs for rehabilitation, replacement and new construction of infrastructure.[30]

In some sectors, the potential problems of decentralization are avoided by the relatively crude method of retaining central control. Since 2001, the PIP classifies projects into A, B and C level investments. A-level investment projects—which include the largest and most strategic infrastructure investments (for instance major ports, or main roads)—rest with central government, requiring authorization of the Prime Minister. Such investments are shielded from the complications of provincial service delivery. Similarly the national level state-owned enterprises in the energy and telecommunications sectors are responsible for their own financing and planning processes. They are not subject to the limitations of either dual subordination or dual budgeting. Nor is responsibility for their delivery diffused across different levels of government. Some rural water projects have been included in a National Target Program, which is implemented independently of provincial planning.

Remaining infrastructure projects face the risks posed by decentralized decision-making, the potential delays and conflicts arising from the principle of dual subordination, and the financing difficulties of dual budgeting. The impact of these risks and problems is felt principally in transport projects, and smaller scale infrastructure services in urban areas. The impact of the coordination and planning weaknesses in the transport sector has already been illustrated with the example of debts passed on to the construction and banking industries.

Rather than simply retaining central control for some projects, and subjecting other projects to the risks of decentralized decision-making, it would be preferable to address squarely the problems of coordination in a decentralized environment. Currently, the bulk of the funds that can be used by sub-national governments for investment in infrastructure are transferred from central government in the form of unconditional grants. The central government should develop financial tools through the public finance management system to align provincial investment with national priorities. For example, conditional or matching grant facilities, or ring-fenced minimum expenditure requirements could be used to channel resources to particular infrastructure priorities.

3.4. Urban Planning

The difficulties in urban infrastructure illustrate many of the problems of vertical and horizontal coordination, as well as highlighting that the basic types of plans produced are inappropriate for an economy in which development occurs increasingly in response to market requirements rather than central planning decrees.

Spatial planning presents the greatest problem for urban infrastructure, both in the way it is conducted and in how it relates to financing and sectoral plans. Most plans are prepared by the National Institute of Urban and Rural Planning (NIURP) or, in the south, by the Institution of Planning and Architecture of the National Corporation of General Construction Consultancy (NAGECCO). Both institutes are subsidiaries of the Ministry of Construction. Only the three largest cities have their own planning institutes.

Spatial plans are prepared in four levels of detail: orientation plans (national policy), regional plans, general plans (province or city), and detailed area plans (ward, industrial zone, or project). Until 2005, no consideration was

30. See PER-IFA p.84

Master(spatial) Plan for Danang

given to regional planning: there was no coordination amongst neighboring provinces. In 2005, a start was made on preparing regional plans from the greater metropolitan areas of Hanoi, Ho Chi Minh City, and Danang. This is a positive development in overcoming one of the weaknesses of decentralization.

At the provincial/city level, general spatial plans are required to include long and medium term directions for physical development and the arrangement of urban space and infrastructure networks and facilities. They also cover the characteristics of urban areas, population size, land use, resettlement, redevelopment, conservation, and zoning. They also prescribe technical standards for constructions, such as street widths, floor area ratios, or floor area per occupant. A map is the principal element of the plan. The Prime Minister approves the general plans for Special, Class I and Class II cities.

Detailed area plans are prepared under the guidance of sub-national People's Committees. They determine the specific uses of urban space and include the quality, quantity, and position of each development type and building footprint. An urban design element to express architecture, built form, construction heights, and landscape of each urban area and street was introduced by a Planning Decree in 2005.

One difficulty with the centrally produced plans is that they tend to be too rigid in their technical specifications, and based around idealized visions of urban development that do not take account of realities such as unofficial migration, or market-based development. Deviation from specified technical standards at the general plan level requires an arduous bureaucratic process. Plans lack the phasing and incremental development mechanisms to translate them to reality in a mixed economy where development is likely to occur on an incremental basis directed by decisions made by investors rather than government planners. With a mismatch between the central planners' visions and local reality, and with enforcement of construction and land use regulations vested at the local government level (Departments of Transport and Public Works in large cities and Public Works Companies in smaller towns), it is not surprising if plans are frequently ignored at the local level, or treated as mere guidelines.

A different sort of planning is required to take account of rapid market-led development. Plans need to be regularly updated, desirably with the involvement of local communities. Stricter enforcement of planning laws and construction regulations is required, but at the same time spatial plans should become more strategic. They should give guidance and orientation on how cities should develop, but not prescribe too much detail. They also need to be flexible within their overall orientation and local governments should be given more authority to adjust them quickly to meet changing needs. Local authorities should be made accountable with realistic checks and balances. Construction regulations should be

based on performance standards rather than strict technical norms. For example, road widths should relate to estimated traffic projections rather than pre-defined dimensions; wastewater should be treated to a level relevant to the river, or sea, into which the effluent will be discharged; water consumption levels and quality should relate to what people are likely to be willing to pay.

Much of the vertical coordination problem would be resolved with more flexible standards and planning processes that permitted greater flexibility for local authorities. Part of the problem is also that plans have been centrally prepared, when greater local participation is required. The new Construction Law (2004), with new (2005) Decrees on Planning and on Construction Investment Project Management, has introduced greater decentralization of approvals for plans, and public consultation. These are positive steps, but without greater capacity at the local level the plans will continue to be developed by the central planning institutes. There is also an issue concerning how local governments should be held accountable for compliance with essential elements of centrally developed plans.

The introduction of public consultation is a particularly important development in terms of holding local governments accountable to their populations. Idealized top-down plans fail to take adequate account of the preferences of local stakeholders. Such idealized plans can result in the wholesale clearance of communities and housing to permit redevelopment to a higher and more technically mandated standard. This often results in the destruction of tightly knit communities and housing with their own carefully developed economic and social support systems that have evolved over many years. Experience from other countries, including many in Western Europe and the United States, indicates that demolishing such neighborhoods, often with the best intentions, results in irreparable damage to the social fabric and well-being of the residents. Housing prices in the newly created development will often be well beyond the affordability of those displaced. Experience in many other countries such as Indonesia and Brazil demonstrates that it is usually better on cost effectiveness and social grounds to adopt an incremental approach developed with the active participation of the beneficiaries.

Problems of horizontal coordination between different government ministries occur with a mismatch between budgets and spatial plans, and mismatches between sectoral and spatial plans. Spatial plans are generally prepared independently of financing considerations. Lack of budgets to implement plans can provide further grounds for implementation failure at the local level. Lack of timely financing means public infrastructure (water supply, solid waste management, drainage, and sewers) often has to follow after development has occurred. Rapid, unplanned growth of the peri-urban fringes of large cities is leading to serious environmental degradation and significantly higher costs for infrastructure than would be the case if the infrastructure were built at an earlier stage. (There are, however, some well-planned peri-urban areas, such as the Tu Lien development in Hanoi and Phu My Hung in Ho Chi Minh City.)

Sectoral master plans for the same location are also developed independently, and may not be linked in phasing, finance, or implementation. For example the drainage included as part of a transport master plan may not be coordinated with the drainage and sewerage master plan. In some cases they may even propose conflicting strategies.

3.5. Environmental and Social Policies

Infrastructure projects can have adverse environmental and social effects that conflict with the objectives of sustainable growth and

equitable improvement of living conditions. Among the environmental concerns are air and water pollution, effects on water quantity and flow patterns, and contribution to climate change. Transport developments can open access to environmentally sensitive areas, leading to potential deforestation and possible consequent losses of biodiversity, increases in flooding or silting of water systems. Social concerns include disruption of social fabric (inclusiveness and cohesion of communities), involuntary land acquisition and displacement of people, and impacts on ethnic minorities.

Many environmental and social issues are difficult to quantify in monetary terms. Despite limitations in the ability to precisely measure environmental and social costs, rough estimates of the damages associated with infrastructure projects indicate that they are often sufficiently high to warrant the serious attention of planning and finance ministries, and not just those responsible for the sectors concerned. For example, a major World Bank study in China estimated environmental damage from pollution alone at between 3.5 and 7.7 percent of GNP.[31] While large scale development projects are inevitably the primary focus of attention by environmental and social agencies and the public, in many countries the vast numbers of inadequately designed and implemented small scale projects frequently pose a greater environmental and social threat. Consequently there is a need for all government ministries to incorporate environmental and social considerations into their planning and project appraisal mechanisms.

A range of policies is available to address environmental and social aspects of infrastructure development, including:

- Environmental impact assessments should be a routine part of project appraisal. Strategic Environmental Assessments extend beyond the individual project context. They can be used, for example, when preparing spatial plans for land use in regions or river basins. Box 3.5 discusses a "best practice" example from Bali,

BOX 3.5: Strategic Environmental Assessment in Bali

The Bali Urban Infrastructure Project was designed to improve urban infrastructure services throughout the island of Bali, with major subprojects in urban roads and traffic management, water supply and sanitation, drainage and flood control. Although it was not a legal requirement, Strategic Environmental Assessment (SEA) was carried out in order to help address the most critical environmental issues in Bali, with water catchments, forests, and cultural property all being threatened by population growth, industrial development, and tourism.

The SEA was designed to ensure that urban infrastructure development would take place in the context of, and be sensitive to, this overriding concern. The SEA involved extensive public consultation at local levels, which led to several concrete recommendations about implementation of the sub-projects as well as selection of priorities, which included the importance of maintaining cultural and historic heritage. The SEA also included detailed recommendations for institutional capacity building required to ensure proper execution of the investment program.

The SEA produced a comprehensive environmental profile of Bali, and in particular a set of maps defining environmental zones, placing sub-projects and their potential impacts in relation to the different zones, and helping to avoid adverse environmental and social consequences of urban infrastructure development programs.

Source: Warford (2004).

31. World Bank (1997).

Indonesia. A similar tool, known as Poverty Social Impact Assessment, can be used to examine income distributional and poverty issues arising from infrastructure projects.

- Investments in sanitation, waste water treatment, and solid waste treatment are typically designed specifically to reduce environmental degradation and improve public health. Urban mass transport can help to lessen vehicle pollution. Pollution abatement technologies can be used to reduce environmentally harmful emissions associated with power production. Increased investments in these areas would have important environmental benefits in Vietnam.
- Efficient pricing incorporates environmental and social effects. For example, the environmental costs of coal burning could be incorporated through taxes in the price of coal, and hence incorporated in the price of electricity produced using coal. Higher prices would reduce consumption of coal, and hence reduce negative environmental consequences.
- Spatial planning, particularly for roads,

Waste water Interceptor Tunnel being constructed in Ho Chi Minh City

BOX 3.6: Resettlement and Land Markets

Vietnam's Land Law of 2003 requires compensation to be paid for land compulsorily acquired by the government. The Vietnam Development Report 2005 contained a discussion of Vietnam's compensation policies, concluding that they are largely in accordance with international practice, but in practice less than full compensation tends to be provided for the dislocation suffered.

While social policy objectives suggest that Vietnam's compensation regime could be more generous, infrastructure development objectives would seek to contain resettlement costs. A particularly prominent cost arises from the high price of land. For example, a 10 km road proposed as part of a Hanoi Urban Transport Development project would resettle about 1100 households. The cost of road construction is estimated at about US$ 60 million, while the resettlement costs are estimated to be in the range of US$ 170-210 million. In the case of a recently-completed, JBIC-financed flyover in Hanoi, resettlement accounted for over 80% of project costs. Clearly resettlement costs can add significantly to the total cost of developing urban infrastructure.

High land prices are certainly not a reason to avoid paying proper compensation to people who suffer from compulsory resettlement. But in Vietnam high prices are partly a product of land policies which serve to push up prices artificially:

- In Hanoi in particular, the Government holds a large proportion of the land, so that the supply of land tradable in private markets is very limited. Limited supply combined with high demand serves to push up market prices.
- Throughout the country, there are high transaction costs in legally registering land, so that many people occupying land do not have full legal title to the land. The Vietnam Development Report 2006 contains a useful discussion of the consequences. Again, the scarcity of land with full title serves to drive up the price of such land, and this price then becomes the reference point for people seeking resettlement compensation.

Releasing government land and reforming land registration arrangements would improve the efficiency of land markets, raise revenue for the government, and have the happy side-effect of reducing resettlement costs for infrastructure development.

should take account of environmentally protected or sensitive areas.

- Compensation for involuntary resettlement can be used to reduce the social impact. Effective valuation and compensation procedures are necessary ingredients for successful resettlement. Vietnam's Land Law of 2003 established an official policy for resettlement requiring replacement value for housing and the use of market rates to determine compensation. From a social policy perspective, these are the right sorts of policies, but as discussed in Box 3.6, the interaction of these policies with weak land markets poses certain practical problems for infrastructure development.
- Environmental agencies should play a central role in monitoring and enforcing environmental standards. To be effective, such agencies should be adequately resourced financially and have appropriately qualified staff.

These policies cannot be the sole responsibility of environmental and social agencies. To be effectively implemented, environmental and social objectives need to be incorporated into the "mainstream" activities of infrastructure ministries, and their planning and financing overseers. For example, environmental objectives such as avoidance of water pollution should be part of the objectives of agencies responsible for water and sanitation. And reliance should not be placed solely on project level appraisals. For example, EVN is planning an expansion of its hydro-electric generation capacities. Individually, the environmental and social impact of the planned projects may lead to only marginal impacts, but the program also needs to be examined at the country level during the planning stage, to ensure that the cumulative impacts of the individual projects are acceptable.

3.6. Recommendations

In the long-term, it seems likely that different tiers of government will evolve exclusive areas of responsibility (to avoid costly revisions of decision-making), while some domains will remain shared, providing for central government oversight. Much of the necessary reform should occur in response to developments, and so requires a framework of constant monitoring and reaction to problems. This monitoring and reaction could take place within the Prime Minister's department. There is a pressing need to better integrate financing decisions into the investment approvals process, and a starting point for this would be a government-led review. The most urgent area for systematic review is coordination of planning processes for urban areas. An ideal response is likely to take some time to implement, and so the recommendations are placed in a medium-term setting. Nevertheless, the urban problems are of a significance demanding that solutions begin to be developed immediately.

The following actions are recommended:

(3.1) Establish a system of evaluation of investment projects to measure the rates of return achieved

(3.2) Improve the quality of feasibility studies, addressing all areas identified Box 3.6

(3.3) Develop a results framework for each sector, setting out sectoral goals, strategies for achieving them, and performance indicators for measuring progress towards the goals. Ensure that all proposed projects fit within this framework, and provide for monitoring of projects' contribution toward the goals.

(3.4) Develop a governmental process for integrating budgeting decisions with investment planning, ensuring that projects are allocated budget funding in accordance with their priority. The process should not allocate budget funding to projects capable of obtaining finance elsewhere.

(3.5) Develop budgeting processes that ensure an appropriate balance between spending on maintenance and on new investment. Ideally, rates of return from maintenance spending should be estimated. (S)

(3.6) Review the costs and benefits of promoting growth of mid-sized cities to determine whether revised policies are needed to support the objectives of the Orientation Master Plan for Urban Development to 2020. (S)

(3.7) Develop financial tools for aligning provincial priorities with regional or national priorities. Examples include conditional or matching grant facilities, and ring-fenced minimum expenditure requirements. (S)

(3.8) Monitor the effects of dual subordination. Where the principle results in excessively slow decision-making or conflicts between decisions, consideration should be given to either revised processes to improve coordination across levels of government, or else exclusive powers being granted to one level. Consideration should be given to exclusive domains of decision-making to lower governments in areas in which local governments are rarely overruled. (M)

(3.9) Develop urban planning institutions to better deal with a mixed economy. The planning system should move toward performance standards, decentralization, and stakeholder participation. A strategy to deal with this issue should promote:

- Public benefit analysis – the urban planning and approval process must be able to judge public benefits and negative externalities in proposed developments.
- Best Practices and Performance Standards – the adherence to rigid single purpose technical master planning specifications will need to be relaxed and replaced with performance standards, particularly as more development comes from the non-state sector and must be made to fit and benefit local situations rather than prescribed national standards. Performance standards (transport capacity, waste management, open space, height limits, setbacks, mixed use compatibility, noise, etc) should be introduced to the planning system as minimums that need to be met, but that allow flexibility in meeting them. Decentralized planning with more local control, transparency, and stakeholder involvement should replace adherence to formulae and specific physical design standards.
- Integrated Planning – cooperation among the elements of the fragmented planning process (including financing and budgeting for the state sector) is necessary to rationalize urban planning and management.
- Financial Reality – plans at all levels are made without apparent reference to financial reality or cost. For urban planning to be useful, financing and budgeting for state sector responsibilities and projects must be part of the process.
- Decentralization of Planning – planning will need to be decentralized to be able to address local conditions and greater transparency and public participation. A concerted program to develop local planning skills and facilitate integration will be necessary. Planners must establish enough credibility that their analysis will be recognized and given credence by ultimate decision-makers.

(3.10) Ensure that environmental and social considerations are considered in the objectives of agencies responsible for investment planning, that they are adequately addressed in project feasibility studies, and that overall plans for series of projects are similarly subject to assessment of environmental and social impacts.

(3.11) Ensure the National Environment Agency has the resources and the mandate to set, monitor, and enforce appropriate environmental standards.

