VIETNAM URBANIZATION REVIEW

TECHNICAL ASSISTANCE REPORT

WORLD BANK

Vietnam Urbanization Review

Technical Assistance Report

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Selected Abbreviations and Acronyms

ADB	Asian Development Bank
AFD	Agence Francaise de Developpement
CBD	Central Business District
DFID	Department for International Development (United Kingdom)
DSI	Development Strategy Institute
EZ	Economic Zones
FAR	Floor Area Ratio
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GIZ	Geselleschaft fur Internationale Zusammenarbeit
GSO	Government Statistics Office
HCMC	Ho Chi Minh City
HCCMP	Hanoi Capital Construction Master Plan
HTZ	High Technology Zones
IBNET	International Benchmarking Network of Water and Sanitation Utilities
IC	Industrial Clusters
IZ	Industrial and Processing Zones
JICA	Japan International Cooperation Agency
KfW	Kredistalt fur Wiederaufbrau
LQ	Location Quotient
LURC	Land Use Registration Certificate

MOC	Ministry of Construction
MONRE	Ministry of Natural Resources and Environment
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
MRD	Mekong River Delta
NH-1	National Highway No. 1
O-D	Origin and Destination
O&M	Operations and Maintenance
TSDS	Transport Sector Development Strategy
UNDP	United Nations Development Program
UFW	Unaccounted for Water
VDR	Vietnam Development Report
VITRANSS-2	Comprehensive Study on Sustainable Development of the Transport System in Vietnam
VND	Vietnam Dong (Currency)

Executive Summary

Vietnam will have only one chance to get urbanization right. If we fail at urbanization, we will fail at industrialization and modernization. -- **Deputy Prime Minister Nguyen Sinh Hung, speaking at the Vietnam National Urban Conference, November 6th-7th, 2009.**

Introduction

As Vietnam enters a crucial period of urbanization corresponding to its present stage of economic development, the Government of Vietnam has placed strong emphasis on developing its system of cities. This commitment is explicitly stated in the above statement by Deputy Prime Minister Nguyen Sinh Hung. In accordance with this objective this Urbanization Review is dedicated to understanding the key dimensions and aspects of Vietnam's urbanization process and to identifying trends, opportunities, challenges and core policy priorities that the government will need to address in order to realize its objective.

The Vietnam Urbanization Review was prepared following extensive consultations with various stakeholders, including officials from national and local government, private sector groups and international and bilateral organizations active in development assistance in the urban sector in Vietnam. It builds on a strong portfolio of World Bank engagements in investment and policy lending to the Government of Vietnam. It also builds on a number of more in-depth studies that were commissioned specifically for the Vietnam Urbanization Review. The World Bank is carrying out Urbanization Reviews for a number of countries, but Vietnam is one of the first for which this comprehensive analysis is being developed.

Chapter 1 of this review analyzes how Vietnam's urban system is evolving along *five transitions:* administrative; demographic; economic; physical; and welfare. The shifts taking place along these dimensions are of-course interrelated, and provide a good point of departure to the overall analysis. The Urbanization Review then focuses on understanding in more detail some core areas of priority for Vietnam, building on prior analysis and the extensive consultations the team undertook in the preparation of this report. These chapters are: connecting Vietnam's urban portfolio (Chapter 2); urban expansion and spatial development in Vietnam's cities (Chapter 3); and basic urban services (Chapter 4). These are referred to as the *core diagnostics.* It is hoped, that this work will provide a fuller understanding of the basic elements of Vietnam's urbanization process, shed some light on the challenges it is facing and identify areas for further

analysis that will aid policy makers in addressing these challenges. Some areas for further consideration and inquiry are presented in the final chapter of the Review (Chapter 5).

Principal Messages of the Vietnam Urbanization Review

Vietnam's Evolving Urban System

Chapter 1 considers how Vietnam's urban system is evolving. This analysis is done by considering five transitions across the entire urban system. **The five transitions or shifts consist of administrative, physical, economic, demographic, and welfare changes across the entire Vietnam urban system.** The first one, the "administrative" transition, refers to how the overarching policies, institutional and management practices central to urbanization (as well as issues like the decentralization agenda), critically influence the other four transitions. One of its components, the classification of cities, constitutes a major area of focus in this chapter. The "physical" transition, examines urbanization in a spatial dimension, and focuses on changes to land use as urbanization takes place. The "economic" transition examines the nature and transformations of economic activity driving urbanization and is often a driver of the other transitions. The "demographic" transition describes the socioeconomic changes brought about by Vietnam's economic and spatial transformation (and vice versa). The "welfare" transition—correlated with the economic changes as well as the physical, administrative and demographic changes—would indicate whether Vietnam's urbanization trajectory has improved the well-being of its population, particularly the most vulnerable populations.

Understanding these transitions is important for developing the right policies that will allow Vietnam to maximize the benefits from its ongoing urban transformation.

Since the 1986 Doi Moi reforms, Vietnam's urban population has begun to grow. The review indicates that Vietnam is in an incipient stage of urbanization transitioning to an intermediate stage with rapid urbanization (currently 30% urban with 3.4% urban population growth per year) with an increasing economic transition toward industrial manufacturing as a share of both employment and economic output. Population growth in the past ten years has been fastest in Vietnam's largest cities of Hanoi and HCMC, their surrounding regions and in some medium sized cities. With few exceptions, small cities grew the least or lost population.

Vietnam has developed two independent and dominant core-periphery urban systems: Ho Chi Minh City and Hanoi. Vietnam's rapid economic growth is driven by these two urban systems with high growth and industrial concentration within these cities and their surrounding areas. The finding that economic growth is led by a single or a few core economic nodes is consistent with the experience of other rapidly developing countries in incipient or intermediate stages of urbanization. **While growth is concentrated in these two core urban systems, Hanoi and Ho Chi Minh City manifest different economic growth trajectories**

driven by different conditions of economic geography.

Ho Chi Minh City and the Southeast region host nearly half (45%) of overall manufacturing production. Heavy and fast growing (higher tech) manufacturing activity is more intense in the Hanoi and the Red River Delta Region than in HCMC and the Southeast Region (55% and 39%, respectively). Industrialization is rapidly progressing in Hanoi and the Red River Delta region due to its proximity to the massive industrial bases in South China. But it appears that HCMC and the Southeast Region show some signs of saturation in production of low value-added products. Despite that, the rapidly expanding container handling capacity in the deep-water port near HCMC is creating an installed capacity that will be larger than Singapore's entire current throughput by 2015. Already, for the first time in the country's history, this port is connecting Vietnam with Western Europe and North America via direct ocean services. These differences in economic and strategic profiles have important implications for policy makers.

While economic development is concentrated in the two core metropolitan regions of HCMC and Hanoi, as is to be expected, welfare improvements have been more widespread. **Overall, there appears to be strong convergence of welfare across provinces; this steady distribution of welfare improvement is mainly driven by sustained and strong government commitment to inclusive social development. It is underpinned economically by the strong growth of core metropolitan cities and ensuing positive spillover to the hinterlands.** But these improvements must be interpreted with caution. There remain disparities in access to and quality of services provided; further there are areas of persistent poverty in Vietnam. Vietnam, like many countries is moving from incipient to intermediate stages of urbanization and from lower to middle income levels: it needs therefore to consider not only access, but quality and reliability of basic services.

Connecting Vietnam's Urban Portfolio

Chapter 2 considers the connectivity of the urban portfolio. Rooted in a broader understanding of agglomeration economies and economic geography theory, this chapter primarily focuses on connective infrastructure as it relates to freight movement in Vietnam's urban system.

The chapter begins by looking at the modal split of freight transportation across the country. It reveals that the two dominant modes of freight transport are inland waterways with 48%, and roads with 45%. The bulk of manufactured goods (88%) are transported by roads, while most heavy raw materials, such as construction materials (73%) and coal (79%), are shipped using inland waterways.

Rail freight is relatively weak at 1.9% and coastal freight which is the dominant mode for longer trips (over 1000 km, particularly 1400km-1600km) is responsible for 4.4% of freight movement. The dominance of short distance freight transportation trips of less than 200km

distance is quite significant: 87% of all freight movement takes place within 200km, with 98% of all inland waterway movement taking place within 200km and 73% of road movement within 100km. This can be partly explained by the fact that 60% of the freight movement of the economic centers is intra-regional.

Inter-city freight movements confirm the dominance of the two urban systems of Ho Chi Minh City and Hanoi. However, these two regions are limiting their competitive advantage on account of logistics bottlenecks and disproportionately high transport costs. Improving urban road and infrastructure conditions would be priorities in HCMC, Hanoi and their economic regions. Clearly investments in spatially connective logistic infrastructure are needed to sustain these engines of economic growth. But improving infrastructure is not sufficient. As is detailed in Chapter 2, reforms to reduce informal payments and corruption in the sector are needed to reduce costs, especially in the southeast, and further reforms in the trucking industry must also be made to improve efficiency. Freight transport costs in HCMC and Hanoi regions can be reduced by 57% and 67%, respectively, if their unit costs are reduced to levels of Class 1 cities.

Urban Expansion and Spatial Development in Vietnam's Cities

Chapter 3 examines the processes of urban expansion and spatial development in Vietnamese cities. It starts out by looking at housing, followed by an examination of urban form and mobility in the cities of Hanoi, Ho Chi Minh and Da Nang. While Vietnam has done well on some of the issues, there are some important elements that need to be addressed to ensure that achievements can be sustained by Vietnamese cities as they move on to the next stage of challenges with higher levels of urbanization. The chapter then looks into land and real estate markets and the urban planning process. Land markets and urban planning are critical factors in helping urban economies to function efficiently and equitably, and the chapter provides some initial suggestions for strengthening the approaches currently prevalent in Vietnam.

By and large Vietnamese cities have managed to enable a pluralistic supply of housing to meet the needs of different segments. It seems that much of the demand for housing in Vietnam, especially for low income groups, is and will be met in the following ways.

1) Small contractors constructing traditional townhouses where land is available within the city or in its immediate periphery,

2) Government facilitated densification through the extension of the road network to integrate former villages close to the city.

3) The incremental upgrading and maintenance of the existing housing stock by individuals (including the increase in FAR by vertical extension), and the upgrading of infrastructure and services by the Government.

As a lower-income and rapidly urbanizing country, Vietnam has very few urban slums. Some of the reasons for this are discussed in Chapter 3. This outcome is particularly striking when compared with cities in countries which have even higher incomes such as India, the Philippines, Indonesia, and Brazil – to mention a few.

Vietnam's cities still enjoy relatively good urban mobility, due in large part to the following features.

1) The nearly universal use of the motorcycles as the primary means of transportation;
2) The characteristic mixed land use neighborhoods of Vietnamese cities (which result in the close proximity of many of the day-to-day trips individuals typically make).
3) The prevalence of shop-houses, where many people live in the space above or behind their stores.

The above picture is changing rapidly with the increase in the usage of cars in cities. The logistical infrastructure of the largest cities of Hanoi and HCMC are not capable of sustaining extended use of motor-cars as the major means of transportation; indeed, increased car use would eventually lead to gridlock. With car ownership on the rise, and the benefits of planned transit systems 10-15 years away, a major challenge will be to slow down the transition to automobiles.

While there are plans for public transport systems in most major cities, a nearly universal preference for personal transport will run counter to plans for such urban transit systems. This is why public transport options should be designed as a part of a system that together with motorcycle trips will compete in overall cost and convenience to the car. In addition, planned transit systems will have to take into account market driven and evolving land use patterns in cities. The increasingly polycentric layout of the country's large cities of Hanoi and HCMC might require the public transit options to be designed as a grid-like mass transit network of a longer total length than radial routes alone, and/or that they should include investments in feeder routes.

Land markets in Vietnam reflect some of the deeper issues with land management and governance. For instance the huge discrepancies between the Government's 'set price' for land and the 'market price' (which is often 10 times higher than the 'set price') - is a cause for large distortions and bottlenecks in the land market. This two-price system can transfer huge values and benefits to developers (often SOEs), investors and speculators. Also, since land allocations, joint venture deals, taxes, concessions and permissions for developers and investors are based on artificially deflated land values – the Government is significantly forfeiting the creation of public benefit by undervaluing one of its most valuable assets. Also, as the amount of land tied up in conflict rises, a supply bottleneck is created which further increases the market price for

land and housing –a further distortion in the market. Further, the artificially lower priced land stimulates a proliferation of land sales that contributes to rapid urban sprawl and the high infrastructure inefficiencies and capital costs associated with it.

An initial review of real estate prices in Hanoi and Ho Chi Minh City suggest that prices are rather high when compared with comparator cities in Asia. At the urban fringe, vacant land prices are roughly $500/m^2 and above in both cities, but closer to the center, vacant land prices are far higher in Hanoi than in HCMC: as much as $7,000/m^2 or $8,000/m^2 in Hanoi, but more like $4,000/m^2 in HCMC. An interesting finding is that vacant land exhibits prices that approach almost 1,000 times the monthly rent for housing at the same location. In other words, vacant land is priced at around 80 years worth of monthly rent. This is an unusually large difference, and suggests that vacant land prices reflect a strong expectation of increased rents or resale values in the future, in order to pay off such high initial investments—and perhaps also a lack of other options for storing wealth. At the same time strong government rental subsidies to a segment of the rental market probably brings down the average of the rental price. These numbers suggest that perhaps only 5% of the population in Hanoi can afford to buy properties at these inflated prices.

Land and real estate market regulations appear to be improving but there are still more essential improvements to be made. Enterprise Survey data from two large surveys of Vietnamese firms conducted in 2005 and in 2009 indicates a substantial improvement in firms' rating of their ability to access land. Access to land remains rather more problematic in the Red River Delta than elsewhere, but overall has improved dramatically in all regions of Vietnam. It is a 'Severe Obstacle' to doing business for far fewer firms in 2009 than it was in 2005, and though it remains a 'Major Obstacle' for a substantial proportion of firms, the trend is definitely one of improvement.

The urban planning system in Vietnam has two fundamental areas where it can be strengthened. The first is that the prevalent master planning approach in Vietnam is not evidence based – and can be significantly strengthened to more accurately respond to the dimensions and locations of demand and of market forces. The second is that like in many other countries, the planning system is fragmented and silo based, without adequate integration and coordination across either functional or spatial jurisdictions. These are both very important areas to address – especially as the efficiency of the urban form and the benefits of long-term economic agglomeration will strongly depend on the extent to which these deficiencies in the urban planning system can be addressed.

There are signs that provinces are now moving toward the riskier and more expensive approach of 'new towns,' and to high-end and iconic real estate projects that are not based on an integrated urban strategy that factors in market demand and long-term costs and benefits. Since land sales often comprises one of the largest sources of revenue for provinces, and since increase in administrative boundaries and urban land push a city higher up in the

Government's urban hierarchy – there is an incentive to sell land and expand outward (even when there is no clear demand). This phenomenon is likely to be an important reason in explaining Vietnam's fast expansion of cities outwards.

Basic Urban Services

Chapter 4 provides a general view of the state of access to basic services in Vietnam, and looks into issues of service quality as well. It also looks into aspects of how basic service provision is financed in Vietnam.

Vietnam has achieved about 96% access to electrical power supply, an achievement that is highly commendable for a developing country; however access to other basics services such as water and sanitation still remain at lower levels. While Vietnam has also done a remarkable job increasing access to water in urban areas in the last ten years, access is still not universal; Data from 65 utility companies show that only 12 percent of households in the area covered by the companies had access to the water network in 2002. By 2007 more than 70 percent of the population in the area was connected. However, there is still much to be done in extending access to water throughout the nation. There have been strong improvements in sanitation access as well over the years. From low levels around 17 percent in 1999, more than 67 percent of households in urban areas had access to a toilet in 2009. While rising from a very low 13 percent, rural areas still lag typical urban access levels, with only 48 percent of households having a toilet. **As Vietnam moves to higher income levels and universal access is achieved in other services as has been done with electricity, the next goal should be to focus on quality of services.**

Vietnam has achieved high primary education enrolments in both its urban and rural regions (almost 90%) which can be attributed to the government's policy of mandatory universal primary education. Enrolment rates for lower secondary education are almost 80%; this tapers down to about 56% for upper secondary education, where the divergence between rural and urban educational attainment becomes more pronounced. However, it must be kept in mind that national averages do not reveal differences between the rich and the poor, across regions, and relating to ethnic minorities groups. In general and as might be expected, the more urban a province is (the higher the share of its population that is 'urban'), the higher student attainment. Completion rates in rural areas are about two-thirds of those in urban areas. The focus going forward will need to be on reducing the education attainment gap between different groups, on strengthening higher education, as well as on improving the quality of education.

Provinces and their subsidiary units are financing themselves through a range of sources: equalization transfers from the central government, taxes, land sales, short-term debt, local development investment funds, and sometimes through cross-subsidy from profitable subsidiary entities of provincial public utility companies. The merits and risks of these approaches need to be further examined, as alternatives are considered. For the poorer provinces, the equalization

formula has been a cornerstone in enabling access to basic services, and should be maintained. At the same time, there is room for improvement in strengthening and deepening the ability of provinces to leverage other sustainable sources of financing. Some options for achieving more universal access to urban services might be to: (i) ramp up cost recovery which will lead to better services; (ii) increase the efficiency and the quality of service provision to meet growing demand and reduce costs; and (iii) reduce the dependence on public investment and to find other, sustainable sources of financing, including private sources (where beneficial), to improve access and quality of service.

Policy Considerations and Options for Further Analysis

The intent of the Urbanization Review is not to articulate a set of policy priorities per se, but to highlight relevant policy areas and choices that emerge from the detailed analysis. These are summarized in Chapter 5. In addition, Chapter 5 suggests some specific areas where the World Bank can potentially provide continued analytical and advisory services and collaborate with the Government together with other development partners in helping to advance understanding of policy options and challenges in these key areas.

The final Chapter of the Urbanization Review therefore outlines a possible program of analytical and advisory services that the Bank can provide. Some of this would include new analytical work, while other aspects are already planned or can be incorporated into World Bank lending operations. Moving this policy dialogue forward will require developing opportunities for policy dialogue channels with government, such as the Urban Forum which is in a process of being revitalized by the Government. It would also be important to strengthen collaboration with other development partners who are working with the Government of Vietnam on these issues.

1

Vietnam's Evolving Urban System

1.1 Vietnam's urbanization in a system of cities

Vietnam will have only one chance to get urbanization right. If we fail at urbanization, we will fail at industrialization and modernization. -- Deputy Prime Minister Nguyen Sinh Hung, speaking at the Vietnam National Urban Conference, November 6th-7th, 2009.

1.1.1 The socio-economic background to urbanization

Before independence industrial development in Vietnam took place in three independent colonial regions centered on Hanoi, Ho Chi Minh City (Saigon) and Hue, the old imperial capital. While the centrally located Hue still continues to be an important historic and cultural destination, as well as a provincial capital – it is Hanoi in the north and Ho Chi Minh City in the south that now anchor much of Vietnam's urban economy. The economic geography that has been developing in Vietnam over the last half-century or more therefore has a longer history, deriving also from the fact that the elongated shape of the country naturally needed more than one principal economic pole.

Interestingly, these two poles have more recently also developed along slightly different trajectories, partially because of the inheritance of contradictory governing and socioeconomic systems for more than twenty years. The South employed liberal market policies (as South Vietnam) while the North followed a socialist model (North Vietnam). In the eleven years following re-unification, the unified country followed the socialist development model placing greater emphasis on rural areas and on building a 'planned economy' that entailed the distribution and concentration of industry in select centers. It was only since the adoption of the sweeping Doi Moi policies in 1986 that the government began to introduce liberal market mechanisms, encouraging private-sector initiatives, while retaining its role as the nation's strategic planner and enforcer.

Although Vietnam has embarked on a trajectory of rapid economic liberalization with the inception of Doi Moi, its government has also implemented a variety of policies in an attempt to foster a more even distribution of economic growth and urban development. For example, Government Decision No. 10 (1998) on the Urban System and Development Strategy to 2020 called for the development of medium and small sized cities while containing the growth of the largest cities. Subsequently the Government accepted the possibility of the rise of mega-cities with populations over 10 million (Government Decision No. 445 in 2009). The 2011-2020 Socio Economic Development Strategy de facto accepts that urbanization will be necessary to promote the country's goals of industrialization and modernization – as is reflected in the powerful and unequivocal opening quote of this chapter. Table 1.1 details a series of Government policies to control and guide urban development in Vietnam.

China has also made the same policy reversals, shifting urban policy emphasis from small cities to large cities while promoting balanced development so that national urban policies do

not penalize large cities but acknowledge the major contribution of large cities to economic development. The eleventh FYP for 2006-2010 placed much stronger emphasis on the development of metropolitan regions across the country, and the promotion of urbanization process through the "balanced development" of cities and towns. The change in part reflects the government's desire to balance growth more towards domestic consumption away from exports, and the view that large cities can make a disproportionately larger contribution to the country's economic development.

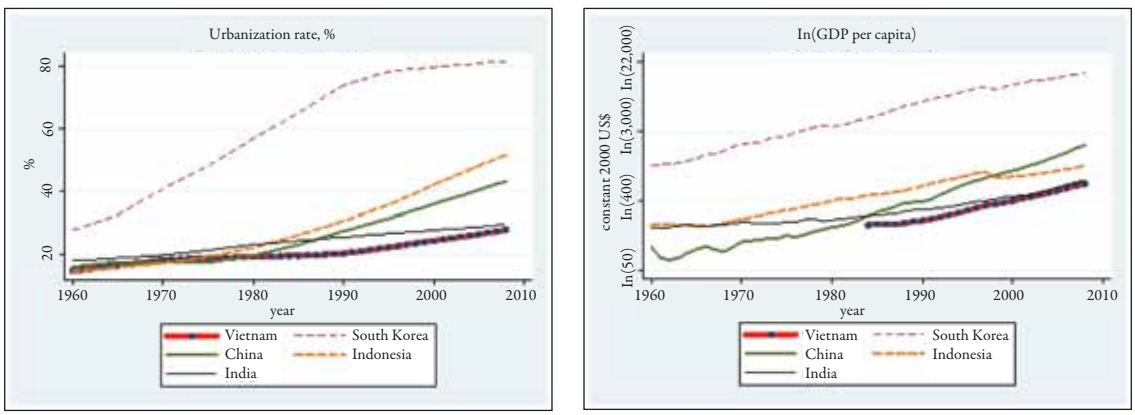
Table 1.1 Government policies to control and guide urban development in Vietnam

Urban Development Policies	Consequences
Central Control of Administrative Boundary Shifts	From 1954 to the present, administrative boundary changes required approval from the central government. This has historically been viewed as an effective tool for controlling city size and encroachment of urban areas onto agricultural lands. With the increase in urbanization since Doi Moi policies in the late 1980s, the loss of agricultural land to urban use is increasing conflicts at the urban fringe of many cities.
Controlling Population Movements and the Demographic Transition	The demographic transition has been largely controlled by the urban residency permission system, which is essentially a Vietnamese version of the Chinese hukou system. This was considered largely effective for its intended purpose from 1954 to 1990. Since 1990 this policy has been relaxed - the effects of which can be seen in the demographic transition since 1990; the urban population rose from 19.5% in 1990 to roughly 30% in 2009. However, remnants of this system may actually still result in an undercount of the actual urban population with many migrants potentially not accounted for in this number.
Urban Service Provision and the Welfare Transition	From 1954 to early 1990s uniform utility rates for the provision of urban services largely discouraged the provision of these services and impacted their quality. In most cases since the 1990s and the 2000s, reforms in service provision have been made to allow for cost recovery in tariffs and an orientation to commercial practices. This has had a general positive impact on increasing access to basic services across all urban classifications. Quality of services remains a problem.
Urban Finance and the Economic Transition	Urban Construction finance from 1954 to the present has been largely controlled through the state and the redistribution of revenues on a per capita basis. This has had a positive impact on equity between regions and urban areas. But many cities still struggle to make infrastructure investments necessary to keep them competitive and in pace with demand. There is a growing trend for cities and the private sector to take over urban construction, though large SOEs still dominate in many areas. Land sales are a big component of 'own

Urban Development Policies	Consequences
	source' revenues that cities have for infrastructure investments. There is growing debate nationally to create new rules for larger cities (e.g. The Law on the Capital City).
Land Markets and the Physical Transition	Urban land markets were largely ignored from 1954 to the 1990s. The 1993 Land Law was a step forward to release land into the land and housing market. Conversion of farmland to urban use accelerated rapidly, though it was considered to have been chaotic due to low levels of legally recognized land use rights and many informal transactions. The 2003 Land Law further grants the use of land as a resource input in business and as eligible for compensation when land is acquired by the government for development. The Land Price Framework (generally lower than 'market' rates by 30 - 70%) is intended to stimulate economic development. It is viewed as being successful in attracting real estate investment; but it is also viewed as source of land speculation, land conflicts, and as raising land prices to the end user to benefit the state and property developers at the expense of the original land owners and by the creation of a de facto two tiered land price system.
Transition towards Pro-Urban Policies?	The Government Decree No. 72 (2001) and Decree No. 42 (2009) established city and town classification requirements in an attempt to distinguish between the roles of different cities. The classification system has implications for administrative functions, tax collection and state funding allocations. A possibly unintended consequence has been a trend for cities to exploit loopholes in the classification system to move up in the ranking. These moves are largely administrative and not necessarily based on the actual economic function of the cities. Government Decision No. 10 (1998) on the Urban System and Development Strategy to 2020 called for the development of medium and small sized cities and containing the growth of the largest cities. By 2009, Government Decision No. 445 updating the 1998 Decision with a vision to 2050 accepts the possibility of mega-cities with populations over 10 million. The current thinking is to develop a system of cities that each play a role in the country's urban economy. However, these Decrees are non-binding, and are seen as only statements of intent. The 2011-2020 Socio Economic Development Strategy de facto accepts that urbanization will be necessary to promote the country's goals of industrialization and modernization.

Figure 1.1 shows the strong co-movement of Vietnam's urbanization and economic growth. Vietnam's overall urbanization had been in a similar stage to China, India, and Indonesia until late 1970s, but then it slowed down as China and Indonesia were -increasing urbanization and economic growth. Recently, on account of Doi Moi reforms and export-oriented industrialization policies, Vietnam's urbanization also started accelerating. In parallel, economic growth, measured by GDP per capita, was strong over the same period. This coincides with rapid structural transformation from an agriculture-based economy to greater emphasis on industry and export oriented activity (Table 1.2). All this suggests that urbanization, as an indicator of economic transformation, is linked to economic growth in Vietnam, as everywhere else.

Figure 1.1 Vietnam's urbanization and economic growth



Source: World Development Indicators, World Bank

Since urbanization in Vietnam has been accelerating recently, a UN projection suggests that the urban population will exceed the rural population by 2040 (United Nations, 2008). Fully understanding the significance of upcoming large-scale urban and economic transformation in Vietnam, the Government responded with the new Socioeconomic Development Strategy for the period of 2011-2020. The strategy aims to continue promoting industrialization and modernization, along with fast and sustainable development. It also promotes equity across the whole population, towards a predominantly industrial future with a socialist orientation. In short, the focus is on bolstering industrialization and urbanization in parallel, while consolidating social inclusiveness.

Table 1.2 Changing economic structure of Vietnam

Sector value-added as percent of GDP (constant 2000 US$)	1985 (A)	1990	2000	2008 (B)	Change (B-A) 1985-2008
Agriculture	37.2	33.6	24.5	18.5	-18.7
Industry	26.2	26.1	36.7	43.2	16.9
(Manufacturing alone)	15.9	13.9	18.6	25.2	9.3
Services	37.0	40.3	38.7	38.3	1.3
Total	100.0	100.0	100.0	100.0	0.0

Source: World Development Indicators, World Bank

Box 1.1 Socioeconomic development strategy for the period of 2011-2020

The new Socioeconomic Development Strategy continues to promote industrialization and modernization, fast and sustainable development; equitable social progress; while targeting an industrial future with socialist orientation. The Strategy is orientated towards development, innovation, growth and restructuring of the economy. The key priorities are as follows.

Improve regulation of the socialist-oriented market economy; ensure macroeconomic stability; effective mobilization of resources

Strongly develop and modernize industry while improving quality and competitiveness to create foundations for an industrial country

Comprehensively develop and modernize agriculture while building efficiency and sustainability

Strongly develop service industries, especially high value services, with great potential for raising competitiveness

Rapidly develop infrastructure, especially transportation infrastructure

Harmoniously and sustainably develop regions, build up new urban and rural areas

Comprehensively develop cultural and social fields in harmony with economic development

Strongly develop health services and improve the quality of healthcare delivery

Improve the quality of human resources comprehensively; rapidly upgrade education and technical training

Rapidly develop science and technology capabilities which is crucial for fast and sustainable development in industry and agriculture

Protect and improve environmental quality, proactively and effectively deal with climate change

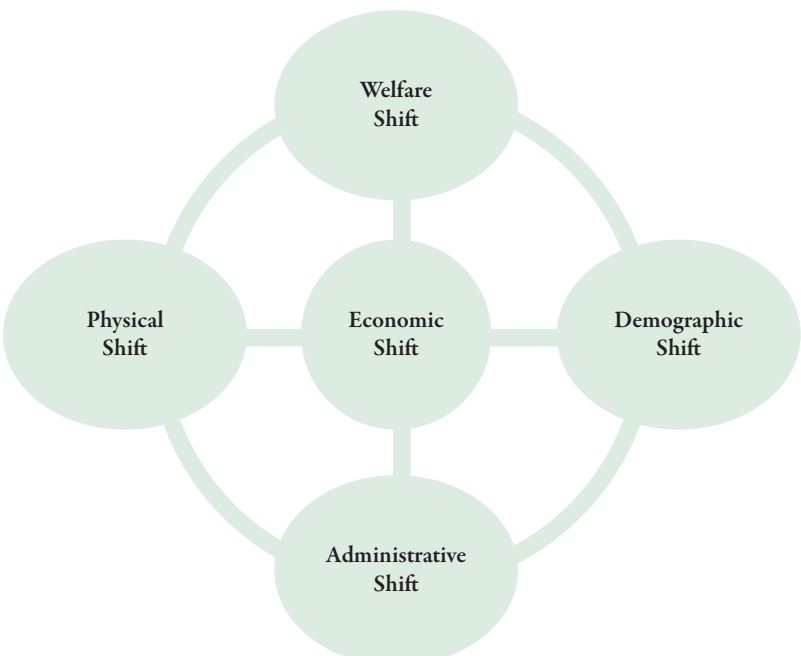
Strongly maintain independence, sovereignty, territorial unification, political security, and social order; extend external relations, actively integrate and improve the position of Vietnam in the international arena.

1.1.2 Vietnam's urbanization as five transitions

This chapter examines the Vietnam urban system in a system of cities perspective rather than focusing on a few selected cities or anecdotal evidence. This data intensive quantitative analysis is complemented by comparison with comparator countries, like China, India, and South Korea in different stages of urbanization and socioeconomic development, and draws lessons from their experiences.