4. Efficiency

Issues

(i) Infrastructure service providers in Vietnam are reasonably efficient, given Vietnam's level of development, but of course improvements can always be made. More efficient infrastructure services would lower costs to consumers and businesses, and potentially reduce the amount of infrastructure financing required.
(ii) Tools for improving the efficiency of Vietnam's infrastructure services include public sector reform, competition, private participation, and regulation. There is much the Government could do in all of these areas.
(iii) Corruption can also have an impact on efficiency, and measures must be taken to combat it where possible.

More efficiently operated infrastructure services achieve greater output for given inputs. Operational improvements can thus directly lead to cheaper services, helping to address poverty objectives and providing a stimulus to growth. Improvements in operational efficiency are also part of the solution to Vietnam's infrastructure financing difficulties. For example, reductions in water or electricity technical losses can delay the need for system expansion and so generate capital savings.

This chapter considers the various tools that are available to improve the operational performance of infrastructure service providers. In general, the strongest incentives are provided by active competition between commercially focused service providers. In general, a commercial focus (ie profit motivation) is a pre-requisite for other tools that provide additional incentives to improve performance. Unfortunately, for most infrastructure services active competition between providers is not possible. In these cases, periodic competition between private operators for the right to provide a service can provide an alternative means of identifying efficient operators. By providing increased profits in return for performance improvements, regulation can also provide incentives for improvement.

Finally, corruption can significantly undermine the performance of infrastructure service providers. Happily, many of the other measures that can be taken to improve efficiency will reduce the opportunities for corruption. But these measures do need to be supplemented by explicit anti-corruption measures, such as regular physical and financial auditing and a system for prosecuting corruption when it occurs.

4.1. Current Efficiency Levels

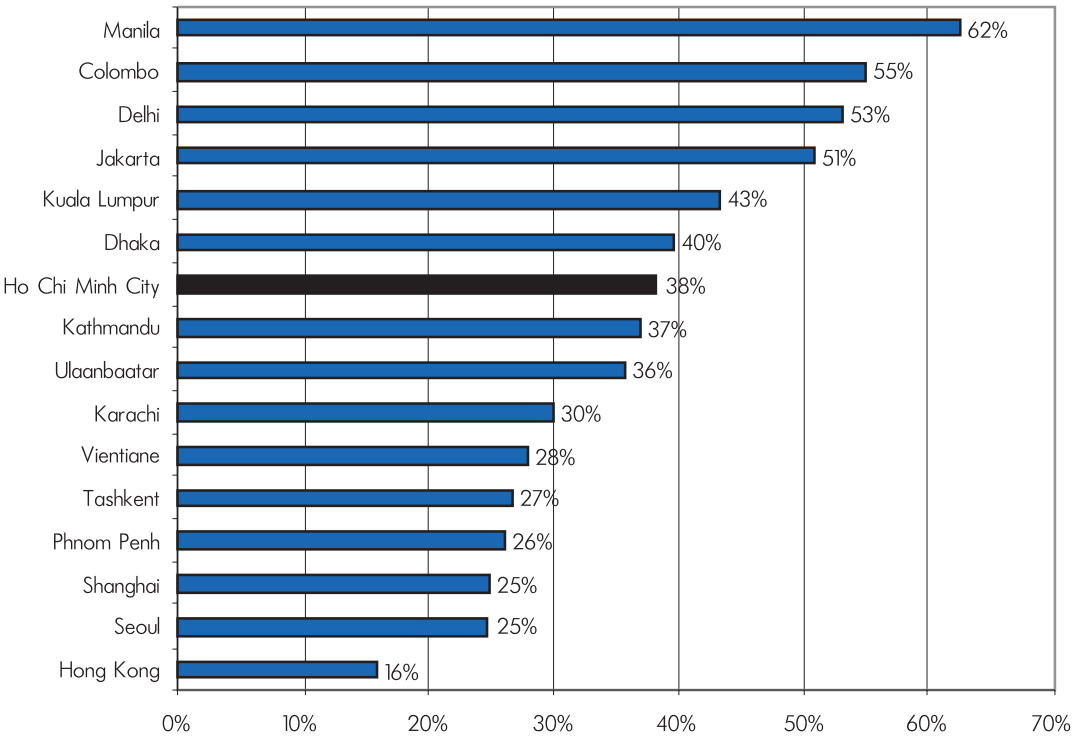
Overall, Vietnam's infrastructure service providers are reasonably efficient for the country's level of development, but of course there is room for improvement.

- Figure 4.1 indicates that Ho Chi Minh City is

in the worst half of major Asian cities for unaccounted water (lost to leakage or theft). Figure 4.2 illustrates that Ho Chi Minh City is near the average for Vietnamese water utilities for unaccounted water, with the worst performer in the country losing 95% of its water. Variation within the country illustrates the scope for improvement.

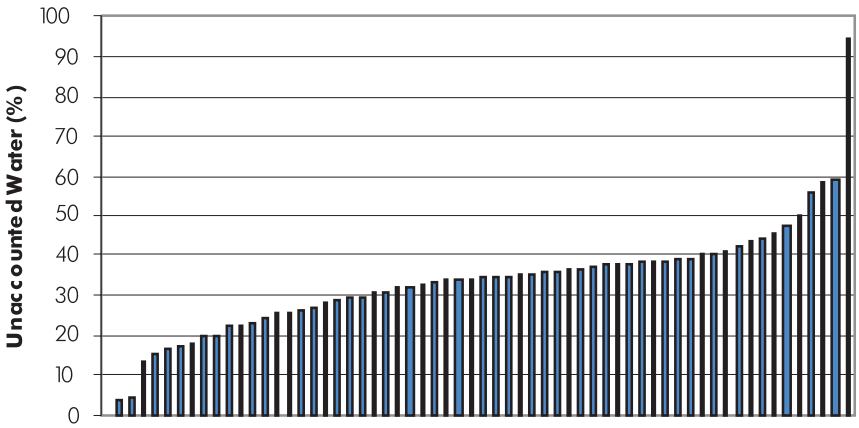
- Figure 4.3 illustrates recent improvements in staff productivity in water utilities in Hanoi

Figure 4.1: Non-Revenue Water (%) in Asian Cities (2001)



Source: IBNET database, http://www.ib-net.org/wb/bench/nodes/ADB.html

Figure 4.2: Unaccounted Water (%) in Vietnam



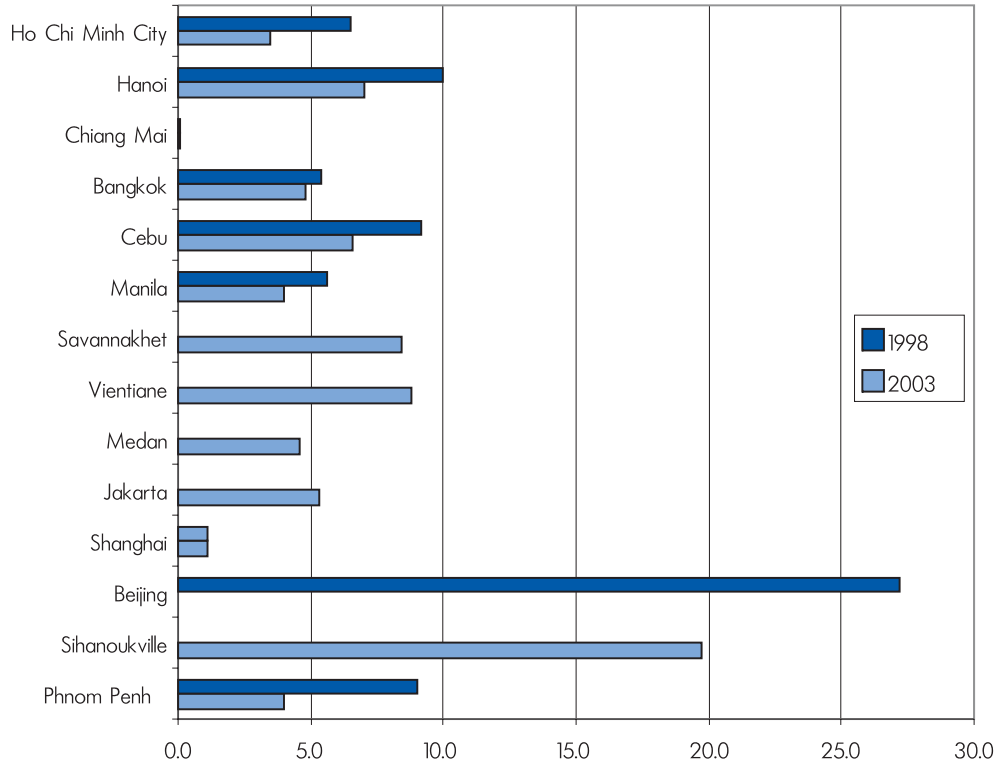
Each bar represents a separate utility. Data for 62 utilities in 2003.
Source: Benchmarking data from Vietnamese Water Supply Association.

Leak Detection Activities in Ho Chi Minh City

and Ho Chi Minh City. Nevertheless, Hanoi, with 7 staff per thousand connections performs worse than the average for the sample regional cities (6 staff). Ho Chi Minh City's utility performs better with 3.5 staff per thousand connections.

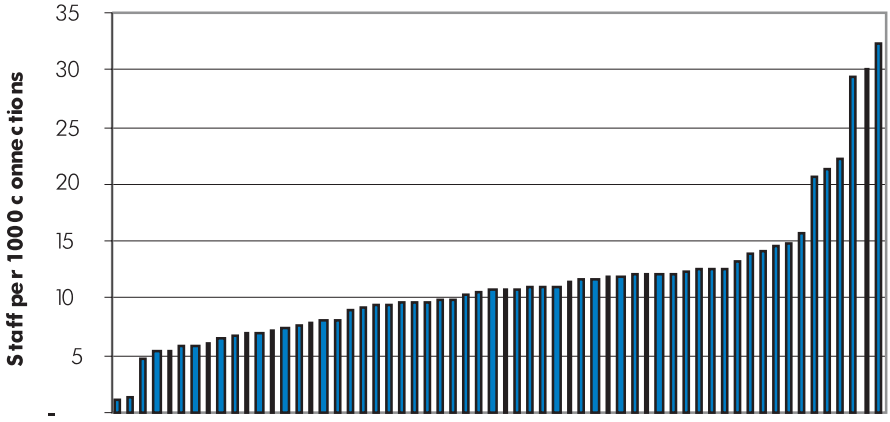
- Figure 4.4 highlights that the Hanoi and Ho Chi Minh City water utilities are among the nation's best performers in staff productivity. The national average is 11 staff per 1000 connections, and the worst quarter of firms have over 15 staff per 1000 connections.
- Figure 4.5 illustrates that labor productivity in telecommunications is poor compared to productivity in neighboring countries.
- Figure 4.6 illustrates that despite steady reductions in losses of electricity in transmission and distribution, still performs poorly in comparison with China and Thailand. To some extent this comparison is unfair. For example, China has a higher proportion of businesses receiving high voltage supply, and so has lower distribution losses. More recent data than is shown in the graph puts transmission and distribution losses in Vietnam at 12.2% in

Figure 4.3: Water Utility Staff Ratio (Staff/1000 Connections)



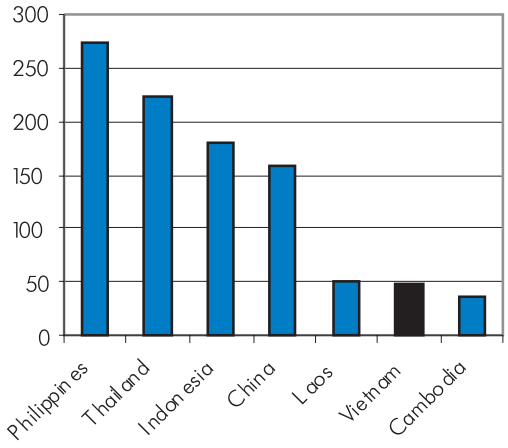
Source: ADB, JBIC, World Bank (2005).

Figure 4.4: Staff per 1000 water and waste water connections in Vietnam



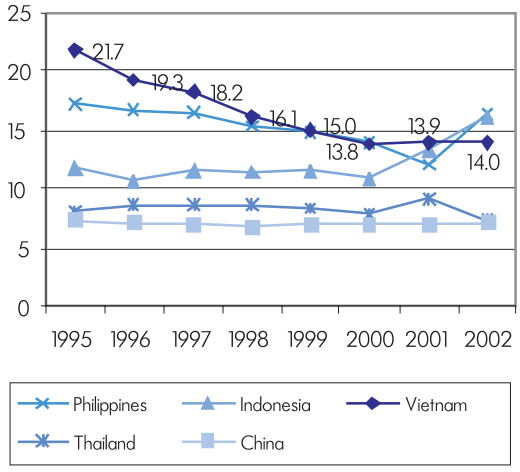
Each bar represents a separate utility. Data for 60 utilities in 2003.
Source: Benchmarking data from Vietnamese Water Supply Association

Figure 4.5: Telephone Mainlines per Employee



Source: WDI (2005). Data are from 2003 for Cambodia, Laos and Vietnam; 2002 for the Philippines and Thailand; 2001 for Indonesia; and 1999 for China.

Figure 4.6: Transmission and Distribution Losses (% of Electricity Generated)

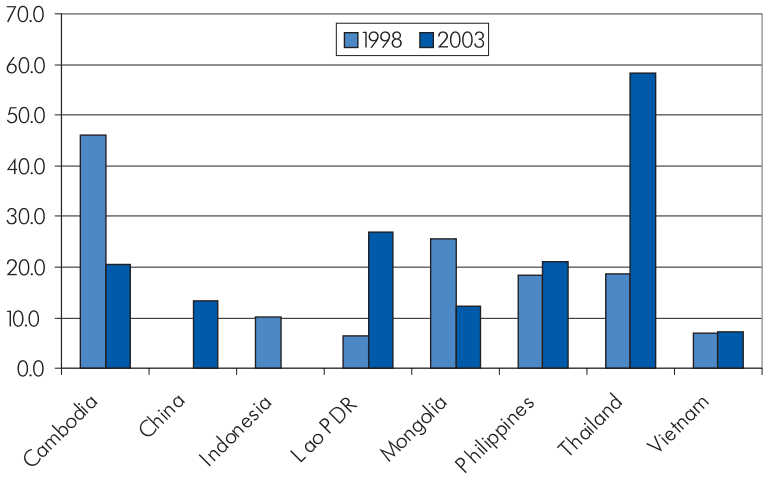


Source: WDI (2005)

Vietnam, but there is still room for further improvement.

- Figure 4.7 reports the proportion of road expenditure devoted to maintenance. At 7.1% of total road expenditure in 2003, Vietnam has the lowest maintenance expenditure in the sample. See also Figure 3.2 which highlights the downward trend in road maintenance. Neglect of maintenance is inefficient since it is likely to increase long-term maintenance costs.
- Vietnam's trains have low operating speeds of 40 km/h for passenger trains and 22 km/h for freight trains, because for lack of maintenance and new investment the rail network has deteriorated. Labor productivity is low at 124,000 traffic units/employee, compared with 548,000 in

Figure 4.7: Road Maintenance Expenditure (% Total Road Expenditure)



Source: ADB, JBIC, World Bank (2005).

Thailand and 610,000 in Indonesia.

- Accident statistics for Vietnam's railways suggest a neglected network. In 1998 there were 41 deaths per 1,000 km of track. This figure increased to 271 in 2003. Corresponding figures for Indonesia were 11 in 1998 and 16 in 2003, and for Thailand: 5 and 2.
- Performance appears to vary across Vietnam's ports. Some ports are reported as achieving 15-20 moves per hour per stevedoring gang, compared, for example, with 25-30 moves in the Philippines.[32] On the other hand, Vinalines reports throughput on container berths in Saigon of 20-25 containers per hour and 30 containers per hour in the new port of Cai Lan.

All of these measures suggest there is room for reducing costs of infrastructure services. This is not simply an issue for residential consumers. Businesses use infrastructure services as inputs. High cost inputs force up the final price of their goods, reducing their international competitiveness. Reducing input costs would permit lower prices for exports, and thus greater international demand for Vietnam's exports. Failure to reduce input costs will mean that Vietnam benefits less from opening to international trade than it otherwise would.

4.2. Reforming Public Infrastructure Enterprises

Until the 1980s, around the world there was little competition or private participation in the financing or operation of infrastructure. Attempting to improve efficiency many countries attempted reform within the public sector. The international experience has been that these measures offered improvements in commercial operation, but that even greater improvements have been delivered by subsequent competition and ownership reforms. A notable difference between these sorts of reform is that public sector reforms are easier to reverse, and hence less durable, than measures that establish new competitors or private property rights. A good public sector manager may improve performance until his or her replacement occurs, but the introduction of competition provides an enduring pressure for performance enhancement.

Internationally, one of the major problems of state ownership has been inadequate commercial focus of state-owned enterprises. A company whose objective is profit maximization will actively seek to keep costs down. While the politicians and officials who make government decisions would like to see profitability increased they may also seek other non-commercial goals such as maximization of

32. PDP Australia Pty Ltd/Meyrick and Associates (2005).

employment. While some non-commercial goals are legitimate goals of public policy, mixing them together with commercial goals hides their true cost, reduces the ability to examine trade-offs, de-motivates managers, and provides them with plausible reasons for poor financial performance.

In many cases non-commercial goals can be achieved at less cost through alternative means. For example, the provision of social services might be best achieved through direct transfers to the poor, while leaving infrastructure firms free to pursue directly commercial goals. In addition, the weight attached to non-commercial goals may not be communicated to the public. Most governments with a policy of transparency and public policy debate find that an informed public can play an important role in improving the quality of public policies.

To encourage greater commercial focus many governments have "corporatized" their enterprises, applying private sector company law. Company law is designed to provide private owners with rules that allow them to manage the enterprise effectively, make strategic decisions about the enterprise's direction, and hold the enterprise managers accountable for its performance. The same sorts of rules are desired by the government as owner. Of course, the effectiveness of corporatization in imparting a commercial focus and providing necessary information to owners depends on the strength of company law in each country.

In Vietnam most infrastructure services are provided by state-owned enterprises. Corporate governance is under the Law on State-Owned Enterprises. SOEs are not subject to the general principles of private sector corporate governance, and are not able to make their own autonomous commercial decisions. To the extent that business strategies exist they are embodied in sectoral Master Plans prepared by line ministries, personnel policies are controlled by the Ministry of Labour, Invalids and Social Affairs, the Ministry of Planning and Investment approves their investment projects, and the Ministry of Finance grants funds.

Corporate governance in Vietnam is generally said to be weak. A new Unified Enterprise Law (UEL) was enacted in 2005 for implementation from April 1, 2006. It is intended to provide common and improved rules of corporate governance for domestic and foreign private firms. But SOEs will only be subjected to the new UEL if they are specifically converted into either single member limited liability or joint stock companies. Subjecting infrastructure SOEs to the UEL would be a logical element of any corporatization program, but there currently seems to be little impetus in this direction.

In addition to subjecting public enterprises to the corporate governance rules of the private sector, there may be a need for state-owned infrastructure enterprises to be governed by additional rules, to ensure a transparent debate about the trade-off between commercial goals and non-commercial goals. A possible set of additional rules to support a commercial focus and allow balancing with non-commercial objectives might, for example:[33]

- give the enterprise the objective of operating as profitably as possible;
- set up procedures for negotiating contracts or business plans between the government and the enterprise as the only procedure for politicians or officials to direct or influence the enterprise;
- provide for the government to pay the enterprise to pursue non-commercial goals and prevent it from directing the enterprise to pursue such goals without paying;

33. These suggestions are taken from Irwin, and Yamomoto (2004.

- require the appointment of directors who are not government employees and thus cannot be directed on a day to day basis by the government, and don't face the threat of punishment if they resist political interference;
- specify the procedure the government must use to appoint directors;
- establish performance pay for directors (who in turn may establish it for managers); and
- require additional public reporting of performance and policies not required for private companies, such as:
  - economic profitability taking into account an estimated cost of the government's equity in the enterprise;
  - any directions given to the enterprise by the government;
  - performance in billing and collection; and
  - the number of employees.

Appointment of privately successful business people as directors may help to instill a commercial culture. Listing a minority of shares in an enterprise brings to bear the stock exchange rules for information disclosure, and also brings close monitoring of financial performance by the minority shareholders. Similarly, requiring the enterprise to borrow from commercial lenders, rather than seek government financing, brings close monitoring of financial performance by those lenders.

Vietnam has not used such measures to promote commercial focus and to ensure transparent trade-offs between commercial and non-commercial goals. The suggestions above could be used as an agenda to be explored for purposes of improving public sector infrastructure efficiency.

Apart from a weakness of commercial focus, the second major difficulty with public ownership encountered internationally is that governments face a conflict of interest that undermines the quality of policy. For example, as owner of a firm the government is more likely to protect it from competition than if it were not the owner. And as owner of a monopoly, the government can regulate the industry in arbitrary fashion, without resistance from persons representing the commercial interests of the firm.

While these conflicts of interests cannot be entirely removed their negative effects can be lessened by measures such as:

- Separating the ministries responsible for being the shareholder of a state-owned enterprise and those responsible for industry policy. For example, in New Zealand the Ministers of State-Owned Enterprises and Finance hold shares in New Zealand's public electricity companies, while the Ministers of Energy and Commerce have responsibility for electricity policy. The ministry responsible for industry policy could also be given the task of purchasing or subsidizing services not fully paid for by customers.
- Creating and using independent regulators and competition agencies to enforce some of the rules (regulation is discussed in more detail below in Part 4.5).
- Establishing high-level rules that create a bias in favor of competition that politicians and officials cannot easily undermine when making lower-level decisions.

In addition to reforms to encourage better general commercial and policy decisions, there are some public sector reforms which could be undertaken to address particular problems encountered in Vietnam. Vietnam could increase the use of performance based pay for managers to address specific measurable problems. For example, Figure 4.1 highlights a problem with unaccounted for water. Performance pay linked to reductions in unaccounted for water could be a useful tool for addressing the problem. Care must be taken in

the design of such schemes, however, since a manager could, in an extreme case, achieve zero unaccounted for water by stopping all production. Moreover managers can make little progress on unaccounted for water if funds are not provided to install meters to identify where leakage occurs, or to repair leaks when they are identified.

Finally, public procurement practices could be reformed to make greater use of competitive bidding, and less use of independent expert verification of sole-source bids.

Particularly in the transport and telecommunications sectors there are many possibilities for SOE reform for enterprises that serve the core infrastructure facilities. For example, there are many construction companies in transport that could be separated from the Ministry of Transport and equipment producers in telecommunications which could be separated from VNPT, and given revised governance structures and stronger incentives for commercial performance. Going a step further, these sorts of enterprises could be exposed to stronger competition, to provide ongoing incentives for efficiency improvements.

4.3. Competition

Competition is the most powerful mechanism for improving efficiency. Competition provides firms with the incentives to keep costs to a minimum, to offer products that are better adapted to the needs of consumers, and to adapt new technologies as they become available.

There are various possibilities for increasing competition in the infrastructure sectors (for example, transport construction companies, telecoms equipment manufacturing) but there are also various natural monopoly sub-sectors, such as electricity transmission or water pipelines, where direct competition is not feasible. Cases where direct competition is not feasible pose the greatest challenge for efficiency improvement.

In natural monopoly markets there is the possibility of using "competition for the market" to identify more efficient firms. For example, the government can sell the right to operate an enterprise to the firm offering the lowest prices to consumers, or to the firm offering the highest fee to the government. In theory, the bidding firm with the lowest costs would expect to make the most profit from any given pricing arrangement, and so could afford to offer the lowest prices to consumers or the most money to the government. Competitive bidding serves as a means of identifying the least cost firm from among multiple bidding firms.

The difficulty with the "competition for the market" approach is that the greater investment that is sought, the longer the contract needs to be to ensure that investment costs are recovered. This requires a long-term contract that is sufficiently flexible to cover changing circumstances. With large investments, these contracts may last for upwards of 30 years, and of course it is unlikely that all circumstances can be foreseen over 30 years. Flexibility can be introduced by entrusting discretion to a regulator, but even this has its limits (see the section on regulation, below). Thus re-negotiation is very common where "competition for the market" is used. Since re-negotiation occurs under very different circumstances from the initial competitive bidding, it is not clear that the benefits of competitive bidding are always retained. In any case, over the life of a long contract it is not guaranteed that the firm that was most competitive at the time of contract award remains the market leader.

In Vietnam the use of competition as a tool for improving efficiency varies across infrastructure sectors, but generally the continuing philosophy is one of trust in government planning processes and

bureaucratic performance targets rather than market competition.

4.3.1. Roads

National roads are managed by the Ministry of Transport, with half delegated to Provincial Departments of Transport. Local roads are managed by District Departments of Transport and Commune People's Committees.

Competition is used to procure road construction, but the competition is between state-owned companies who use the same norms to prepare their bids, and typically prepare similarly priced bids. This suggests either collusion in their bids or that a greater number of competitors is required to produce vigorous competition.

Competition for the market can be introduced for toll roads (to construct and/or simply maintain roads), either through direct tolls or "shadow tolls" in which the government pays the operator for each vehicle that uses the road. Such competition can be used to lower the total cost of roads since the toll road operator has an incentive to find the optimal mix between construction and maintenance costs—lower construction standards imply higher maintenance costs.

4.3.2. Railways

Vietnam Railways Administration (VNRA) under the Ministry of Transport develops investment plans. Vietnam Railways Corporation (VNR) operates 2 passenger companies, 1 freight company and a group of regional infrastructure administrations. There is thus no competition within Vietnam's railways industry, although the railways as a whole face competition from the road industry.

Internationally, "competition for the market" has been introduced in many countries through concessions for regional railway companies. In the United Kingdom the railways infrastructure (the rails and stations) have been separated into a separate company to allow for competition between service companies (operating the locomotives and carriages) over the same lines. This introduction of direct competition has been controversial, because there are economies of coordination of rail operation and service operation in a vertically integrated company. An alternative approach with the same objective of competition between service operators is to retain a vertically integrated entity, but to impose a duty to provide third party access to new service operators.

Vietnam is currently debating the choice between separating infrastructure from train services, or whether simply to oblige VNR to provide access to its network for third party operators.

4.3.3. Waterways

Vietnam has 8,000 km of commercial waterways, 70% of which are managed by Vietnam Inland Waterways Administration, with the remainder managed by provincial Departments of Transport and Departments of Agriculture. Ports and landing stages are operated by provinces. Management of large barges is a mix of private and SOE, while smaller boats are usually privately operated. There is little charging for the use of waterway infrastructure, limiting the scope for competition.

The importance of internal waterways in Vietnam is rare internationally, so there is relatively little international experience to draw on. While not physically impossible, concessioning of stretches of waterways would pose great practical difficulties in gathering revenues to cover maintenance and ongoing investment. More promising as revenue-raising devices is higher charging for use of ports and for boat registration, measures that do not require competition for their introduction.

Maintenance contracts should be procured competitively.

4.3.4. Ports

Vietnam has 80 ports. The major ports of Hai Phong, Danang, Saigon and Can Tho are operated by VINALINES, while smaller ports are operated by VINAMARINE, both of which are SOEs. Limited competition exists in the industry. Consideration is being given to the development of a deep sea port to serve Ho Chi Minh City, and the development of a trans-shipment hub.

International experience illustrates several mechanisms for introducing competition into the port sector. Competition for the market can be introduced by concessioning individual ports to the firm offering the highest sum to the government, or lowest tariff for shippers. With adequate surface linkage multiple ports can compete directly with each other. For example, Ho Chi Minh City could be served from Saigon Port or by shipping to Can Tho and completing the journey by rail or road. Finally, in large ports with multiple terminals, individual terminals concessioned to private operators can compete directly with each other. In general, direct competition yields greater performance improvements than competition for the market.

At present the introduction of competition into the ports sector is not on the agenda. It would be possible to concession a major port on a pilot basis. The presence of alternative ports would serve as a safeguard in the case of failure, but it is more likely that the introduction of a strong competitor would stimulate improvements in regional port performance.

4.3.5. Electricity

A high level of competition is possible in electricity markets, with the most advanced countries possessing spot wholesale markets in which the price of electricity and dispatch order is determined every few minutes by competition between multiple generating companies, and individual households can choose their supplier of electricity. Transmission and distribution remain regulated natural monopolies in all systems. Competition in generation and retail supply eliminates the need for governments to regulate these prices. Moreover, price serves as a signal of impending capacity constraints, inducing new investment when required. The hope is that market signals will provide for more efficient capital expenditure than public sector planning, but it is probably too early to evaluate the strength of this claim since such highly competitive markets have not been operating for long, and only in a few countries.

Vietnam is a long way from such a business model. Competition has been introduced in a minimal way through competitive bidding for an independent power producers (IPP) at Phu My 2.2. In this model the "single buyer" (EVN) signs a long term "power purchase agreement" (PPA) with the private firm that bids to provide electricity at the lowest price. In this way competition helps to lower the price of electricity obtained by EVN. IPPs also help in diversifying financing sources. EVN plans in coming years to procure around 50% of the required new generating capacity using IPPs. It makes sense for Vietnam to expand the use of IPPs in procuring expansion of generation capacity, but greater use of competitive bidding should be used in procurement than in the past, and as mentioned in the financing section, tariff increases are needed to ensure that EVN has the financial capacity to pay for the procured electricity.

Vietnam has plans for the introduction of greater competition in three phases. In the first phase, commencing in 2009, generators would bid to sell electricity into a power pool, with EVN as the single buyer. In the second phase, commencing around 2014, large consumers such as distribution companies or major

industrial firms would be given the right to make bilateral contracts with generators, avoiding EVN as the single buyer. And in the third phase, commencing around 2022, retail customers would be given the right to choose their supplier of electricity.

The competition provided by these reforms will unleash strong forces for efficiency improvements in the electricity sector, in both operations and in system expansion. But there will be several difficulties in managing this transition. In moving to competitively determined prices for electricity in a situation of capacity shortage, market prices are likely to be very high resulting in large rent transfers to the generation companies. In the short term there is a need for considerable investment in capacity, and IPPs will be needed to help supply the capacity. But IPPs require reassurance about the tariffs they will receive. Plans to move to uncertain competitive pricing may deter private investment (notwithstanding that those tariffs could be quite high). Finally, the current plans seem to envisage ongoing ownership by EVN of generation assets. It is not credible to expect equal treatment of its generation subsidiaries by EVN in its role as single buyer. EVN's conflict of interest would deter private investment in competing generation companies. These transitional challenges are discussed in more detail in the electricity chapter.

4.3.6. Telecommunications

Internationally, mobile telecommunications and even fixed line telephony have become highly competitive industries. Unfortunately, Vietnam is lagging behind international best-practice. State-owned VNPT dominates the sector, with a 90-94% share of the entire telecommunications market (including segments such as equipment construction and installation). It dominates fixed line telephony in all its forms: local, long-distance, leased lines and international services, and through two subsidiaries, Vinaphone and Mobifone, dominates mobile telephony as well.

Nevertheless there is an official intention to promote competition. Vinaphone and Mobifone, despite a common parent, do seem to compete, perhaps in part because they have business cooperation contracts with different foreign partners. Four SOEs have been licensed to enter fixed and mobile markets: SPT, Hanoi Telecom, Viet Power Telecom, and Viettel. These four companies already have a small presence in the fixed line market, because they have traditionally had their own private networks. They are just beginning in the mobile market. SPT is present in Ho Chi Minh City only, and is 18% owned by VNPT; Hanoi Telecom is present only in Hanoi; Viettel is an SOE owned by the military; and Viet Power Telecom is owned by EVN, the electricity utility.

It is perhaps too early to judge the recent introduction of competition from SOEs. But progress is likely to be slow with VNPT dominating the market. The success of interconnection regulation will be crucial to the success of the new entrants, since if the dominant firm refuses or impedes access to its network, customers of new entrants will have few numbers they can call. There is currently no transparent process to set or appeal interconnection disputes or rates. It also remains to be seen whether competition between SOEs can be maintained. In a rapidly growing market, risks of business failure are lessened, but failures can still occur. There is little reason for the government to bear this risk.

Stronger levels of competition, and hence greater likelihood of efficient services and rapid growth in consumer access, could be achieved by further opening the market to private investors, including foreign firms. Through a Bilateral Trade Agreement, United States firms have gained preferential access to Vietnam's telecommunications market. It is intended that other nationalities will obtain access to the

market in the context of Vietnam's planned WTO accession, possibly in 2006. But even the access obtained by United States firms is unnecessarily restrictive. Although US firms already have the right to up to 50% ownership of firms offering value-added telecoms and internet services, few firms have entered these markets. For mobile and fixed line services US ownership is capped at 49% and 45% respectively, so even less investor interest can be expected when these markets open at the end of 2005 and 2006 respectively. Investors prefer to control management decisions if they are to invest large sums of money.

4.3.7. Water and Sanitation

The main possibility for the introduction of competition in the water and sanitation sector is through competition for the market (e.g. for management contracts, leasing, or concessions). Internationally, concessions and leases have held great promise for water supply systems, but have been difficult to implement in practice. Fewer difficulties seem to have been encountered in the concessioning of bulk water treatment plants, and indeed Ho Chi Minh City signed a BOO contract for the construction of a new water treatment plant (Thu Duc) in March 2005. Smaller water distribution systems operated by independent operators in Vietnam typically have not been competitively bid, but communities could, in principle, use competitive bidding. Direct competition is possible in the water vending market, although vendors typically provide service at a higher total cost than piped water.

Thu Duc, Ho Chi Minh City, Build Own Operate (B.O.O.) under Water Treatment Plant Construction May 2006

4.4. Private Participation

At the moment Vietnam's efforts to involve the private sector in infrastructure sectors is largely focused on meeting financing needs, through the equitization program and BOTs, rather than improving infrastructure efficiency. But private participation can be introduced as a means of improving efficiency, especially when introduced through competitive bidding for the right to serve a market. Greater use of private participation as a means of improving enterprise efficiency could be encouraged with various institutional reforms.