Urbanization involves various functional and spatial transformations needed for long term growth and development. The pace and form of urbanization are inherently linked to the fluidity of factor markets and the provision of basic services. Just as urbanization varies with economic development across countries, urban transformations, or transitions of socioeconomic structures, also vary within countries. As countries create the institutional foundations of fluid factor markets and progressive social services, some places reap benefits sooner and urbanize rapidly because they offer facilities valued by businesses and workers. Therefore it is important to understand the patterns of these functional and structural transitions during the country-specific urbanization process. This chapter considers urbanization as it is characterized by "five transitions." Assessing these five different dimensions of change provides insights on the extent and form of urbanization, the function of cities, and the socioeconomic landscape within the urban portfolio.

Figure 1.2 Analytical framework: five transitions (or shifts)



The five transitions or shifts (Figure 1.2) consist of administrative, physical, economic, demographic, and welfare changes across the entire Vietnam urban system. The first one, the "administrative" transition, refers to how the overarching policies, institutional and management practices central to urbanization (as well as issues like the decentralization agenda), critically influence the other four transitions. One of its components, the classification of cities, constitutes a major area of focus in this chapter. The "physical" transition, examines urbanization in a spatial dimension, and focuses on changes to land use as urbanization takes place. The "economic transition" examines the nature and transformations of economic activity driving urbanization and is often a driver of the other transitions. The essence of this chapter is to provide solid quantitative evidence on how economic transition triggers other transitions (and vice versa). The "demographic" transition describes the socioeconomic changes brought about by Vietnam's economic and spatial transformation (and vice versa). The "welfare" transition—correlated with the economic changes as well as the physical, administrative and demographic changes—would indicate whether Vietnam's urbanization trajectory has improved the well-being of its population, particularly the less privileged.

1.1.3 Statistical definitions used in the analysis and their limitations

Much of the analyses focuses on comparison between the 1999 and 2009 census data. Given the reclassification of some provinces in 2003 and 2007, the 1999 regions need to be modified to conform to provincial grouping in the 2009 census. This chapter sets up consistent geographic definitions and boundaries between 1999 and 2009, to maintain comparability in the panel data. The details are included in the Appendix 1A, to this chapter.

The rural-urban demarcation is systematic and clear in the population census, but such is not the case for specific sector information at local district/commune levels. Appropriate proxy measures were derived in this case as well as for other un-synchronized data sets collected by different government agencies at varied time intervals.

Outside of population and land area, district level data were not available. Therefore most data in the city class and distance quintile typologies, especially in economic, demographic, and welfare transition analyses, are derived from provincial data using local population size as a conversion factor weight.[1] Therefore, the empirical results presented in the chapter need to be interpreted with this caveat in mind. Despite the caveat, the empirical findings are consistent with each other and well aligned with comparator pilot country studies of the World Bank's Urbanization Review initiative.

[1] For example, the total employment of Hue city is calculated as the total number employed in Thua Thien Hue Province (where Hue city belongs) multiplied by the ratio of Hue city population over Thua Thien Hue province population. These city-level figures are then aggregated for each typology group.

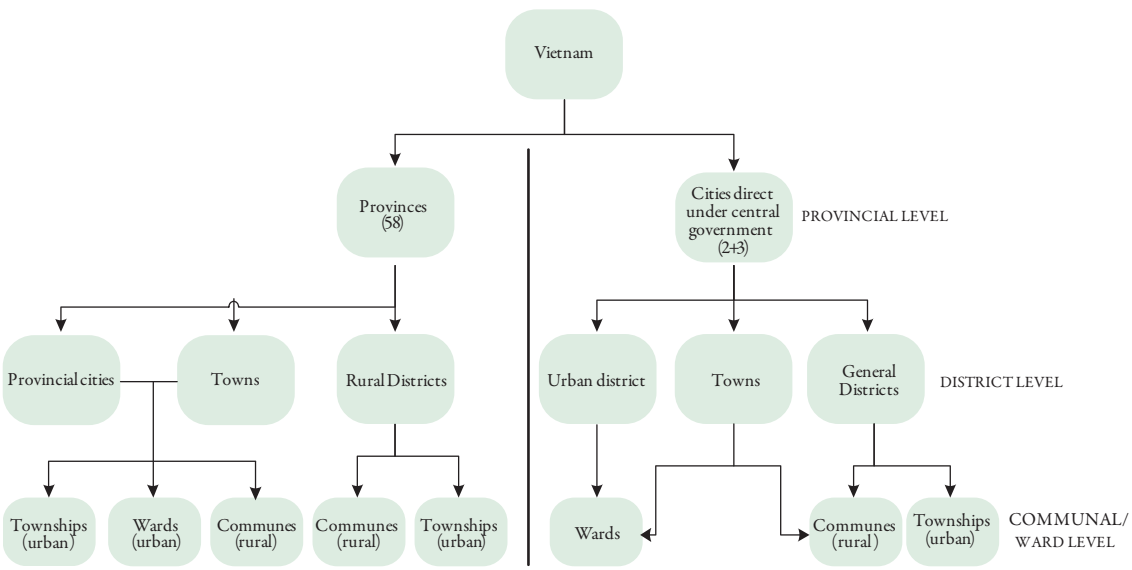
1.2 Urbanization as administrative and physical transitions: rapid expansion of urban areas

1.2.1 Urban classification system

The Vietnam urban classification system, established in 2001 and updated in 2009 with the inception of Decree No. 42/2009/ND-CP, serves as an important part of urban policy and management in Vietnam. It is a hierarchical system constituted by six classes of urban centers that are defined by different levels of economic activities, physical development, population, population density, and infrastructure provision. The main features of the regional and urban classification system are depicted in Figure 1.3 and Table 1.3.

Hanoi and Ho Chi Minh City (HCMC) are the nation's two special cities. They precede class 1 cities in the urban hierarchy according to the classification system and have achieved 'special' status due to their significant and unique economic and political contributions to the country. In 2009 there were 2 special cities, 5 class I cities, 12 class II cities, 40 class III towns, 47 class IV provincial towns, and 625 class V small townships .[2]

Figure 1.3 Vietnam's regional and urban administration hierarchy



Source: Urban Solutions (2011)

[2] This is the list according to the official classification system in 2009. More recent changes have been made as recent as 2010 but to match the other datasets in this report, the 2009 list is used.

Table 1.3 Proportion of urban population & economic power represented by special cities, class 1, 2, 3, and 4 urban areas, 2009

Category	Population	% of Country	Urban Population	% of Country	GDP in millions 0f VND	% of Country
Country	85,846,897	100.0%	25,436,896	100.0%	1,860,296,198	100.0%
Special class cities	13,614,773	15.9%	8,612,920	33.9%	567,505,959	30.5%
Class 1 cities	5,286,453	6.2%	3,106,983	12.2%	128,554,679	6.9%
Class 2 districts	3,538,283	4.1%	2,812,254	11.1%	96,993,428	5.2%
Class 3 districts (B)	5,354,288	6.2%	3,986,014	15.7%	105,498,464	5.7%
Class 4 districts (C)	3,522,553	4.1%	1,739,495	6.8%	55,980,660	3.0%
Special, class 1, 2, 3 and 4 urban areas as a % of Total Population in Country						36.5%
Special, class 1, 2, 3 and 4 urban areas as a % of Total Urban Population in Country						79.6%
Special, class 1, 2, 3 and 4 urban areas as a % of Total GDP in Country						51.3%

Notes:

1. Numbers were estimated for sub-province level urban areas as only provincial data was available
2. Excluded Hoa Binh Township in Tuong Duong District of Nghe An, a sub-district class 3 urban area for which population data is unavailable.
3. Excluded class 4 urban areas at the sub-district level, including: Cam Duong, now a part of Lao Cai Province; Binh Dinh Township in An Nhom District of Binh Dinh; Bong Song township is in the Hoai Nhon District of Bin Dinh; Phu Phong Township in Tay Son District of Binh Dinh; Phu Phong Township in Tay Son District of Binh Dinh; Lien Nghia in Duc Truong District of Lam Dong; Hat Lot Township in Mai Son District of Lam Dong.
4. Constituent cities and urban areas in each class are based on the 2009 urban classification system

Source: General Statistics Office (GSO) provincial statistics yearbook.

The administrative system of urban areas and the urban classification system provide incentives for cities and towns to move up the urban class ladder. Striving for higher classification standards has in recent years become a major preoccupation of local government authorities as urban areas of higher classes receive greater recognition and shares of financial resources. Coulhart, Quang, & Sharpe (2006) describe how the urban classification spurs development and creates perverse incentives:

> *"Class V is the smallest urban class and marks the demarcation between urban and rural. Striving for higher classification standards is a major preoccupation of local government authorities as the higher classifications receive a larger share of state resources. The classification system provides incentives for cities to try to move to a higher class. Cities often make investments*

in infrastructure to enable them to meet the requirements of the next classification level, rather than in direct response to the immediate needs of the population. For example a city or town may invest in road expansion when there is only limited traffic demand, instead of expanding piped water supply, where clear need exists."

Table 1.4 indicates that the urban classification system is dynamic as the central government reclassifies cities; it can therefore change from time to time. For example Can Tho became a Class 1 city in 2004 and with the 2010 changes Bac Lieu moved up from class 4 to class 3 city.

Combinations of both urban and non-urban areas in each administrative unit exist. It is therefore possible to have rural communes in districts (or towns) and even in urban provinces and/or cities and vice versa. This results in rural communes like Can Gio rural district in the city (and province) of HCMC and Can Thach township (ward) within that same rural district.

Table 1.4 Change in Urban Classification 1999-2009

	1999	2009	Change
Special	--	2	2
Class 1	2	5	3
Class 2	8	12	4
Class 3	12	40	28
Class 4	64	47	-17
Class 5	518	625	107
Total	604	731	127

Notes:
1. Based on 2009 urban classification system definitions.
2. The 2010 amended list specifies 2 special cities, 10 class I (4 direct under g'ment, 6 district status), 12 class II (districts), 47 class III (districts), 50 class IV (31 district, 19 ward) and 634 class V.

Source: General Statistics Office (GSO)

Box 1.2 Criteria to be considered urban

Decree No. 42/2009/ND-CP presents 6 groups of indicators to make a distinction between urban and rural. Circular No. 34/2009/TT-BXD amplifies the criteria further. The most important indicators are as follwos.

Functions of an urban center: An urban center is a general or specialized center of national, inter-provincial, provincial or district level, or a center of an intra-provincial region, which has the role of promoting socioeconomic development of the whole country or a certain region.

Population of an urban center is at least 4,000.

The population density suits the size, nature and characteristics of each urban center grade and is calculated for the inner area or township's consolidated street quarter. This means each urban class requires different population densities and the density is calculated with the inner areas of the total urban area (including both the rural and urban areas).

Non-agricultural labor within the inner area or consolidated street quarter accounts for 65% or more of total.

Urban infrastructure facilities, including social infrastructure facilities and technical infrastructure facilities:

For inner areas, these facilities are built in a synchronous manner and completed to an extent prescribed for each urban class.

For suburbs and outskirts, infrastructure networks are built in a synchronous manner, satisfying environmental protection and sustainable urban development requirements.

Urban architecture and landscape: Urban construction and development comply with Approved Regulations on Urban Architecture Management (ARUAM). An urban center has model urban quarters, civilized urban streets and public areas for its inhabitants' spiritual life; and has typical architectural complexes or works suitable to its environment and natural landscape.

Box table 1.2.1 Criteria for classes 1 to 5

Indicators	Urban Class									
	Class 1		Class 2		Class 3		Class 4		Class 5	
	1999	2009	1999	2009	1999	2009	1999	2009	1999	2009
Population	> 1 million	Central government run city (CG): >1 million Provincial city:>500 thousand	350,000 to 1 million	>300,000 If the class 2 is central government run city, population should be more than 800,000	100,000-350,000	>150,000	30,000 -100,000	>50,000	4,000-30,000	>4,000
Ratio of non-agricultural labor	>90%	>85% for urban centers	>90%	>80% for the urban centers	>80%	>70% for urban centers	>70%	>70% for urban centers	>60%	>65%
Population density	15,000/ km^2	CG: 12,000/ km^2 Provincial city: 10.000/ km^2	12,000/ km^2	8,000/km^2 or 10,000/km^2 if directly under the central government	10,000/ km^2	6,000/km^2	8,000/km^2	4,000/km^2	6,000/km^2	2,000/km^2

Indicators	Urban Class									
	Class 1		Class 2		Class 3		Class 4		Class 5	
	1999	2009	1999	2009	1999	2009	1999	2009	1999	2009
Socio-economic infrastructure system[1]	With integrated system	Integrated system in place New factories equipped with clean technology and old factories retrofitted with mitigation devices System coverage	With integrated system	Urban Centers with infrastructure partially built for full integration New factories equipped with clean technology and old factories retrofited with mitigation devices	Partially built system	Individual infrastructure system in place and gradually integrated New factories equipped with clean technology and old	Partially built system	Individual infrastructure system in place and gradually integrated New factories equipped with clean technology and old	Limited infrastructure in place	Same as class 4 in 2009

[1] Included both social infrastructure, such as schools, hospital, police and fire stations etc, and technical infrastructure, such as electricity and other utilities.
Source: Decree 42.42/ND-CP

1.2.2 Distribution of cities

The distribution of cities across city classes and regions is presented in Table 1.5, with more detailed data given in Tables 1.6 – 1.8. Two parallel urban systems can be identified for Vietnam: (i) Hanoi and its surrounding areas (Northern Midlands, Red River Delta and part of North Central/Central Coast regions) and (ii) HCMC with its surrounding areas (Central Highlands, Southeast, Mekong River Delta and part of North Central/Central Coast regions). Figure 1.4 visualizes this partition.

Table 1.5 Distribution of cities across city classes and regions in 2009

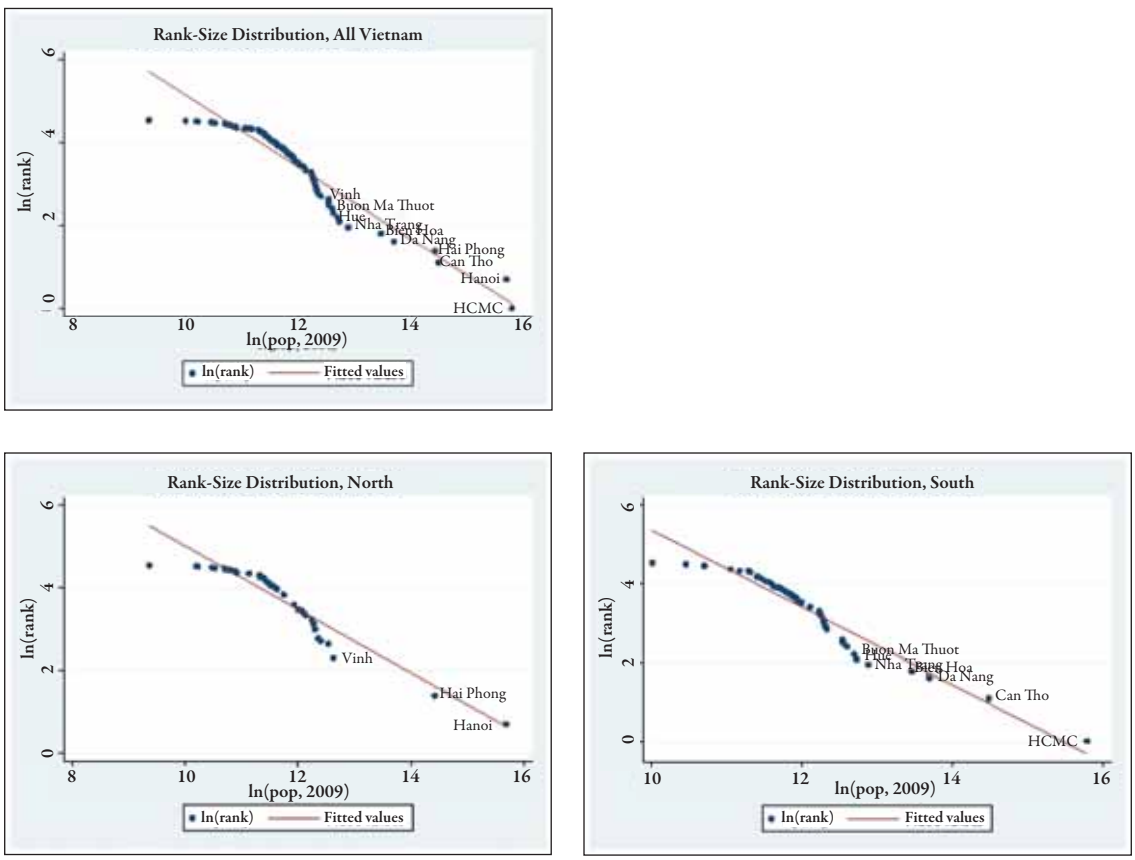
Region ↓ City class →	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	Total
Northern Midlands	.	.	2	7	10	19
Red River Delta	1	1	2	11	3	18
North Central/Central Coast	.	3	3	9	6	21
Central Highlands	.	.	2	2	4	8
Southeast	1	.	2	3	3	9
Mekong River Delta	.	1	1	9	8	19
Total	2	5	12	41	34	94

Source: General Statistics Office (GSO)

The average city size in 2009 and its growth between 1999 and 2009 show a distinct core-periphery structural pattern. The average city size is much larger in the Southeast and Red River Delta regions because of the large metropolitan cities of Hanoi and HCMC. Each of these two regions accommodates one third (about 10 million) of the total national urban population.

City population growth is also relatively higher in these special cities and their neighboring areas. Interestingly, the Northern Midlands region shows strong city population growth while its average city size is the smallest. On the contrary, cities in other regions of the North Central/Central Coast, Central Highlands, and Mekong Delta experienced lower growth of population over the same period. This pattern is more clearly observed in the cross tabulation of region and city class (Table 1.8). Smaller class 4 cities in the hinterlands of the Central/Central Coast and Central Highlands regions experienced a net loss of city population in the last ten years.

Figure 1.4 The rank-size distribution of Vietnamese cities and its North-South partition



Note: The North (South) is above (below) the 17th parallel north.

Source: World Bank staff calculation using data from GSO

Da Nang is strategically chosen as a key economic growth pole and supposed to function as such for the Central region. In fact, Da Nang's city growth (2.6% per annum) is higher than its comparators (1.2% of class 1 cities or 1.1% of North Central/Central Coast region), but it is not strong enough to lead regional growth. The observed decrease in small city (class 4) population in the same region and also the fall of the rural population in Da Nang (-1.9%) suggest that Da Nang's city growth is mainly driven by in-situ urbanization (short distance migration within the same administrative boundaries or rural-urban land conversion). It is unlikely that Da Nang will grow to play as pivotal a role in the national urban system, as Hanoi or Ho Chi Minh City does. In fact cities like Can Tho and Hai Phong might be better placed as the next level of dynamic growth drivers after Hanoi and Ho Chi Minh City.

Table 1.6 Average city size in 2009 and growth between 1999 and 2009, by region

Region	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	Total
Average city population, 2009	85,497	583,865	186,125	160,576	1,002,202	241,999	329,203
Number of cities	19	18	21	8	9	19	94
Total city population	1,624,450	10,509,567	3,908,632	1,284,609	9,019,816	4,597,981	30,945,055
Annual city pop growth, 1999-2009, %	3.7%	2.6%	1.1%	1.4%	3.3%	1.2%	2.4%

Table 1.7 Average city size in 2009 and city growth between 1999 and 2009, by city class

City class	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	Total
Average city population, 2009	6,807,387	1,057,291	294,857	134,743	87,679	329,203
Number of cities	2	5	12	41	34	94
Total city population	13,614,773	5,286,453	3,538,283	5,524,460	2,981,086	30,945,055
Annual city pop growth, 1999-2009, %	3.0%	1.2%	2.8%	2.6%	1.1%	2.4%

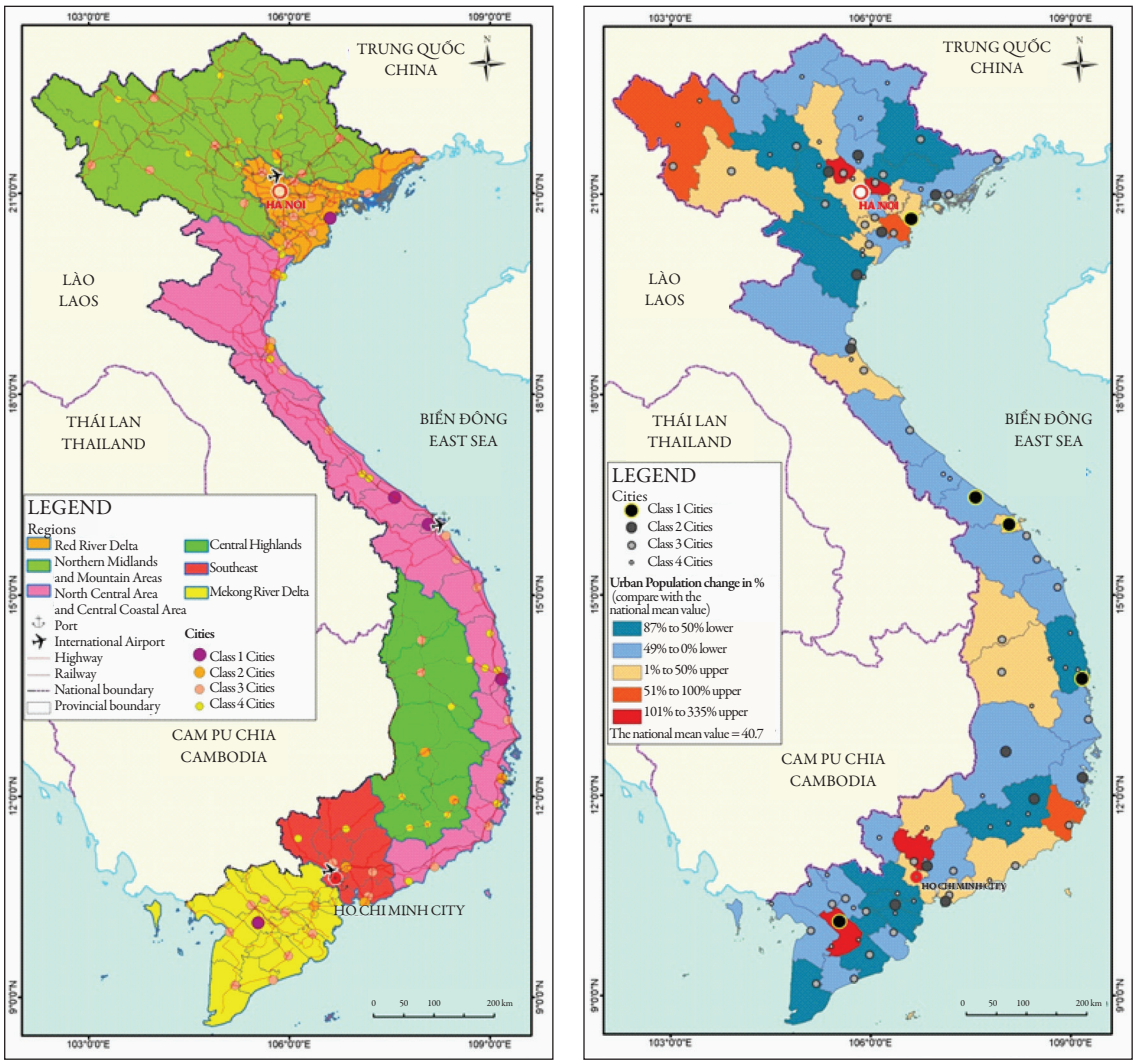
Table 1.8 Average city size in 2009 and city growth over 1999 – 2009 by region and city class

		Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities
Northern Midlands	avg city size			231,178	76,639	62,562
	city growth			3.1%	3.7%	4.1%
Red River Delta	avg city size	6,451,909	1,837,173	231,008	141,198	68,430
	city growth	2.4%	0.9%	1.7%	5.3%	1.9%
North Central/Central Coast	avg city size		501,182	301,230	121,197	68,438
	city growth		2.0%	2.3%	0.2%	-2.7%
Central Highlands	avg city size			265,711	175,867	100,364
	city growth			2.7%	2.2%	-0.9%
Southeast	avg city size	7,162,864		498,716	149,425	137,082
	city growth	3.5%		3.9%	1.3%	0.8%
Mekong River Delta	avg city size		1,945,735	181,367	171,559	115,856
	city growth		0.7%	1.4%	1.5%	1.6%

Figure 1.5 Spatial profiles of urban population changes between 1999 and 2009

Regions and location of cities in different classes

Urban population change between 1999 and 2009



Source: Urban Solutions (2011)

The concentration of urban populations in large cities is to be expected. As shown in Table 1.3.1 of Box 1.3, while urbanization in South Korea progressed from 37% in 1960 to 96% in 2005, the percentage of population living in cities of more than 1 million increased from 39% to 51%. The share of population living in the capital region (the Seoul metropolitan region and its suburban areas) rose from 21% to 48%. At the same time, urban agglomerations have steadily clustered around two core centers: Seoul and the Busan metropolitan area (see Figure 1.3.1 of Box 1.3). The concentration of population and economic activities in core urban clusters is an equilibrium

outcome of all market participants locating in the best places to maximize economic gains while minimizing economic costs. In this regard, public policies should be directed towards providing a level playing field with fluid factor markets so that agglomeration benefits are shared by all market participants rather than disproportionately diverted to rent-seekers.

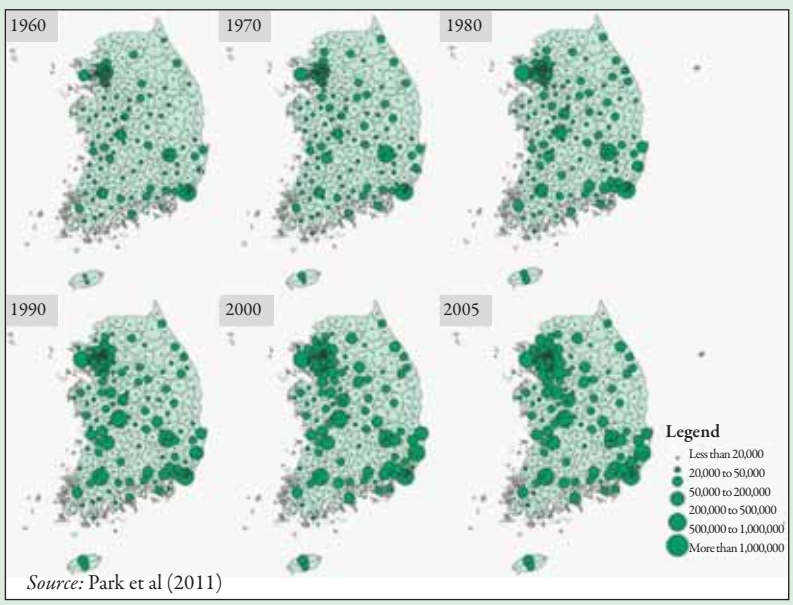
Box 1.3 Urbanization patterns in South Korea

Table 1.3.1 South Korea's urbanization progress and city size distribution

Categories		1960	1970	1980	1990	2000	2005
Percentage Urban Population		36.8%	50.2%	69.7%	82.6%	93.9%	95.7%
% of Population in the Capital Region		20.8%	28.2%	35.5%	42.8%	46.2%	48.1%
Cities by Population Size	1 Million above	39.2%	5.8%	54.4%	57.6%	51.4%	51.5%
	500,000-1 Million	7.2%	4.1%	5.3%	8.5%	15.6%	15.3%
	200,000-500,000	10.3%	7.5%	12.8%	12.4%	17.0%	18.9%
	50,000-200,000	20.0%	20.4%	14.0%	11.3%	11.0%	9.9%
	20,000-50,000	19.6%	13.5%	9.3%	6.4%	2.5%	2.2%
	Less than 20,000	3.5%	80.0%	4.2%	3.8%	2.5%	2.3%

Note: The total population living in cities and towns in terms of administrative districts
Source: Park et al (2011)

Figure 1.3.1: South Korea's spatial concentration of urban population in cities



Source: Park et al (2011)

Box 1.4 Decentralization in Vietnam

From the 1990s onward urban areas have become an increasingly important element in the organization of Vietnamese society. Provinces play a key role in this development and their autonomy vis-à-vis central government is constantly expanding, as are their powers and resources. In Vietnam, the focus of decentralization has been on gradual transfer of powers and authority to the provincial level of Government, which in most cases represent the higher tier of Government within which 'cities' are found in the Vietnam urban system.

From a legal perspective, local public administration is a local embodiment of the State. Their budgets are simply parts of the state budget and, in principle, only serves to implement at the local level the plans defined at the national level.

The following three areas of decentralization are considered important for urbanization in Vietnam.

Mandates of planning preparation, appraisal and approval (including Socio-Economic Development Plan and General Construction Master Plan). The Law on Urban Planning in 2009 regulates that provincial units have authority to prepare the general construction master plan for "big cities" except Hanoi and Ho Chi Minh City, technical infrastructure system of central government run cities, and functioning and detail construction plans of areas covering more than two districts.

Mandates of financial activities (including provincial budget collection, spending and investment decisions). Financial mandates are confined to the ability of provinces to decide budget spending and collection. Budget spending is mainly on investment and regular activities. Budget collection mainly comes from taxes, fees, charges, loans and transfer from the central government. As regards tax rates, none of the administrative units have authority to define tax rates which are regulated by Tax Laws. Thus, budget collection mandate is limited to the freedom of provinces to decide on fees, charge rates, transfers from government, and loans.

Mandates of land management: The land management authority of provinces and districts is confined to (i) land use planning allowance and approval; (ii) land provision and leasing; land use conversion and (iii) land price. In 2003, the new Land Law was enacted, replacing the Land Law of 1993 and brining several changes to the authority of Provincial and District People Committees in relation to land management:

- The first revision was to include regulations on land price, whereby the government has the authority to set land prices for regions in which provincial government should base its prices which are to be publicized on the first of January every year.
- In terms of land use planning, the revision included the provision that the Land Use Plan prepared by the Provincial Committee now had to be sent to the People Council first and then to the Prime Minister for approval.
- In terms of land provision, the revision gave the Provincial Committee the authority to provide and lease land to organizations, the District Provincial Committee to provide and lease land for individuals; and Communal, Ward People's Committee to lease land for public use.
- In terms of land conversion, the Provincial Committee was given the authority to decide on land conversion of organizations and individual households in downtown urban areas, while District People's Committee can decide to land conversions for individual households in the other urban areas.