4.4.1. Equitization

Equitization provides for a simple change of ownership. International evidence suggests that compared to the introduction of competition, ownership changes of themselves are likely to deliver relatively small efficiency improvements. There is strong empirical evidence that private firms *in competitive markets* outperform public firms across a host of measures, including total social welfare.[34] Thus, for example, telecommunications markets could be strengthened by eliminating the existing barriers to competition and introducing new private competitors. But in infrastructure natural monopolies the international evidence is much weaker concerning efficiency

34. See, for example, Megginson and Netter (2001) and references cited therein.

improvements induced by mere changes of ownership. Changes of ownership in infrastructure natural monopolies do, however, offer the potential for improved performance when linked to competition for the market.

Vietnam's equitization program introduces a level of private ownership into infrastructure firms, and provides an injection of funds that can be used for investment. But as a means of delivering efficiency improvements in infrastructure the current program has important weaknesses:

- Equitization tends to be focused on current workers and managers. While providing workers with stronger incentives has helped to improve productivity in various smaller enterprises in Vietnam, in large infrastructure enterprises these incentives are likely to be weaker. When the benefits of better performance are shared across more workers, workers have stronger incentives to free-ride on the efforts of others.
- Equitization is not used as a means of introducing new management in infrastructure, so it is unlikely to find new solutions to poor management.
- It is rare for equitized firms to be listed on the share market. This is unfortunate as an important element of privatization is the possibility for outside shareholders to take control when they see the possibility of efficiency improvements.

If the equitization program is to be used as a means of improving efficiency of infrastructure firms the current rules (see section 2.3.10) requiring that the State retain majority ownership even in competitive segments of infrastructure industries should be relaxed. Such rules are not necessary in markets where there is a choice of supplier as, for example, in electricity generation or mobile telecommunications. Moreover, with relaxation of these rules, equitization should be used to introduce new management in at least a selection of infrastructure operators, to provide a competitive spur towards innovation and efficiency improvement.

4.4.2. BOTs

Table 4.1 sets out instances of private participation in infrastructure in Vietnam. A majority of the contracts are BOTs. (The telecommunications business cooperation contracts (BCCs) are a means of introducing private financing without transferring management control). Competitive bidding for a BOT project can be used to identify efficient service providers. Because the winning bidder is responsible for operations, management, and investment it also offers strong ongoing commercial incentives for efficient performance.

Unfortunately, the Government has historically tended to award BOTs on a negotiated basis, rather than through competitive bidding. International evidence suggests that competitive bidding of BOTs yields lower final prices than direct negotiation.[35] This was certainly observed with the Phu My 2.2 project (see Box 4.1). International experience also suggests that competitive bidding tends to be less susceptible

Phu My 2.2 BOT.715 MW Gas Turbine Power Station

35. Albouy, and Bousba (1998).

to corruption than direct negotiations.

A number of BOTs have been negotiated with state-owned construction companies. While local financing has advantages in terms of foreign exchange risks, the use of foreign enterprises with specialist infrastructure experience could provide a stronger infusion of management expertise, new technology, and new ideas for efficiency improvements. And a difficulty with state-owned enterprises is that weak governance structures may provide weak commercial incentives, undermining the aims of a BOT program. There is scope for greater openness toward foreign private enterprises in infrastructure investment.

The legal basis for BOTs is set out in the 1996 Foreign Investment Law, and the related Decrees 62/1998/ND-CP and 02/1999/ND-CP. These laws encourage foreign investment in transport, communications, power production and trading, water supply and drainage, waste treatment, and other fields decided by the Prime Minister. They offer tax exemptions and set out procedures for the conduct of feasibility studies, procedures for government approvals, contractual terms, and mechanisms for dispute resolution, although not in great detail.

The current BOT legal regime permits, but does not require competitive bidding. The 1999 Country Framework Report (PPIAF, 1999) identified several further problems with the legal regime for BOTs, including investors' concerns about how priorities would be allocated in the event of foreign exchange shortages, which State bodies had the legal authority to provide and honor guarantees, the possibilities for land-use rights to be transferred in the event of sales of buildings, the "step-in" rights of lenders in the event of failure by an investor to fulfill contractual obligations, and the right to specify foreign arbitration in the event of a dispute between the BOT company and another Vietnamese enterprise.

The government is currently drafting a replacement BOT decree. Desirable features of a BOT decree would include:[36]

- Competitive bidding should be required for all BOT projects, with exceptions only granted under a limited and carefully defined set of circumstances;
- The decree should clearly identify in which sectors BOT contracts may be granted, and establish who has the authority to enter into BOT contracts;
- The decree should establish minimal project preparation steps, including feasibility studies, to be carried out before calling for bids;
- The decree should clearly state which public authorities (preferably only the Ministry of Finance) may provide financial or economic support, including contingent support such as guarantees, to the implementation of BOT projects;
- Specified bidding procedures could allow for pre-qualification of bidders; and for a two-stage selection process, with an initial hurdle of meeting certain technical standards, and then all remaining bidders being evaluated solely on a single financial criterion.
- Procedures should be specified for how negotiation would be conducted in the event that competitive bidding is not used.
- Procedures should be specified for dealing with unsolicited bids, potentially permitting some form of compensation for the intellectual property and financial costs of unsolicited project proponents, but nevertheless requiring that such projects be subjected to competitive bidding.

36. A useful statement of international best practice is UNCITRAL (2004).

Table 4.1:
Private Participation Contracts in Vietnam

Contract type	Closure date	Duration (years)	What	Where	Country of Sponsor
BOT	1994	25	Deep water port	Phu My, 70 km from HCMC	France, Norway
BCC†	1995	10	MobiFone mobile network	National	Sweden
BOT	1996		Air cargo terminal	Ho Chi Minh City	Singapore
ROT‡	1996	50	Diesel power generation, transmission lines & toll-road	Hiep Phuoc, EPZ 15 km from HCMC	Taiwan
BCC	1996	10	Network development	Four provinces	South Korea
BCC	1997	15	Network development	North-east Hanoi	Japan
BCC	1997	15	Internal network	HCMC	France
BCC	1997	15	Network development	East Hanoi	UK
BOT	1997		VICT container terminal	Ho Chi Minh City	Japan
BOT	1997	30	Diesel power generation	Bien Hoa	Thailand
BOT	1998	20	Water treatment plant	Ho Chi Minh City	Malaysia
BCC	1998	6	International telecom network	National	Australia
BOT*	2001	25	Water treatment plant	Ho Chi Minh City	France, Malaysia
BOT	2002	Approx. 20	Gas field, transmission pipeline, & processing facility	Nam Con Son	UK, US
BOT	2002	20	Gas-fired power generation	Phu My 2.2	France, Japan
BCC†	2003	15	S-Fone mobile network	National	South Korea
BOT	2003	23	Natural gas power generation	Phu My 3	UK, Japan, Singapore
BCC	2005	15	CDMA mobile phone network	Hanoi	UK

Source: BCC information from USAID (2005); other information from PPI database.
† BCC – Business Cooperation Contract.
‡ ROT – Rehabilitate, Operate, Transfer.
* In February 2003 Suez Lyonnaise (France) and Pilecon Engineering (Malaysia) withdrew from the Thu Duc water project following disputes with the construction company and local partners. In August 2005 a Vietnamese consortium led by Ho Chi Minh City Infrastructure Investment Joint Stock Company (CII) won the tender to replace the foreign investors under a revised BOO scheme.

- Provisions dealing with the contents of a BOT contract, including governing law, ownership of assets, responsibility for acquisition of rights to the project site, assignment of the contract, and duration and termination of the contract;
- Provision for dispute resolution, distinguishing between disputes between the contracting authority and the investor, disputes involving suppliers to the BOT, disputes involving customers of the BOT facility, and other disputes.

Because the details of BOTs differ substantially across sectors, there could also be a need for supplementary sectoral regulations setting out minimal contractual details, while

preserving flexibility to adapt contracts to circumstances. As discussed in section 2.3.12, it would also be desirable to have government guidelines governing the provision of contingent support.

4.4.3. Other Forms of Private Participation

The almost exclusive use of BOTs as a means of private participation in Vietnam suggests that the focus has been on obtaining private finance, rather than being focused on improving the efficiency of existing enterprises. The BCCs in telecommunications provide further suggestive evidence, since they obtain private financing without ceding management control to the private sector.

But as reviewed above, the efficiency of existing enterprises is not perfect. There are many contractual options for involving the private sector in the provision of infrastructure services, which can be used as a means of improving efficiency. Competitive bidding is a central element of the use of these schemes to improve efficiency, since it serves to identify the most efficient firms.

Table 4.2 outlines the various possibilities:

- Service contracts provide for the contracting out of specific tasks, such as reading meters, computer services, road maintenance or collecting payments. They can be used as a means of bringing in specialist expertise that is missing in the public sector, and/or to reduce costs by identifying the private sector firm that can perform the service at least cost.

BOX 4.1: Phu My 2.2 Project

The 715 MW Phu My 2.2 gas-fired power project was the first infrastructure project in Vietnam to use international competitive bidding. Six international consortiums bid for a 20 year BOT to construct and operate the plant in Vung Tau, near Ho Chi Minh City.

The World Bank helped to finance technical assistance for the project, and provided a US $75 million partial risk guarantee that helped to mobilize a further US$ 405 million in finance. In 1996 an engineering consultancy firm was employed to develop the contractual framework for the project, including a proposed power purchase agreement. A request for proposals was issued in late 1997; questions were accepted from bidders; then clarifications provided. Bids were opened in April 1998.

The contract with the winning bidder provided for the delivery of power to EVN at US cents 4.1 per kWh (including fuel costs based on the gas price agreed with Petro Vietnam) on a levelized basis over the life of the project. This was lower than bids for other projects being negotiated directly with project sponsors, typically around 5 cents per kWh.

Table 4.2:
Responsibilities under the Main Private Participation Options

Option	Operations and maintenance	Commercial risk	Capital investment	Asset Ownership	Typical Duration
Service contract	Public and private	Public	Public	Public	1-2 years
Management contract	Private	Public	Public	Public	3-5 years
Lease	Private	Shared	Public	Public	8-15 years
Concession	Private	Private	Private	Public	25-30 years
BOT/BOO	Private	Private	Private	Private and public	20-30 years
Divestiture	Private	Private	Private	Private	Indefinite

- Management contracts are used to address more general problems of inefficient management. Basic management contracts transfer responsibility for operations and maintenance to a private firm. The private firm seeks to make efficiency improvements in return for a fixed fee. Payments can also provide incentives on particular targets, but specifying these targets clearly can be difficult.
- Under a lease arrangement a private firm leases the assets of the enterprise from the government and takes on the responsibility for operating and maintaining them. Because the lessor effectively buys the rights to the income stream from the utility's operations (minus the lease payment), it assumes much of the commercial risk of the operations. This provides strong incentives to the private firm to lower costs and increase revenue collections, and lessens the need to contractually specify particular operational targets requiring management attention. Leases leave the responsibility for financing and planning investments with the government. One of the major complications of leases is the coordination required between the government's investment plans and the private operator's operational plans.

Concessions give the private partner responsibility not only for the operation and maintenance of a utility's assets but also for investments. Asset ownership remains with the government, however, and rights to all the assets revert to the government when the contract ends. Concessions are often bid by price: the bidder that proposes to operate the enterprise and meet the investment targets for the lowest tariff wins the concession. The concession is governed by a contract that sets out such conditions as mechanisms for adjusting tariffs, performance targets such as quality and service coverage, and arrangements for resolving disputes. The main advantage of a concession is that it passes full responsibility for operations and investment to the private sector and so brings to bear incentives for efficiency in all the utility's activities.

- Build-operate-transfer (BOT) arrangements are basically the same as concessions, with the added requirement that the private firm construct the infrastructure facility concerned. These contracts help the government reduce the public risks of construction cost overruns and delays. Build-operate-own (BOO) contracts provide that the built assets remain indefinitely with the private firm.
- Divestiture can occur through a sale of assets or shares. A complete divestiture gives the private sector full responsibility for operations, maintenance, and investment. But unlike a concession, a divestiture transfers ownership to the private sector. With a concession, the government needs to devise rules that ensure the assets are returned in good condition. Such rules are not needed with divestiture since the private owner has sufficient incentive to maintain assets.

Consideration should be given to use of these PPI alternatives as a means of improving the efficiency of existing infrastructure enterprises. Pilot exercises should be undertaken across the infrastructure sectors, to gain experience in project preparation, and also to assess the effectiveness of private participation as a means of improving efficiency. Because of the difficulties in attracting private investment in sectors where there has been little history of private investment, initial experiments should focus on projects that are likely to be commercially attractive. In order to assess effectiveness it would be important that these pilot projects be accompanied by careful monitoring and evaluation of their effects.

4.4.4. Preparing for Private Participation

Competitive bidding requires careful preparation by the Government. Ideally, projects will be sufficiently well prepared that a common set of conditions can be offered to all bidders, without the need for any further negotiation after the winning bidder has been identified. Even if competitive bidding is not made automatic, careful preparation by the Government before approaching private firms can help to reduce the time and expense for the private sector, and so help to reduce final costs.

Preparatory work that should occur prior to bidding includes identification of the scope of the project, an assessment of the potential economic benefits of the project, an environmental and social impacts appraisal, a market appraisal, an assessment of the likely costs of private sector capital, preparation of a financial model for the project, an assessment of whether the implied tariffs are compatible with the government's policies on affordability, and an overall appraisal of the likely social costs and benefits of the project. All relevant documents should be available for inspection by all potential bidders.

Where the project involves sales to final consumers, there is often a need for regulatory arrangements governing tariffs and service quality. Regulatory reforms should be developed and enacted prior to bidding.

To identify the most efficient operator it is common practice to use a two-stage process in which bidders' proposals must first meet a specified technical standard, and then the winning bidder is chosen purely on the basis of financial proposals (eg. the firm proposing the lowest tariff to consumers, or the highest payment to government, or asking for the lowest subsidy from government). For such bidding to work, the government should have already identified sufficient technical standards, and must have clear financial criteria for evaluation of the bids, and all of these should be included in the bidding documents.

Finally, winning bidders have been known to use the period after bidding to negotiate revised terms and conditions. This risk can be lessened if all of the terms and conditions are set out in a draft contract prior to bidding occurring, with the only remaining detail to be filled in being the financial result of the bid. Bidders should be informed that no modification of the contract will be permitted after the bidding. In the absolute best of international practice, the draft contract is pre-approved by Government, and the winning bidder is required to fill in the financial bid and sign the contract immediately after selection.

Preparing for a competitive bid is a time-consuming process. But all of these steps would need to be performed even with a negotiated proposal, and the benefit of careful preparation is that the full force of competition can be used to generate greater cost savings in procurement of the desired infrastructure service.

Careful project preparation also requires specialist economic, accounting, and legal skills. Most governments, even those with extensive PPI experience, find that the skills within government need to be supplemented with the skills of consultants with expertise in project preparation. Recognizing the difficulty in trying to reproduce such skills across many ministries and tiers of government, some countries have opted for specialist institutions to be involved in developing a pipeline of projects, project preparation and, in some cases, project approval. Good examples include the Philippines BOT Center, South Africa's Public-Private Partnerships Unit (PPP Unit), or in India, the Gujarat Infrastructure Development Board (see Box 4.2).

In supporting provincial and municipal governments, a central "PPP Unit" or "BOT Center" could be given an advisory role (providing support when requested by lower levels of government) or a mandatory role

BOX 4.2: Gujarat Infrastructure Development Board

The State of Gujarat in India, located on the coast next to Pakistan, has a population of over 50 million people, and has had an annual growth rate of 10 to 12% over the past five years. The Gujarat Infrastructure Development Board (GIDB) is headed by the State's Chief Minister, and consists of various ministers responsible for infrastructure. It is supported by a technical secretariat with expertise in each affected sector.

The GIDB's mandate is to pave the way for fast-track implementation of infrastructure projects. Planning processes identified 383 infrastructure projects required to meet demand during 2000-2010. This list of projects was then assessed on economic criteria to determine priorities. Projects are being assessed in order of priority for their potential for private participation.

Where it is decided to involve the private sector in a project, the GIDB undertakes project preparation, including the risk allocation framework, the financing framework, and the bidding criteria. Preparation to the point of a bankable project is expensive. The GIDB operates a revolving fund to pay for pre-feasibility studies. Some projects are feasible, others are not. When a feasible project proceeds to selection of a private operator, a fee is charged by GIDB, enabling the development costs to be recovered and used for further pre-feasibility studies.

Much of GIDB's early efforts were focused on developing clear policies, such as bidding criteria and model concession agreements to guide future development. At the same time, real progress on introducing private participation has been made, with 6 port projects, 10 independent power projects, 6 toll-road projects and 2 railroad projects completed since 2000, involving over US$ 5 billion of investment. A number of other projects are close to completion.

Source: GIDB website:

(approval of the unit would be required for the project to advance). Alternatively, LDIFs could be developed as the centers of expertise in preparation of PPPs, although this strategy would not work for the many provinces that have not established LDIFs.

4.5. Regulation

Where competition is not present, effective regulation is the key to efficient operation. Regulation can provide incentives to firms to reduce their costs and can mandate prices designed to achieve allocative efficiency. Regulatory decisions addressing quality of service also have an important effect on the cost of services. Well-organized regulation requires specialist skills, and different institutional arrangements can enhance the effectiveness of regulation. Regulation is not, however, a panacea and should not be seen as a replacement for competition. Regulation has costs, including the possibility that regulatory errors will be made that could potentially undermine efficiency.

4.5.1. Benchmarking

A light-handed form of regulation consists of publicly revealing information, so that the public can compare their service provider with service providers elsewhere in the country. For instance, publicly revealing the price of water at utilities across the country can motivate consumers and local officials to ask why their utility charges high prices, and to push for improved efficiency to keep costs down. This sort of regulation does not rely on bureaucratically mandated pricing, simply on public pressure. It can create a sort of competition between utilities, whose managers would like to be ranked as among the best in the country. Benchmarking can be applied where there are many firms providing similar services.

A benchmarking program is currently run by the Water Supply Association, and appears to have been helpful in generating performance improvements across the country. Similar programs would be possible for ports and for electricity distribution businesses. Greater

attention could also be applied to international comparisons as a spur to improved performance.

4.5.2. Price Regulation

Left to their own devices, infrastructure monopolies could set prices well above cost, in order to maximize their profits. To protect consumers from this abuse it is usual to fix prices by regulation. The challenge is to set prices as low as possible to maximize the social benefits of service provision, while simultaneously preserving the financial sustainability of the service (that is, still allowing a "normal" profit for the firm). Many countries have found it politically attractive to set infrastructure prices below cost, but have then struggled to finance maintenance and new investment. Accumulated international experience suggests the fundamental importance of setting cost-covering tariffs.

In recent years Vietnam has generally shifted infrastructure prices towards cost-recovery levels—at least to the level of operations and maintenance costs, in industries in which prices are charged. The challenge for the future is to gain a greater contribution from users towards investment costs, to reduce the fiscal burden of infrastructure investment. There is an efficiency reason for doing so: taxes distort the economy and impose deadweight losses over and above the direct cost of taxation to consumers. By shifting the burden to user payments these deadweight losses are avoided. Simultaneously, imposing additional costs on consumers reduces demand and hence the total cost of service provision, reducing the financing requirements.

Once cost recovery, including capital costs, is broadly achieved, price regulation can be used as a tool for providing incentives for improved efficiency, particularly for private operators who are sensitive to profit. Box 4.3 discusses broad

BOX 4.3: Forms of Price Regulation

There are three main approaches to preventing monopolistic infrastructure utilities from charging excessively high prices: rate-of-return regulation, price cap regulation, and yardstick competition.

Regulatory agencies that use a rate-of-return approach first determine a reasonable rate of return (profit), and then set the utility's price to cover operating costs plus a margin that is just enough for investors to earn the specified rate of return on their investment. The regulated price can be adjusted upward if the utility starts making a lower rate of return, or downward if the utility makes a higher rate. This system encourages investment, because it provides a sure rate of return, but it does little to encourage cost reductions.

Price-caps are an alternative approach to setting utility prices. Under this approach, the regulated price is adjusted each year by the rate of inflation minus some predetermined amount and without regard to changes in the firm's profits. The price-setting rule is sometimes called RPI-X, where RPI is the retail price index and X represents the expected annual gain in the utility's efficiency. In this system, firms have a strong incentive to reduce costs because efficiency improvements generate higher profits for the firm. Failure to achieve the expected rate of efficiency improvement will result in regulated price increases that trail inflation. The price cap can be re-set, commonly every five years, to ensure that consumers benefit from these cost reductions.

Yardstick competition can be used where there are many similar firms, such as water or electricity distribution companies. It is a more refined version of a benchmarking program, which recognizes there may be legitimate reasons why unit costs differ across utilities. For example, fixed costs tend to be a higher proportion of total costs in a company with fewer customers. Information on each firm is collected, and statistical methods are used to calculate the unit costs that would be incurred by an efficient firm, taking account of its system characteristics. A different customer price for each utility can then be set equal to the costs of an efficient firm operating under the same constraints. If a firm's performance does not achieve the benchmark its profits are low, while if it out-performs the benchmark its profits are increased. As individual firms improve their efficiency, the benchmark requirements are tightened for all firms.

Hybrids of these forms of price regulation are possible. For example, an efficient benchmark or a rate-of-return calculation can be used to set an initial price-cap; and the more frequently price-caps are re-set, the more the system resembles rate-of-return regulation.

approaches to setting prices. Rate-of-return regulation provides weak incentives to operators to reduce their costs, because they earn the same rate of profit regardless of system performance. In fact, it may lead to a system with excessive capital investment, because greater investment leads to a higher total profit. On the other hand, there is uncertainty associated with the periodic re-setting of price-caps, and this uncertainty leads to a higher cost of capital. This higher cost of capital needs to be reflected in higher initial tariffs. Internationally, the tendency seems to be to favor price-cap regulation, since the long-term cost reductions are judged to outweigh any initial risk premium.

Standard discussions of price regulation tend to focus on the overall level of consumer tariffs. For purposes of financial sustainability and investor interest this is clearly very important. But there are also many possible tariff structures that can achieve any given level of revenue. Depending on how tariffs are structured (eg decreasing/uniform/increasing block tariffs, connection charge versus volume charge) differing levels of consumer welfare can be achieved. Setting price structures to ensure that for a given level of revenue the greatest social welfare is achieved (potentially including a welfare weighting for poor consumers) is a subject that is well treated in theoretical economics but has been neglected by regulatory practitioners. Nevertheless, specialist skills required for this task can be contracted and the information requirements are not impossible. Generating welfare improvements through price structure changes simply requires utilities or governments to take an interest in the issue. This sort of reform does not rely on utilities' profit incentives, and is thus equally as relevant for public and private regulated firms.

4.5.3. Regulation of Quality

Regulation of the quality of infrastructure services can take many forms, such as minimum output standards (eg hours of service, water pressure, water quality), input standards (e.g., type of wiring to be used, qualification of technicians, vehicle safety inspections), environmental standards, provision of information to consumers, or liability for unsatisfactory services. Usually, higher quality standards imply higher costs. Quality standards may be particularly important when private operators are employed, because cutting quality can help to lower costs and improve profits. Where such temptations exist, it is important that an appropriate effort be devoted to quality inspection and enforcement. It is important, however, that cost implications be considered when quality standards are devised. Setting quality standards at a level desired by the urban elite may render services unaffordable to the majority of the population.

4.5.4. Regulatory Institutions

In any regulatory system there is a need to monitor and enforce compliance with the rules. In even the most rigid regulatory system with clear rules on performance standards and how prices should be calculated, there is a need for specialist staff with skills in areas such as auditing, accounting and law. In most regulatory systems there is also an element of discretion, in areas such as how prices should be set (see Box 4.4), what firms should be allowed to enter a market (eg the licensing and allocation of spectrum to new mobile operators), or in deciding appropriate technical or environmental standards. In such systems, there is a need to supplement monitoring and enforcing skills with policy skills, including economic analysis to determine the potential social costs and benefits of alternative policies.

Where private investment is sought, the international tendency is to entrust the exercise of discretion to specialist regulatory institutions, independent of both ministers and

regulated firms. While ministries design the overall system, decisions within the rules are treated as technical matters to be interpreted by skilled technical specialists in accordance with pre-specified guidelines which should strike a fair balance between investors' and consumers' interests. Decisions by ministers are typically viewed by investors as being driven by short-term political considerations, and thus present greater risk of regulatory expropriation. By providing greater confidence that investors' interests will be protected, independent regulators can help to restrain the cost of capital.

Independence of regulatory institutions can be established by providing the regulator with a distinct legal mandate, free of ministerial control; prescribing professional criteria for appointment; appointing regulators for fixed terms and protecting them from arbitrary removal; and providing the agency with a reliable source of funding, usually earmarked levies on regulated firms or consumers. Checks and balances are required to ensure that the regulator does not stray from its mandate or become grossly inefficient. Measures to establish accountability include publication of decisions and reasons for those decisions; prohibiting conflicts of interest; providing rights of appeal from the agency's decisions; subjecting the regulator's conduct to scrutiny by external auditors, and permitting the regulator's removal from office in case of proven misconduct or incapacity (Smith, 1997).

In Vietnam the traditional regulatory institution has been government ministries. A good first step towards a specialist infrastructure regulatory institution was taken in 2005 with the establishment of the Electricity Regulatory Agency, described in the Infrastructure Strategy—Electricity Power Sector paper. ERAV is not a fully independent agency, and does not have the powers associated with many regulatory agencies elsewhere. Significantly, the Minister of Industry presides over the agency, final decisions on retail power remain the prerogative of the Prime Minister, and details of information-gathering and enforcement powers remain to be developed.

A gradual and evolutionary approach towards independence is natural: entrusting important decision-making powers to an entirely unproven institution would be risky. But over time, the aim should be to establish ERAV as an independent agency, with strong professional skills. And it would be desirable to remove retail tariffs from the political arena. Vietnam needs large amounts of foreign investment in IPPs to meet growing demand. While IPP tariffs will be fixed under power purchase agreements with EVN, the financial viability of EVN as the single buyer of electricity will be determined by the retail tariff. The perceived risks of EVN default, and hence the cost of capital, would be reduced by a system in which an independent regulator established retail tariffs on purely technical criteria related to costs.

There are greater weaknesses in regulatory institutions in other sectors. In telecommunications, regulation rests with the Ministry of Post and Telematics. The Ministry's ownership of VNPT establishes a conflict of interest between maximizing VNPT's profits and developing strong competition for VNPT. This will be particularly apparent in disputes in which competitors seek access to VNPT's network. If a competitive and cost-effective telecommunications industry is desired, regulation should be performed by an agency that is separate from the Ministry and has no interest in the regulated firms.

The ports sector provides an even starker example of a conflict of interest. Vinamarine regulates port operations, but also operates a number of small ports. Effective regulation cannot be expected in cases where regulatory

BOX 4.4: Discretion in the Regulation of Private Infrastructure Enterprises

The regulation of consumer tariffs for infrastructure services is subject to conflicting forces:

- Governments would generally like to keep tariffs down to protect consumers, and face political pressures to reduce tariffs after investments have been made (effectively, to expropriate the investment).
- Investors are aware of these pressures, and will not invest in the first place unless the government makes a credible commitment to rules that permit a reasonable return on capital invested. The lower the credibility, the higher the cost of capital.
- The long-term nature of most infrastructure investment makes it difficult to create credible commitments. Detailed rules specifying how prices will be established over time could provide a degree of certainty to investors, but this would leave little flexibility to pursue efficiency as circumstances change in unforeseen ways.

There is thus an important tradeoff between reducing the risk of expropriation and with it the cost of capital, and retaining the flexibility to pursue efficiency and deal with unexpected circumstances. Policy makers need to decide how much discretion to introduce into regulatory systems, and how best it should be exercised.

The discretion in regulatory systems differs widely across countries. At one extreme, US regulators typically have wide powers to set prices that are "just and reasonable." But the United States has more than a century of experience in regulation of private utilities, with an established body of jurisprudence as to what constitutes a "just and reasonable" price, and a reputation for protecting the legitimate interests of investors. In a developing country with limited reputation for respecting private property rights, such wide discretionary powers would not provide credible protection of investors' rights. To compensate for the perceived risk of expropriation, investors would demand a high rate of return for their capital.

At the other extreme, some countries implement regulation through tightly specified laws or contracts that seek to eliminate discretion. This approach has often been favored by investors who perceive a high risk of misuse of discretion by ministers or regulators. But the international experience of the past decade suggests that such contracts are highly vulnerable to changed circumstances, resulting in frequent disputes and renegotiations.

Most regulatory systems lie somewhere between these extremes. Key policies and principles tend to be defined in laws, licenses, or contracts, which carefully delimit residual discretion through reference to criteria, factors and objectives. When discretion is retained on tariffs or other issues of concern to investors, the challenge is to manage it in a way that minimizes the risk of misuse. The exercise of discretion needs to be insulated from short-term political pressures and other improper influences and to be based on competent analysis. International experience suggests that these requirements are best satisfied by specialist regulatory agencies, desirably independent of ministerial influence.

Source: Smith (1997).

enforcement would diminish Vinamarine's profits.

Better is the arrangement in railways where Vietnam Railways Administration regulates, while Vietnam Railways Corporation provides rail services. Given the accident rate in railways, however, it would be reasonable to question whether safety standards are adequately enforced. Part of efficient service provision should be providing adequate resources to regulatory agencies to permit enforcement. A review of regulation in transport is currently under way, addressing roads, railways, inland water, maritime transport, ports, air freight, multi-modal transport, and customs and cross-border issues. Recommendations for reform of regulatory institutions in transport await the outcome of the review.

In the water sector, although the requirement of cost-covering tariffs has recently been imposed at the national level by the Ministry of Finance, the details of regulation are effectively implemented by local People's Committees. It seems unlikely that the People's

Committees have adequate resources to perform the more economically demanding tasks of price regulation, which could potentially improve the welfare of their citizens. There may be a role for central government to provide regulatory support to local authorities to assist in these tasks.

As market liberalization and entry by private firms occur in different infrastructure sectors there will be an increasing need for autonomy of regulatory processes from political interests (ie greater separation from ministries) to reassure investors that their investments will not be subject to political whims. But for the moment the most pressing requirement is to build greater regulatory capacity in terms of both auditing, to verify the true costs of regulated firms, and economics, to set prices in an efficient manner. The aim should be to develop experts who can improve the efficiency of price and other forms of regulation. Such experts could be made available to lower levels of government to assist in regulatory reviews. One option for consideration is the concentration of economic experts in a multi-sectoral regulatory agency, which would help to address the shortage of economic and other capacity for specialist price regulation.

4.6. Addressing Corruption

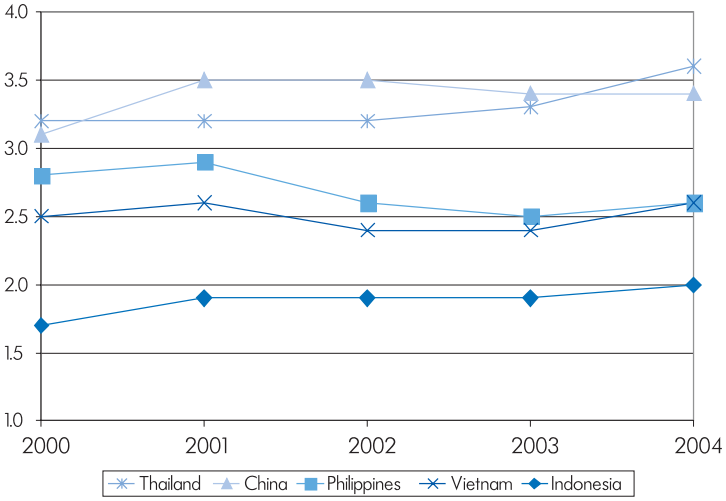
The Transparency International Corruption Perceptions Index suggests that Vietnam has a serious corruption problem. Although perceptions of corruption are about average for the region (Figure 4.8), on a broader international scale Vietnam was ranked 102nd out of 146 countries in 2004. Corruption is both a symptom of poverty (poor countries tend to have higher levels of corruption, because of inadequate systems to control it) and a cause of poverty (it increases the risks and direct costs of business transactions, hampering growth).

Academic studies have found that corruption tends to slow the rate of economic growth. Econometric studies by Mo (2001) and Pellegrini and Gerlagh (2004) agree in the broad magnitude of this effect, suggesting that an increase of one point in the TICPI corresponds to an increase in economic growth of around half a percentage point. For Vietnam an increase of one point in the TICPI corresponds to the corruption level of Thailand, while two points roughly corresponds to the corruption level of Malaysia. Pellegrini and Gerlagh (2004) present evidence that the principal transmission mechanism is corruption's effect in constraining investment, by increasing costs and risks of investing.

With around 10% of GDP being channeled into infrastructure investment in Vietnam, infrastructure is an obvious area for potential corruption, and there have been several documented instances of corrupt behavior in connection with infrastructure projects (see Box 4.6). The magnitude of investment combined with high social returns to infrastructure raise the opportunity costs of corruption to very high levels. For example, suppose the average infrastructure project yields a total return of 20%, and corruption boosts project costs by 10%. Without corruption, investment of 10% of GDP in infrastructure would yield social benefits worth 2% of GDP. With corruption, criminals would receive a transfer of 0.9% of GDP, and the social benefits flowing from infrastructure investment would be reduced to 0.9% of GDP, a reduction of 1.1% of GDP.