1.2.3 Physical transition

City population density profiles follow that of city size distributions (see the urban-rural decompositions shown in Tables 1.9 and 1.10). Large urban clusters in the Southeast and Red River Delta regions and large cities tend to have higher population densities while the densities for other regions are quite low. When looked at closely, rural densities are quite low when organized by region or by city class, but urban density is very high for the special cities alone. For example, in the densely populated Southeast region and the two largest special cities, the urban city population density is about 10 times higher than in their rural counterparts.

There are significant variations in density profiles in urban and rural areas within city boundaries. In general, for regions, overall city population density is rising during the last ten years, along with population density in city suburban areas; but the urban population density in regions is declining, except for North Central/Central Coast and Southeast regions.

When decomposing city density changes of urban and rural areas within city boundaries into changes in population versus changes in land size, declining urban population density in cities is mainly attributable to excessive rural-urban land conversion (beyond accommodating city population growth per se). Interestingly, only the Southwest region saw a noticeable increase in urban population density, which is mainly driven by the lowest urban land expansion.

Cross-regional variation in city population density changes between 1999 and 2009 is higher than cross-city class variations (Table 1.9 versus Table 1.10). It suggests a city's physical transition is determined by its location-specific endowments rather than its urban hierarchical position (or its location in the city size distribution in a non-spatial context). For example, Red River Delta (Hanoi) and Southeast (HCMC) show opposite urban population density trends (1.9% versus 2.6% annual growth rates), while their urban population growth rates are similar (4.4% versus 3.7%). The main difference comes from rural-urban land conversion intensity (8.4% versus 0.9%). This difference can be explained by multiple factors. Recent expansion of the Hanoi city boundary could well be a reason. More importantly, as detailed later, the rapid economic transitions in Hanoi and the Red River Delta areas toward heavy manufacturing would have contributed to increasing demand for urban land.

Table 1.9 City population statistics in 2009 and changes between 1999 and 2009 for regions

Region	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	Total
City population density, total, 2009, persons/ha	10.3	19.2	18.5	5.7	33.6	12.1	21.3
Urban density (a)	28.5	70.4	33.0	16.7	96.6	27.2	62.5
Rural density (b)	5.0	11.7	10.8	2.3	9.1	5.7	9.2
(a/b), %	572.3%	599.7%	306.8%	716.7%	1059.1%	474.1%	679.3%
Annualized growth rates over the period 1999 - 2009							
Total city population density	3.1%	1.1%	2.0%	1.6%	3.5%	1.4%	2.1%
Urban density growth	-1.6%	-1.9%	0.9%	-2.4%	2.6%	-2.9%	-0.4%
Rural density growth	3.4%	0.3%	-0.3%	0.5%	3.8%	0.1%	1.4%
Annualized growth rates over the period 1999 - 2009							
Total city population	3.7%	2.6%	1.1%	1.4%	3.3%	1.2%	2.4%
Urban growth	3.4%	4.4%	3.3%	2.5%	3.7%	5.4%	4.1%
Rural growth	3.1%	1.2%	-3.6%	0.0%	3.2%	-1.8%	0.8%
Annualized growth rates over the period 1999 - 2009							
Total city land area	-0.3%	1.2%	-1.8%	-1.5%	-0.8%	-0.1%	-0.3%
Urban growth	3.2%	8.4%	2.4%	3.4%	0.9%	9.8%	5.6%
Rural growth	-1.0%	0.2%	-3.4%	-1.9%	-1.2%	-1.4%	-1.2%

Source: General Statistics Office (GSO)

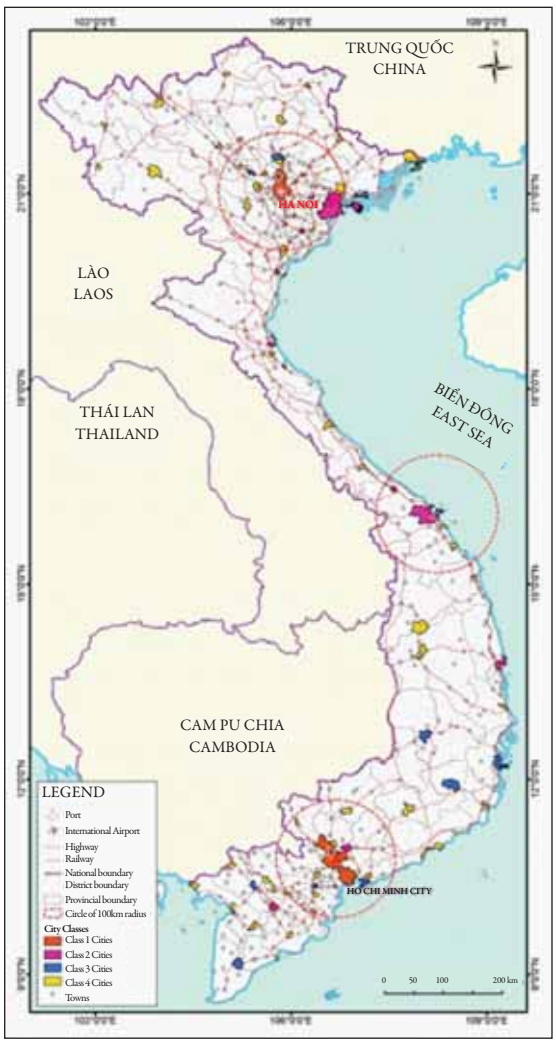
Table 1.10 City population statistics in 2009 and changes between 1999 and 2009 by city class

City class	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	Total
City population density, total, 2009 , persons/ha	27.9	12.2	26.8	16.4	9.2	21.3
Urban density (a)	101.0	28.4	44.3	33.2	22.5	62.5
Rural density (b)	10.2	7.7	12.3	7.4	6.9	9.2
(a/b), %	992.3%	370.2%	360.9%	447.7%	324.3%	679.3%
Annualized growth rates over the period 1999 - 2009						
Total city population density	2.8%	1.1%	1.9%	2.1%	1.0%	2.1%
Urban density growth	0.7%	-1.7%	1.7%	-2.2%	-2.2%	-0.4%
Rural density growth	2.7%	-1.2%	1.7%	1.1%	0.7%	1.4%
Annualized growth rates over the period 1999 - 2009						
Total city population	3.0%	1.2%	2.8%	2.6%	1.1%	2.4%
Urban growth	3.9%	5.4%	2.6%	4.9%	2.7%	4.1%
Rural growth	2.6%	-2.4%	3.7%	-1.8%	-0.4%	0.8%
Annualized growth rates over the period 1999 - 2009						
Total city land area	0.4%	0.0%	1.2%	-0.1%	-1.5%	-0.3%
Urban growth	3.9%	8.3%	0.7%	9.8%	2.2%	5.6%
Rural growth	0.0%	-1.0%	1.8%	-2.2%	-2.2%	-1.2%

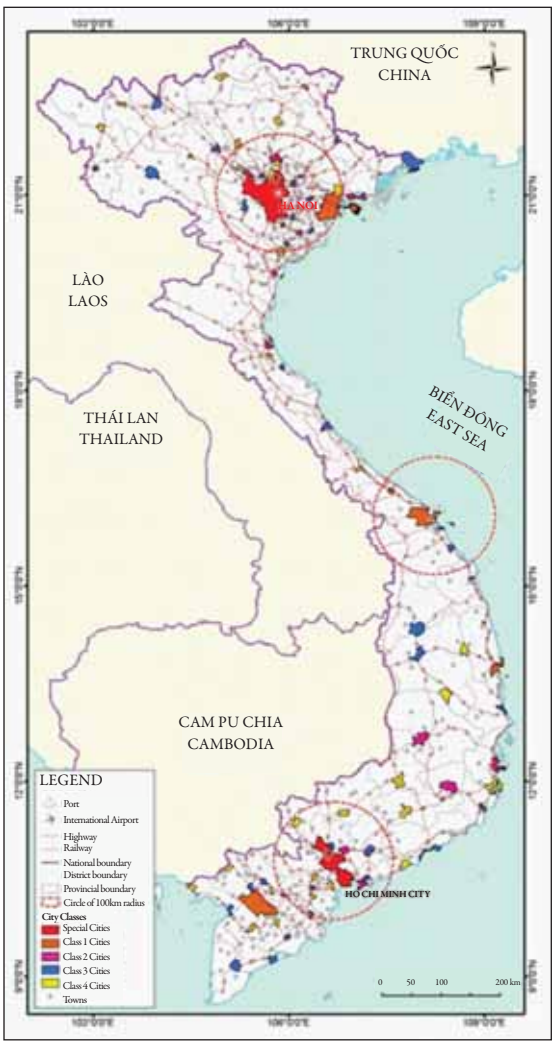
Source: General Statistics Office (GSO)

Figure1.6 Expansion of city boundaries between 1999 and 2009

City boundaries, 1999



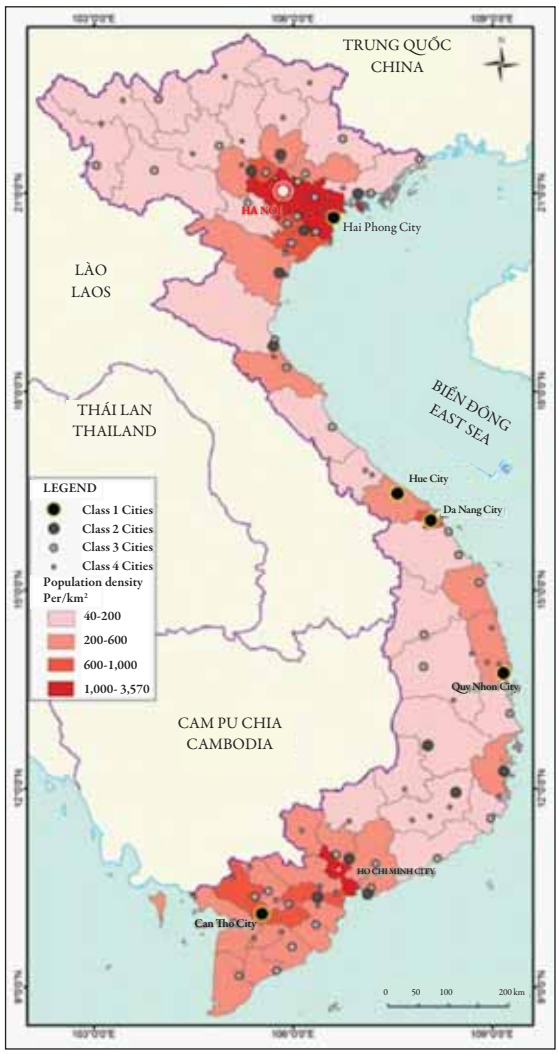
City boundaries, 2009



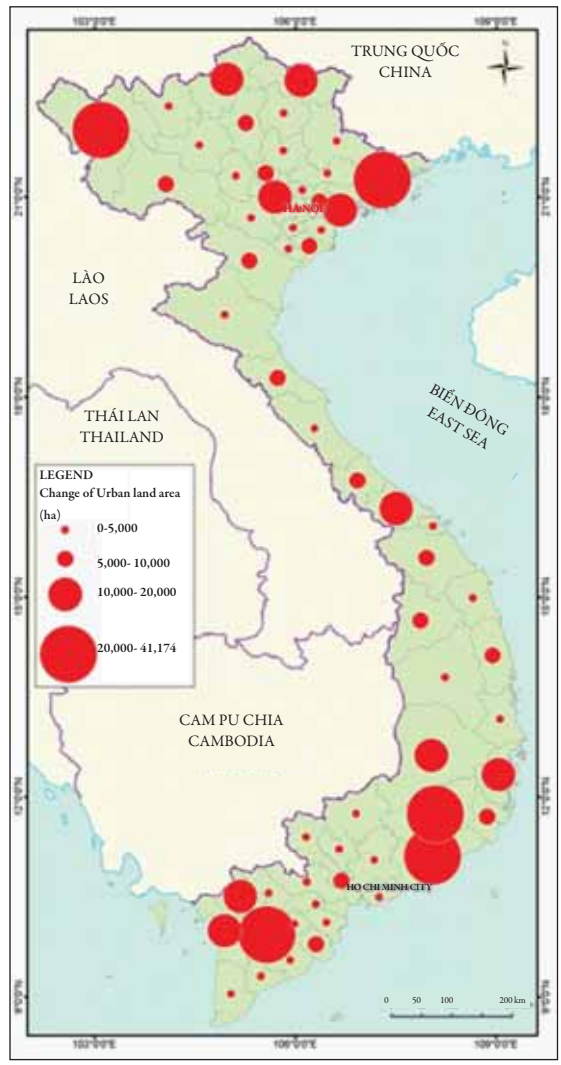
Source: Urban Solutions (2011)

Figure 1.7 population density in 2009 and urban land changes between 1999 and 2009

Population density in 2009



Urban land changes (ha) between 1999 and 2009



Source: Urban Solutions (2011)

1.3 Urbanization as an economic transition: bumpy specialization of economic activities

1.3.1 Economic transitions by region (with reference to Table 1.11)

Nationally, more than half the workforce is employed in agriculture, forestry and fisheries

(54% as of 2009). The high proportion in agriculture is consistent with the low aggregate urban population of about 30%. However, commercial agriculture has been particularly successful in recent decades, especially coffee, rubber, and rice production for export. For example, in the past 20 years or so, Vietnam has become one of the world's largest coffee exporters with production concentrated in the southwesterly provinces.

The mountainous Northern Midlands and the Central Highlands are highly specialized in agricultural activities, which accounts for 76% and 74% of employment share, respectively. Interestingly, agricultural employment in these two regions also show strong growth over the last 10 years, with the Central Highlands growing by 37% and the Northern Midlands by 22%. The Red River Delta region, however, shows a net loss of agricultural employment in the past ten years.

Table1.11 Employment structure, by region and activity

Region	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	Total
Employment share,percent of total for each each region, in 2009							
Agriculture, forestry, and fishery	76.2	48.8	6.9	74.1	19.4	58.2	54.0
Industries and Construction	9.3	24.8	16.2	7.6	40.2	15.2	20.3
Mining and quarrying	0.6	1.1	0.8	0.2	0.3	0.2	0.6
Manufacturing	4.8	16.0	8.9	4.1	32.6	10.2	13.7
Construction	3.5	7.1	6.0	2.9	6.5	4.5	5.5
Commerce/Services	14.5	26.4	22.9	18.3	40.4	26.6	25.8
Employment growth, percent change over 1999-2009							
Agriculture, forestry, and fishery	22.1	-14.8	4.1	36.5	4.5	3.1	4.2
Industries and Construction	161.0	155.1	107.4	106.6	117.1	106.5	125.0
Mining and quarrying	136.9	27.9	76.9	323.4	79.9	117.2	60.5
Manufacturing	151.1	155.5	72.0	72.9	119.0	79.0	110.7
Construction	297.7	216.6	205.7	170.1	114.3	209.0	190.7
Commerce/Services	70.4	97.7	68.6	89.4	84.1	69.5	79.7

Source: General Statistics Office (GSO)

Overall economic growth is largely driven by growth in industrial activities (most notably the manufacturing and construction sectors). As of 2009, the manufacturing sector absorbed 14%

of national employment, and the construction sector 6%. These two sectors have doubled and tripled sector employment in the period 1999-2009 respectively. Manufacturing employment is highly concentrated in the Southeast and the Red River Delta regions, which contain the largest metropolitan cities of HCMC and Hanoi. While manufacturing employment in the Southeast region and HCMC continue to grow, the Red River Delta and the Northern Midlands regions are growing more rapidly. The same holds for complementary industries such as construction. This high pace of industrial activity in the north might be attributable to economic geography, i.e. its proximity to massive Chinese industrial centers.

1.3.2 Economic transitions by city class (with reference to Table 1.12)

Table1.12 Employment structure, by city class

City class	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	Total
Employment share by sector for each class in 2009						
Agriculture, forestry, and fishery	17.2	41.4	54.7	57.0	61.7	54.0
Industries and Construction	35.5	23.6	21.4	19.3	15.5	20.3
Mining and quarrying	0.2	0.3	1.6	1.1	0.7	0.6
Manufacturing	27.4	15.5	13.9	12.6	10.0	13.7
Construction	7.1	7.0	5.4	5.2	4.3	5.5
Commerce/Services	47.3	35.0	23.9	23.7	22.8	25.8
Employment growth in percent over period - 1999						
Agriculture, forestry, and fishery	-19.9	2.3	27.8	17.9	0.2	4.2
Industries and Construction	90.1	94.5	148.8	164.1	81.8	125.0
Mining and quarrying	113.6	38.5	63.0	80.0	51.1	60.5
Manufacturing	87.4	80.6	142.0	151.9	66.0	110.7
Construction	104.7	137.4	224.4	242.6	144.3	190.7
Commerce/Services	89.4	70.7	98.7	96.2	48.4	79.7

Source: General Statistics Office (GSO)

As the 1999 and 2009 data indicate, employment in the manufacturing sector correlates positively with levels of urbanization – i.e. the higher the urbanization rate, the higher the extent of employment in the industrial sector. The same trend is reflected in most industrial

subsectors except for mining and quarrying, which is more dependent on natural resource availability determined by location. The same holds true for the commerce/service sector and its business service subsectors such as wholesale and retail sales, transportation and warehousing, and hotel and food services.

Urban areas in all city classes saw substantial employment growth in the industrial and commercial sectors and most of their subsectors from 1999 to 2009. The high growth of the construction sector implies the rapid expansion of urban physical space and the corresponding demand for building urban infrastructure. Employment in the construction sector had increased by more than 100 percent in all city classes. City classes 2 and 3, in particular, saw hiring balloon as the construction workforce rose by more than 240 percent. Meanwhile, employment in the real estate sector, though with a minimal share of 0.1% of national employment, has also boomed over the same period (a tenfold increase nationally).

1.3.3 Economic transitions by distance from Hanoi and HCMC

Table 1.13 Employment structure, by distance quintiles from Hanoi

Distance from Hanoi	Within 70km	71-140km	141-210km	211-280km	281-350km	Total
Employment share by sector for each region in percent, 2009						
Agriculture, forestry, and fishery	58.1	50.4	61.4	84.0	70.2	54.0
Industries and Construction	24.0	23.7	16.8	3.9	12.1	20.3
Mining and quarrying	0.3	0.7	6.7	0.2	2.4	0.6
Manufacturing	15.9	15.4	6.0	1.7	4.6	13.7
Construction	7.4	7.0	3.4	1.8	4.7	5.5
Commerce/Services	17.9	25.9	21.8	12.2	17.7	25.8
Increase in Employment shareover period 1999-2009, %						
Agriculture, forestry, and fishery	33.8	4.0	34.6	150.5	46.8	4.2
Industries and Construction	554.5	135.5	84.0	184.2	172.1	125.0
Mining and quarrying	570.8	19.6	52.2	839.1	69.4	60.5
Manufacturing	568.0	123.4	9.0	84.3	128.9	110.7
Construction	557.9	207.3	191.0	377.7	453.3	190.7
Commerce/Services	262.0	76.9	81.3	216.7	116.0	79.7

Source: General Statistics Office (GSO)

When examining industrial activities and their growth (employment) in the spatial dimension, namely the distribution of employment moving away from the two core metropolitan cities of Hanoi and HCMC, quite distinct patterns emerge (Tables 1.13 and 1.14). First, industrial, commercial and service sectors are more concentrated within a 70km radius of two largest special cities. Second, growth of these industries is also much higher within the 70km radius areas – though in the case of HCMC the construction sector grew by 169% in the 70kn-140km band. Third, in high growth areas (such as within the 70km radius) manufacturing employment growth outperforms commercial and service employment growth. However, in less urbanized areas (outside beyond the 70km - 140km radius) manufacturing growth is not strong compared to other sectors.

Table 1.14 Employment structure, by distance quintiles from HCMC

By Distance from HCMC	Within 70km	71-140km	141-210km	211-280km	281-350km	Total
Employment share in percent , 2009						
Agriculture, forestry, and fishery	32.7	46.7	55.7	60.3	68.5	54.0
Industries and Construction	40.8	23.0	15.3	12.6	9.9	20.3
Mining and quarrying	0.3	0.9	0.1	0.3	0.4	0.6
Manufacturing	33.9	15.4	10.1	8.3	5.9	13.7
Construction	6.2	6.1	4.6	3.8	3.2	5.5
Commerce/Services	26.5	30.2	29.0	27.1	21.5	25.8
Employment growth in percent over entire period 1999-2009						
Agriculture, forestry, and fishery	14.8	-1.3	7.2	15.0	34.1	4.2
Industries and Construction	223.1	107.2	89.3	93.0	120.6	125.0
Mining and quarrying	281.4	50.3	198.8	352.2	284.0	60.5
Manufacturing	226.5	93.7	64.7	58.5	98.2	110.7
Construction	2.8	169.3	175.1	239.1	156.0	190.7
Commerce/Services	116.6	74.8	66.1	74.3	105.2	79.7

Source: General Statistics Office (GSO)

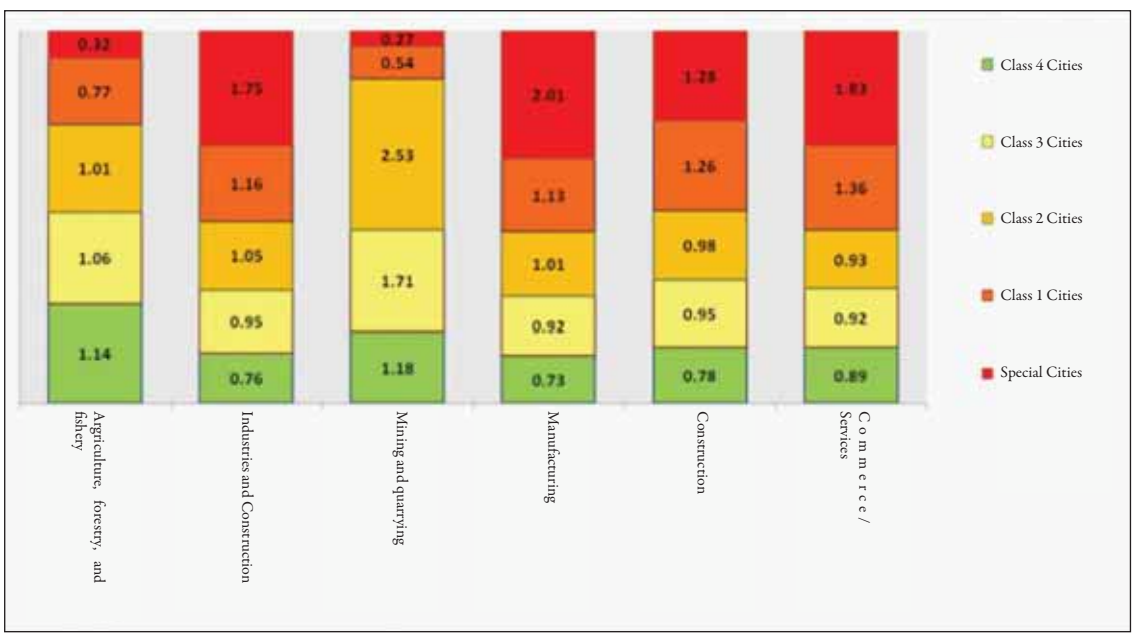
This pattern of the concentration of manufacturing production in large cities in incipient stages of urbanization is consistent with the spatial product cycle theory and international experiences, as detailed later. [3]

1.3.4 Industrial specialization from a location quotient approach

Figure 1.8 calculates location quotients according to the proposed typology groups. The location quotient (LQ) is a measure of the geographical concentration of an industry, defined as a ratio of a location's share of the industry's employment to its share of national employment. Values above (less than) one indicate that the location is relatively more (less) specialized in the specific industry compared to the national average. A higher location quotient implies relatively higher concentration or specialization of that industry in that particular location.

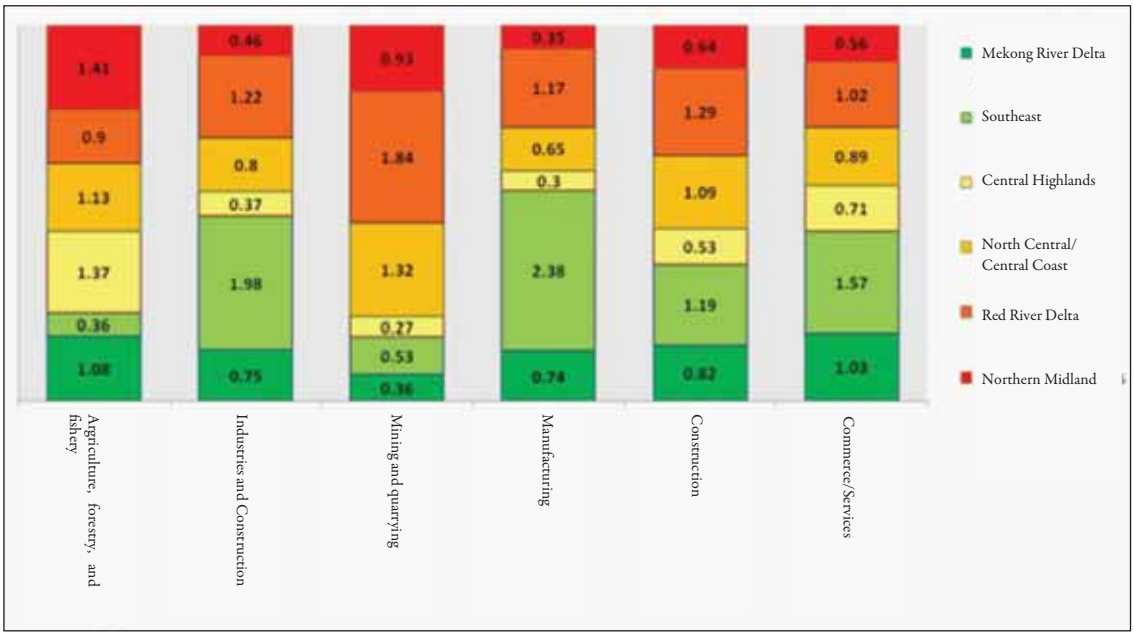
Figure 1.8 Location quotient per sector

By City Class

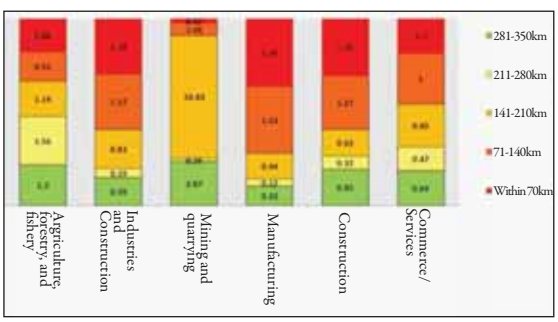


[3] Manufacturing production tends to be initially concentrated in large cities, such as the early industrialization of USA and UK in late 19th and early 20th centuries, and those in China and India now. Its production then starts suburbanizing in the second tier cities (like Brazil), and then finally in rural areas or small towns (as in the USA now). Box 1.6 provides detailed figures.

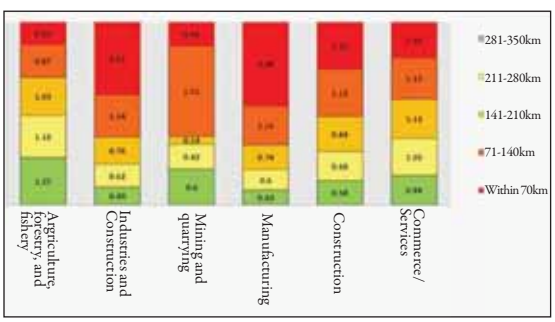
By Region



By distance quintile from Hanoi



By distance quintile from HCMC



Source: World Bank staff calculations using data from General Statistics Office (GSO).

The general patterns of Figure 1.8 are consistent with the spatial product cycle theory and the idea of spatial equilibrium in urban economic activities (Box 1.5). Non-agricultural activities are heavily concentrated in large cities and its specialization decreases as one moves over to smaller sized cities. The largest special cities are more specialized in manufacturing activities which are then followed by commercial/service ones. Class 1 cities follow similar specialization patterns but to a lesser extent. For lower tiers, i.e. city classes 2 to 4, there is no sign of specialization in non-agricultural activities other than mining and quarrying, which are by nature location specific activities.

Box 1.5 The evolving role of HCMC as Vietnam's economic gateway to the world.

The rapidly expanding deep-water port container handling capacity around HCMC, is a key element of the city (and regional) connectivity and competitiveness going forward. Expansion started in earnest in 2009 and will continue through 2015-2016, at which point the installed capacity will be larger than Singapore's entire current throughput. For the first time in the country's history, this is already connecting Vietnam with Western Europe and North America via direct ocean services rather than having to transship at Singapore, Hong Kong or some other regional hub. This change has slashed 5-6 days from a typical intercontinental container itinerary and as much as $240 per TEU in transport, handling and other fees (which, for a typical shipment from HCMC to LA/Long Beach, for example, would represent 10% or more of the port-to-port rate). The key point to note is that HCMC and its regional economic periphery are now taking steps towards solidifying the sustainability of both their economic preeminence in a country where economic activity is highly concentrated and the sustainability of their future growth.

Majority private sector led, these investments are also an indicator of the current market confidence that the HCMC region will continue to produce and deliver goods to the world for years to come. The greater HCMC region still accounts for the bulk of economic activity (71% of seaport throughput, 62% of industrial output if one adds the MRD and Southeast regions together) and is the most globally connected region in the country. Hai Phong, which is Hanoi's key gateway, lags HCMC in terms of handling capacity and basic waterway infrastructure. Recent large scale high technology private investments in southern HCMC a couple years ago is further evidence that the city and its region can compete globally for high value commodities. HCMC is also a gateway for the bulk of the country's seafood production, the perishability of which is highly logistics-intensive and not too different from market high-end apparel or electronics, despite having much lower unit values.

Other typology tabulation by region and by distance quintiles from Hanoi/HCMC confirms the dominant role of Hanoi and HCMC. The bulk of manufacturing employment and its highest growth rates are located in Hanoi and HCMC cities and their neighboring suburban areas within 70km from the city center. This strong concentration of manufacturing activities in the largest cities and their economic peripheries is commonly observed in many rapidly industrializing countries.