Opportunities for corruption arise at most stages of the infrastructure project cycle. Corruption in the project preparation phase typically involves the choice of project location, choice of design, relocation and resettlement plans, and land acquisition. Internationally, the majority of cases involve corruption in the project implementation phase: particularly during procurement, but also in the approval and payment of invoices. In addition to

Figure 4.8: Transparency International Corruption Perceptions Index (2000-2004)



Note: The maximum possible score is 10 for a country free of corruption. VietnamÕs score in 2004 was 2.6.

collusion among bidders, infrastructure projects are especially vulnerable to change order schemes (bids are set artificially low to secure the contract, and subsequently adjusted by change orders) and the use of inadequate and/or inferior materials (e.g., road construction contractors cut costs by laying insufficient foundation and improper drainage, the results of which might not be exposed until sometime in the future when potholes appear or when portions of the pavement wash away).

Once projects are operational there are myriad opportunities for low-level corruption, such as weigh-bridge operators who falsify truck weights and thereby induce excessive road deterioration, or technicians who assist in the theft of electricity. The 2005 Investment Climate Survey found that 17% of manufacturing firms reported that an unofficial "gift" to officials was required to obtain an electricity connection. For a water connection the corresponding figure was 11%. For a mainline telephone connection, just 8% of firms reported that a gift was required, suggesting that the possibilities for corruption diminish in the presence of competition, in this case competition from mobile phone companies.

The Government has placed greater emphasis on fighting corruption in recent years. The Government's main anti-corruption agency is the Government Inspection Office (GIO). The GIO is governed by the Inspection Ordinance (1990), the Law of Complaint and Denunciation (1998) and the Anti-Corruption Ordinance (1998). The General Inspector of the GIO holds the rank of minister. But the GIO's mandate is general, and there is an emphasis on responding to public complaints and "denunciations", and reviews of civil servants' assets. While the GIO has the power to inspect compliance with the law by the executive branch in all its areas of operation, it is not clear that it is adequately resourced to perform the forensic audits and physical inspections that would be required to detect corruption in infrastructure procurement. Reliance cannot simply be placed on the GIO to detect corruption. Systems for the detection of corruption should be implemented in all infrastructure agencies, particularly in the area of procurement, with detected cases passed on to the GIO for prosecution.

The Government has endorsed the "Anti-Corruption Action Plan for Asia and the Pacific" developed by the ADB and the OECD in the Anti-Corruption Initiative for Asia and the Pacific (ADB/OECD, 2000). In its 2004 "Self Assessment Report" under this initiative the Government indicated that it had implemented measures to address most of the areas of the Action Plan (ADB/OECD, 2004). A draft anti-corruption law was issued for public comment in July 2005. Some of the proposed articles require declaration of assets and incomes by public officials, encourage citizens to report

instances of corruption, and require public agencies to report information to the mass media. It is too early to assess the practical effect of recent measures. Nevertheless, a review focused on detection of corruption in infrastructure could reveal additional potential measures, such as particular attention to change-orders, or improved systems for inspection of construction works.

Happily, many of the measures recommended in this chapter to improve efficiency will simultaneously help to prevent corruption. Measures to promote greater commercial focus, such as corporatization, equitization, and privatization, will provide stronger pressure on managers to identify innovative means of combating petty corruption, such as corrupt meter readers. Box 4.5 presents examples of some specific preventive measures.

Effective competition is one of the best means of narrowing the scope for corruption. The 2005 PER-IFA provides a number of recommendations to encourage competition in procurement, including a requirement for competitive bidding, preparation of standard bid documents, mass media advertising of bids, and elimination of restrictions on the province (and country) of origin of the bidding companies. This needs to be supported by evaluation criteria that do not allow the exclusion of firms on spurious grounds. Competition in the construction industry could be promoted by a program of equitization: the industry is currently dominated by state-owned enterprises that prepare their bids using common public sector norms.

Measures to promote effective competition need to be sustained by laws against collusion. One of the priorities for Vietnam's Competition Authority should be investigation into allegations of bid-rigging. A potential pool for recruitment of competition investigators could be construction company staff involved in bid preparation.

4.7. Recommendations

The recommendations for improving efficiency of infrastructure services follow the structure of

BOX 4.5: Bangladesh Rural Electrification Board

In Bangladesh, the Rural Electrification Board (REB) and its rural electric cooperatives (Pally Bidyut Samities) have protected themselves from the corrupt practices commonly seen in other power sector utilities through a number of innovative arrangements:

Administrative Arrangements: The Board of each PBS is elected by consumers. This Board and REB management approve the salary structure for the PBS, which is usually market based (de-linked from the government salary scale). Since meter reading is a common source of corruption, meter readers are hired on contracts of only one year. With good performance record the contract may be extended, but never can it exceed three years—after which the meter reader will have to seek a different career. A good performance record as a meter reader can lead to a linesman or other job with a PBS, and this job expectation is a strong incentive to maintain a good track record as meter reader.

Operational Arrangements: Every year the management of each PBS negotiates a results agreement with REB. This is known as Performance Target Agreement (PTA). If a PBS meets the PTA, its management receives a bonus. Not meeting the PTA targets results in penalties. A standard PTA has about 20 targets, with high weights given to system loss, collection efficiency, revenue/km of line, cost of supply/km of line, and debt repayment.

Investment Decisions: PBSs use independent consulting firms to survey rural areas to identify potential consumers and to design the electricity distribution network. These firms also calculate the revenue that is expected to be generated by each proposed line, and the lines generating the highest revenue are selected first for construction. The list of lines to be constructed next year is disclosed to the public on the notice board of each PBS. These practices reduce the risk of corruption and nepotism in investment decisions, and help PBSs to avoid constructing uneconomic lines.

BOX 4.6: Opportunities for Corruption

The following cases from the past decade in Vietnam illustrate some of the possibilities for corruption in infrastructure projects.

In 1995 a former Minister of Energy was sentenced to 3 years in prison for accepting side-payments for the award of construction contracts for the 500 kVA north-south electricity transmission line. Source: Vietnam Today (2002).

In 1997 tens of thousands of peasants in Thai Binh province demonstrated against State abuse of land-use rights, official corruption, unfair taxation, and compulsory labor contributions. Their two principal grievances were additional local taxes (e.g. a grass-replacement tax levied on flocks of more than 30 ducks) imposed on peasants to finance overambitious government infrastructure projects and the misappropriation of public funds for the personal enrichment of Party officials. The official report on the incident noted that a sewerage pipe installed by the authorities cost VND 21 million, whereas a pipe installed by the peasants cost only VND 7.5 million, and that prominent rural officials grew extraordinarily rich over the course of five years. Source: UNHCR (1998).

In 2003 questions were raised about the award of procurement contracts by VNPT, with media allegations that 90% of the contracts handed out between 1998 and 2003 were to favored suppliers, and contravened laws on tendering. During the investigation investment contracts were frozen, posing network capacity problems for the company as it tried to meet the growing demand for mobile phones. Ultimately the company was cleared of illegal practices, but five contracts awarded to a company run by the son-in-law of the Minister for Posts and Telecommunications were cancelled. Sources: Vietnam News (2004), Vietnam Trade (2004).

The World Bank recently investigated 400 construction contracts under six credits. No irregularities in financial management or disbursements were uncovered, and the majority of works physically investigated were of satisfactory overall quality. Nevertheless most bidding prices fell within a very narrow range, suggesting collusion between bidders. There are possible explanations for this, such as state-owned bidding companies using the same official costing norms. But if this is the case, it suggests an inadequate level of competition between these firms. Source: Vietnam Development Report (2005), p.97f.

this Chapter, addressing in turn public sector reform, competition, private participation, regulation, and anti-corruption measures. As stressed in the main text, competition offers the greatest incentives for ongoing efficiency improvements.

(4.1) Undertake governance reforms of SOEs which provide infrastructure services, to provide a greater commercial focus (ie profit motivation). Such reforms should include subjecting the SOEs to the new Unified Enterprise Law, and could include additional measures as suggested in section 4.2. Where the Government seeks non-profitable objectives to be achieved, it should explicitly purchase non-profitable services from the SOEs. (M)

(4.2) Review the possibilities for SOE reform in transport service companies and for corporate restructuring of VNPT's ancillary service providers (such as equipment manufacturers), having regard to the provision of stronger incentives for commercial performance, separation of potentially competitive operations from the core natural monopoly operations, and introduction of competition for such operations. (S)

(4.3) Increase direct competition in telecommunications, by relaxing foreign ownership constraints, and opening the market to all foreign entrants, not just American firms. (S)

(4.4) Introduce competition between port terminals, including competitive stevedoring services, on a pilot basis in at least one port. (S)

(4.5) Require stock market listing, including full compliance with all stock market procedures, for any infrastructure firm that is equitized. (S)

(4.6) Revise the BOT Law to ensure that competitive bidding is the usual form of procurement, to develop procedures for subjecting unsolicited bids to competitive bidding, and providing criteria and processes for rare instances where non-competitive bidding might be appropriate. (S)

(4.7) Conduct pilot exercises in the introduction of private participation by means other than BOTs. Examples could be a management contract for water services for an under-performing water utility, and a landlord port operation where the public sector retains responsibility for infrastructure and private operator conducts daily operations. The pilot exercises should be well documented to ensure that lessons can be learnt for wider application across Vietnam. (M)

(4.8) Develop a regular benchmarking program for services beyond water, including port performance and performance of electricity distribution businesses. (S)

(4.9) Encourage moves to set tariffs for greater cost recovery across all infrastructure sectors. (S)

(4.10) Conduct thorough economic reviews of tariff structures in telecommunications, electricity, water services, and transport, with a view to developing structures that ensure the greatest social welfare for a given level of revenue. (M)

(4.11) Establish a non-ministerial regulatory agency for telecommunications, responsible for the promotion of competition and investment. Consider the institutional possibilities for regulation of transport and water as discussed in section 4.5.4. Ensure that regulatory institutions are provided with adequate financial and human resources. (M)

(4.12) Conduct a review of corruption in infrastructure services, with a view to identifying particular areas that are prone to corruption and mechanisms for improved detection. (S)

(4.13) Adopt measures to promote competition in procurement, as recommended in the 2005 PER-IFA. (S)

(4.14) Accelerate equitization in the construction industry. (M)

(4.15) Assign infrastructure construction company bid-rigging as a major priority for investigations by the Competition Authority (S)

5. Poverty

Issues

(i) In rural areas, with relatively high concentrations of poverty, simply increasing public investment in poor provinces is a low transaction cost means of targeting the poor. Road and water investment are particularly well adapted to reducing poverty in the poorest rural provinces.

(ii) In urban areas, geographic targeting of investments will only be effective with a fine degree of poverty mapping, and quick responsiveness to shifting settlement patterns, demanding greatly improved planning competence at municipal level.

(iii) In both rural and urban areas, targeting can be improved with the aid of non-geographic criteria aimed at identifying the poor. In general, there is a trade-off between the transaction costs involved in identifying the poor and the effectiveness of targeting.

(iv) In addition to targeting, a further criterion for evaluation of public support for the poor is the extent to which costs of service delivery (and hence the need for public support) are restrained. Output-based aid is designed to provide incentives to keep costs down.

Chapter 1 reviewed the progress that Vietnam has made in reducing poverty through a growth-led strategy, and noted that at the same time inequality between regions has increased. Access to infrastructure services has improved across all quintiles, but the poorest quintiles have benefited less than other quintiles. Where poverty was once relatively equally spread across the country it is now more concentrated in difficult to reach mountainous areas, and new pockets of poverty are emerging in peri-urban areas. Vietnam's Comprehensive Poverty Reduction and Growth Strategy signals the government's dissatisfaction with these trends and an intention to address the issue of growing inequality while maintaining a focus on growth as the best means of poverty alleviation.

Programs that seek to address poverty usually contain an element of targeting. Public funds are wasted when money intended for the poor flows instead to the non-poor. Vietnam's rural areas tend to have high concentrations of poverty, permitting geographic targeting. In urban areas, the poor and non-poor may tend to be more geographically mixed, requiring either a finer geographic mapping of poverty and/or alternative targeting mechanisms for delivering assistance to the poor. Of course, even within rural areas, targeting could be improved with additional criteria for identifying the poor.

5.1. Rural Poverty

The high concentrations of poverty in rural areas permit simple geographic targeting as a means of channeling public funds to the poor. Much is already known about the sorts of projects that reduce poverty in the provinces where public funds are spent.

Using provincial data on agricultural production, rural non-farm employment,

poverty, and government investments, Shenggen Fan, Pham Lan Huong and Trinh Quang Long (2004) developed an econometric model to estimate the marginal returns in agricultural growth and poverty reduction to various types of government spending. The results reveal that government investment in agricultural research has the largest poverty reduction impact, immediately followed by road investment. Very little is actually spent on agricultural research so in practice road investment has a higher total return. Education is also found to yield positive, albeit lesser, reductions in poverty.[37]

Larsen, Pham and Rama (2004) have studied the effects of investment in transport, water and electricity, and find that provinces with greater investment in transport and water projects tend to see greater reductions in provincial poverty rates. The effects of electricity projects tend not to be concentrated in particular provinces.

Deolalikar (2001) found that rural road projects in Vietnam had a significant poverty reduction impact. The establishment of a new road in a village raised the per capita income of a household by 30 percent between 1993 and 1998, after controlling for other factors, such as household size and education. Moreover, the spatial location of roads increased the household probability of moving out of poverty by 68 percent over the same period of time. In parallel, rural roads expanded school enrolment of children at all levels, and improved the utilization of public health services. Furthermore, Deolalikar found that the benefits of rural roads are significantly larger in poorer provinces than in the richer ones.[38] This finding was also reflected by Larsen, Pham and Rama (2004).

Telecommunication Access for all

Unfortunately there is no evidence from Vietnam concerning the contribution of telephone access to poverty reduction. A recent paper suggests that an extra 10 mobile phones per hundred people boosts economic growth by 0.6%.[39] The linkages from phones to growth are through shortening the "economic distance" to markets (farmers can get a better idea of market prices, do deals with distant merchants, facilitate job-finding, permit rapid transfer of funds, etc). The telecommunications section of this strategy suggests ways to increase rural access to telecommunications services, which could thus be expected to help reduce poverty.

Summarizing the available findings, road and water investments are good means of targeting particular provinces in which poverty

37. Among all types of government spending, the authors found that agricultural research has the largest return on poverty reduction–for every billion dong spent, 339 poor people would be lifted above the poverty line. Road investment yields the second largest return, with every billion dong spend on roads lifting 132 poor people above the poverty. Education investment has also favorable returns, with every billion dong spend on education lifting 76 poor people above the poverty line.

38. Deolalikar (2001) found that the positive effect of roads on household living standards was more pronounced among the poorest provinces and fell rapidly with an increase in provincial level of income.

39. Fuss et al (2004).

levels are high. As discussed in Box 5.1, Vietnam has made a considerable effort to provide access to roads in rural areas, but there appears to be a case for an even greater proportion of road spending to be allocated to rural roads. In addition, a mechanism is needed within provinces to assist the poorest communes in financing road maintenance.

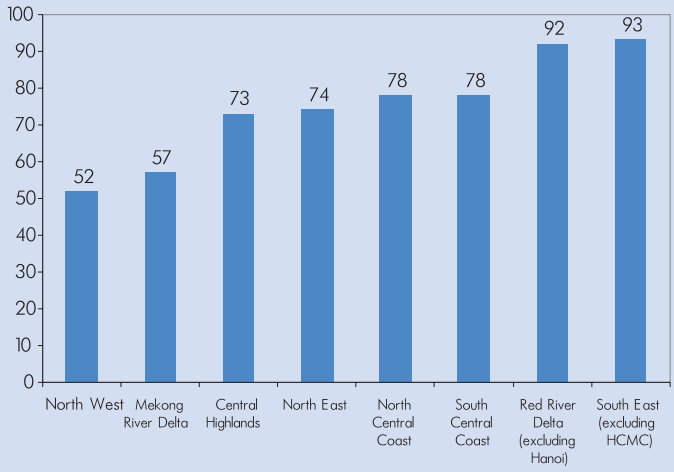
BOX 5.1: Road Investment—A Case for Further Expenditure Redistribution

The clear developmental benefits of investment in rural roads have attracted every major donor and ministry. Rural roads projects, or projects which include rural roads components, are currently being implemented through the Ministry of Transport (MoT), Ministry of Planning and Investment (MPI), and Ministry of Agriculture and Rural Development (MARD). The Government funds rural roads either through budget allocations to provinces (which have discretionary power to apportion revenues to districts and communes) or through national poverty-targeted programs, such as the Hunger Eradication and Poverty Reduction program (HEPR) and the national Program for Socioeconomic Development in Communes in Especially Difficult Circumstances *(Program 135)*[40]. Similarly, donors fund rural roads projects either through stand-alone transport projects or, increasingly, through community-driven development (CDD)-type projects. Communes also have the option to levy fees (i.e. toll roads) to finance road projects. While the primary goal of road investment is supporting the government policy objective of providing all-weather access to every commune in the country, rural transport projects are planned and implemented under the responsibility of the provincial governments. Once the roads have been built, the ownership is transferred to the district authorities for management and maintenance.

Since 1999, the number of communes still lacking access to district centers has been reduced by more than half, from over 600 to 269 (2.6 percent of the 10,500 communes). Notwithstanding the progress made and the effort to re-direct expenditure towards the poorest areas, there is still a case for further expenditure redistribution: although per capita road length is 3 times higher in the poorest provinces because of lower population densities, expenditure per kilometer is two thirds that for richer provinces. Moreover, there is still significant discrepancy in the level of access among regions, as seen in Figure 5.1.