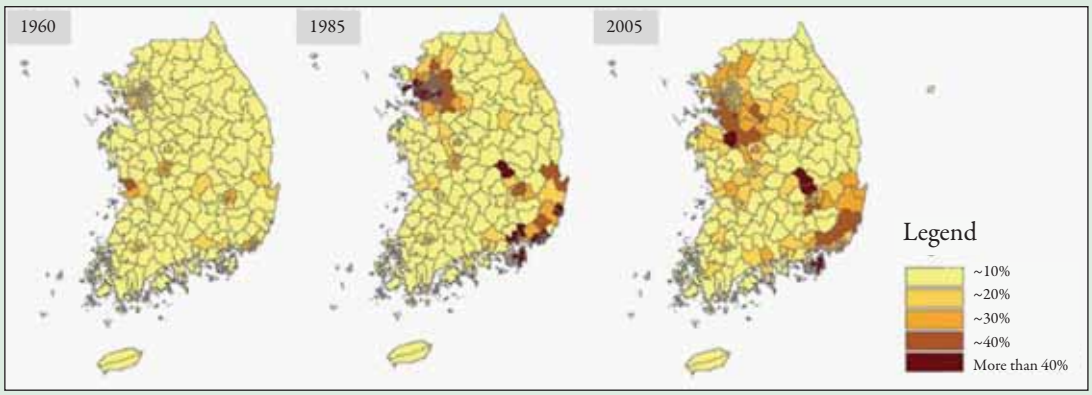
When compared with the industrializing experiences of China, India, Brazil and the United States, the present industrial structure in the Vietnamese urban system strongly suggests that the country is still in an early stage of industrialization. In an early stage of industrialization, as seen in China and India, the role of the largest cities with better access to international markets was critical for national economic growth. The analysis here confirms that it is the same for Vietnam. The two large special cities of Hanoi and HCMC and their neighboring areas are vital to maximize the benefits from agglomeration economies and make Vietnamese industries globally competitive.

The spatial evolution of South Korea's industrialization shows that manufacturing dominance in the urban core areas (such as the Seoul and Busan metropolitan areas) will continue for a long period of time (Box 1.6). Decentralization of manufacturing activities will have the form

of continuous expansion from the core city rather than leapfrogging to distinctly different locations, as indicated in the Box.

Box 1.6 South Korea's experience of spatial evolution of manufacturing activities

In South Korea, manufacturing production had initially been concentrated in core urban centers and then continuously expanded to their suburban areas.



Note: Change of manufacturing employment share, at city-county level, 1960, 1985, 2005
Source: Park et al (2011)

An interesting pattern observed in countries that are rapidly urbanizing but still in an early stage of urbanization is that the concentration of manufacturing activities is not confined within administratively defined urban boundaries. In many cases, rural villages in the vicinity of large cities, usually within 50km radius, also show strong manufacturing activities. Spatial economic linkages and the benefits of agglomeration economies go beyond administrative boundaries.

In general, industrial concentration in large metropolitan cities is more dominant for medium to high tech manufacturing industries; these industries benefit more from information and technology spillovers from international markets and large metropolitan cities serve as a crucial gateway to external markets. This point is highlighted in the following box on the evolution of HCMC as a gateway to international markets.

1.3.5 Different levels of manufacturing specialization across regions and cities

As most economies develop, industrial activities typically specialize first in low-tech production and then move upward to medium-tech and further to hi-tech production with progressively higher value-added activities. Such production technology trajectories are widely observed in many countries. Rising productivity (value-added per worker) results from the secular rise in technological sophistication, making possible higher wages and the induced rise of human capital to match the technological-intensity of production activity.

The spatial distribution of hi-tech heavy manufacturing, low-tech light manufacturing, and fast growing manufacturing production provide important policy implications to better guide and prioritize economic reforms and investment policies in Vietnam. With this objective in mind, manufacturing activity is examined in three groups: heavy manufacturing, light manufacturing, and fast growing manufacturing. The analysis focuses on the main subsectors of more than 3% of the manufacturing production share as of 2009.

Heavy manufacturing includes manufacture of chemical and chemical products; rubber and plastics products; non-metallic mineral products; basic metal; fabricated metal products; electrical machinery and apparatus; motor vehicles; other transport equipment; and furniture. The light manufacturing sector covers processing of food and beverages; textiles; apparel; and leather products. Finally, the fast growing manufacturing sector includes manufacture of motor vehicles; other transport equipment; furniture; and electrical machinery and apparatus.

Vietnam is transforming its manufacturing structures from low-tech light manufacturing to hi-tech heavy manufacturing. This structural change is evident from the gross output share changes in different manufacturing subsectors (Table 1.15). The sector manufacturing shares (percentage of each sector's output in total manufacturing production) of heavy manufacturing production are growing as indicated in parentheses: transport equipment (+3.5%p), motor vehicles (+2.1%p), furniture (+1.9%p), fabricated metal products (+1.8%p), and electrical machinery and apparatus (+1.8%p); these rose fastest between 1999 and 2009. By contrast, the share of light manufacturing production declined: processing of food and beverages (-5.0%p), textiles (-2.5%p), leather products (-2.2%p), and tobacco products (-1.6%p), all fell in the same period, as indicated in parentheses.

Table 1.15 Rising manufacturing sophistication in Vietnam; from 1999 to 2009

The sector-specific manufacturing share, relative to total manufacturing production, %	1999 (a)	2009 (b)	1999 -2009 (b-a, %p)
Manufacture of other transport equipment	2.9	6.4	+3.5
Manufacture of motor vehicles	1.4	3.4	+2.1
Manufacture of furniture	2.4	4.3	+1.9
Manufacture of fabricated metal products	3.6	5.3	+1.8
Manufacture of electrical machinery and apparatus	2.4	4.1	+1.8
Manufacture of rubber and plastics products	4.2	5.2	+1.0
Manufacture of basic metal	3.5	4.4	+0.9
Manufacture of apparel	3.9	4.6	+0.7
Manufacture of chemical and chemical products	7.2	6.6	-0.6
Manufacture of non-metallic mineral products	11.1	9.6	-1.5
Manufacture of tobacco products	3.4	1.8	-1.6
Tanning, dressing of leather; manuf. of leather products	6	3.8	-2.2
Manufacture of textiles	6.8	4.3	-2.5
Manufacture processing of food and beverages	29.2	24.2	-5.0
Others[1]	15.5	13.7	-1.7
Total manufacturing production	100	100	

Note [1]: 'Others' include manufacturing industries with less than 3% of the national production share (as of 2009): paper and paper products, wood and wood products, radio and communication equipment and apparatus, machinery and equipment, tobacco products, office, accounting and computing machinery, publishing, printing and reproduction of recorded media, coke, refined petroleum products, medical, precision, optical, and time instruments, and reprocessing of products.
Source: General Statistics Office (GSO)

Specialization by region, city class, and distance from Hanoi and HCMC, are shown in Tables 1.16- 1.19. These show distinct spatial patterns of manufacturing sophistication.

First, Vietnam is transforming its manufacturing emphasis from low-tech light manufacturing to hi-tech heavy manufacturing. The pace of structural change can be inferred from the growth rates of gross output of the different manufacturing subsectors indicated in the lower panels of the Tables 1.16 -1.19. While manufacturing as a whole grew by 17.8% between 1999 and 2009 (i.e. at twice the GDP growth rate), light manufacturing grew at 15.6%; heavy manufacturing

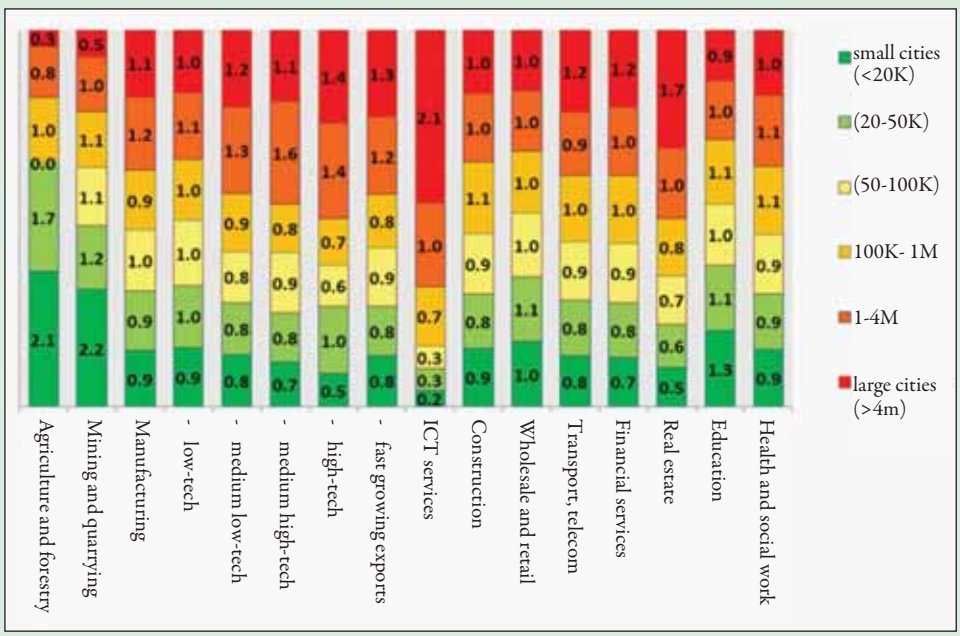
grew considerably faster at 20.2%. The fastest growing sectors grew at nearly 25%.[4]

Second, while overall manufacturing production is concentrated in Southeast region (45% of the national manufacturing production), heavy manufacturing and fast growing manufacturing production is more intense in the Red River Delta region (39% and 55%, respectively). The location quotient captures the relative specialization of each region in a certain manufacturing subsector (Figure 1.9).

Box 1.7 Industrial specialization across city size distribution in India, China, Brazil, and the United States: location quotient

International experience, as indicated below, suggests that, as economies mature, manufacturing is initially concentrated in large cities (like India and China) and then disperses evenly across the urban system (like Brazil), and finally becomes specialized in small cities and rural areas in the most mature stages (like the United States).

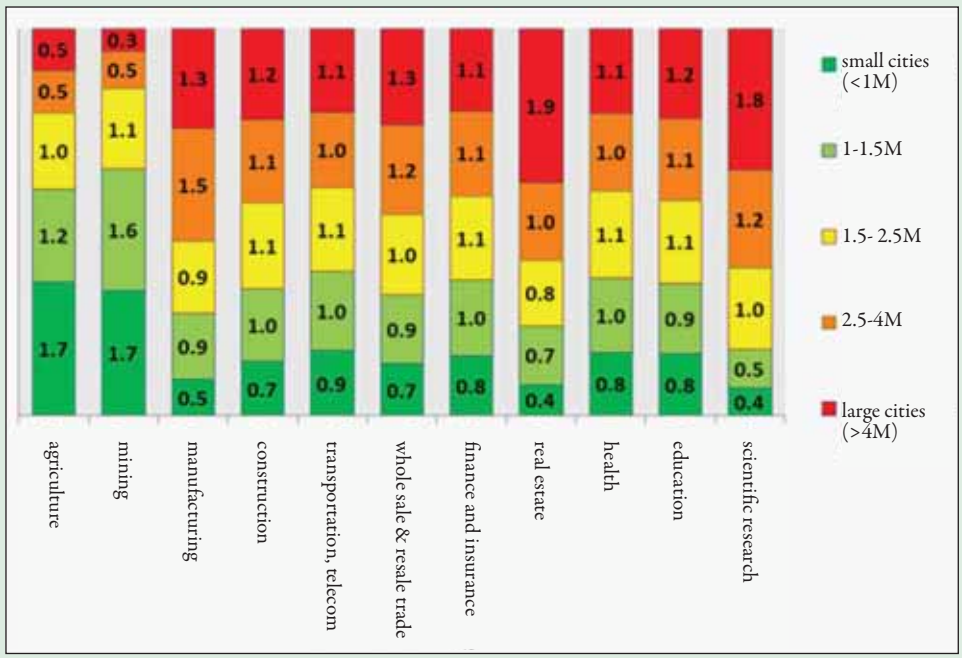
India, 2005



Source: World Bank staff calculations using the 2005 Economic Census of India

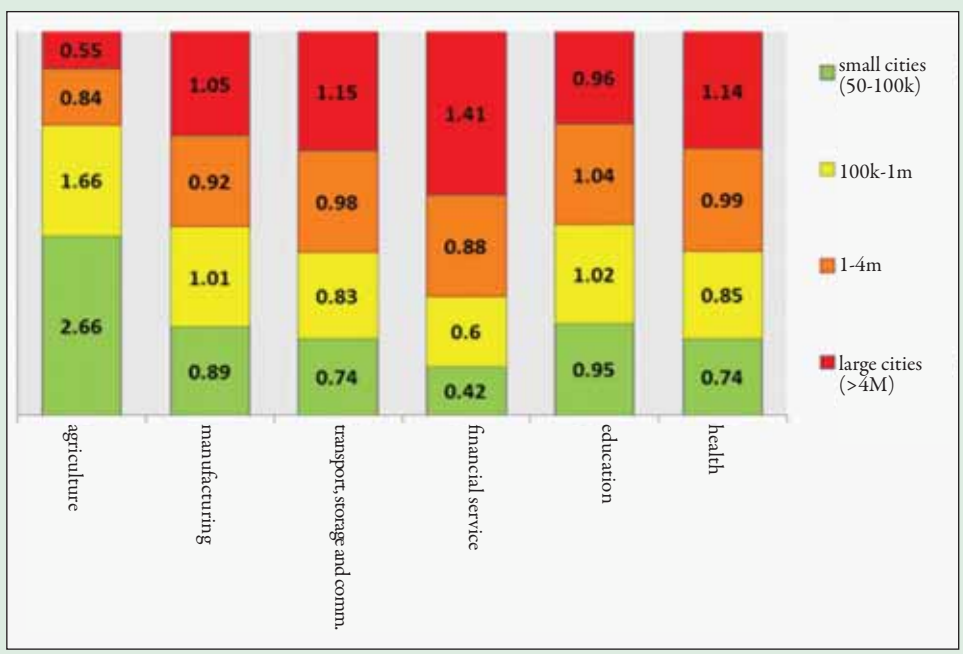
[4] The difference between this section and the previous one is that the former measures manufacturing specialization by production volume in the comparative price and the latter by the number of workers. Therefore if HCMC produces less value per worker, its industrial specialization is lower than measured by employment.

China, 2000



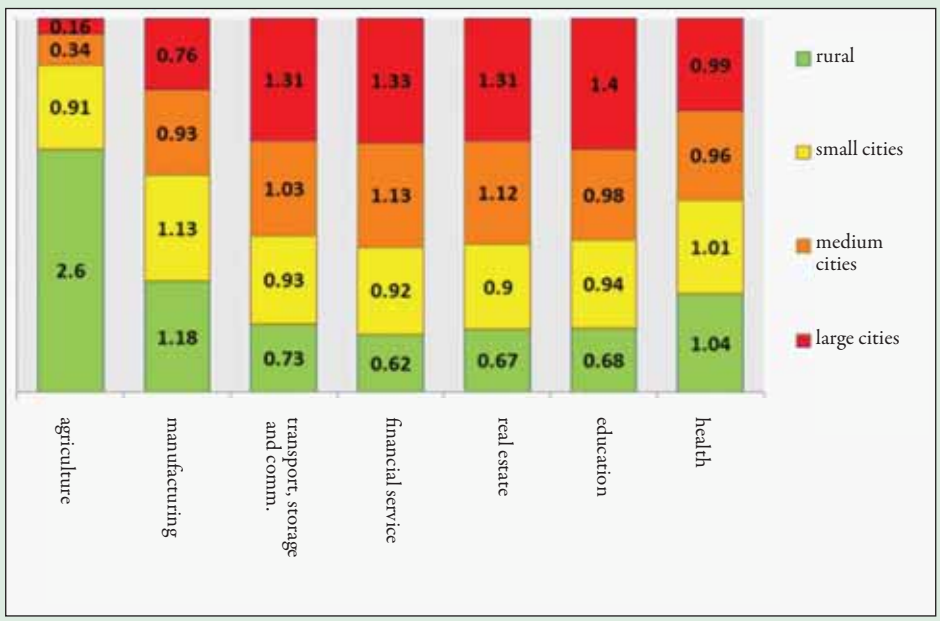
Source: World Bank staff calculations using the 2000 population census of China

Brazil, 2000



Source: World Bank staff recalculations using data of da Mata et al. (2005)

United States, 2000



Source: Holmes and Stevens (2004)

Table 1.16 Manufacturing specialization by region

Region, 2009	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	Total
Sector output as a percent of national sector output, for each region, in 2009							
Total manufacturing	3.4	29.6	9.4	1.0	45.1	11.5	100.0
Light manuf acturing	2.2	17.2	10.3	1.7	45.5	23.1	100.0
H eavy manuf acturing	4.4	38.8	8.0	0.5	43.4	4.8	100.0
Fast growing manuf acturing	1.0	54.5	6.1	0.6	35.8	2.0	100.0
Annual grow th by sector and region, 1999 -2009, %							
Total manuf acturing	18.5	20.9	17.0	15.0	16.5	16.9	17.8
Light manuf acturing	14.3	16.6	14.3	14.5	14.4	18.4	15.6
Heavy manuf acturing	22.5	22.5	19.1	15.7	19.6	13.4	20.2
Fast growing manuf acturing	24.2	27.3	21.9	23.9	23.1	13.6	24.7

Source: General Statistics Office (GSO)

Interestingly, light manufacturing production is highly specialized in the Mekong River Delta and Central Highlands, on account of their dependence on agricultural activities. As expected, heavy manufacturing production is more specialized in the Red River Delta and the Northern Midlands. Fast growing manufacturing production is specialized in the Red River Delta region.

Table 1.17 Manufacturing specialization by city class

City class, 2009	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	Total
Sector output, as a percent of national sector output, for each city class, 2009						
Total manufacturing	58.8	15.5	9.7	10.9	5.0	100.0
Light manufacturing	52.2	16.3	11.6	12.2	7.8	100.0
Heavy manufacturing	58.8	17.7	9.0	10.8	3.6	100.0
Fast growing manufacturing	61.4	16.0	7.6	11.9	3.1	100.0
Annual growth by sector and city class, 1999-2009, %						
Total manufacturing production	15.1	16.2	19.8	20.3	15.2	17.8
Light manufacturing	11.4	14.5	17.7	17.6	14.8	15.6
Heavy manufacturing	18.1	17.5	24.4	23.3	16.6	20.2
Fast growing manufacturing	23.5	27.1	26.3	27.6	20.0	24.7

Source: General Statistics Office (GSO)

Third, the specialization of manufacturing subsectors across city classes shows different profiles. The volume of manufacturing output is overwhelmingly concentrated in special cities on account of sheer size. However, annual growth rates and location quotients measuring manufacturing specialization, show relatively evenly dispersed production activities. While class 4 cities show some degree of specialization in light manufacturing, there is no distinct specialization pattern across city classes. It also confirms the findings that a city's economic transitions are more linked to its economic geography than its position in the urban hierarchy.

Table 1.18 Manufacturing specialization by distance from Hanoi

By Distance from Hanoi, 2009	Within 70km	71-140km	141-210km	211-280km	281-350km	Total
Sector output of region as a percent of total sector output, in 2009.						
Total manufacturing	14.9	72.1	9.8	0.3	2.9	100.0
Light manufacturing	14.1	62.2	17.7	0.7	5.3	100.0
Heavy manufacturing	14.8	75.9	7.1	0.2	2.0	100.0
Fast growing manufacturing	20.5	68.7	8.7	0.0	1.9	100.0
Annual growth in percent , by sector and region over 1999-2009						
Total manufacturing production	28.8	17.7	20.1	25.2	21.0	17.8
Light manufacturing	33.6	11.5	14.9	23.5	17.2	15.6
Heavy manufacturing	27.2	20.5	27.1	28.0	24.6	20.2
Fast growing manufacturing	29.2	32.1	33.0	21.8	28.2	24.7

Source: General Statistics Office (GSO)

Fourth, the spatial profile of manufacturing production surrounding Hanoi and its suburban areas is examined by the distance quintiles from Hanoi in Table 1.18. Interestingly, about 70% of manufacturing goods are produced in neighboring suburban areas of Hanoi, namely between 70-140km from Hanoi, not in the Hanoi city center itself. The same holds for heavy and fast growing manufacturing production (76% and 69%, respectively) and to a smaller extent for light manufacturing production (62%). Location quotients show that areas within 140km from Hanoi (including Hanoi city) are highly specialized in heavy and fast growing manufacturing activities. There is no manufacturing specialization outside 140km radius from Hanoi. Therefore the provision of high quality infrastructure services in this urban center and its fringe area will be a high priority requirement on the investment agenda.

Finally, the spatial profile of manufacturing production in HCMC and neighboring areas is quite different from that of Hanoi. Manufacturing production is concentrated close to HCMC city, namely within 70km. Light manufacturing production is relatively dispersed, but heavy and fast growing manufacturing production is concentrated in HCMC and close neighboring areas. However, when examining "relative" specialization of manufacturing subsectors, more distinct spatial characteristic of HCMC and its vicinity is the absolute absence of heavy and fast growing manufacturing specialization. This implies a competitiveness shortfall in HCMC and its surrounding areas regarding ability to support heavy manufacturing, compared to counterparts in Hanoi and its vicinity.

Figure 1.10 visualizes the striking difference in industrial specialization between Hanoi and HCMC. The spatial pattern of Hanoi and its neighboring areas is consistent with the Indian one in Box 1.7, but not for HCMC.

Table 1.19 Manufacturing specialization by distance from HCMC

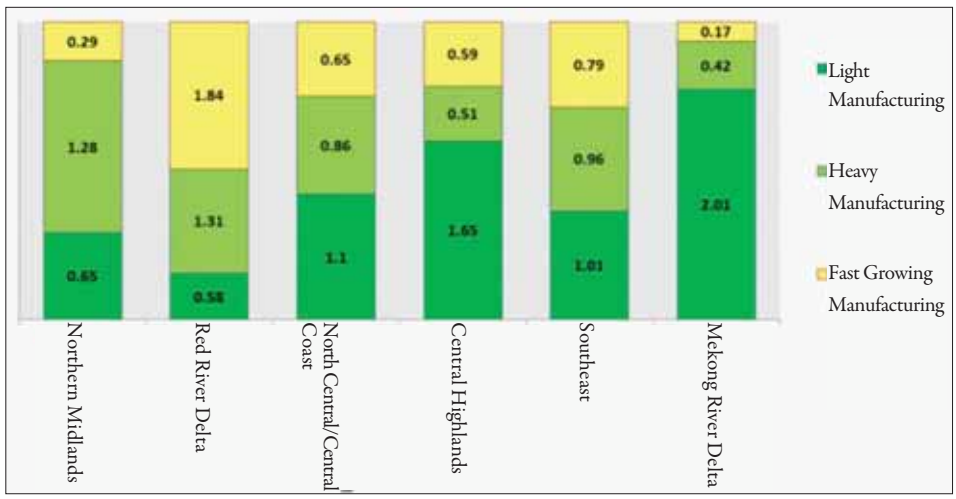
By Distance from HCMC, 2009	Within 70km	71-140km	141-210km	211-280km	281-350km	Total
Sector output of region as a percent of total sector output in 2009						
Total manufacturing	45.0	17.7	27.5	6.9	2.9	100.0
Light manufacturing	35.4	12.8	37.3	9.8	4.8	100.0
Heavy manufacturing	54.2	25.6	16.0	3.7	0.5	100.0
Fast growing manufacturing	81.9	12.7	3.9	0.9	0.6	100.0
Annual growthin percent over 199 - 2009 by sector and region						
Total manufacturing production	20.9	16.3	16.6	17.5	14.1	17.8
Light manufacturing	19.3	15.1	19.0	19.9	14.1	15.6
Heavy man ufacturing	23.7	21.6	10.4	12.4	11.6	20.2
Fast growing manufacturing	27.3	18.1	1.1	8.0	13.8	24.7

Source: General Statistics Office (GSO)

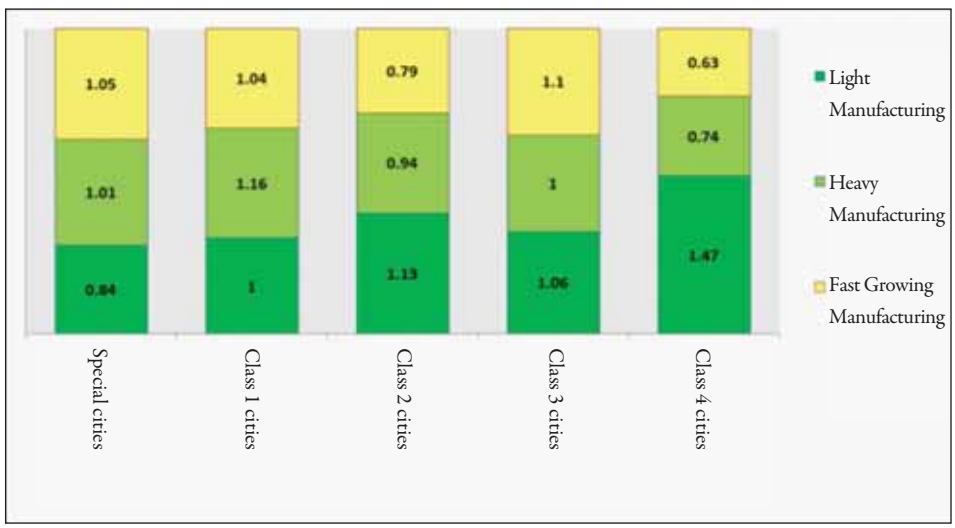
Firms are expected to choose production locations to maximize long-term profits. On account of large fixed costs involved in setting up physical structures in a specific location (various immobile or hard-to-dismantle capital investments like factory buildings and production networks with local subcontractors), the production location choice of firms should theoretically represent the revealed preference of firms regarding long-term business profitability. By identifying these emerging clusters, some estimates can be obtained of the most favorable spatial locations for new industrial investments. The conclusion of the chapter draws on this assumption.

Figure 1.9: Location quotients of manufacturing subsectors

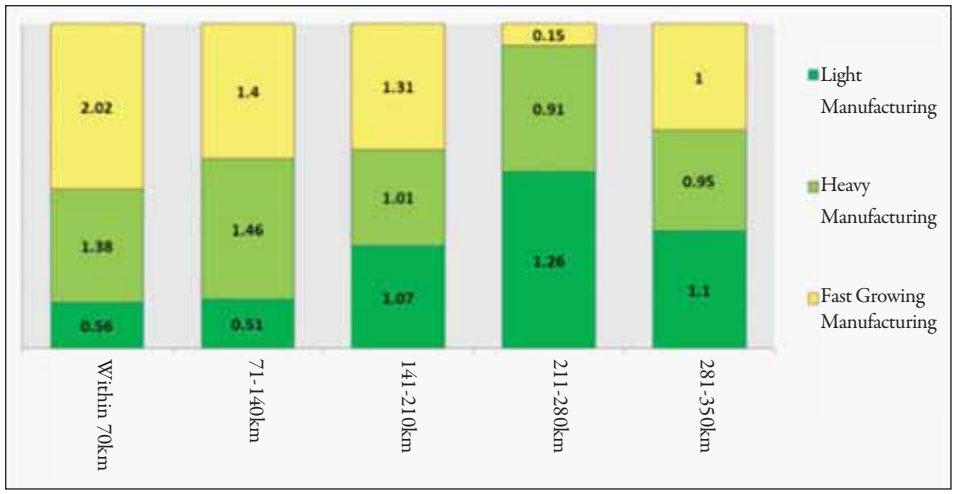
By region



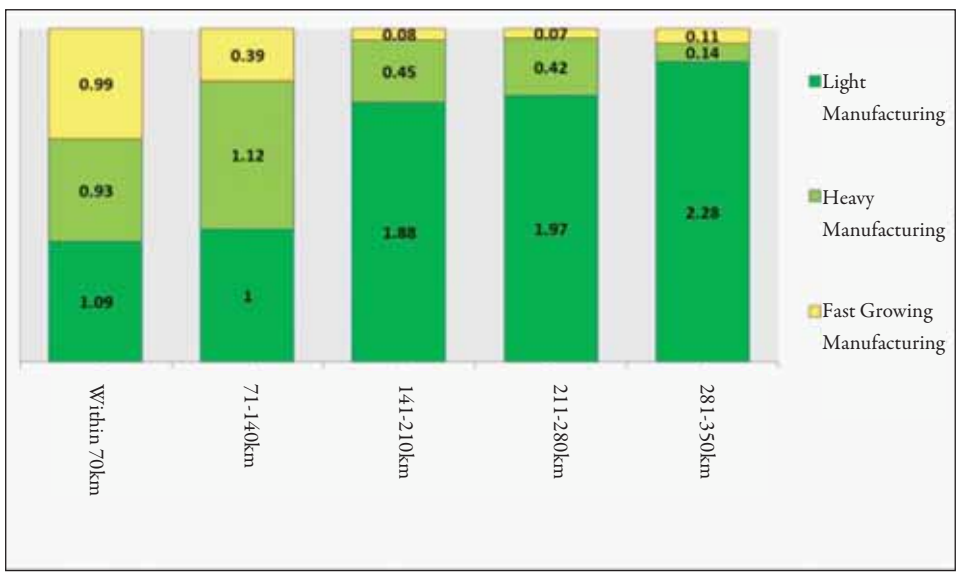
By city class



Distance from Hanoi



Distance from HCMC



Note: location quotient relative to total manufacturing production in the sample, 2009
Source: World Bank staff calculations using data from GSO.

Table 1.20 Regional character of manufacturing: top 5 subsectors and their shares (%) in 2009 of total regional manufacturing output

Northern Midlands (output: 37,159,412 mil VND)		
1.	Manufacture of non-metallic mineral products	17.7%
2.	Manufacture and distribution of electricity, gas	16.8%
3.	Manufacture of basic metal	12.0%
4.	Manufacture processing of food and beverages	11.4%
5.	Manufacture of chemical and chemical products	6.5%
Red River Delta (output: 271,501,076 mil VND)		
1.	Manufacture of other transport equipment	16.2%
2.	Manufacture of non-metallic mineral products	11.1%
3.	Manufacture processing of food and beverages	10.5%
4.	Manufacture of motor vehicles	7.3%
5.	Manufacture of fabricated metal products	5.7%
North Central Area and Central Coastal Area (output: 87,580,196 mil VND)		
1.	Manufacture processing of food and beverages	27.8%
2.	Manufacture of non-metallic mineral products	18.3%
3.	Manufacture and distribution of electricity, gas	5.6%
4.	Manufacture of furniture	5.4%
5.	Manufacture of wood and wood products	4.5%
Central Highlands (output: 13,052,094 mil VND)		
1.	Manufacture processing of food and beverages	31.7%
2.	Manufacture and distribution of electricity, gas	28.6%
3.	Manufacture of furniture	6.7%
4.	Manufacture of wood and wood products	5.9%
5.	Manufacture of wearing apparel	5.2%
Southeast (output: 415,004,848 mil VND)		
1.	Manufacture processing of food and beverages	18.3%

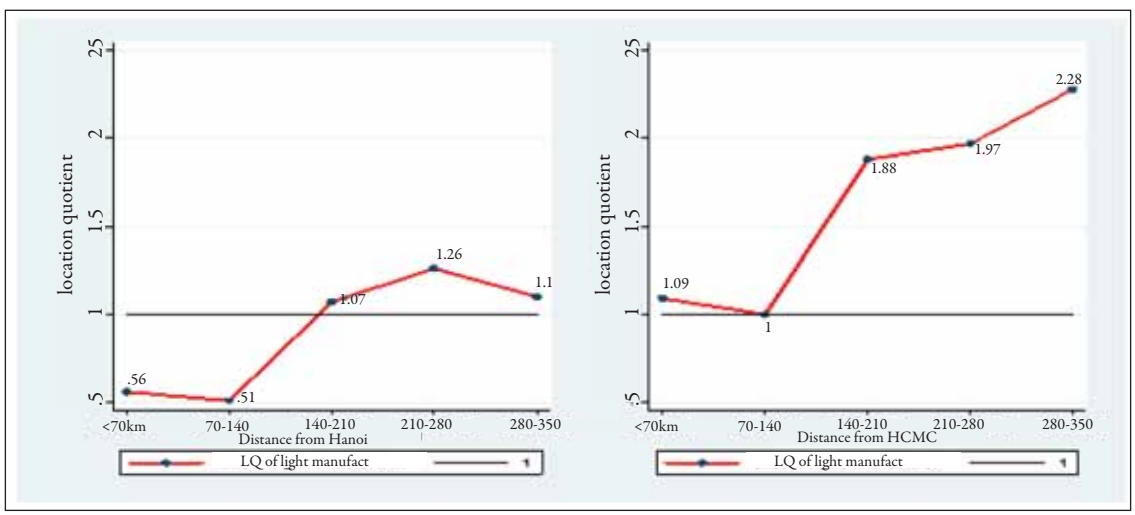
2.	Manufacture of chemical and chemical products	9.1%
3.	Manufacture of rubber and plastics products	7.2%
4.	Tanning and dressing of leather; manufacture of leather products	6.1%
5.	Manufacture of furniture	5.3%
Mekong River Delta (output: 103,371,880 mil VND)		
1.	Manufacture processing of food and beverages	63.8%
2.	Manufacture of non-metallic mineral products	7.6%
3.	Manufacture and distribution of electricity, gas	5.8%
4.	Manufacture of chemical and chemical products	5.1%
5.	Tanning and dressing of leather; manufacture of leather products	2.6%

Note: Output is in the 1994 comparative price.

Figure 1.10: Manufacturing specialization (location quotient), distance from Hanoi versus HCMC

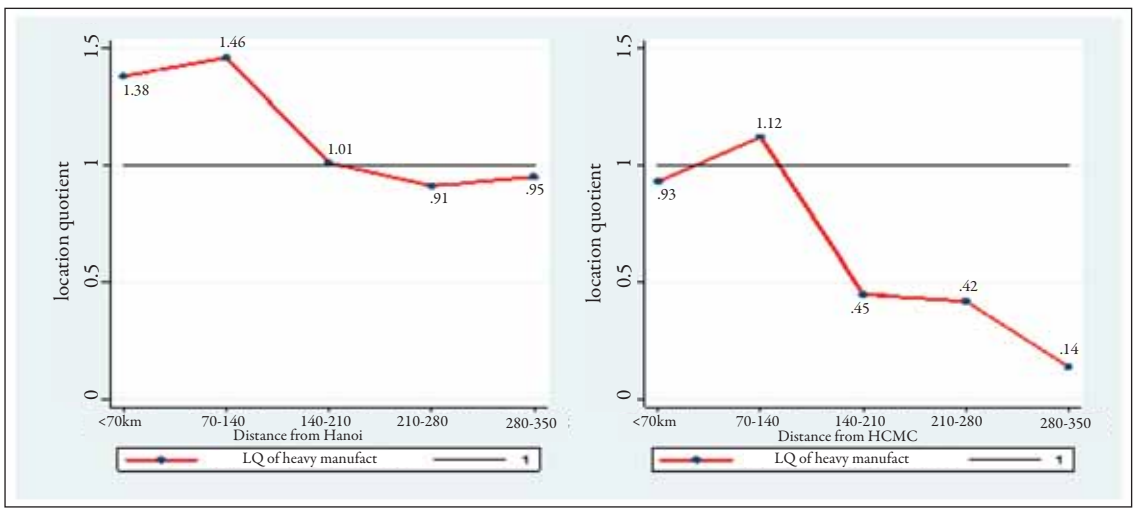
Light manufacturing

Distance from Hanoi **Distance from HCMC**



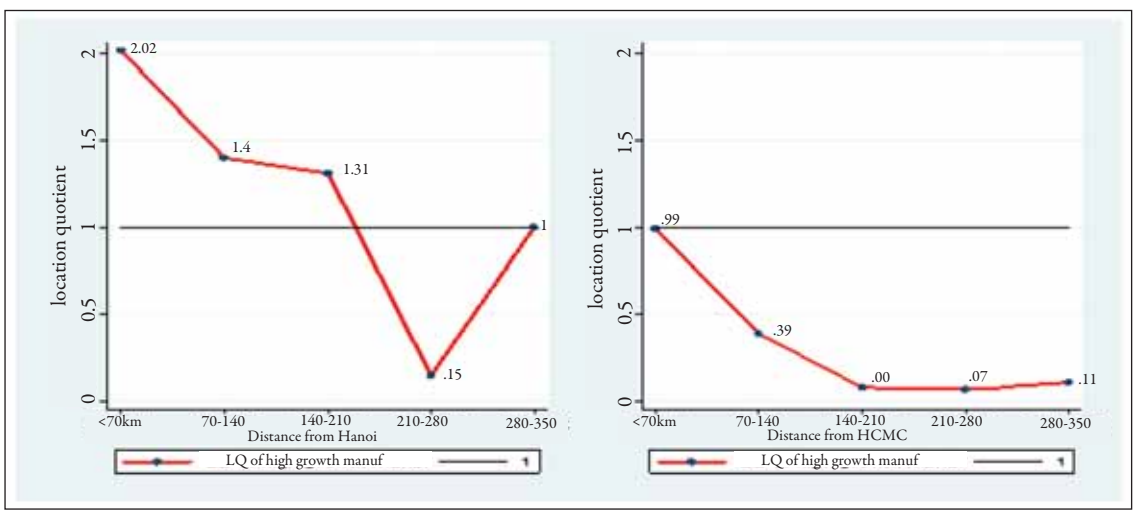
Heavy manufacturing

Distance from Hanoi **Distance from HCMC**



Fast growing manufacturing

Distance from Hanoi **Distance from HCMC**

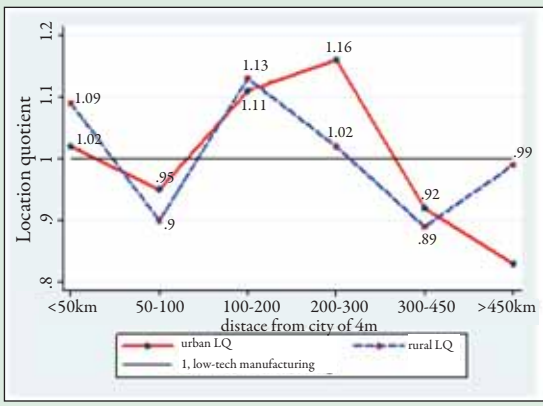


Source: World Bank staff calculations using data from GSO

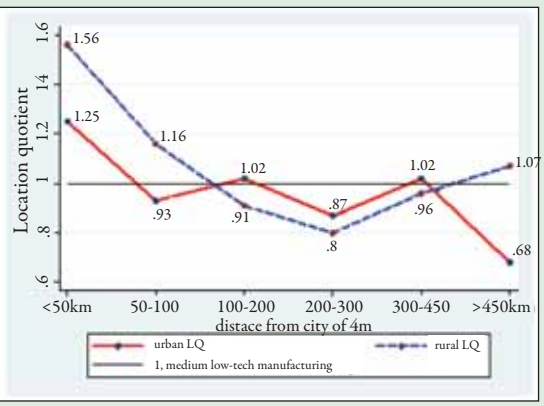
Box 1.8 India's industrial specialization, by manufacturing technology and by distance from seven largest cities

India's manufacturing activities show different patterns when sectors are reclassified by levels of technological complexity. Low-tech manufacturing activities are spatially dispersed. However, clearly, as production technologies become more sophisticated, they cluster closer around big cities. At the same time, a significant presence of high tech industries is observed in administratively defined "rural" areas which are in the 50km economic periphery of large cities.

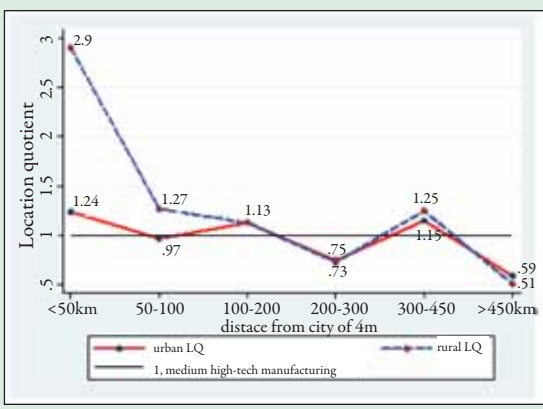
low-tech manufacturing



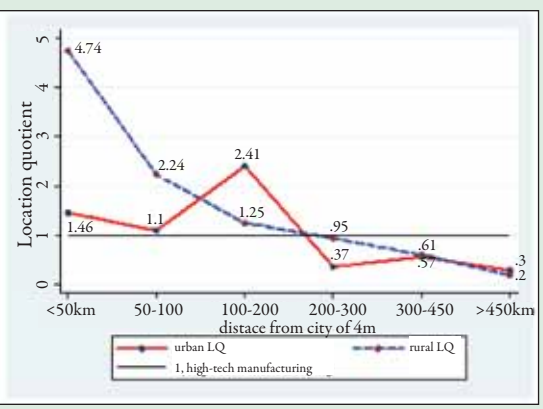
medium low-tech manufacturing



medium high-tech manufacturing



high-tech manufacturing



Source: World Bank staff calculations from the 2005 Economic Census of India

Box 1.9 special economic zones in Vietnam

Four types of special zones exist in Vietnam: Industrial Clusters (IC), Industrial and Processing Zones (IZ), High Tech Zones (HTZ) and Economic Zones (EZ). Except for industrial clusters, these were defined by Decree 36/CP in 1997.

Industrial Clusters

This category refers to a small group of factories generally in traditional villages. Only since 2009 has the establishment of these clusters been legalized (Decree No. 105/ND-CP). Industrial clusters are areas that group small scale manufacturers. The aim is to cluster enterprises in one area and make them more efficient. The Chairman of PPC approves the establishment of new industrial clusters. According to the Economic and Administrative Organizations Census in 2007 (GSO), there were some 333 industrial clusters with 3,845 manufacturing establishments occupying 287ha of land (planned land given to the group is 18.271ha).

Industrial and Processing Zones

Although there is a technical difference between these two zones they are often both called industrial zones. For the remaining part of this report both industrial and processing zones will be called industrial zones (IZ's). Industrial Zones specialize in the manufacturing of industrial products and supporting services. They occupy a defined geographical area and have no people living within the zone. The Prime Minister decides on their establishment. Processing zones are industrial zones which contain processing enterprises—products for export, and/or services supporting production for export. Other characteristics are the same as for industrial zones.

According to official MPI data in 2010 Vietnam counted 264 industrial zones, of which 75 percent were in operation and 25 percent still under construction.[5] The occupancy rate in all industrial zones averaged 46 percent covering leases on 17,107 ha. The value of production in 2008 in these zones represented 38 percent of total GDP, and involved some 1.1 million jobs. The majority of the Industrial Zones are located in 23 provinces belonging to the four economic regions (Northern, Central, Southern, and Mekong River Driven Economic regions). At the beginning of 2009, 75 percent of the zones were located in these 23 provinces.

High tech zones

These include high tech enterprises and their supporting services, including research, scientific, technology support and training entities. Other features are similar to those of the industrial zones. At the end of 2010, there were three high tech zones. One in Ho Chi Minh City—established in 2002 and covering 804 ha, one in Hanoi—established in 1998 over 1,650 ha, and one in Da Nang—established at the end of 2010 over an area of 1010 ha. At the beginning of 2011, there are 66 companies operating in Hoa Lac (Hanoi), and Ho Chi Minh high tech zones. But these zones have problems attracting qualified staff; Intel Corporation for example in Ho Chi Minh zone planned to recruit 3,000 employees, but could only identify 40 people who were qualified enough. Another problem is access to land. For example in the Hoa Lac zone (Hanoi), only 50 percent of the planned area has been acquired (VnEconomy, 2010). Issues relating to land acquisition are discussed in detail later on, in the chapter on land.

Economic zones

Economic zones comprise two groups—border gate economic zones and coastal economic zones. The former mainly support the less developed areas where border gates exist, while the latter are meant to stimulate the national economy through the exploitation of nearby harbors. EZ's are different from the other above mentioned zones as they are mainly larger areas that include many other activities as well. These areas receive special benefits generally meant to stimulate economic development. By the end of 2010, there were 23

[5] The number of IZs identified differ by source and year. The MOC is using 2010 figures (254 of which 83 are still in the construction phase) and the PCI is stating that there are 151 IZ's. The MPI is considered the official source with the highest authority: 223 IZ in 2009 and 264 in 2010.

border gate economic zones covering some 501,000 ha and 15 coastal economic zones covering 627,600 ha. The coastal economic zones were mainly established in the mid-2000s (7 out of 15). Coastal economic zones are located mostly in Coastal Center Region (10 of 15). As at the end of 2009, 550 projects within the coastal economic zones have been established with a total capital investment of VND 294,157 billion (or $14.7 billion).

Table 1.21 The number of Industrial Zones by province

	1999	2009		1999	2009
Northern Midlands	2	10	Phu Yen	1	3
Bac Can	--	1	Quang Binh	--	3
Bac Giang	--	1	Quang Nam	1	3
Cao Bang	--	--	Quang Ngai	2	3
Ha Giang	--	1	Quang Tri	--	2
Hoa Binh	--	1	Thanh Hoa	1	1
Lai Chau (pre 2003)	--	--	Thua Thien Hue	1	6
Lang Son	--	--	Central Highlands		7
Lao Cai	--	--	Dak Lak (pre 2003)		2
Phu Tho	1	2	Gia Lai		1
Son La	--	1	Kon Tum		2
Thai Nguyen	1	1	Lam Dong		2
Tuyen Quang	--	1	Southeast	32	5
Yen Bai	--	1	Ba Ria-Vung Tau	4	
Red River Delta	12	6	Binh Duong	7	1
Bac Ninh	1	--	Binh Phuoc		2
Ha Nam	--	1	Dong Nai	9	
Hanoi (after merger)	6	--	Ho Chi Minh City	11	
Hai Duong	--	1	Tay Ninh	1	2
Hai Phong	3	--	Mekong River Delta	6	55
Hung Yen	--	1	An Giang		2
Nam Dinh	--	1	Bac Lieu		1
Ninh Binh	--	1	Ben Tre		2
Quang Ninh	1	--	Ca Mau		1
Thai Binh	--	1	Can Tho (pre 2003)	2	8
Vinh Phuc	1	--	Dong Thap	1	3
North Central and Central Coastal	12	35	Kien Giang		5
Binh Dinh	--	2	Long An	1	23
Binh Thuan	1	3	Soc Trang		1
Da Nang	3	4	Tien Giang	1	5
Ha Tinh	--	--	Tra Vinh		1
Khanh Hoa	1	1	Vinh Long	1	3
Nghe An	1	2	**Total Number of Industrial Zones**	**64**	**118**
Ninh Thuan	--	2			

Source: Development Strategy Institute (DSI)

1.4 Urbanization as demographic and welfare transitions: converging welfare conditions

1.4.1 Transition in average income

Average income, measured by GDP per capita, is much higher in the Southeast and Red River Delta regions. The average income of the richest region (Southeast) is three times higher than that of the poorest (Northern Midlands) in 2009 (Table 1.22). However, regional income disparities are improving in recent ten years. The average income difference between the richest and the poorest regions declined substantially (from 427% in 1999 to 304% in 2009). There are signs of strong income convergence (sigma convergence): the standard deviation of regional income differences declined from 0.534 in 1999 to 0.455 in 2009. [6]

Table 1.22 Average income (GDP per capita in millions of VND) by region

GDP per Capita	Northern Midlands	Red River Delta	Central/ Central Coast	Central Highlands	South-east	Mekong River Delta	(max-min)/ min	sigma convergence
2009	11.0	23.1	14.6	13.6	44.5	18.3	304%	0.455
1999	2.2	5.0	2.9	3.1	11.6	4.3	427%	0.534
Annual growth, %	16.1	15.3	16.2	14.8	13.4	14.5	-122%	-0.079
Change in contribution to GDP per capita , 1999-2009, %p								
Agriculture	-14.3	-9.7	-14.8	-14.4	-1.7	-12.5		
Industry	11.8	7.8	13.5	9.0	1.5	6.4		
Commerce	2.4	1.8	1.3	5.3	0.3	6.1		

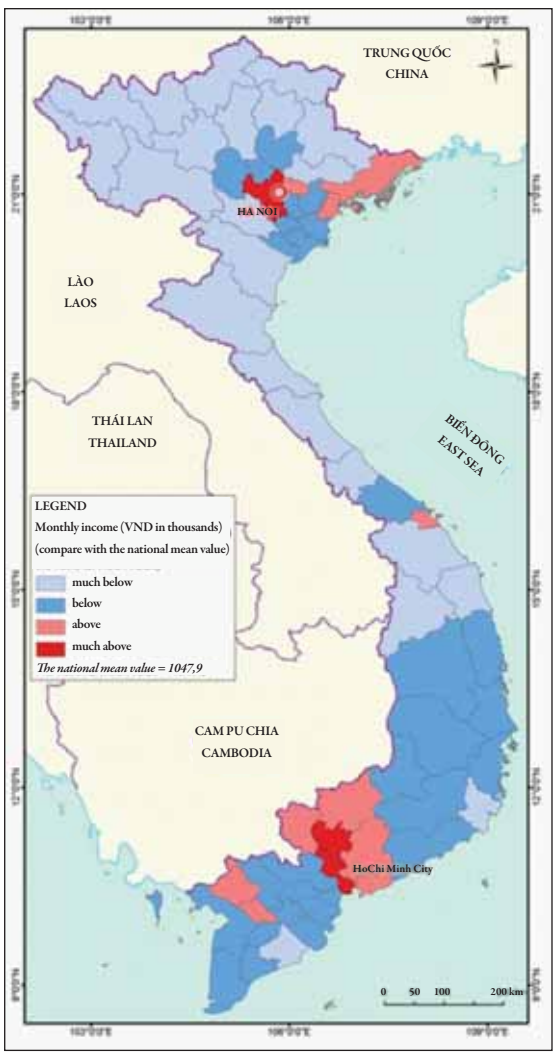
Note: It measures the change in sectoral composition of GDP per capita between 1999 and 2009.
Source: General Statistics Office (GSO)

Relatively higher income growth is observed in the North (Northern Midlands, Red River Delta, and North Central/Central Coast) compared to the South (Central Highlands, Southeast, and the Mekong River Delta). Interestingly, the strong income growth of the North is mainly driven by high growth in industrial activities. The share of industrial GDP in the total regional GDP grew much faster in the North than the South. There is a strong positive correlation between average income growth and increasing share of industrial activities.

[6] Sigma convergence is indicated for a group of countries or regions if the standard deviation of the logs of per capita income for the group (i.e. its group variance) converges over a period of time.

However, average income profiles across city classes show a different pattern, following a city's position in the urban hierarchy (Table 1.23). Special cities are the richest and the lowest tier, class 4 cities the poorest. By contrast with converging regional incomes, city income profiles tend to diverge on account of strong income growth in the richest special cities.

Figure1.11 The average income profile in 2009



Source: Urban Solutions (2011)

Surprisingly, class 1 cities' income growth is the lowest, way behind those of other city classes. The main reason seems to be the diminishing share of industrial activities in class 1 cities. Significant growth of service activities in class 1 cities didn't contribute to urban productivity

growth. It suggests that the productivity of the service sector is much lower than that of the industrial sector. In sum, the average income level and its composition, as a measure of local productivity, across regions and across city classes shed light on the fundamentals of local economic development in Vietnam: the high performing industrial sector leads local economic development.

Table 1.23 Average income (GDP per capita in millions of VND) by city class

GDP per Capita	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	(max-min)/min	Sigma convergence
2009	41.7	24.3	27.4	19.7	16.8	148.2%	0.311
1999	7.6	7.5	6.2	4.3	3.7	105.4%	0.293
Annual growth, %	17.0	11.8	14.9	15.2	15.1	42.8%	0.018
Change in contribution to GDP percapita, 1999-2009, percent							
Agriculture	-2.0	-4.9	-7.1	-11.5	-10.5		
Industry	2.2	-6.0	6.3	8.8	6.1		
Commerce	-0.2	10.8	0.8	2.7	4.5		

Source: General Statistics Office (GSO)

1.4.2 The transition in human capital (with reference to Table 1.24)

Educational attainment is measured by the percentage of the population completing higher secondary schools. Though not listed, similar profiles are observed when population with college degrees is used to measure local educational attainment. As expected, rich areas, such as the Red River Delta, the Southeast regions and the special cities, possess disproportionally large shares of highly educated people. It suggests that high performing areas attract more high skilled workers and therefore reinforce the benefits from agglomeration economies and human capital externalities. This would result from circular causation between local economic growth and human capital accumulation (Romer, 1986; Aghion and Howitt, 1997).

Table 1.24 Educational attainment by region and city class

Region	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	(max-min)/min
Fraction that completed higher secondary school, in2009, in percent	18.2	30.2	19.1	13.6	27.1	10.7	182.2%

City class	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	(max-min)/min
Fraction that completed higher secondary school, in2009, in percent	38.0	25.4	20.8	18.3	15.7	142.0%

Source: General Statistics Office (GSO)

1.4.3 Transition in poverty

There was dramatic reduction in poverty across all regions and all city classes, when compared by absolute reduction in poverty incidence (percentage point change) between 1999 and 2009 (Table 1.25). In relative terms (percentage change in the same period), relatively strong poverty reduction is observed again in richer regions which also exhibit lower poverty incidence (Red River Delta, Southeast and Mekong River Delta). It seems the benefits of economic growth were evenly shared nationally, while the relative intensity of poverty reduction is stronger in rich regions. The same pattern is observed across city classes (Table 1.26). While there was universal poverty reduction across all city classes, rich cities in the upper hierarchy (Special and Class 1 cities) show somewhat faster poverty reduction (measured by percentage change).

Table 1.25 Poverty incidence by region

Poverty incidence,in percent	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	(max-min)/min
2009	26.2	8.5	18.8	21.3	2.4	11.4	991.7%
1999	58.1	33.0	43.1	43.8	8.3	35.8	600.0%
2009-1999	-31.9	-24.5	-24.3	-22.5	-5.9	-24.4	391.7%

Source: General Statistics Office (GSO)

Table 1.26 Poverty incidence by city class

Poverty incidence,in percent	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	(max-min)/min
2009	3.3	7.9	12.5	13.6	15.7	375.8%
1999	15.9	29.9	31.6	38.9	39.4	147.8%
2009-1999	-12.6	-22.0	-19.1	-25.3	-23.7	228.0%

Source: General Statistics Office (GSO)

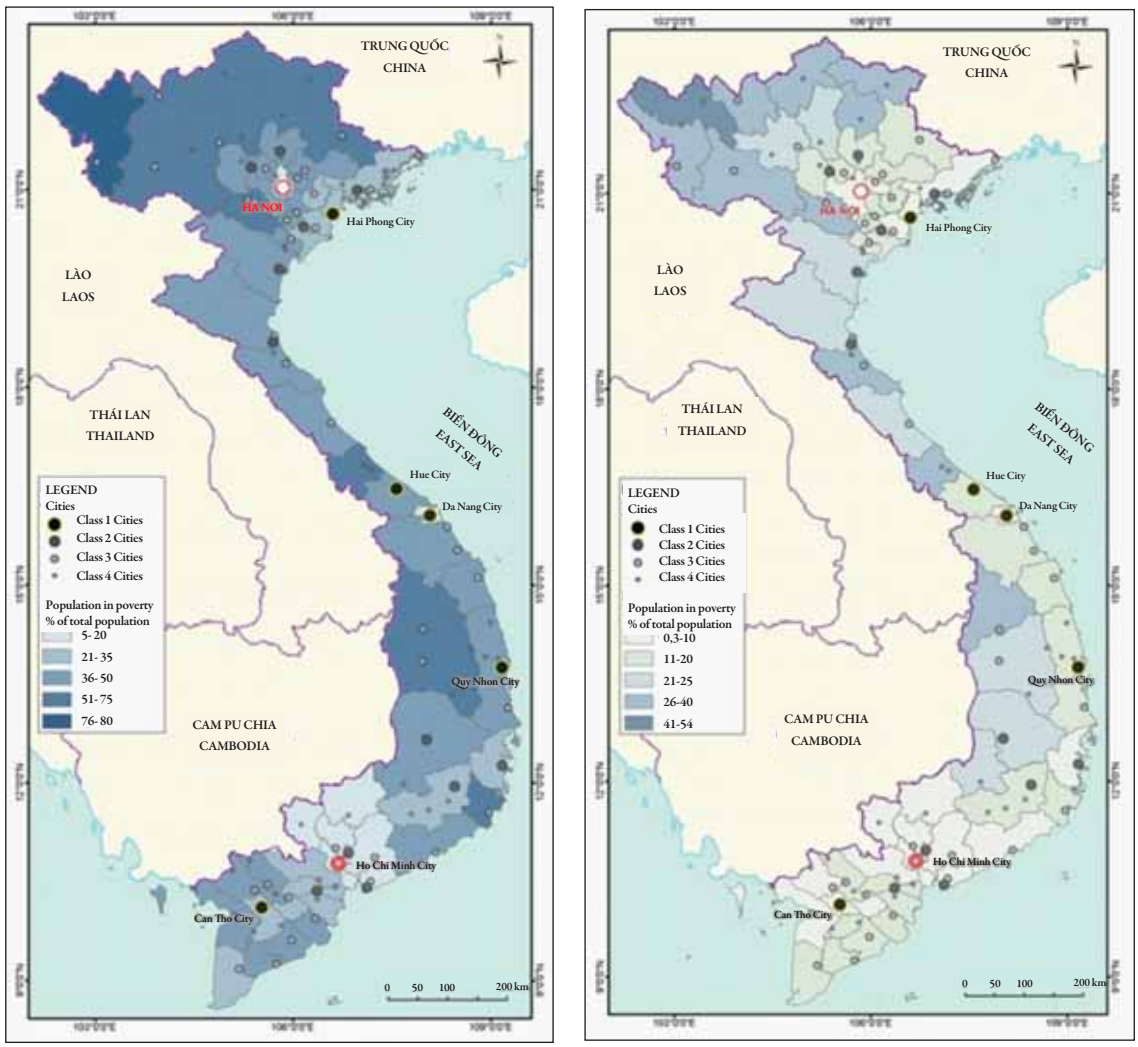
The profile of poverty distribution (the national share of poor people in an area) is quite different from that of poverty incidence (the ratio of poor people over the total population in an area). More poor people live in North Central/Central Coast (30% of total poor people in Vietnam in 2009), Northern Midlands (25%), and Mekong River Delta/Red River Delta (17% and 15%) regions, and less in the Southeast region (only 3%) (Table 1.27).

When comparing changes in poverty distribution (or changes in national share of poor people) between 1999 and 2009, relatively more poor people are located in the hinterlands: Northern Midlands (+4%p), North Central/Central Coast (3%p), and the Central Highlands (3%p). By contrast the Red River Delta and the Mekong River Delta regions experienced declining national shares of poor people, -7%p and -4%p respectively.

This strong reduction of the national share of poor people in the two river delta areas would be associated with favorable agronomic potential in the river delta areas. In addition, spillovers of agglomeration economy from neighboring large cities would have contributed to a significant reduction in the local poor and therefore to overall poverty reduction at the national level. This suggests important policy implications on where to invest, what positive spillovers are to be expected from urbanization, and how to extend development benefits to neighboring areas.

Figure 1.12 Changes in poverty incidence between 1999 and 2009

Poverty incidence in 1999 **Poverty incidence in 2009**



Source: Urban Solutions (2011)

Table 1.27 Poverty distribution (national share) by region

Poverty distribution relative to the national poor, %	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	(max-min)/min
2009	25.2	14.5	30.8	9.5	3.0	17.1	938.3%
1999	20.9	21.1	28.0	6.4	3.0	20.7	824.0%
2009-1999	4.3	-6.6	2.8	3.1	-0.1	-3.6	114.4%

Source: General Statistics Office (GSO)

Another interesting finding is how poor people are located across the urban system, namely across city classes (Table 1.28). Poor people were relatively evenly distributed across city classes in 2009, a little more in lower tier cities of classes 3 and 4, but in general there is no significant difference.

However, changes in the share of the national poor between 1999 and 2009 show a different pattern. There is a large reduction in the share of the national poor living in special cities (-6%p) and class 1 cities (-3%p). Again, economic prosperity is the main driver of poverty reduction in these booming regions.

Table 1.28: Poverty distribution (national share) by city class

Poverty distribution relative to national urban poor, %	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	(max-min)/min
2009	17.5	16.3	17.3	28.5	20.4	75.0%
1999	23.5	19.6	12.4	24.7	19.7	99.1%
2009-1999	-6.0	-3.4	4.9	3.8	0.7	-24.1%

Source: General Statistics Office (GSO)

1.4.4 Transition in housing conditions and basic service provision

Welfare transitions can be measured by the quantity and quality of basic services provided to the locality as well as housing conditions. This section examines these urban services. There have been universal improvements in basic service provision and housing conditions. The share of permanent houses increased rapidly across the nation, but more noticeably in the Red River Delta region (Table 1.29).

There were also significant improvements in under-serviced regions. For example, dramatic improvements in access to safe water in the once under-performing Mekong River Delta (from 44% in 1999 to 78% in 2009), and the ramping up of electricity provision in Northern Midlands, Central Highlands, and Mekong River Delta (+26%p, +36%p, and +40%p respectively). Due to these welfare promoting interventions, regional disparities in access to safe water and electricity are diminishing rapidly. However, there has been a somewhat widening disparity in access to sanitation facilities on account of much stronger improvements in the two special cities of Hanoi and HCMC.

The same welfare convergence patterns were observed across city classes (Table 1.30). Large spatial cities exhibited stronger improvement in housing conditions (percentage change of permanent houses) and sanitation. However, access to safe water and electricity provision have more substantially improved in lower tiers of city classes. Overall, for all welfare indicators listed in the table, there has been strong welfare convergence, so that once worse-off cities are catching up with better-off cities and closing the welfare gaps. However, this improving or converging access to basic services should be interpreted cautiously, as there remain large disparities in the quantity and quality of service, as detailed in the chapter on service delivery.