Since the communes are expected to be financially self-sufficient, they are virtually excluded from the integrated state budget. Some of the poorer communes in a district may obtain assistance from the district with their transport expenses. However, communes tend very often to levy a 'tax' or rely on voluntary contributions to cover part of the operational or capital expenses of rural road. Heavy reliance on local contributions implies that the system is to some extent regressive. As a result, richer communes tend to have more leeway to finance road access and better quality roads than poor communes. This calls for additional central support for road development in targeted regions to correct the current disparities in the level of access among regions.

Figure 5.1: Percent Population with All-Weather Access to Rural Roads (2002)



Source: PER-IFA.

40. "Essential infrastructure" (including basic road access, schools, health centers, clean drinking water systems, electrification, markets, post offices, and irrigation) forms the core of key poverty-targeted programs.

Poverty Targeted Rural Water Supply Investments

In seeking to reduce rural poverty through road and water investments the Government is likely to face two particular challenges. Under the current decentralization arrangements, increased resources can be transferred to the poorest provinces but there is no guarantee that the funds will be spent on the priorities identified at national level. So, for programs with a particular poverty focus, there is a need for mechanisms to encourage project selection at the provincial level consistent with nationally identified objectives. Matching funding for particular project priorities may be one way to mold provincial priorities in the desired fashion.

The other challenge that may emerge in coming years is that remaining extreme poverty may be concentrated in remote areas where conventional infrastructure services may be particularly expensive to provide. Where the costs of service provision are prohibitive, the solution may be to rely on incentives for emigration from the remote areas. There are also a variety of alternative technologies for provision of basic services in remote communities.

5.2. Urban Poverty

While the percentage of population classified as poor in predominantly rural provinces is higher, the absolute number of poor is greater in cities and urbanized provinces. The official percentage of urban poor declined from 25% in 1993 to 6.6% in 2002.[41] However, if unregistered migrants had been included, it is likely that the percentage of urban poor in 2002 would have been closer to 15%.[42] The housing of about 25% of the urban population in 2002 was classified by government as slums or temporary housing.

The number of poor in cities will increase, at least in the medium term, as more of the rural poor migrate. This provides both opportunities and challenges in reducing poverty. The economies of scale that underpin the existence and growth of cities mean that poor people can be lifted from poverty more cost effectively in urban areas than in rural areas. But on the other hand, the poor and non-poor may be more evenly mingled within cities, potentially incurring greater transaction costs in identifying the poor for purposes of targeting public spending.

When the urban poor are spatially concentrated, policies to address poverty can be focused on particular locales (for example, peri-urban areas or slums). Within these areas, installation of basic networks can be subsidized with a lower level of cost recovery than would normally be the case, and some services specifically targeted at the poor can be installed (for example, public stand-pipes for water supply), infrastructure connections could be subsidized.

Poverty considerations provide further motivation, if it were necessary, to enhance municipal planning capacities. The poor are likely to be concentrated in areas of new settlement. Accordingly the burden of non-

41. Vietnam: Growth and Reduction of Poverty – Annual Report of 2002-2003.

42. World Bank, Project Appraisal Document for the Urban Upgrading Project, 20 February 2004.

Before After

Improving baks Infrastructure in low income areas

responsive planning and slow infrastructure provision in newly settled areas is likely to fall particularly on the poor. Planning which does not recognize the presence of unregistered migrants is also likely to have an adverse impact on the poor.

Where the poor are distributed relatively evenly within the general urban population, alternative methods of targeting the poor should be considered. Such alternatives are discussed in the next section.

5.3. Designing Subsidies

Addressing inequality through investment planning is a broad-brush policy: aiding a poor region through infrastructure investment will aid many individuals who are not poor. There are also many poor who live in regions that are rich on average.

A review of Vietnam's subsidy policies in the infrastructure sectors would be useful, to examine the cost and targeting effectiveness of the existing subsidy mechanisms and to consider whether those mechanisms could be improved. In designing any infrastructure subsidy scheme there is a need to:

- Compare the effectiveness of spending on infrastructure as a means of alleviating poverty as compared with spending on education, health, or direct cash transfers (social security).
- Decide whether to subsidize consumption or connections or both.
- Decide whether subsidies are to be permanent or simply transitional.
- Determine the financing source: cross-subsidies or budget funded.
- Determine how much the scheme will cost, including administrative costs.
- Assess the scheme on targeting effectiveness: that all the poor actually receive the subsidies (coverage); and that public funds are not wasted by directing subsidies to the non-poor (leakage).

In comparing between different ways of helping the poor, it is useful to know how much each scheme costs. On this criterion schemes which rely on direct fiscal grants can be preferred to cross-subsidies, because the cost is immediately obvious to all, based on budgetary allocations. Where cross-subsidies are used it is desirable that the implicit cross-subsidies be valued and noted in public accounts, thereby facilitating comparison with alternative schemes.

5.3.1. Quantity-Based Consumption Subsidies

One common method of subsidizing consumption is based on the quantity consumed. One such quantity-based subsidy is an increasing block tariff, as used by water and electricity utilities in Vietnam.[43] The idea is to provide a

Box 5.2: Targeting Effectiveness of Increasing Block Tariffs

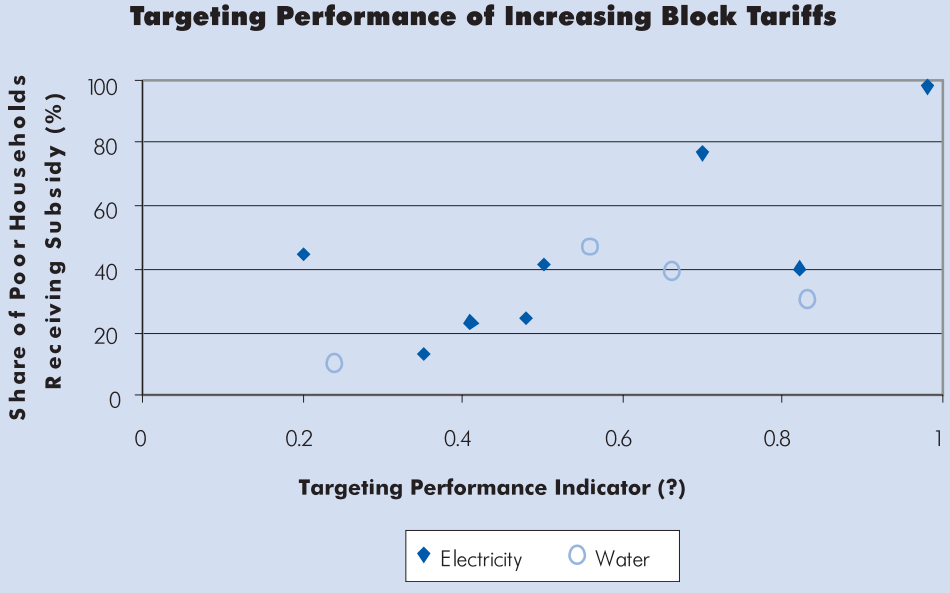
Komives et al (2005) have developed a measure of the targeting effectiveness of a subsidy. Their indicator, ?, is defined as the share of subsidy benefits received by the poor divided by the proportion of poor households in the total population: where S_P is the amount of subsidy funds received by poor households, S_H is the total amount of subsidy funds received by all households, P is the number of

$$\Omega = \frac{S_P / S_H}{P / H}$$

poor households, and H is the total number of households.

A value of 1.0 for Ω implies that the subsidy distribution is neutral with the share of benefits going to poor households equal to their share of the population. For example, if 40 percent of the population is poor, a neutral targeting mechanism would deliver 40 percent of the subsidy to the poor. This is no better than a random distribution of subsidies across the population, or a universal subsidy that delivers equal benefits to all. The rationale for most subsidies is to address poverty, and it is wasteful for subsidies to be delivered to the non-poor. A value greater than 1.0 implies that the subsidy is progressive.

An analysis of increasing block tariffs in 10 developing countries (see diagram) found that they all performed worse than a random distribution of subsidy funds (Ω <1). Reasons for this are that many of the poor do not receive subsidies because they are not connected, and because those who consume greater quantities also receive greater total subsidies.



Countries surveyed are: Cape Verde, Guatemala, Honduras, Hungary, India, Peru, Rwanda, and So Tom̃ & Principe for electricity; and Cape Verde, India (Bangalore), Nepal (Kathmandu), and Sri Lanka for water.

Source: Komives et al (2005).

43 The residential price per kWh of electricity is around 4 cents for the first 100 kWh per month and 10 cents for any units over 310 kWh per month. The price increases in blocks of consumption, hence the name "increasing block tariff".

small quantity at a low price—so that the poor can consume a minimal "lifeline" quantity at a low price—and to set higher prices for subsequent quantities—to assist in cost-recovery.

But there are both errors of exclusion and inclusion in these schemes. Frequently the poorest consumers are not connected to utility services, and so do not benefit from the subsidy of the lifeline tariff. And among those who do have utility connections, the non-poor also receive the subsidies for their initial quantities so that much of the value of the subsidy goes to the non-poor. International evidence suggests that these sorts of subsidies typically provide the non-poor with a share of total subsidy payments which exceeds their share of the population (Box 5.2). The use of quantity-based subsidies assumes that the poor consume less than the rich. This may not be true if, for example, the poor have larger families or if poor families share a common connection.

In addition to being poorly targeted, consumption-based subsidies have in practice often served to undermine the financial viability of infrastructure service providers. Frequently, low quantity consumers pay less than full cost, high quantity consumers pay for their operational and maintenance costs, and the enterprise fails to recover full costs. If quantity-based subsidies are to be used, the prices should be calibrated to be consistent with cost-recovery or explicit budget funding should be provided to fund the subsidized consumption.

5.3.2. Alternative Criteria for Targeting

An alternative to quantity-based consumption subsidies is direct means testing. In Chile, households' incomes are assessed based on a survey in which households interested in receiving subsidies can take part. The subsidy can cover between 25% and 85% of an eligible household's consumption of water, up to a maximum of 15 cubic meters per month. The proportion of water that is subsidized for each household is determined by the household's estimated income. The subsidies are intended to ensure that no household spends more than 5% of its income on water. The water companies send one bill to the household customers and one to the municipal government. Municipal governments are given grants by the central government to cover the cost of subsidies. The advantage of this scheme is that there is less leakage of subsidy funds to non-poor households than with increasing block tariffs. On the other hand, the transaction costs of determining eligibility are higher than in a scheme where eligibility is determined by the quantity consumed.

In Honduras, Wodon et al. (2003) found that more than 80% of the subsidy in a lifeline electricity consumption program went to the non-poor. The same study found that housing characteristics were a more accurate predictor of poverty than the quantity of electricity consumed, suggesting that housing characteristics would be a better criterion for the allocation of public funds to alleviate poverty.

5.3.3. Connection Subsidies

Connection subsidies are frequently preferred as a subsidy mechanism, since it is usually the poorest who lack connections to infrastructure, and because the fiscal burden is not recurrent. When taxpayer funds are used to finance infrastructure connections, Vietnam is effectively subsidizing connections.

A more targeted subsidy scheme is Program 135. Created in 1998, Program 135 provides a series of grants to finance small-scale infrastructure investments, given to the most difficult and remote communes. Over 1998-2000 around VND 760 billion in grants were spent. In using the grant communes can choose from a list of infrastructure projects. Out of 2,274 proposed projects under the scheme in 2000,

Shool built under Program 135

39% were for roads, 27% for school building, 19% for small-scale irrigation, 7% for water supply, 5% for electrification, 1% for health center building, and 0.5% for local market building (Yukio, 2000). Communes obtaining the grants must have at least 40% of households classified as poor. The Vietnam Development Report 2004 suggested that the criteria used to identify poor households are fairly accurate.

Efforts could be made to better target connection subsidies to the level of households where there is some attempt at cost recovery for connections. The existing Hunger Eradication and Poverty Reduction (HEPR) program includes a scheme for the allocation of "poor-household certificates" which could be used as a criterion for connection subsidies. Alternatively, Vietnam could abandon a policy of subsidizing infrastructure subsidies and connections, and simply give cash to those with poor-household certificates.

Connection charges are a barrier to the objective of expanding access. It is possible to treat the costs of connection as part of the enterprise's general fixed costs, and to recover them through consumption prices. This policy can be thought of as a cross-subsidy from the currently connected to those who are not already connected.

Finally, enhanced access to micro-credit can help the poor to meet connection charges.

5.3.4. Transitional Subsidies

Some subsidies are designed as transitional measures, typically to give greater time to consumers to adjust to higher tariffs, or to obtain public acceptance of higher tariffs by first providing better services. For example, in Guinea in the early 1990s the government entered into a 10 year lease agreement for the supply of water by a private company. Before reform the price of water was US$ 0.12/m^3. It was estimated the average tariff would need to rise to US$ 0.76 to cover costs. The government was committed to the tariff increases, but wanted them to proceed gradually to lessen the speed of adjustment for consumers, and also to allow the private sector the time to show service improvements before the tariff increases were apparent to consumers. During a transitional period of six years, the government paid a decreasing proportion of the consumers' bills. Thus, the private company received the tariff increase immediately (thus covering its costs), but the effect on consumers was delayed. The scheme allowed the government to escape from a cycle of recurrent subsidies for consumption, thereby limiting the total cost of the subsidy.

If, for example, municipalities discover resistance to the current goal of full-cost recovery in water services, or to paying for an increase in the coverage of sewerage systems, a transitional form of subsidy may help to build public acceptance of higher tariffs.

5.3.5. Output Based Aid

Output based aid (OBA) is a strategy for using explicit performance based subsidies to complement or replace user fees in the delivery of basic services (see Box 5.3). A classic OBA

BOX 5.3: Output-based Aid: Tying Subsidies to Service Delivery for the Poor

Two output-based aid (OBA) schemes, one in Cambodia and the other in Paraguay, utilize local private operators to deliver water to the poor. The operators—selected under least-cost subsidy bidding—are assured payment for connecting the poor, but are for the most part paid *after* service delivery. The two schemes utilize different forms of targeting—proxy means testing and geographic targeting—to help ensure that subsidies go to the intended recipients.

In Cambodia, it was decided that subsidies would be targeted directly to individual households: of the 13,000 households in the four towns, the 3,000 poorest households (as determined by a community-administered survey and verified by an independent consultant) would receive a subsidized connection. In Paraguay, *aguateros* (small-scale water entrepreneurs) which usually only operate in peri-urban areas, teamed together with local construction companies to provide water services to poor rural communities.

In the Paraguay case, un-served rural areas and small towns where most residents are poor were selected to receive the subsidies. In addition, the very poorest customers were given the option to provide labor during construction as part of their payment to the service provider.

scheme involves competitive bidding among private operators for the right to provide a service (encouraging cost reductions in service provision), and payment of the subsidy only when the requisite outputs have been achieved (transferring the implementation risk to the private sector). OBA is "explicit" in that it ensures explicit recognition of why the subsidy is being provided, who is receiving the subsidy, who is providing it, what activity is being subsidized, and the amount of the subsidy.[44] It is performance-based because it links the payment of service providers to their delivery of specified services, or outputs. This linkage to output transfers performance risks to the service provider, providing strong incentives to ensure the outputs are achieved at least cost.

An OBA scheme is being developed for the Ho Chi Minh City water utility. The scheme would provide incentives to the utility and its private contractors to reduce leakage and connect targeted poor customers. The service providers will be paid for connections made only after demonstrating that leakage levels have also been reduced.

5.4. Recommendations

Recommended actions are:

(5.1) Develop a subsidy strategy for each infrastructure sector, identifying whether subsidies are to be delivered to the poor, and if so, how best to maximize the benefits of those subsidies. Ensure a cross-sectoral assessment of these strategies, to ensure that the most efficient subsidy delivery mechanisms are used, and that there is not unnecessary duplication of subsidies across sectors. (S)

(5.2) Incorporate equity objectives into the planning process, and provide a means of prioritizing projects and allocating adequate funds to achieve these objectives. (M)

(5.3) Develop mechanisms at provincial level to ensure that adequate road maintenance funding is provided to communes. (M)

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44. Contrast OBA with subsidies implemented through increasing block tariffs, where many people may not realize any subsidy is occurring and would usually be surprised to hear that users with high consumption levels receive greater subsidies than low consumers, and where the total amount of the subsidy is very difficult to calculate.