Table 1.29 Housing conditions and basic service provision by region

	Northern Midlands	Red River Delta	North Central/ Central Coast	Central Highlands	Southeast	Mekong River Delta	(max-min)/min
Households in dwellings made of permanent materials[1], %							
2009	47.6	77.4	57.5	29.9	39.7	20.4	279.4%
1999	7.7	21.3	8.9	5.1	13.6	7.1	317.6%
2009-1999	39.9	56.1	48.6	24.8	26.1	13.3	-38.2%
Households with Access to Safe Water, %							
2009	61.5	98.3	89.7	78.5	97.1	77.9	59.8%
1999	60.6	92.1	86.6	81.0	95.7	43.8	118.5%
2009-1999	0.9	6.2	3.1	-2.5	1.4	34.1	-58.7%
Households with access to sanitation facilities, %							
2009	26.1	60.4	47.3	46.5	89.9	42.4	244.4%
1999	6.2	18.8	14.7	8.6	14.1	15.4	203.2%
2009-1999	19.9	41.6	32.6	37.9	75.8	27.0	41.2%
Households with access to electricity, %							
2009	87.1	99.7	97.3	93.0	98.2	95.1	14.5%
1999	61.4	97.9	83.5	57.0	84.8	55.2	77.4%
2009-1999	25.7	1.8	13.8	36.0	13.4	39.9	-62.9%

Note: 1) Permanent household is built by durable materials like concrete pillars and wall.
Source: General Statistics Office (GSO)

Table 1.30 Housing conditions and basic service provision by city class

	Special cities	Class 1 cities	Class 2 cities	Class 3 cities	Class 4 cities	(max-min)/min
Households in dwellings made of permanent materials[1], %						
2009	72.7	39.1	41.2	45.1	29.9	143.1%
1999	25.4	14.0	8.4	9.2	6.4	296.9%
2009-1999	47.3	25.1	32.8	35.9	23.5	-153.7%
Households with Access to Safe Water, %						
2009	98.8	88.8	91.0	85.3	72.8	35.7%
1999	96.5	71.0	88.6	73.7	61.4	57.2%
2009-1999	2.3	17.8	2.4	11.6	11.4	-21.5%
Households with access to sanitation facilities, %						
2009	87.9	66.2	59.3	50.7	46.3	89.8%
1999	21.9	28.1	18.8	12.0	12.8	134.2%
2009-1999	66.0	38.1	40.5	38.7	33.5	-44.3%
Households with access to electricity, %						
2009	99.7	98.8	96.8	96.0	93.4	6.7%
1999	98.6	84.1	81.3	71.3	66.9	47.4%
2009-1999	1.1	14.7	15.5	24.7	26.5	-40.6%

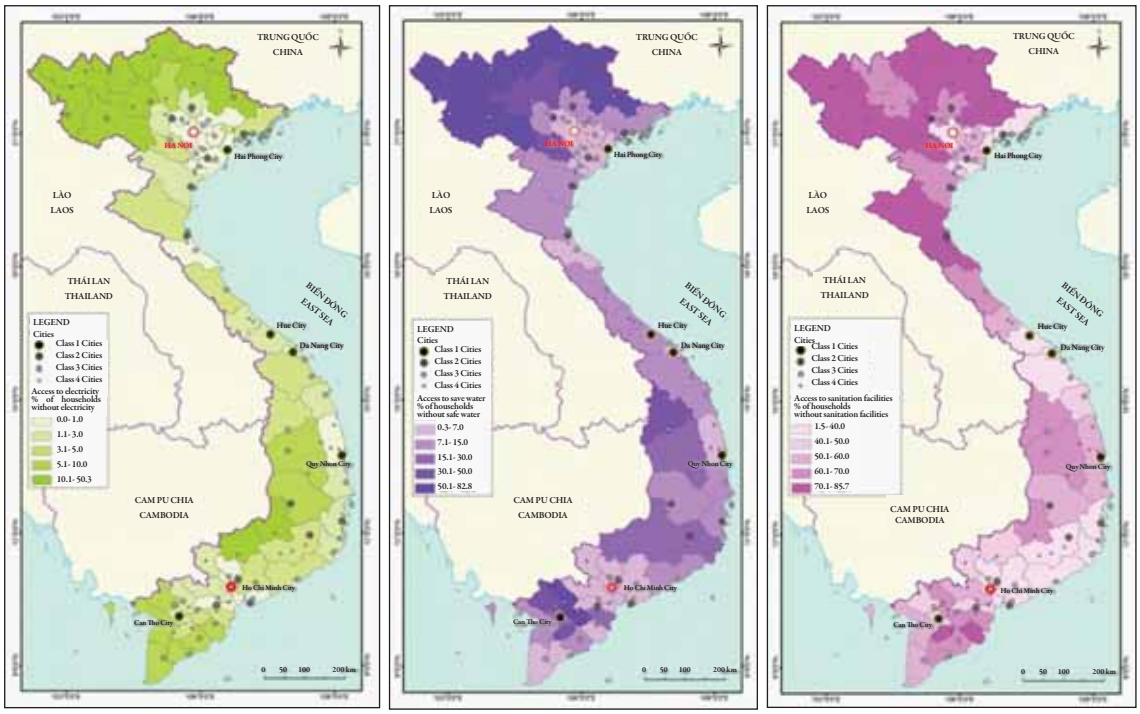
Note: 1) Permanent household is built by durable materials like concrete pillars and wall.
Source: General Statistics Office (GSO)

Figure 1.13 The profile of public service provision in 2009

Percent of households without electricity

Percent of households without safe water

Percent of households without sanitation



Source: Urban Solutions (2011)

1.5 Emerging policy issues for high quality urbanization

Vietnam's rapid economic growth is mainly driven by the two core areas of Hanoi and HCMC and their economic peripheries. In Vietnam, the industrial sector leads local economic growth, as the productivity of the industrial sector is generally higher than that of agricultural and service sectors. Industrial activities, particularly manufacturing, are concentrated either in the two largest cities and their neighboring areas, or in areas with special economic geography conditions, such as proximity to industrial regions in China or the coast. These high performing regions also attract high skilled workers, which reinforces agglomeration economies. Hanoi and HCMC and their neighboring areas are vital to maximize the benefits from agglomeration economies and to make the Vietnamese economy globally competitive. HCMC though is increasingly emerging as Vietnam's economic gateway to the world through its programmatic enhancement of its deep-water port container handling capacity.

The high growth of large cities and their leading role in national economic development is also commonly observed in many rapidly growing developing counties in incipient or intermediate

stages of urbanization, such as China and India. South Korea's experience of urbanization and economic growth also showed the same patterns of spatially concentrated growth in earlier stages of urbanization.

Public policies should focus on strengthening the current growth momentum of the two core cities (and their economic regions) by addressing some of the priorities that are discussed in the following chapters of the Urbanization Review. Across other countries it has been observed that highly productive industrial activities concentrate spatially in a few large cities (rather than dispersing evenly across the nation) and this tendency is more dominant in rapidly growing developing counties in an early stage of industrialization. In order to maximize the benefits from agglomeration economies, cities should accumulate a significant urban mass. Agglomeration promotes the rise of urban productivity through better linkages between intermediate input suppliers and final producers, better skill matching in labor markets, and costless knowledge/information spillovers (Marshall, 1890). [7]

The two urban cores of Hanoi and HCMC show different economic growth trajectories driven by different economic geography conditions. Industrialization is rapidly progressing in Hanoi and the Red River Delta areas due in part to their proximity to the massive industrial bases in South China and also to its lower base starting point that HCMC. Heavy manufacturing industries, such as transport equipment manufacturing, are growing particularly fast in these areas.

By contrast, while ranked as Vietnam's largest industrial center, HCMC and its neighboring Southeast region show some signs of saturation in production of low value-added products: the lowest per capita industrial GDP growth between 1999 and 2009 among regions, but this may be due to the already high rate of industrialization from 1999 onwards. A key policy agenda will be to shore up its local industrial system and bring up urban productivity in these areas. Exploiting the strong agricultural potential in the neighboring Mekong River Delta and the Central Highlands regions and developing industrial centers with regional comparative advantages, are possible options to be considered.

For other urban areas without as strong an economic potential when compared to large cities, a different set of policy interventions are needed, depending on the specifics of local endowments. Cash crop production in areas of favorable agronomic potentials is a clear possibility. More importantly, investing in people (education and health) as well as infrastructure (roads) and universal access to basic services will level the playing field and facilitate the fluidity of factor markets. This will enable firms and households to choose the best location for economic activities, and therefore will maximize the efficiency of economic development in Vietnam.

While economic development is concentrated in two core metropolitan cities and neighboring

[7] More detailed discussion of the micro-foundations of urban agglomeration economies, are to be found in Duranton and Puga (2004).

areas, welfare improvements have been more widespread. There were universal improvements in basic service provision and housing conditions across the country, and significant improvements in under-served regions and lower-tier cities. It suggests the benefits of economic growth are evenly shared nationally. In relative terms, the speed of poverty reduction is faster in regions with good economic geography conditions, large cities, and regions with favorable agronomic potentials (two river delta areas). Overall, there has been strong welfare convergence.

This equalizing of welfare improvement is mainly driven by strong government commitment to inclusive social development as well as strong growth of core metropolitan cities and its positive spillovers to the hinterlands. However, these universal improvements should be interpreted cautiously, as there remain large disparities in the quantity and quality of service.

To sum up, fluid factor markets, enhanced labor mobility and migration and corrective public interventions well targeted but working in line with market forces, will be vital for Vietnam to maximize long-term economic growth while equalizing welfare of all segments of population. Equally importantly, policy reforms and infrastructure investments should be carefully prioritized based on specific needs arising at different stages of urbanization. As illustrated in Box 1.9, the experience of South Korea might provide one example of how a phased approach to urban policy might work. This is not an endorsement of the specific policy choices that South Korea has made, but rather a demonstration of how different policies are needed by different cities at different stages through the urbanization process. Examples from other countries should also be examined for more specific and relevant policy direction on particular issues.

Box 1.10 South Korea's experience: different policy and infrastructure priorities as urbanization progresses from an incipient to an advanced stages

Categories	Urban Planning and Land Management	Housing Supply Policies	Transportation Policies	Low-income Deteriorated Neighborhood Policies
Incipient	• Establishing land management and ownership • Adopting building permits, urban planning districts, and zoning • Project bases: Land Acquisition Act, Downtown improvement rogram(redevelopment), Land readjustment program(new development) • Agricultural land reform after Korean Independence	• Lack of housing supply policies • Housing shortage due to the Korean War • Concentration of population in urban areas: increasing illegal poor housing	• Forming the railroad network(1919): Opening the Kyoungbu railroad line at the end of Chosun dynasty • Road: complementing railroads • After the 1945 Korea Independence endence:Improving the railroad network in South Korea (Industrial railroad lines)	• Shacks and shanty towns outside the four main gates of Seoul: Influx of farmers from rural areas • Shanty towns: Rural farmers, people coming from foreign countries, refugees during the Korean War re-located to urban downtown areas

Categories	Urban Planning and Land Management	Housing Supply Policies	Transportation Policies	Low-income Deteriorated Neighborhood Policies
Intermediate	• Expanding urban planning districts • Adopting Floor Area Ratio regulations('70) • Land use change permit, Regulation of appropriation of agricultural and forest lands ('72) • Project bases: Industrial base development through land acquisition by complete purchase('80) • Long-term planning: National land development plan, urban comprehensive plan	• Policies for expanding housing lands(New downtowns, New city) • Housing supply policies based on apartment construction • Implementing the 2 million housing construction plan etc.	• Opening the Kyoungbu expressway: Opening the era of expressways • Forming the national road network • Expanding subway lines	• Removing illegal housing and forcing movement to urban outer areas • Residential environment improvement projects: • Public land disposal, supporting infrastructure, and deregulating floor area raitios • Joint redevelopment projects:removal of low-income deteriorated neighborhoods
Advanced	• Integrating land use management systems in urban and non-urban areas • Adopting a regional metropolitan plan system	• 1st-term and 2nd-term new town construction: formation of new metropolitan areas	• Constructing a metropolitan subway network • Constructing the Korea Train Express(KTX) line (reducing travel time from 5 hrs to 2 hrs)	• Poor residents: scattered throughout urban areas • Housing policies for residential tenants and homeless people
Future issues	• Land management for preventing chaotic development and ensuring social equity • Reasonable, efficient, and cooperative planning system • Urban policies focused on urban region	• User-oriented housing construction • Expansion of affordable housing • Ensuring residential quality: environment-friendly and energy-efficient housing	• Ensuring quality of transportation facilities: Pedestrian paths, green transportation system • Finding out solutions to traffic problems in metropolitan areas	• Supporting Residential improvement programs based on communities • Residential stability programs for residential occupants • Housing policies for homeless people

Source: Park et al (2011)

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Appendix 1A: data sources and analytical methodology

Statistical definitions: Regions, provinces, urban and rural districts and communes, and time intervals --- Much of the analysis focuses on the comparison of the 1999 versus 2009 census data. Given the re-grouping of some provinces in 2006, the 1999 regions need to be modified to conform to the provincial grouping in the 2009 census. That requires the establishment of consistent geographic definitions and boundaries. The rural-urban distinction seems to be systematic and clear in the population census; but such is not the case for specific sector employment and output data as Vietnam's government agencies do not record such information at the local district/commune levels. Appropriate proxies were employed to derive accurate estimations for localities. Similarly, a consistent method was developed to compare data sets that are temporally not synchronized because Vietnam's government agencies collect information at varied time intervals.

Data handling --- The census data were aggregated at district and provincial levels and reclassified into groups according to rural/urban delineation, city sizes, regions, and other grouping categories. These groups were then tested against indicators used for different transitions as tested in the chapter, designed to examine how factors such as the size and location of urban areas related to economic development and socioeconomic changes.

Once arranged into clearly annotated tables, the findings were examined in detail to infer important trends and relationships. The findings were also be reconfigured into graphs and maps.

Data compilations and limitations --- Outside of population and land area, district-level data were not available. Therefore most numbers in the urban class and distance quintile typologies are derived from weighted population estimates using a mechanically calculated conversion factor (the weighted population average factor).

In addition, the following types of sub-provincial urban areas have been omitted from the typology groups they belong to in the comparative analyses of 1999 and 2009 statistics: 1) newly created or eliminated districts that could not be matched in 1999 and 2009 and 2) sub-district level areas that the team could not procure data for. Urban areas omitted for each analysis are specified in the footnotes of the tables attached in subsequent sections. Tables 1A1 and 1A2 illustrate the constituent cities of typology groups I, II, III, and IV used in 1999 and 2009 analyses.

Vietnam has seen a number of changes in its provincial administrative boundaries during the aforementioned 10-year span: 1) The former Ha Tay province was incorporated into Hanoi in 2008; 2) Lai Chau Province was split into Dien Bien and Lai Chau Provinces in early 2004; 3) Dak Lak Province was divided into the new Dak Lak and Dak Nong Provinces in 2003 and; 4) Can Tho Province was split into Can Tho the class 1 government-run city and Hau Giang Province in 2004.

In order to maintain consistency in the administrative boundaries represented by the extracted 1999 and 2009 data, the following manipulation was performed: 1) provincial statistics of Ha Tay was aggregated with Hanoi data in 1999; 2) 2009 Lai Chau and Dien Bien provincial data were aggregated; 3) 2009 Dak Lak and Dak Nong provincial data were combined and finally; 4) 2009 Can Tho and Hau Giang data were aggregated.

Table 1A1: Constituent provinces and cities in the six regions

Red River Delta	Northern Midlands and Mountain Areas	North Central Area and Central Coastal Area	Central Highlands	Southeast	Mekong River Delta
Bac Ninh	Bac Can	Binh Dinh	Dak Lak	Ba Ria-Vung Tau	An Giang
Ha Nam	Bac Giang	Binh Thuan	Dak Nong	Binh Duong	Bac Lieu
Hanoi	Cao Bang	Da Nang	Gia Lai	Binh Phuoc	Ben Tre
Hai Duong	Dien Bien	Ha Tinh	Kon Tum	Dong Nai	Ca Mau
Hai Phong	Ha Giang	Khanh Hoa	Lam Dong	Ho Chi Minh	Can Tho
Hung Yen	Hoa Binh	Nghe An		Tay Ninh	Dong Thap
Nam Dinh	Lai Chau	Ninh Thuan			Hau Giang
Ninh Binh	Lang Son	Phu Yen			Kien Giang
Quang Ninh	Lao Cai	Quang Binh			Long An
Thai Binh	Phu Tho	Quang Nam			Soc Trang
Vinh Phuc	Son La	Quang Ngai			Tien Giang
	Thai Nguyen	Quang Tri			Tra Vinh
	Tuyen Quang	Thanh Hoa			Vinh Long
	Yen Bai	Thua Thien Hue			

Table 1A2: Constituent class 1 to 4 urban areas used in analysis

Special Cities	Province
Hanoi	
Ho Chi Minh City	

Class 1	Province
Quy Nhon	Binh Dinh
Can Tho (pre 2003)	Can Tho (pre 2003)
Da Nang	Da Nang
Hai Phong	Hai Phong
Hue	Thua Thien Hue

Class 4	Province
Chau Doc	An Giang
Bac Can City	Bac Can
Ben Tre City	Ben Tre
Dong Xoai	Binh Phuoc
Vi Thanh	Can Tho (pre 2003)
Cao Bang City	Cao Bang
Xuan Loc	Dong Nai
Sa Dec	Dong Thap
Ha Giang City	Ha Giang
Hong Linh	Ha Tinh
Ha Tien	Kien Giang

Class 2	Province
Bien Hoa	Dong Nai
Nam Dinh City	Nam Dinh
Vinh	Nghe An
Vung Tau	Ba Ria-Vung Tau
Buon Ma Thuot	Dak Lak (pre 2003)
Nha Trang	Khanh Hoa
Da Lat	Lam Dong
Viet Tri	Phu Tho
Ha Long	Quang Ninh
Thai Nguyen City	Thai Nguyen
Thanh Hoa City	Thanh Hoa
My Tho	Tien Giang

Class 3	Province
Long Xuyen	An Giang
Ca Mau City	Ca Mau
Hai Duong City	Hai Duong
Ba Ria	Ba Ria-Vung Tau
Bac Giang City	Bac Giang
Bac Lieu City	Bac Lieu
Bac Ninh City	Bac Ninh
Thu Dau Mot	Binh Duong
Phan Thiet	Binh Thuan
Dien Bien Phu	Lai Chau (pre 2003)
Cao Lanh	Dong Thap
Plei ku	Gia Lai
Phu Ly	Ha Nam
Son Tay	Hanoi (after merger)
Ha Tinh City	Ha Tinh
Ha Dong	Hanoi (after merger)
Hoa Binh City	Hoa Binh
Hung Yen City	Hung Yen
Rach Gia	Kien Giang
Kon Tum City	Kon Tum
Lang Son City	Lang Son
Lao Cai City	Lao Cai
Cua Lo	Nghe An
Ninh Binh City	Ninh Binh
Phan Rang-Thap Cha	Ninh Thuan
Tuy Hoa	Phu Yen
Dong Hoi	Quang Binh
Hoi An	Quang Nam
Tam Ky	Quang Nam
Lai Chau City	Lai Chau (pre 2003)
Bao Loc	Lam Dong
Tan An	Long An
Tam Diep	Ninh Binh
Phu Tho City	Phu Tho
Uong Bi	Quang Ninh
Dong Ha	Quang Tri
Quang Tri City	Quang Tri
Son La City	Son La
Tay Ninh City	Tay Ninh
Song Cong	Thai Nguyen
Bim Son	Thanh Hoa
Sam Son	Thanh Hoa
Go Cong	Tien Giang
Tuyen Quang City	Tuyen Quang
Nghia Lo	Yen Bai
Do Son	Hai Phong
Hong Ngu	Dong Thap
Di Linh	Lam Dong
Moc Chau	Son La
Sa Dec	Dong Thap
A yun pa	Gia Lai
An Khe	Gia Lai
Tan Hiep	Can Tho (pre 2003)
Vi Thanh	Can Tho (pre 2003)
Cam Ranh	Khanh Hoa
Phuc Yen	Vinh Phuc
Muong Lay	Lai Chau (pre 2003)

Quang Ngai City	Quang Ngai		
Cam Pha	Quang Ninh		
Mong Cai	Quang Ninh		
Soc Trang City	Soc Trang		
Thai Binh City	Thai Binh		
Tra Vinh City	Tra Vinh		
Vinh Long City	Vinh Long		
Vinh Yen	Vinh Phuc		
Yen Bai City	Yen Bai		
Long Khanh	Dong Nai		

2

Connecting Vietnam's Urban Portfolio

2.1 Vietnam's national transport infrastructure

2.1.1 Overview

Effectively connecting people and economic activities is critical for successful urbanization and economic growth. One of the major benefits of urbanization is faster growth in the productivity of economic activities through positive externalities from agglomeration economies (increasing returns to scale) and spillover of technological information. The easier, less costly flow of products and production factors facilitate more sophisticated economic transactions and upstream and downstream industrial linkages. These enable the economy to produce more efficiently and also upgrade to higher value-added products. The general consensus of urban economics and the New Economic Geography, confirmed by international experiences, is that reduction in transport costs within a portfolio of places enhances the scale of interaction and facilitates faster socioeconomic development.

While there are many dimensions to agglomeration economies, this chapter focuses on connective infrastructure as it relates to freight movement. It examines the scale and cost of inter-city freight movements in Vietnam, and looks at how they vary across regions and cities.

Vietnam's diversified transport infrastructure reflects its topographical characteristics. Vietnam forms a narrow S-shaped land form, stretching just over a thousand miles (1650km) from the northern to the southern tip. Mountainous terrain constituting three-fourths of the land and two large deltas, the Red River Delta in the north and the Mekong River Delta in the south, have determined the spatial distribution of its people and the corresponding connective infrastructure.

Two major metropolitan centers of Hanoi in the north and HCMC in the south, serve as hubs of the multi-modal transport network, consisting of roads, inland waterways, railways and airways. Da Nang, located roughly in the middle, also functions as an economic center and a major port. Connecting these three major nodes is the National Highway No.1 (NH1) and the North-South railway trunk running through the central region along the coast (see Box 2.1).

Box 2.1 Transport infrastructure, by sector (extracted from VITRANSS2, 2009)

(See also Appendix 2A to this chapter)

Roads

Vietnam's road network comprises over 250,000km, of which 17,385km are national highways, 22,783km are provincial roads, and the rest are other local roads (district roads, commune roads, urban roads and exclusive roads). The network grew by 1.6% p.a. from 1999 to 2006. The paved ratio has also improved significantly. The percentage of national highways that remain unpaved was 6%, and unpaved provincial roads 21% in 2008. Still, the overall conditions of roads has a long way to go to be considered good, especially since the overall network is only about 30% paved due to the significant share of district and commune roads that have remained unpaved. The road network can be considered as properly distributed considering

demand and terrain, although it is narrow and has a limited capacity, 60% have less than two lanes.

Railway

Railway operation started in 1901 with the Saigon–Nha Trang Line, and by 1936 much of the present-day network, which is approximately 2,600km, was already in place. However, the national railway network was put in disrepair as a result of the war and neglect during that time. Since then much of the focus has been in the rehabilitation of the network. However, track infrastructure remains unsatisfactory with problems of weak bridges and bottlenecks (i.e. restricted speed sections), as well as numerous at-grade crossings. Furthermore, the network in the north converge inside Hanoi, wherein due to numerous at-grade crossings, train operation is not permitted during daytime, and this seriously affects the connectivity of the network in the north. The system utilizes single track and narrow gauge (except in some sections) with maximum passing capability of 25 up and down trains per day. Signal and communication systems are outdated.

Port and shipping

There are 80 seaports in Vietnam classified into eight seaport groups. Apparently, Vietnamese ports have limited capacities to handle larger-sized vessels. Thus vessels used in ocean container operation are typically small; for instance, one operator utilizes 400–800teu vessels, while another uses 1,000teu vessels operating either feeder service or intraregional service. Seaports in Vietnam are classified into three categories, i.e. Class I, Class II and Class III, based on their importance and characteristics in accordance with the provisions of Maritime Code. As of 2008, the seaport system of Vietnam includes 17 seaports of Class I, 23 seaports of Class II and 9 seaports of Class III. Seaports of class I and class II include 166 terminals and waterfronts. Existing terminals are mainly at somehow upstream of the rivers, distant from the sea and are of small scales with poor, limited facilities. Since 1995, the seaport system of Vietnam has been paid greater attention to in terms of investment made into the system. But, the terminals that can accommodate large vessels are still limited.

Inland waterway

The number of rivers and canals in the country was counted at 2,360 with total length of 220,000km. Of this, only about 19% (~41,900km) is considered navigable and 7% (or 15,436km) placed under management and operation. There are two main river groups in Vietnam which are utilized for inland waterway transportation (IWT). The northern region river system focuses mainly on the Red River Delta with minimum channel widths of 30–36 meters and minimum depths of 1.5–3.6m. The northern region has 55 channels with a length of 2,753km. Most of the major waterways are under operation 24/7 due to a secured navigational depth. The biggest concern is that the connected waterways are not under the same grade and have sharp curves. Some even have limited vertical navigational clearance under the bridges and other river crossing structure. The technical specifications of the channels in the south are more favorable, with minimum widths of 30–100m and minimum depths of 2.5–4m. In some sections the depth can reach up to six meters. The channels are, however, constrained by low bridges and narrow clearances. The south has 80 channels with a combined length of 3,017km. Major waterways from HCMC to Mekong delta are operated 24/7 others are operated during daytime only.

Aviation

There are 21 airports as of May 2008. Among the 21 airports, 18 have scheduled domestic service only; while the big 3 (Tan Son Nhat, Noi Bai, and Da Nang) have scheduled international and domestic flights. Phu Bai Airport was recently classified as international, since 1 October 2007. In addition to above 21 airports, Dong Hoi Airport in Quang Binh Province was opened in 19 May 2008, followed shortly thereafter by Can Tho Airport in Can Tho Province. By 2009, the number rose to 23 airports.

The modal shares of freight transportation are dominated by roads (45% of modal share by ton) and inland waterways (48%). Contrary to other countries, railways have a very limited role. Its modal share is less than 2%. Table 2.1 shows the modal shares of interprovincial freight transportation in 2008. Each transport mode takes different responsibilities in the national transport system. A large proportion of manufactured goods (88%) is transported by roads, while the bulk of heavy raw materials, such as construction materials (73%) and coal (79%), are shipped using inland waterways.

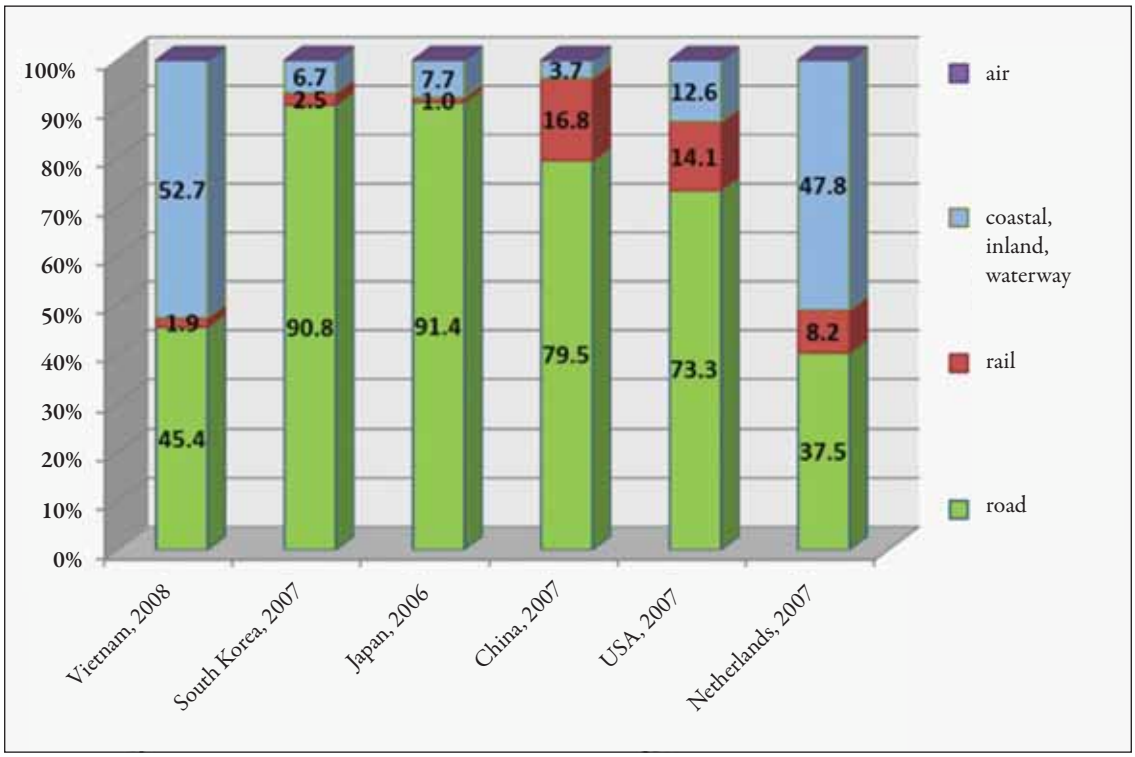
The composition of modal shares for domestic freight transportation is similar to the Netherlands (Figure 2.1). However, the model shares of the Netherlands are also explained by its being a small country of about 42,000 km2 (13% of Vietnam's size) divided by three large rivers including the Rhine. Other countries, like South Korea, Japan, or large continental countries like China and the United States have a large modal share of road freight transportation: about 90% of domestic freight is transported via roads in South Korea and Japan, and more than 70% in China and the United States.

Table 2.1 Modal shares by commodity, 2008 (ton/day)

Commodity	Road	Rail	Inland waterway	Coastal waterway	Air	Total
1. Rice	78,969	204	36,109	4,261	0	119,543
2. Sugarcane/Sugar	3,682	0	4,847	88	0	8,617
3. Wood	11,499	523	11,683	914	0	24,619
4. Steel	41,965	2,156	1,015	764	0	45,900
5. Construction Materials	129,219	8,213	370,787	1,914	0	510,133
6. Cement	38,965	3,810	64,387	13,021	0	120,183
7. Fertilizer	8,813	2,939	28,678	1,168	0	41,598
8. Coal	12,106	2,377	92,549	10,092	0	117,124
9. Petroleum	33,374	404	5,018	8,234	0	47,030
10. Industrial Crops	5,628	0	2,415	0	0	8,043
11. Manufactured Goods	171,895	4,895	3,916	13,524	251	194,481
12. Fishery Products	7,186	0	12,203	0	0	19,389
13. Animal Meat & Others	61,578	0	9,373	4,118	0	75,069
Total Tonnage (ton/day)	604,879	25,521	642,980	58,098	251	1,331,729
Modal Share (%, ton)	45.4	1.9	48.3	4.4	0.0	100.0
Average Trip Length (km)	143	400	112	1,161	1,404	178
Modal Share (%, ton-km)	36.6	4.3	30.5	28.5	0.1	100.0

Source: VITRANSS 2 (2009)

Figure 2.1 Modal shares of other countries (%, ton)



Source: Suh et al (2009). The Netherlands are from OECD database.