(5.3) Develop mechanisms at provincial level to ensure that adequate road maintenance funding is provided to communes. (M)

(5.4) Review utility pricing schemes to ensure that equity objectives are actually achieved at minimum cost to the utilities. (S)

(5.5) When subsidies are used in the delivery of infrastructure services, consider specifying outputs as the criterion for subsidy (eg number of new connections, not amount of money invested) and consider whether competition can be used in the delivery of the subsidy (to minimize costs). (M)

6. Reform Prioritization

It would be difficult to implement all of the recommendations identified in this report simultaneously. The Government, as with governments everywhere, has limited capacities to manage reform; some of the reforms recommended here, particularly those advancing private participation in infrastructure, may pose political challenges; and some may face public resistance, particularly any recommendations that would result in price increases. The most politically challenging reforms can be dealt with using pilot programs: political difficulties may be surmounted when reform effectiveness can be demonstrated. In other areas, choosing which reforms to focus on for early attention, the Government could be guided by various possible criteria, including:

- If Vietnam's businesses are to be internationally competitive, Vietnam's infrastructure should be broadly on par with its regional competitors. Regional comparisons can provide a basis for assessing where Vietnam lags. Surveys of business attitudes can also provide suggestions about the particular areas that businesses find important.
- Some idea of the potential benefit of different types of reforms can be obtained through basic economic modeling. Such estimates can suggest which infrastructure industries are likely to give rise to the greatest benefits, and hence warrant the greatest attention. Modeling can also be extended to distributional analysis, to help Government determine who are the winners and who are the losers from different reforms.
- Another way of prioritizing reforms is on the basis of reform bottlenecks: identifying where there is capacity to manage reforms and the complexity that can be managed at a given time.

6.1. International Competitiveness

Sections 1.2, 2.3.1 , and 4.1 present a range of international comparisons, indicating the industries where Vietnam performs less well than its regional competitors. Among the access indicators presented, Vietnam lags in terms of sanitation and teledensity. Regional efficiency comparisons suggest room for improvement in terms of unaccounted water, telecommunications labor productivity, the price of international telephone calls, electricity transmission and distribution losses, and road maintenance financing.

If the government's focus is on business competitiveness, business inputs such as telecommunications and electricity are particularly important. Inadequate road maintenance can reduce competitiveness, by increasing the time and expense of transporting goods to market.

An alternative perspective on what is important for competitiveness can be provided by business perceptions surveys. The World Bank's investment climate surveys asked small, medium and large manufacturing businesses about 18 potential constraints to their businesses. Transport and electricity were ranked the 3rd and 4th most severe constraints. Transport is seen as a major or severe constraint for 24% of manufacturing firms, and electricity is a major or severe constraint for 19%. Transportation is seen

as a greater constraint in Vietnam than in neighboring countries for which these surveys have been undertaken (see Figure 6.1). Figure 6.2 sets out the reasons why infrastructure is rated a business constraint, for firms that rank infrastructure as the most or second-most important constraints on their businesses.

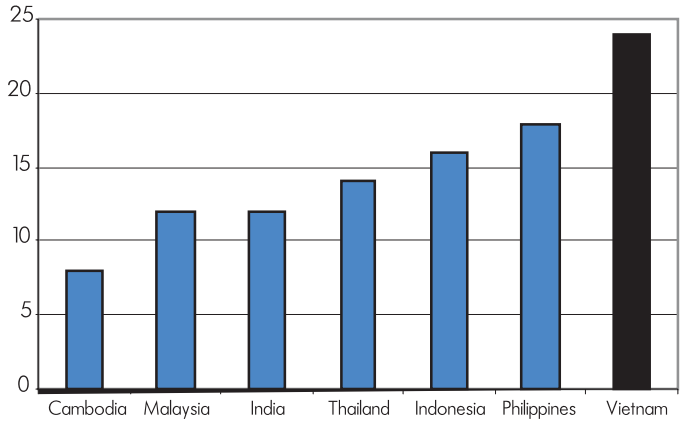
For electricity, the main problems are perceived to be the price and the quality. Sixty percent of firms consider the price of electricity to be excessive. In fact, EVN is reasonably efficient in terms of cost, and a requirement for EVN's sustainability is that tariffs cover costs, so that there is little to be done about these concerns in the short term. More significantly, forty-one percent of firms are concerned about the poor quality of electricity services. Power outages and surges are estimated to cost manufacturing firms the equivalent of 3.2% of their sales. About a third of firms have bought generators to cope with EVN's unreliability. On average, generators cost around VND 79 million (US$ 11,500) each to purchase, and cost VND 1,649/ kWh to operate (about 10 cents/kWh, or twice EVN's average industrial tariff), so that unreliability imposes substantial costs even for those with generators. These concerns suggest that investment in increased generating, transmission and distribution capacity, as well as reductions of system losses, are the main priorities for electricity.

In telecommunications, the main problems are perceived to be price and quality. As argued in Chapter 4, the best solution to these problems may be greater competition. Greater competition would help to drive down prices, and would provide consumers with a choice in the event that they had problems with the quality of services from particular providers.

6.2. Estimates of Reform Effects

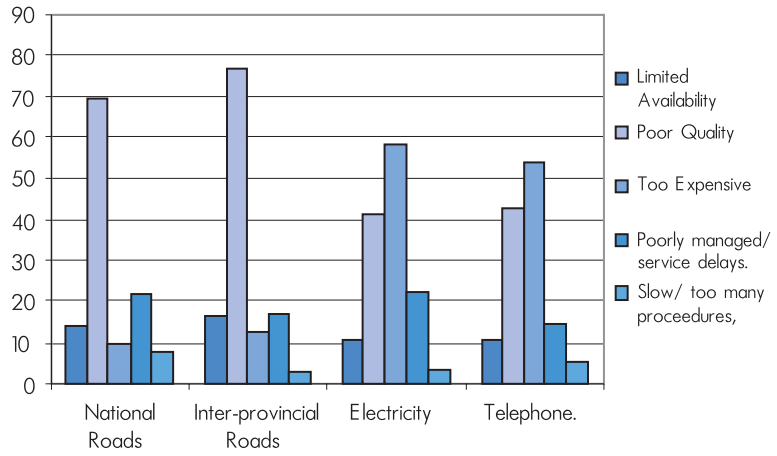
Simple economic modeling techniques can provide an alternative means for the

Figure 6.1: % of firms ranking transport a severe or major constraint



Source: Vietnam Investment Climate Survey (2005)

Figure 6.2: Businesses' Problems with Infrastructure



Source: Investment Climate Survey (2005), feedback from firms rating specific infrastructure sectors as either the 1st or 2nd highest priority for infrastructure improvements.

government to determine its reform priorities. Table 6.1 summarizes results from simple modeling of possible reforms in the water and transport sectors. The models measure the additional consumer surplus obtained over several years, as a result of hypothetical reforms. Details of the modeling assumptions and methodologies are given in the annexes to the water and transport chapters.

Care should be taken in interpreting the results in Table 6.2. The simple models used do not capture the full benefits of the assumed reforms. For example, the results for water do not include public health benefits. The results for road maintenance are calculated on the basis of the value of time saved and vehicle damage avoided, and do not adequately include the boost to growth that is provided by improved road networks. More detailed models could, however, be prepared with better knowledge of specific reforms proposed in Vietnam.

The purpose of these examples is to illustrate the technique of simple modeling to assist in setting priorities. For tariff reforms, assumptions about the level of prices can be determined by reference to existing cost benchmarks, such as the cost of operations, maintenance and new capital costs. For cost reductions, assumptions can be made about possible room for efficiency improvements by reference to international experience. Consumer demand can be simply modeled with knowledge of international estimates of the price elasticity of demand, the current level of consumption, and knowledge of the historic growth rate of consumption. Using such assumptions, an idea can be obtained of the relative magnitude of the benefits of different sorts of reforms.

The modeling techniques are more difficult to apply to institutional reforms or cross-sectoral reforms. But usually, such reforms can be mapped into either expanded investments, avoided costs or some sort of cost or price change in individual sectors. For example, institutional reforms that give rise to improved planning processes might help to eliminate the

Table 6.1:
Benefits of Possible Reforms

Sector	Reform	Net Present Value of Benefits ($)	Benefits (% GDP)
Water	(i) 40% increase in urban water tariffs over 4 years, reinvested to expand water connections.	$2.2 billion	0.7%
	(ii) 40% increase in urban water tariffs over 4 years; & 25% decrease in energy costs over 2 years; & reduction in average capital costs to the top performing quartile of water utilities; with extra revenue reinvested to expand water connections.	$5.1 billion	1.3%
Roads	(i) a budget adequate to maintain roads in their current condition is spent on maintenance (ie around $73 million annually compared to current expenditure of around $39 million).	$2.5 billion	0.7%
	(ii) an optimal maintenance budget (around $93 million) is spent, in which the greatest net benefits of maintenance are achieved.	$6.3 billion	1.8%

Note: The assumed reforms generate a stream of net benefits, which are discounted at the rate of 10% to give the net present value. Benefits as a % of GDP are calculated as the simple sum of the annual benefits, divided by the sum of annual GDPs for the relevant period. Annual GDPs are calculated using the 2003 figure of US$ 39,157 million, projected forward at a growth rate of 7%.

sort of problems encountered when SOCBs lent to transport projects that had not yet obtained financing approval. The value of losses incurred by SOCBs and construction companies could be computed in present value terms, relative to the situation that would have occurred if the problematic projects had not been undertaken. Such a measure could give a sense of the value of the proposed institutional reform, in terms of avoiding similar losses in future.

Upper and lower bounds to reform benefits can be calculated, to give an idea of the range of possible reform benefits when the exact outcome is difficult to determine. A specialist institution, such as Australia's Productivity Commission (Box 6.1), could be established to help in the ongoing task of identifying potential reforms and measuring their likely effects, not only in infrastructure but across the economy.

BOX 6.1: Modeling the Benefits of Reform in Australia

In the early 1990s the Council of Australian Governments (CoAG), comprising the national, state, and territory governments, established a review of national competition policy. The resulting report recommended wide-ranging reforms to increase competition systematically across the economy. Also under consideration by CoAG at the time were sectoral reform programs, including the establishment of national competitive markets in electricity and gas, implementation of a national approach to road charging that would reflect damage to road surfaces by heavy vehicles, and a pricing and trading system for water resources.

Together, this group of reforms became known as the National Competition Policy (NCP). Implementation of such wide-ranging reforms had many potential benefits and costs, including greater efficiency, but also possible job losses from restructuring, other distributional impacts, and effects on the fiscal relations between the national and sub-national governments.

Prior to agreeing to implement the NCP, CoAG requested a review of its likely effects from the Productivity Commission, a government body with specialist economic skills in assessing the effects of potential reforms. The Productivity Commission used a computable general equilibrium (CGE) model to estimate the effects of the proposed reforms. The basic approach was to assume that greater competition would lead to cost reductions as infrastructure and other industries approached international best practice. The Commission found the reforms were likely to increase Australia's GDP by about 5.5%, an "outer envelope" estimate of likely benefits. This report helped to gain inter-governmental support for adoption of the NCP in 1995.

In 1999, political concerns were raised that the competition policy reforms were having an adverse effect on rural areas. The same CGE model and "outer envelope" methodology was used to assess the effects of a subset of NCP reforms of particular relevance for rural areas. The report presented results disaggregated by regions. Overall, the report found benefits of 2.5% of GDP from the subset of reforms, and indicated that current adverse effects felt in rural areas were the result of economic trends independent of the NCP.

In 2005, the Commission conducted a review of the actual effects of the NCP to date. The Commission found it difficult to separate the effects of the NCP from many other factors influencing economic outcomes. To provide a partial indication, the Commission sought to quantify the economy-wide gains from productivity improvements and price changes observed over the 1990s in the electricity, gas, urban water, telecommunications, urban transport, ports, and rail freight sectors. The modeling indicated that productivity and price changes had boosted Australia's GDP by 2.5%.

In many of the sectors studied in 2005, NCP and related reforms are acknowledged to have been key, but there have been other influences driving productivity improvements so in this sense the benefits are over-estimated. On the other hand, the modeling does not cover all areas encompassed by the NCP reforms; does not include effects since 2000 (the introduction of a VAT in 2000 complicated analysis after that year); and does not make allowance for the dynamic benefits of more competitive markets. The Commission considers that the full benefits are considerably larger than the figure obtained from the modeling exercise.

Source: Productivity Commission (2005).

6.3. Capacity to Manage Reform

In every country there is a small handful of people who are closely involved in making the major reform decisions. Where countries differ is in the definition of what is a "major" decision. When the Prime Minister can confidently delegate reform decisions to ministers so that all of the details will be sorted out before reform proposals are presented to the legislature, the country's reform capacity is multiplied manifold compared to the situation where the Prime Minister must approve every detail along the way. And a much greater reform capacity is obtained where ministers can confidently delegate decisions to the bureaucracy, providing only occasional guidance and approvals on key decisions.

In Vietnam, sectoral ministries can be entrusted to prepare the major outlines of reforms that will improve the well-being of the country's citizens. But as identified in Chapter 2 on planning, when cross-sectoral issues arise the Government does not have good procedures for ensuring that adequate and timely consultation and coordination occur. This is likely to act as a brake on any sectoral reform efforts.

Whatever the existing ability to delegate policy-making, as senior decision-makers in Vietnam review the priorities for infrastructure reform they must consider the ability of each infrastructure ministry to manage multiple reforms. Some of the reforms require coordination, requiring a special role for central ministries such as Finance, or Planning and Investment. Because of the capacity-intensiveness of coordination roles, only a few reforms requiring coordination can currently be implemented. These capacity constraints will guide the priorities in choosing which proposed reforms to pursue.

Procedures are required in which inter-departmental consultation occurs prior to high-level decision-making. The consultation should be designed to achieve the greatest consensus possible at lower levels, highlighting any remaining areas of dispute for resolution by high-level decision-makers. For such a system to work, lower level bureaucrats must develop policy skills so that ministers can have confidence that results presented to them will not require re-visiting. In turn this requires that bureaucrats are taught to question existing policies, to compare them with potential alternatives, and to identify welfare-maximizing policies. The possibility of questioning policies may pose difficulties. But the alternative is limited policy skills in the bureaucracy, limited ability to delegate the development of policies, and a limited number of reforms that can be developed simultaneously.

6.4. Principal Reform Priorities

Supposing that each relevant ministry is capable of managing at least one major reform priority, combined with insights from the other two suggested methodologies for assessing priorities, provides a basis for identifying those priorities.

6.4.1. Central Ministries

In the central ministries of Finance, Planning and Investment, and Construction, a major priority should be the development of improved mechanisms for project selection, monitoring, and evaluation. The central ministries could take the lead in cross-sectoral capacity building to improve the quality of project feasibility studies and monitoring and evaluation activities. The aim should be to obtain high quality economic analyses indicating expected and attained rates of economic return. These estimates should be used as central criteria in selection of projects for public financing approval.

Chapter 3 has highlighted the need for a better integration of financial planning with other aspects of planning. A mechanism needs to be found by which available taxpayer funds are allocated to infrastructure projects where necessary, by which taxpayer funds are not involved where not intended, and which provides financing alternatives for socially profitable investments where taxpayer funding is not required. These processes should be tied to results frameworks providing strategies that link individual projects to development goals, and which should be prepared by sectoral ministries.

Reforms of capital markets identified in Chapter 2 will require a series of reforms, many within the responsibility of the Ministry of Finance. Among these reforms, preparing the way for private infrastructure investment is a particular priority, given the proposed importance of the private investment in the electricity sector and for its potential role in financing and improving efficiency in other sectors. Here the Ministry of Planning and Investment will have a key role. Reform of the BOT legal framework is one step, but much better project preparation and improved regulatory institutions will also be required. Efforts to build regulatory expertise could begin with improved emphasis on rules-based regulation within the public sector.

6.4.2. Line Ministries

Each ministry responsible for an infrastructure sector should prepare a results framework for the sector, linking development goals, strategies, and key performance indicators. Any proposed investment projects should be mapped into at least one of the identified strategies. These results frameworks would help to improve the overall alignment of Vietnam's investment approvals process with its socio-economic development goals.

A major challenge for the Transport Ministry is to develop institutions that can measure maintenance needs, procure maintenance services at least cost, and ensure adequate financial resources to pay for these services. There are numerous indications that inadequate attention is being paid to maintenance, with very high returns available from spending on maintenance. But improved information is the first step towards recognizing and resolving the problem.

In electricity the greatest challenge is providing sufficient capacity to satisfy growing demand. While the magnitude of the public investment program will increase relative to earlier years, the bigger challenge will be attracting large scale private investment in IPPs. The Ministry of Industry needs to put major efforts into project preparation, ensuring competitive international bidding, and ensuring an appropriate allocation of risks between the public sector and investors.

The telecommunications industry has become a highly competitive, privately managed industry in many, if not most, countries around the world. Competitive industries have outperformed state monopolies on a host of measures. The reform priority in telecommunications for Vietnam should be increasing the level of competition, through increased private sector involvement and improved regulatory arrangements ensuring appropriate terms of access to VNPT's network.

In water and sanitation, the priorities are driven by Vietnam's development objectives. Table 2.3 of the Water and Sanitation Strategy paper sets out different targets for access to improved water and sanitation, defined by Government sector strategies, the CPRGS, the Vietnam Development Goals, and the Government's Environment Strategy. Whichever of these targets is sought, much greater investment is required in the sector. Tariff increases for water will help in meeting

the investment needs for water services. But private willingness to pay for sanitation is significantly less than the public benefits. There is justification for an increased role for public financing of sanitation and wastewater treatment. Enforcing the new obligations to increase water tariffs is the highest priority in the sector, but the next priority is obtaining higher state budget funding for investment in sanitation.

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