The modal share profiles by trip distance indicate the relative competitiveness of different transport modes with respect to trip distance (Table 2.2). Road transportation is dominated by short distance freight transportation. The share of road freight movements less than 100km trip distance is 73% of the total road freight movements. Because of topographical constraints, inland waterway freight transportation is significantly limited to less than 200km trips (98%).

For 400-1000km freight movements, (domestic) coastal shipping competes with roads and equally shares freight movements. However, after 1000km distance, coastal shipping dominates roads, in particular for long-distance (1400-1600km) freight transportation between the north (Hanoi) and the south (HCMC). This pattern somewhat resembles McKinsey (2010)'s study on India's freight transport cost structure (Box 2.2).[1]

[1] A strong difference is the role of railway transportation in India. The significant role of railways in India is mainly attributed to its topographical conditions (large flat inland areas) and historical path dependence.

Table 2.2 Freight transportation volume (ton/day) by trip distance, 2008

Trip Length (km)	Road	Rail	Inland waterway	Coastal	Air	Total
Under100	442,294	3,114	268,974	288		714,670
100-200	77,468	7,188	363,935	639	0	449,230
200-300	38,388	5,480	9,236	2,601	2	55,707
300-400	8,361	3,309	834	590	0	13,094
400-500	2,915	1,154	1	4,854	1	8,925
500-600	3,020	546	0	1,614	0	5,180
600-700	1,907	217	0	1,628	1	3,753
700-800	1,184	345	0	3,531	9	5,769
800-900	6,618	596	0	3,751	20	10,985
900-1000	3,471	283	0	225	0	3,979
1000-1200	3,436	800	0	4,189	4	8,429
1200-1400	1,476	305	0	6,339	1	8,121
1400-1600	7,295	2,115	0	23,756	213	33,379
1600-1800	6,309	69	0	4,093	0	10,471
1800-2000	37	0	0	0	0	37
Total	604,879	25,521	642,980	58,098	251	1,331,729

Source: VITRANSS 2 (2009)

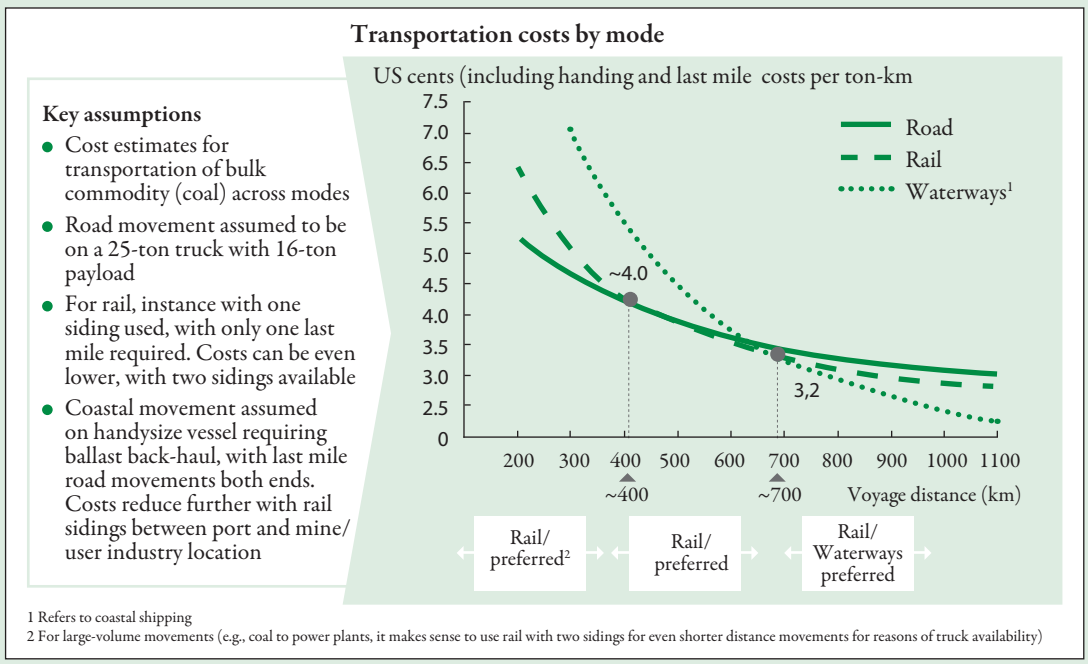
The dominance of short distance freight transportation trips of less than 200km distance is quite significant. As much as 87% freight transportation in Vietnam is within this 200km trip category. This highly skewed distribution is driven by the two dominant internal trade patterns centered around Hanoi and HCMC. Figure 2.2 summaries inter-provincial domestic freight movements grouped by Origin-Destination (O-D) region pair.

These O-D freight movements show the main patterns of domestic freight movements in Vietnam. The Northeast and Northwest regions are heavily linked to the neighboring Red River Delta region: about 76% and 88% of inter-provincial freight movements go to the Red River Delta region, by origin and destination respectively.

The regions in the center (the North Central Coast, the South Central Coast, and the Central Highlands regions) are linked to both the Red River Delta and the Southeast regions in a similar scale. However, the linkage is marginal due to their low volume of economic activities and geographical remoteness. The freight movements from the Mekong Delta region are equally split between the Mekong River Delta and the Southeast region, about 48% each.

Box 2.2 Freight transport cost structure by mode and by distance: the case of India

McKinsey (2010) estimates that in India road transportation is relatively cheap for short distances up to 400km. Railways are preferred for medium range transportation in the 400-700km range. Waterways are more economical for long distances over 700km. However, those breakpoints are estimated given specific conditions in India, and on the basis of various assumptions, such as the type of transported commodity, size of trucks, trains, and vessels operated in India. Actual breakpoint in a specific region may be different from the figures quoted by McKinsey, if topographical endowments, such as navigable rivers and mountains, are taken into account. A similar assessment for Vietnam might reveal different results.



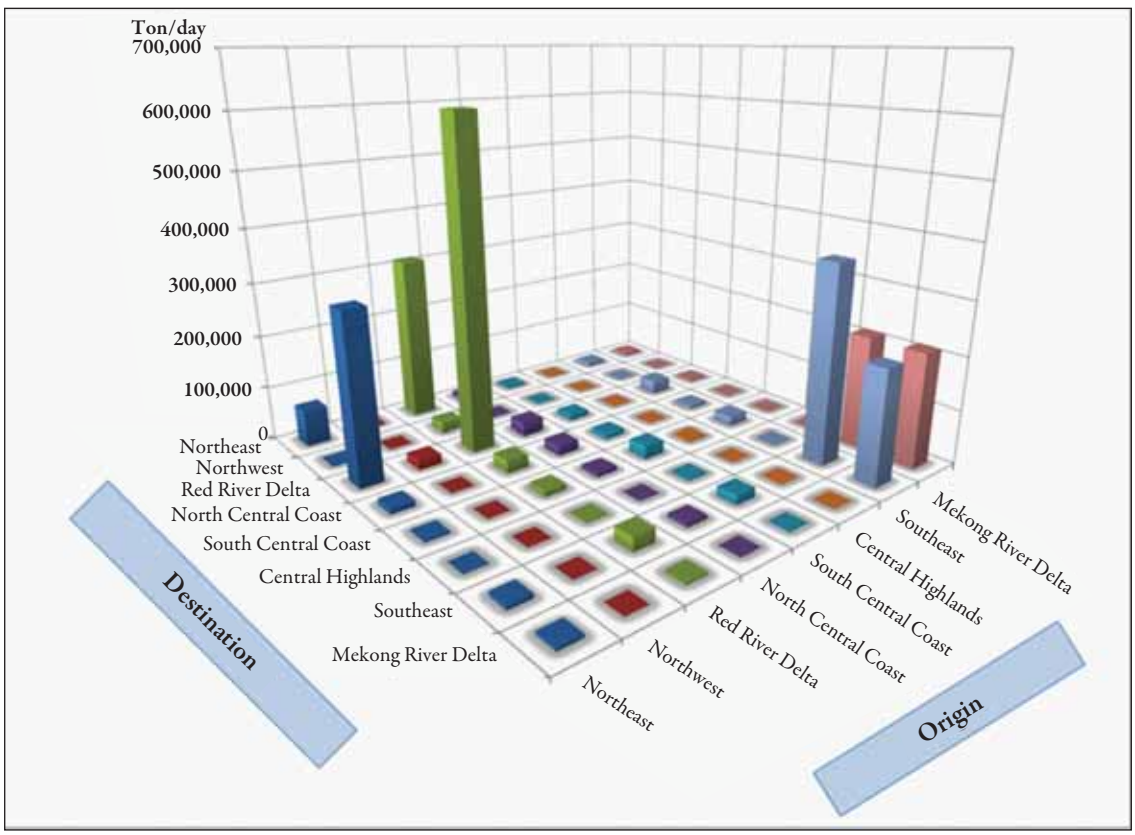
Source: McKinsey (2010)

An important finding of this analysis is the role of Da Nang in the South Central Coast region. Da Nang functions as a regional growth pole connecting neighboring regions, as well as the South and the North. However, the inter-provincial freight movements as of 2008 do not show much expected freight movements around Da Nang. It can be explained largely by the fact that the large markets of Hanoi and HCMC are too far away to draw a significant size of economic transactions, and neighboring local markets are too small. The weak downstream and upstream industrial linkages between Da Nang and the two special cities limit freight movements. A counter example is Can Tho in the Mekong River Delta region. The intra/inter -regional freight movements within the Mekong Delta region and with the Southeast region are quite large. The same is true for the Southeast and the Mekong River Delta regions.

Finally, a majority (about 60%) of freight movements of the two economic centers of the Red

River Delta and the Southeast are "intra-regional" ones. It leads to the dominance of short distance freight movements, as shown above.

Figure 2.2 Distribution of Inter-provincial freight movements, projected, 2008



Source: World Bank staff calculations using data from VITRANSS 2 (2009)

A recent study VITRANSS 2 (2009) projected domestic freight transportation demand up to 2030 based on various assumptions and model estimations.[2] The projection results are a continuation of current freight movement profiles in terms of modal shares and inter-regional freight distribution. Roads and inland waterways will still handle the majority of freight. However, in terms of tonnage, the modal share of roads is projected to increase from 45% in 2008 to 57% in 2030, while inland waterways decrease from 48% to 35% in the same period.

[2] Projecting freight transportation demand starts with estimating production and consumption by province and by commodity group. The provincial-level surplus or deficit is then used as a source of freight traffic. Socioeconomic growth trends and planned projects are also taken into account. After forecasting future OD distribution using the Fratar method, the modal split of freight traffic demand was estimated using differences in generalized cost of each transport mode. Consult VITRANSS2 (2009) for details.

Table 2.3 A Projection of modal shares of freight transportation, 2008 and 2030

		Road	Rail	Inland Waterway	Coastal Shipping	Air	Total
Volum Transported ('000 ton/ day)	2008	604.9	25.5	643.0	58.1	0.3	1,351.8
	2030	2,132.7	155.1	1,317.0	125.8	1.0	3,731.6
Modal Share (%, ton)	2008	45.4	1.9	48.3	4.4	0.0	100.0
	2030	57.2	4.2	35.3	3.4	0.0	100.0
Modal Share (%, ton -km)	2008	36.6	4.3	30.5	28.5	0.1	100.0
	2030	53.0	9.7	19.9	17.2	0.2	100.0

Source: VITRANSS 2 (2009)

2.1.2 Transport sector development strategy and investments

The key policy objective and strategy of the transport sector in Vietnam up to 2020 are outlined in the 2004 Transport Sector Development Strategy (TSDS). It aims to support various economic development plans of the ten year Socio Economic Development Strategy and the Comprehensive Poverty Reduction and Growth Strategy. Key priorities are (i) upgrading of Highway No. 1, (ii) construction of the Ho Chi Minh Highway, and (iii) development of public transport services and long-term transport planning in large cities. The main elements of TSDS are as follows.

- A balanced approach to transport development capitalizing on the country's geographical shape.
- Prioritization of maintenance and upgrading of existing assets.
- Prioritization of rural transport infrastructure especially in mountainous and remote regions.
- Prioritization of new investments in the north-south backbone, important economic zones, large urban areas and key links to neighboring countries.
- Prioritization mass transit systems in the urban sector.
- Increasing the local content in ship and automobile construction and repair.
- Increasing the share of domestic enterprises in the international transportation of Vietnamese goods.

Table 2.4 Transport infrastructure investments, 1999-2007

Mode	Total investments, USD mil	Share
Road	4,500	80%
Railway	115	2%
Waterway	110	2%
Maritime	510	9%
Air	415	7%
Total	5,645	100%

Source: Derived from VITRANSS 2 (2009)

Vietnam has invested VND 113,000 billion (USD 5.6 billion) for transportation infrastructure from 1999 to 2007, or 2.2% of GDP annually. However, only 45% of the planned investments were actually realized. In terms of sector composition in the same period, 80% of investments were for roads, followed by maritime (9%) and air (7%). The investments on railways (2%) and inland waterways (2%) were very low and almost negligible. The overall effectiveness of costs and benefits for this cross-modal distribution of investment prioritization in the sector might merit some further study.

As a result of strong investments in roads, nearly 30,000km of new roads were constructed, amounting to a total road length of 252,000km as of 2006. In addition, paved roads increased 5 times in the same period. Table 2.5 shows the recent dramatic increase in the road network of Vietnam.

However, as motorization is growing at a faster speed (nearly 20% per year), traffic congestion is building up along the main corridors, especially in the vicinity of large special cities of Hanoi and HCMC and the gate way port cities (VITRANSS2, 2009). It has a significant bearing on Vietnam in terms of facilitating urbanization and economic development. The main concern in this regard is, while the main engines of economic growth in Vietnam are the two special cities of Hanoi and HCMC and their suburban areas (or neighboring economic peripheries), local transport infrastructures in these areas are blighted by rapidly increasing congestion and bottlenecks.

The following sections focus on trucking transportation. It is not because other transport modes of inland waterways, railways, or coastal shipping are not important, but because the chapter focuses on road freight transportation to highlight the rapidly deteriorating bottlenecks in the largest cities and their suburban areas. The emphasis on road freight transportation in the chapter is also driven by the fact that 88% of manufactured goods are transported through roads

in Vietnam and the government is spending as much as 80% of transportation infrastructure investments on roads. Improving the efficiency of road freight transportation is critical to support industrialization and modernization of Vietnamese economy as well as to increase the economic returns from investments.

Table 2.5 Road improvements in Vietnam, 1999-2007

Management Category	Year	Total Length (km)	Length by Pavement Type (km)					
			Asphalt Concrete	Cement Concrete	DBST	Gravel	Earth	Other
National Road	1999	15,520	5,354	94	5,828	3,178	-	-
	2006	17,295	7,750	344	6,447	2,854	-	-
Provincial Road	1999	18,344	829	157	5,609	7,309	-	-
	2006	23,138	3,474	701	11,030	4,816	3,073	44
District Road	1999	37,437	-	-	-	-	-	-
	2006	54,962	1,762	2,581	10,992	34,897	77,261	3,601
Commune Road	1999	134,463	-	-	-	-	-	-
	2006	141,442	1,616	18,442	9,226	34,897	77,261	-
Urban Road	1999	5,919	2,297	-	3,622	-	-	
	2006	8,563	2,465	776	2,750	976	1,568	-
Other Road	1999	5,451	-	-	-	-	-	-
	2006	6,414	-	160.4	547	2,593	2,800	-
Total	1999	224,639	-	-	-	-	-	
	2006	251,787	16,967	23,005	40,992	62,018	104,816	3,644

Source: Vietnam Road Administration

To unveil the true magnitude of road transport infrastructure bottlenecks in different locations of freight movements in Vietnam, a spatially referenced route-specific trucking survey was implemented in late 2010. The following sections will analyze the trucking survey results and identify the locations of major bottlenecks in a portfolio of cities in Vietnam.

2.2 Spatially referenced route-specific trucking survey

There are 1,050 registered companies involved in the road transportation industry in Vietnam. Most of them are small to medium scale companies. The privatization of the trucking industry has progressed so much that the role of state-owned enterprises (SOEs) has been reduced to negligible levels, creating a highly competitive trucking market. While competition is a key factor in enhance responsiveness to the market and to lower costs, there is a danger that over-competition could stifle the modernization of the truck fleet (VITRANSS 2, 2009).

Table 2.6 Specifics of World Bank-EEC Survey: the number of data points per origin and type of route

Origin cities	Types of routes						Total
	to Hanoi	to Ho Chi Minh	to nearest international port	to nearest inland border post	to neighboring cities	to neighboring large rural villages	
Ho Chi Minh	42	1	17	49	46	27	182
Hanoi		30	33	39	110	29	241
Hai Phong	14	6	3	12	35	7	77
Da Nang	11	10	8	8	23	1	61
Bien Hoa	3	3	5	1	3		15
Can Tho	2	3	3				8
Ha Long (Hon Gai)	3		1				4
Hue	3	5	2	3	13	1	27
Lao Cai	3	1	3	7	6	27	47
Long Xuyen		4	1				5
Nam Dinh	5	3			1	57	67
Nha Trang	1	5	1				7
Phan Thiet	3		1	1			5
Phu Ly	3	2	1		3		9
Qui Nhon		9	2				11
Rach Gia		5	1				6
Vinh	1	2			1		4
Vung Tau		7	3		1	1	12
Other[1]	9	33	16	1	5		64
Total	103	129	102	121	247	150	852

Note 1: This category includes 33 origin locations.

Collecting the information from truckers on the "actual" costs of transporting goods in different places of production locations will help better understand the true magnitude of transport infrastructure bottlenecks, and identify main drivers of high transport costs and corresponding policy interventions. It answers not only "what" to invest, but also "where" to invest.

In this regard, a spatially referenced route-specific trucking survey was commissioned by the World Bank.[3] The trucking survey consisted of a series of structured, face-to-face interviews with key senior managers/owners of trucking enterprises and with individual truck operators who owned or leased their trucks as independent businesses.

The final sample includes 852 data points (or O-D combinations) with 246 respondents. As shown by Table 2.6, the quota was filled for every origin and for six categories of routes. Appendix 2B details the sampling strategy of the trucking survey.

Figure 2.3 Location of origin cities in the trucking survey

[3] The trucking survey was implemented by the Etude Economique Conceil (EEC) over November and December, 2010. The survey data were then sorted through five levels of data quality control. Level 1: direct control over enumerators through callbacks of respondents or on-site direct controls (100% call-back at selected moments during the survey by the field management team in the country, and a minimum of 40% callbacks overall). Level 2: direct control by the project coordinator and country manager in 100% of cases to verify disclosed internal coherence requirements. These two types of tests were implemented within 24 hours of the survey to allow eventual quick returns to primary source respondents. Level 3: data entry controls disallowing illegal values and maintaining filter questions and skip patterns. Level 4: post data entry controls on undisclosed internal coherence requirements. Level 5: post data entry controls testing for systematic enumerator or supervisory mistakes, regular and unexpected patterns of responses, unusual answers, outliers and, more generally, unexpected correlations. Levels 3 and 4 tests were conducted at EEC's headquarters. Cases requiring clarifications were sent back to the field country manager who contacted respondents. Level 5 tests were conducted once all data was entered, and no problems were detected.

For the analysis, 852 data points are disaggregated by the type and location of origin cities, and by the type of O-D routes (Table 2.7). Specifically, origin cities are classified into three groups of (i) special cities, (ii) class 1 cities, and (iii) other lower tier cities (classes 2 to 4); and into three regional groups of (i) the north (the Northern Midlands, and the Red River Delta), (ii) the central (the North Central/the Central Coast), and (iii) the south (the Central Highlands, the Southeast, and the Mekong River Delta). Finally, O-D routes are grouped into (i) freight movements to special cities (Hanoi, and HCMC), (ii) to foreign markets (international ports and inland border posts), and (iii) to neighboring (domestic) cities and large rural villages.

In the descriptive analysis throughout following sections, data points in the top and the bottom 10 percentiles are dropped to control for outliers. For example, when computing the average unit transport price, the top and the bottom 10 percentiles of unit transport prices are dropped first, and then the average of each subgroup is computed from remaining data. In this way, the typology analysis can be free from the outlier issues.

Table 2.7 The trucking survey sample structure

City class of origin cities	Data points	Share, %
Special cities	424	50
Class 1 cities	184	22
Other cities (class 2-4)	232	28
Total	840	100.0
The geographical location of origin cities	**Data points**	**Share, %**
North	462	54.2
Central	127	15
South	263	31
Total	852	100.0
Route type: freight movements to	**Data points**	**Share, %**
Special cities	232	27.2
Foreign markets	223	26.2
Neighboring cities/ rural villages	397	46.6
Total	852	100.0

2.3 Inter-city freight movements

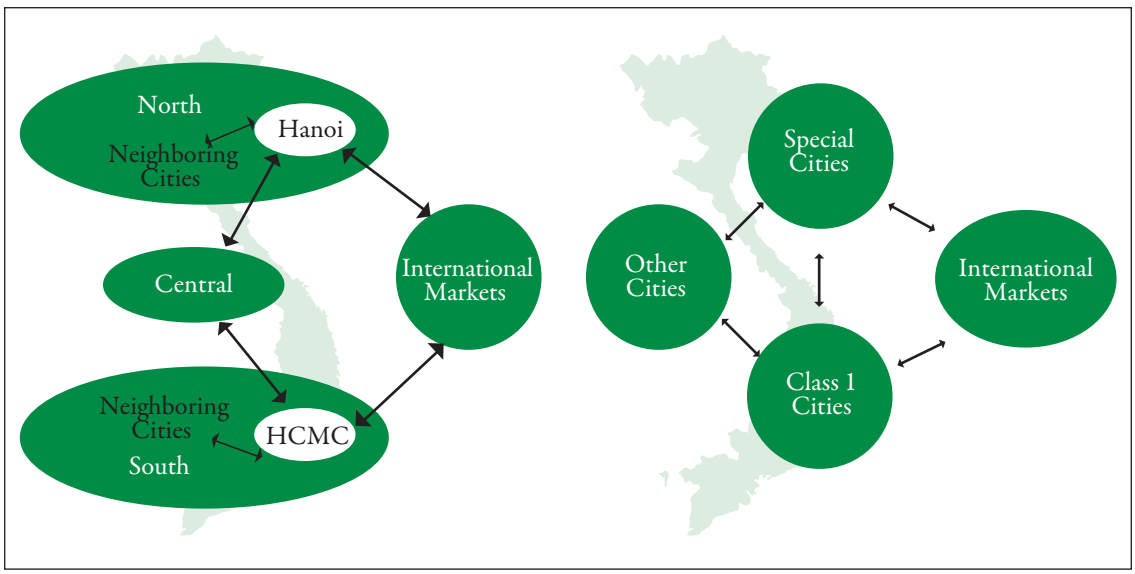
Inter-city freight movements in Vietnam show different structures by city class and by region. Large special cities of Hanoi and HCMC have relatively evenly distributed inter-city freight movements. About 60% of freight movements are equally distributed between two special cities and those to foreign markets (Table 2.8). The remaining 40% are movements to neighboring cities and rural villages. For class 1 cities of Quy Nhon, Can Tho, Da Nang, Hai Phong, and Hue, freight movements to upper tier special cities are more dominant (42%). The freight movements of lower tier (classes 2 to 4) cities are dominantly domestic with the smallest share of international freight movements (17%).

In a regional perspective, about 60% of freight movements from the central region (the North Central/the Central Coast) are to special cities in the north and in the south. The northern and the southern regions have relatively evenly distributed freight movements. This reflects the concentration of the economic system around Hanoi and HCMC, and corresponding freight movements in Vietnam.

Table 2.8 Freight movements by city class and by region

Route type: freight movements to (share, %)		Origin			Total
		Special cities	Class 1 cities	Other cities	
Destination	Special cities	28.5	42.1	36.1	29.6
	Foreign markets	26.5	28.9	16.9	26.5
	Neighboring cities/rural villages	42.7	28.0	46.6	41.7
	Total	100.0	100.0	100.0	100.0
Route type: freight movements to (share, %)		**Origin**			**Total**
		North	**Central**	**South**	
Destination	Special cities	23.8	57.0	35.6	29.6
	Foreign markets	26.3	21.9	26.9	26.5
	Neighboring cities/rural villages	48.2	20.9	34.6	41.7
	Total	100.0	100.0	100.0	100.0

Figure 2.4 Inter-city freight networks in a broader context



2.4 Main obstacles to inter-city trucking operation

Survey results on the main obstacles to inter-city trucking operation are shown in Figure 2.5 and Table 2.9. Truckers consider corruption (at 3.7 on a scale of 0 to 5), and poor road conditions (3.1) to be main obstacles to their trucking operations. Fuel costs (2.7), lack of backload (2.7), and regulation/licenses (2.6) also impede trucking operations. When examining the severity of these bottlenecks by city class, region, and freight movement type, as in Table 2.9, the cross-sectional variations are not found to be significant. For example, corruption and poor road conditions are the main obstacles for all city classes, regions, and freight movement types. However, there are some differences which shed light on prioritizing local policy interventions.

First, class 1 cities perform relatively better than other classes. For example, truckers in class 1 cities score (subjectively) the severity of corruption as 3.3 (out of 5), better than special cities (3.8) and other lower tier cities (3.7). At the same time, regarding the severity of poor road condition, class 1 cities score 2.9, a little better than special cities (3.1) and others (3.5).

Second, the southern region (the Southeast, the Central Highlands, and the Mekong River Delta) is more severely impaired. For all five main constraints listed above, the south scored the worst. For truckers in the south, the constraint of corruption/road blocks scored 4.1 (out of 5), compared to 3.4 for the north and 3.3 for the central region. The severity of poor road conditions in the south region is 3.4, again higher than in the north (2.8) and the central region (2.5), suggesting that significant improvements are needed in the south.

Finally, regarding the two major obstacles of corruption and poor road condition, freight

movements to special cities are more severely hindered than other freight movements. Corruption in the freight movements to special cities is scored 4.1 (out of 5) compared to 3.6 of other movements to foreign markets or neighboring cities/rural villages. The same holds for poor road conditions, 3.5 versus 2.9.

Figure 2.5 Main obstacles to inter-city trucking operations

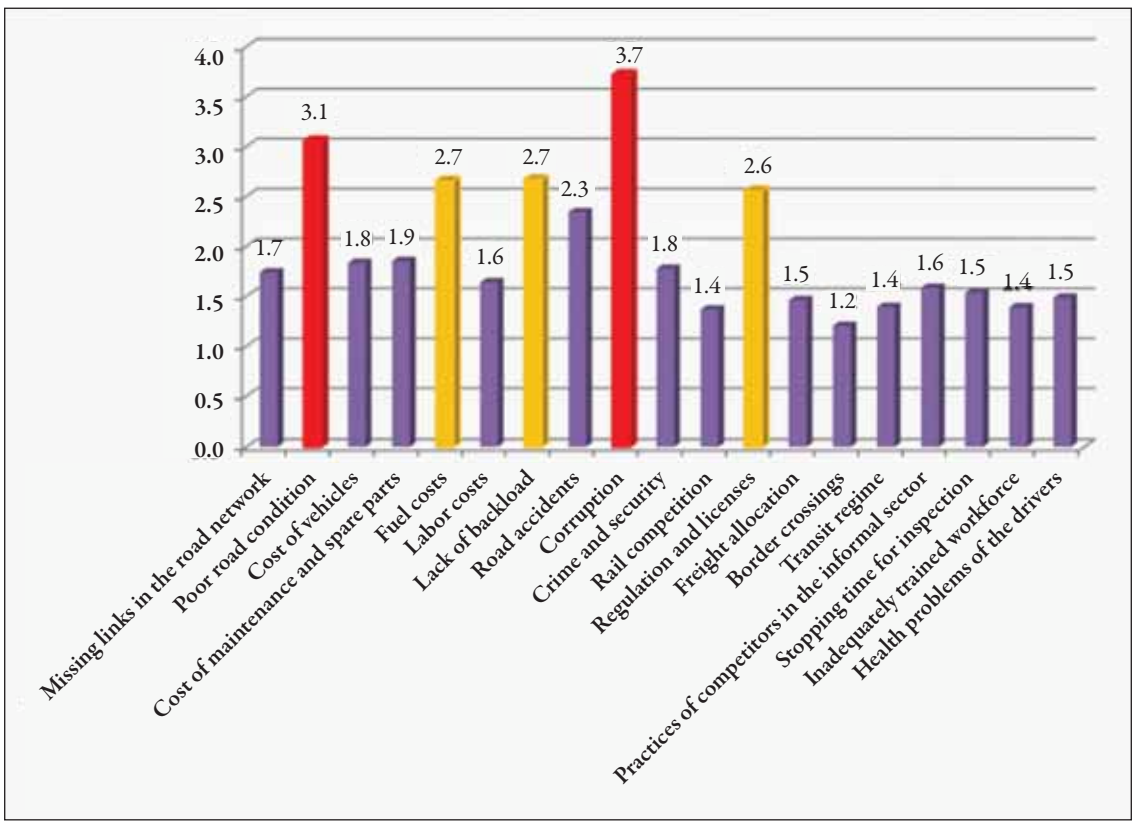


Table 2.9 Main obstacles to inter-city trucking operations, by city class, region, freight movement types

Main obstacles to trucking operations (1: no obstacle, 5: very severe) by city class	Special cities	Class 1 cities	Other cities	Total
Poor road condition	3.1	2.9	3.5	3.1
Fuel costs	2.6	3.0	2.8	2.7
Lack of backload	2.7	2.1	2.6	2.7
Road accidents	2.4	2.1	2.1	2.3
Corruption	3.8	3.3	3.7	3.7
Regulation and licenses	2.6	2.5	1.9	2.6
Main obstacles to trucking operations (1: no obstacle, 5: very severe) by region	**North**	**Central**	**South**	**Total**
Poor road condition	2.8	2.5	3.4	3.1
Fuel costs	2.5	2.3	2.8	2.7
Lack of backload	2.5	2.0	2.9	2.7
Road accidents	2.4	2.4	2.2	2.3
Corruption	3.4	3.3	4.1	3.7
Regulation and licenses	2.3	1.6	2.9	2.6
Main obstacles to trucking operations (1: no obstacle, 5: very severe) by route type	**Movements to special cities**	**Movements to foreign markets**	**Movement to neighboring cities/rural villages**	**Total**
Poor road condition	3.5	2.9	2.9	3.1
Fuel costs	2.9	2.6	2.6	2.7
Lack of backload	2.6	2.4	2.9	2.7
Road accidents	2.4	2.4	2.3	2.3
Corruption	4.1	3.6	3.6	3.7
Regulation and licenses	2.3	2.7	2.6	2.6

2.5 Haulage characteristics

Haulage characteristics of how truckers use different types of trucks to move freight to different locations captures the efficiency of freight movements and indirectly measure the quality of transport infrastructure supporting these freight movements. These location and route-specific characteristics explain why different routes have different transport prices and cost structures, which are discussed in the next section. Before examining transport price/cost structures, this section overviews the haulage characteristics of different routes.

Relatively larger trucks with more cargo capacity operate in class 1 cities, the central/south

regions and long distance movements to special cities. However, the average loading and overloading per truck weight are uniform across different typology classifications, suggesting a competitive trucking market structure. The average trip speed (trip distance divided by trip time) also does not change much across all classifications and is around 30-35km/hour.

Major differences are the empty backhaul rate (percentage of trips returning without cargo) and the yearly truck utilization (measured by yearly mileage). Trucks in class 1 cities have relatively higher empty backhaul rates (40%, compared to the national average of 28%). However, trucks in the central region and freight movements to special cities show quite low empty backhaul rates of around 4%, again compared to the national average of 28%.

The average yearly mileage recorded by trucks operating on each route, as a measure of truck utilization, show quite distinct patterns. Trucks in class 1 cities or in the central/south regions are used more extensively. Significant differences exist between movements to special cities and trips to other cities. The average truck mileage in trips to special cities is 63,000km per year, which is much longer than movements to foreign markets (22,000km) or to neighboring cities or villages (16,000km).

Table 2.10 Haulage characteristics, by city class, region, freight movement types

By city class	Special cities	Class 1 cities	Other cities	Total
Age of trucks, years	16.5	17.1	17.3	16.6
Truck weight, without cargo, ton (a)	7.6	12.9	8.7	8.0
Average load, ton (b)	14.0	21.1	13.3	14.6
Average overload, ton (c)	8.3	8.5	5.8	8.3
Average load/truck weight (b/a)	1.6	1.5	1.8	1.6
Avg overload/truck weight (c/a)	1.0	0.7	1.0	0.9
Number of turnarounds per year	45.0	79.8	65.1	47.6
Fraction of empty returns, %	27.3	40.2	28.5	28.2
Average trip distance, km	499.4	453.2	392.5	493.7
Average trip time, hours	14.1	12.0	9.3	13.9
Average speed, km/hr	33.7	35.9	32.1	33.8
Yearly mileage, km	26,750	31,338	24,582	27,019
By region	**North**	**Central**	**South**	**Total**
Age of trucks, years	17.1	17.1	15.9	16.6
Truck weight, without cargo, ton (a)	5.8	12.0	10.4	8.0
Average load, ton (b)	10.8	18.0	19.7	14.6
Average overload, ton (c)	6.5	6.1	9.9	8.3
Average load/truck weight (b/a)	1.5	1.6	1.9	1.6
Avg overload/truck weight (c/a)	0.8	0.7	1.1	0.9

Number of turnarounds per year	40.6	54.7	55.5	47.6
Fraction of empty returns, %	27.1	3.5	31.0	28.2
Average trip distance, km	393.8	780.9	643.5	493.7
Average trip time, hours	11.0	20.9	17.9	13.9
Average speed, km/hr	35.8	39.8	30.8	33.8
Yearly mileage, km	22,858	34,424	32,216	27,019

By route type	Movements to special cities	Movements to foreign markets	Movements to neighboring cities/rural villages	Total
Age of trucks, years	17.4	16.9	16.0	16.6
Truck weight, without cargo, ton (a)	10.0	9.0	6.6	8.0
Average load, ton (b)	19.6	16.8	11.0	14.6
Average overload, ton (c)	11.1	8.7	5.9	8.3
Average load/truck weight (b/a)	2.0	1.7	1.5	1.6
Avg overload/truck weight (c/a)	1.2	1.0	0.8	0.9
Number of turnarounds per year	31.2	48.0	53.6	47.6
Fraction of empty returns, %	3.9	30.9	34.7	28.2
Average trip distance, km	1,516.2	343.4	226.0	493.7
Average trip time, hours	42.8	13.2	6.3	13.9
Average speed, km/hr	31.7	34.0	34.6	33.8
Yearly mileage, km	63,253	22,368	16,426	27,019

2.6 Transport cost and price structure[4]

The national average trucking unit price charged per ton-km is 2.8 thousand VND (US$0.144) (Table 2.11 and Figure 2.6).[5] However, the unit price varies significantly across different types of classifications. Across city classes, the ton-km unit price is lowest in class 1 cities (1.5 thousand VND). It is much higher in special cities (2.9 thousand VND) and other lower tier cities (2.6 thousand VND). When compared by region, the central region is lowest at 1.3 thousand VND, and the south region at 1.9 thousand VND. However, it is much higher in the north region (3.6 thousand VND). The same pattern is observed across freight movement types. First, movements to special cities are lowest at 1.3 thousand VND. It becomes higher for freight movements to foreign markets (2.4 thousand VND), and the highest for short movements to neighboring cities or rural villages (3.6 thousand VND).

Two interesting facts emerge, when the survey data are more closely examined. First, the unit price charged per ton-km is closely linked to the per ton-km unit operation costs. The correlation coefficient is 0.87 (Table 2.12). It implies that 76% (the square of 0.87%) of variance in the unit price charged can be explained by the variance in the unit operation cost. These self-reported truck operation costs include fuel, salary, route allowances, maintenance expenses, official overhead costs of tolls and road taxes, and informal facilitation payments such as bribes. The profit margin, or the difference between the unit price charged and the unit operation cost, is quite stable across all different classifications. It reconfirms a competitive inter-city trucking market structure in Vietnam, as explained earlier.

Second, as shown in the correlation coefficient matrix in Table 2.12, in addition to the unit operation cost, the unit price (per ton-km) is also closely correlated with truck utilization (yearly mileage), truck size, and trip distance. Though the direction of causality is not clear on account of the endogeneity in truckers' decisions, higher vehicle utilization (longer mileage or trip distance) and use of larger trucks lower the unit cost and the unit price of inter-city freight movements by spreading out fixed overhead costs including capital costs. In sum, improving the operational efficiency of the trucking industry will be a high priority in Vietnam.

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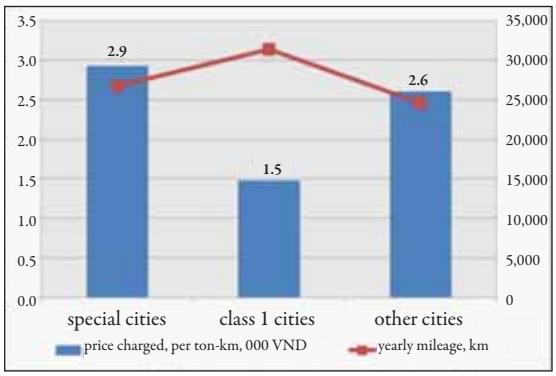
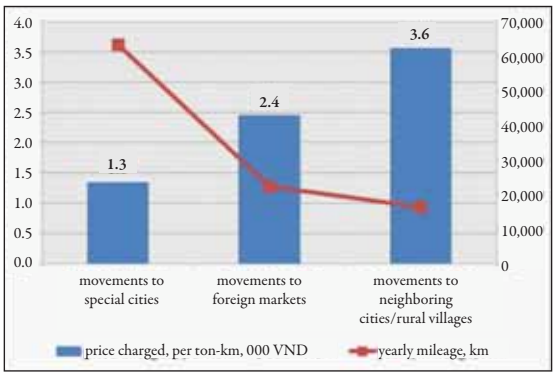
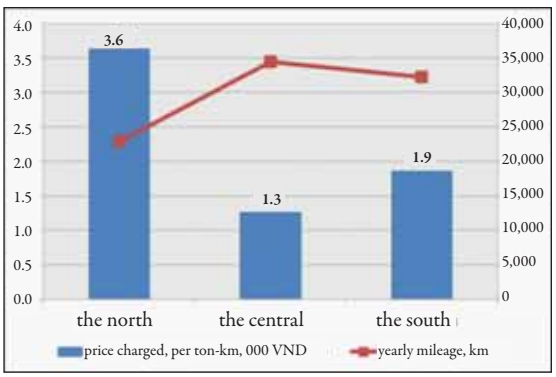
[4] Transport price profiles of trucking freight movements may be thought of as one part of the story, as an equal amount of freight is carried by inland waterways. However, the two transport modes are specialized in different commodity bundles: 88% of manufactured goods move over roads, and heavy raw materials by inland waterways (73% of construction materials and 79% of coals). As this report focuses on the various linkages among urbanization, industrialization and connective infrastructure, there is a focus on road freight transport.

[5] 19,510 VND/US$, the average exchange in November-December, 2010, is used to convert VND to US$.

Figure 2.6 Transport price and yearly mileage, by city class, region, freight movement type







In Table 2.11, the total operation costs are decomposed into fuel, salary, route allowances, maintenance expenses, official overhead costs (tolls and road taxes), and informal facilitation payments (bribes). The composition of each cost component is relatively uniform across different classifications. About 65% of operating costs are attributable to fuel costs, followed by salary (16%), maintenance expenses (5%), official overhead costs of tolls and road taxes (5%), and route allowances (1%). Significantly, about 8% of total operation costs pay for informal facilitation payments such as bribes. The Bank's companion trucking survey in India found that these informal facilitation payments there are about 4% of the total operating costs of inter-city trucking. India's inter-city trucking movements (see Box 2.3) are hampered by truck delays at various check points to collect local octroi tax, check transport documents and inspect vehicles. Significant amounts are paid unofficially to facilitate the process or bypass check point delays. It is striking that Vietnam's 8% of informal facilitation payments are twice as high (as a percentage of total operating cost) as India's.

Reducing informal facilitation payments might require a two-prong effort. One reason why informal payments are frequent is that vehicle weight and height limits are quite low in many corridors because the infrastructure quality (e.g., pavement quality, bridge standards, etc.) is

low. Since the country has continued to develop in many cases more rapidly than the quality of basic infrastructure, heavy traffic (e.g., container trucks) is found on those roads, and they are held up by police enforcing the weight and height limits. In this case, better road infrastructure allowing for more relaxed weight and height limits that accommodate the economic demand would improve not only the operating cost issue – but also reduce corruption.

The second reason for informal payments is that the road traffic rules and regulations are, in many instances, open to interpretation by police and other authorities, leaving the door open for unpredictable stops for trucks along their routes (which of course adds to travel times and variability of travel times and increases inventory carrying costs, on top of leading to informal payments). There is a clear case for regulatory reform with regard to the informal payment issue, but not necessarily through corruption-focused regulation (though this may be needed as well), but by overhauling traffic rules and clarifying the reasons why a truck can be stopped.

Table 2.11 Transport price and cost structure, by city class, region, freight movement type

By city class	Special cities	Class 1 cities	Other cities	Total
Price charged, to go, per ton-km, 000 VND	2.9	1.5	2.6	2.8
Price charged in Us$	0.150	0.075	0.133	0.144
Total operating costs, per ton-km, 000 VND	1.7	0.8	1.6	1.7
Share of total operating costs, %				
Fuel	65.2	61.7	60.9	64.9
Salary	15.7	14.3	15.9	15.6
Route allowances	1.1	1.8	1.1	1.2
Maintenance	5.2	6.3	7.3	5.3
Official overhead costs (tolls, road taxes)	4.4	6.7	4.5	4.6
Informal facilitation payments (brides)	8.3	9.2	10.2	8.4
Yearly mileage, km	26,750.0	31,338.1	24,582.5	27,019.4
By region	**The north**	**The central**	**The south**	**Total**
Price charged, to go, per ton-km, 000 VND	3.6	1.3	1.9	2.8
Price charged in Us$	0.186	0.065	0.095	0.144
Total operating costs, per ton-km, 000 VND	2.2	0.8	1.0	1.7
Share of total operating costs, %				
Fuel	67.4	61.7	63.5	64.9
Salary	15.5	16.7	15.3	15.6
Route allowances	1.3	0.7	1.1	1.2
Maintenance	4.6	5.4	5.7	5.3
Official overhead costs (tolls, road taxes)	4.7	5.6	4.4	4.6

Informal facilitation payments (brides)	6.5	9.9	9.9	8.4
Yearly mileage, km	22,858.5	34,424.1	32,216.5	27,019.4
By route type	**Movements to special cities**	**Movements to foreign markets**	**Movement to neighboring cities/ rural villages**	**Total**
Price charged, to go, per ton-km, 000 VND	1.3	2.4	3.6	2.8
Price charged in Us$	0.069	0.126	0.182	0.144
Total operating costs, per ton-km, 000 VND	0.8	1.4	2.2	1.7
Share of total operating costs, %				
Fuel	67.2	62.8	63.2	64.9
Salary	13.3	17.0	16.3	15.6
Route allowances	0.9	1.1	1.8	1.2
Maintenance	4.7	5.8	5.2	5.3
Official overhead costs (tolls, road taxes)	4.7	4.4	5.3	4.6
Informal facilitation payments (brides)	9.2	8.9	8.2	8.4
Yearly mileage, km	63,253.4	22,368.7	16,426.6	27,019.4

Table 2.12 Correlation coefficient matrix of key indicators of inter-city transportation

	Price charged per ton - km	Operation costs, per ton - km	Yearly mileage	Truck age	Truck weight	One trip distance	One trip time	Average speed	Pct of empty return
Price charged, per ton-km	**1.00**								
Operation costs, per ton-km	**0.87***	1.00							
Yearly mileage	**-0.29***	-0.28*	1.00						
Truck age	**0.11***	0.06	-0.07	1.00					
Truck weight	**-0.62***	-0.68*	0.18*	-0.08*	1.00				
One trip distance	**-0.34***	-0.31*	0.38*	0.02	0.17*	1.00			
One trip time	**-0.30***	-0.29*	0.39*	0.07*	0.17*	0.94*	1.00		
Average speed	**0.10***	0.18*	-0.04	0.06	-0.06	-0.09*	0.01	1.00	
Percent of empty return	**-0.01**	-0.13*	-0.16*	-0.05	0.22*	-0.34*	-0.30*	-0.04	1.00

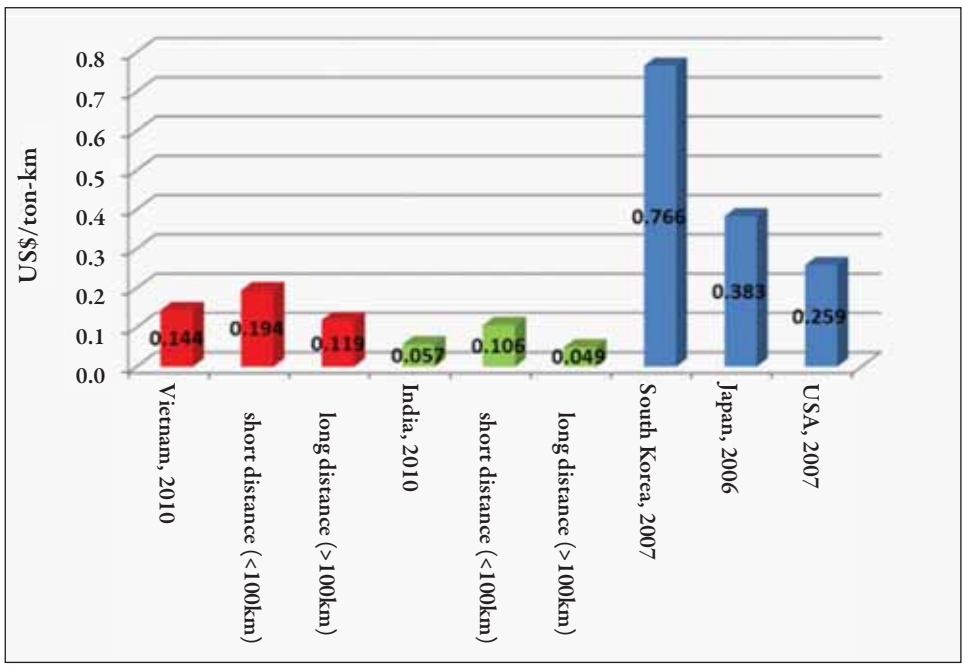
Box 2.3 India's transport costs for inter-city trucking movements in 2010

Indian truckers charge high prices for short distance intra-urban (less than 100km trip distance) freight transport. The short distance intra-urban freight costs are more than double the long distance extra-urban ones in the same city group. The table below shows that the high price for intra-urban freight transport is highly correlated with the vehicle utilization rate (yearly mileage). Higher truck utilization drives down unit costs, as truckers make up for fixed overhead costs which they need to pay up front.

City type	Big cities (>4m)		Small cities (<4m)		
Route type	Intra-urban (>100km)	Extra-urban (<100km)	Intra-urban (>100km)	Extra-urban (<100km)	Total
Price charged, US$/ton-km	0.113	0.054	0.098	0.044	0.057
Total costs, US$/ton-km	0.102	0.059	0.124	0.065	0.065
Share of total operating costs, %					
Fuel	54.1	69.4	59.9	73.6	70.2
Salary	14	5.6	9.8	5.2	5.6
Route allowance	7.7	4.4	7.7	4.3	4.4
Maintenance	8.8	6.6	8.9	6.1	6.5
Overhead costs (tolls, taxes)	14.0	5.6	9.8	5.2	5.6
Facilitation payments (bribes)	5.6	4.4	6.3	4.3	4.4
Yearly mileage, km	25,139.50	80,825.30	25,605.40	73,261.00	73,132.10

Source: The companion India Urbanization Review Study (2011), World Bank

Figure 2.7 International comparison of unit freight transport price per ton-km, by roads
(Vietnam's values are shown in red and India's in green)



Source: WB (2011) and Suh et al (2009)

Vietnam's unit transport cost per ton-km (US$0.144), which truckers charge to move freights domestically, is not high compared to other developed countries of South Korea (US$0.766), Japan (US$0.383), and the United States (US$0.259). However, it is higher than India (only US$0.057). In particular, the unit costs for short distance trips less than 100km, is high. The national average is US$0.194, and it rises to US$0.245 in Hanoi, which is the most expensive (Tables 2.14 and 2.15). The Table 2.13 lists the unit transport costs of other modes of railway, coastal shipping, and air transportation in South Korea, the USA and Japan.

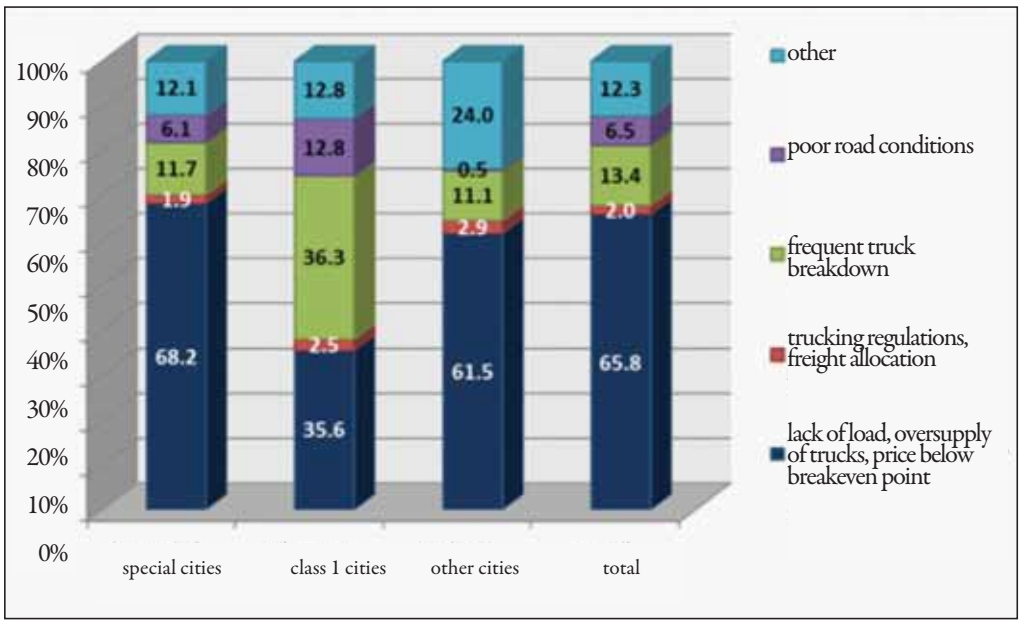
Table 2.13 Unit freight transport price (per ton-km) by transport mode in comparator countries

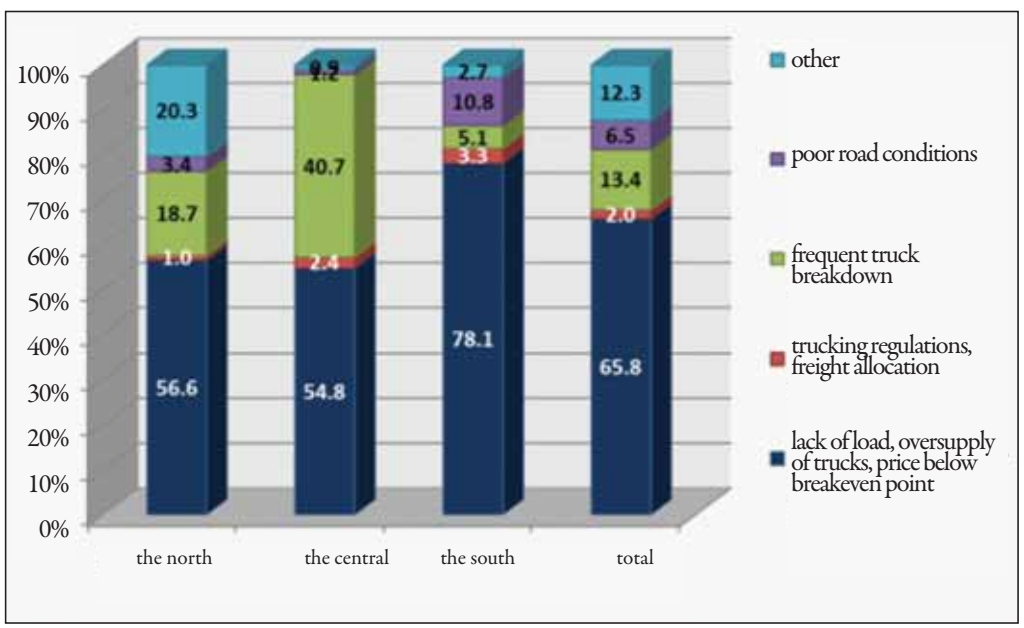
Unit transport price charged, US$/ton-km	Road	Rail	Coastal shipping	Air	Total
South Korea, 2007	0.766	0.070	0.031	0.232	0.582
Japan, 2006	0.383	0.055	0.040	0.603	0.454
USA, 2007	0.259	0.022	0.016	2.869	0.124

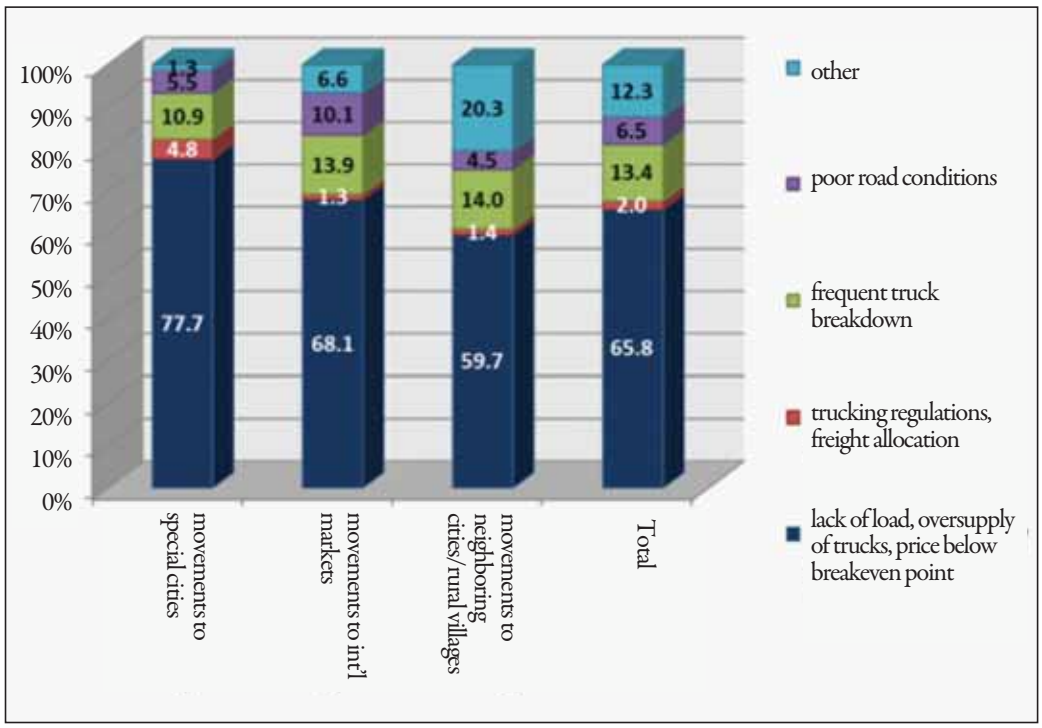
Source: Suh et al (2009)

2.7 Constraints on inter-city trucking movements (with reference to Figure 2.8)

Figure 2.8 Factors causing idle time during trips, by city class, region, freight movement type







The trucking survey asked fleet owners and truckers for their perceptions on which factors make their trucks idle during a trip along the specific route. Nationally, 66% of truckers chose demand constraints (less demand, over supply, price below breakeven point) as the most critical factor responsible for idle time. The next important factor was truck breakdowns (13% of respondents).

Interestingly, hardware and software infrastructure, such as poor road conditions (7%) and trucking regulations (2%), were found to be less constraining, compared to lower demand or truck breakdowns. However, truckers' (subjective) perception needs to be interpreted carefully, as they tend to take other collective factors as given. For example, truckers compete for cargos with local competitors. For them, collective constraints equally affecting all market participants, such as poor road conditions, will not be factors influencing their chance of getting cargos.

When examined across different classification types, demand constraints (or oversupply of trucking services) are more severe in special cities (68%), in the south region (78%), and in freight movements to special cities (78%). The common area intersecting all three hotspots is HCMC. The next section will discuss this in detail in the perspective of urban and regional development.

2.8 Emerging policy issues in the transport sector and its linkage to successful urbanization: Main bottlenecks are the two special cities and their suburbs

2.8.1 Descriptive analysis

This chapter begins by looking at the modal split of freight transportation across the country. It reveals that the two dominant shares of freight transport are inland waterways with 48%, and roads with 45%. A large proportion of manufactured goods (88%) is transported by roads. While a majority of heavy raw materials are shipped using inland waterways, such as construction materials (73%) and coal (79%).

Rail freight is relatively weak at 1.9% and coastal which is mainly the dominant mode for longer trips (over 1000 km, particularly 1400km-1600km) is responsible for 4.4% of freight movement. The dominance of short distance freight transportation trips of less than 200km distance is quite significant. 87% of all freight movement takes place within 200km, with 98% of all inland waterway movement taking place within 200km and 73% or road movement take place within 100km. This can be partly explained by the fact that 60% of the freight movement of the economic centers is intra-regional.

In terms of the sector composition of investments between 199-2007, 80% of investments were for roads, followed by maritime at 9% and air at 7%. The investments on railways (2%) and inland waterways (2%) were very low and almost negligible. The overall trade-offs and benefits for this cross-modal distribution of investment prioritization in the sector might merit some further study.

The chapter then focuses on road freight transportation. As mentioned earlier, 88% of manufactured goods are transported by roads in Vietnam and that urbanization and industrialization are closely linked.

The analysis has so far examined several key indicators measuring the structure and the costs of inter-city road freight movements in Vietnam. Different profiles across city classes, regions, and freight movement types can be consolidated into one typology matrix, namely a taxonomy pairing city class (Hanoi, HCMC, Class 1 cities, other lower tier cities) and trip distance (less or more than 100km). Key indicators to focus on are the unit price per ton-km, yearly mileage (vehicle utilization), and truck size. Tables 2.14-2.15 and Figure 2.9 show the results.

First, the unit price charged per ton-km is much higher in short-distance (less than 100km) freight movements, in particular from the two largest special cities of Hanoi and HCMC. In Hanoi and MCMC, the unit price is 4.8 and 3.0 thousand VND respectively. It is also higher in lower tier (classes 2 to 4) cities at 3.8 thousand VND. However, the unit price is much lower in class 1 cities, at only 1.6 thousand VND. The sharp difference in the unit price between

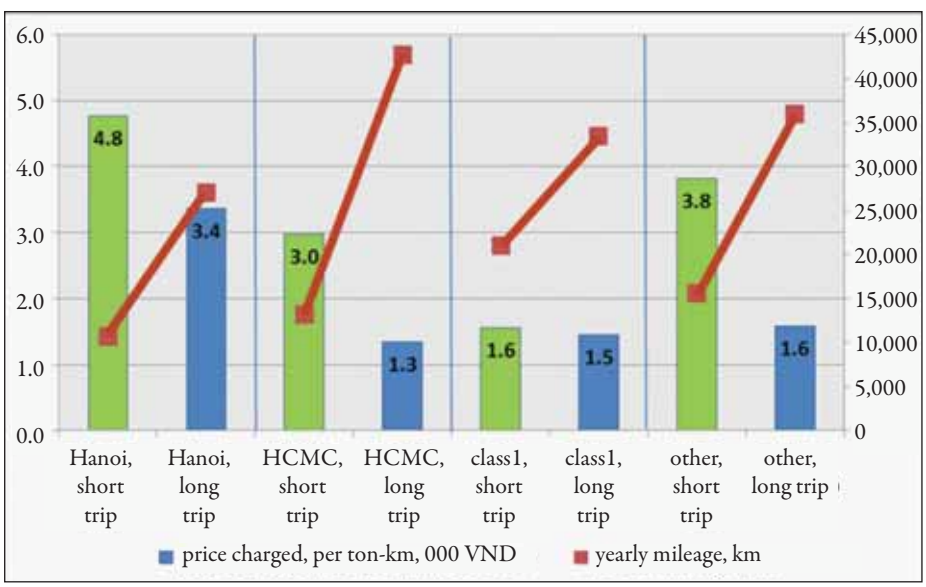
special cities and class 1 ones is striking, as there is virtually no difference in the average trip distance of around 70km.

Second, the unit price profiles mirror the status of vehicle utilization in each location. There is a strong regularity that lower yearly mileage in short distance freight movements from Hanoi, HCMC, and other lower tier cities drives higher unit prices. At the same time, the lower unit price in class 1 cities is likely the reflection of higher yearly mileage.

Third, relatively higher unit prices in Hanoi compared to HCMC (4.8 versus 3.0 thousand VND for short distance movements, and 3.4 versus 1.3 thousand VND for long distance movements) can be explained by Hanoi's dominance in small trucks. The average truck weights (without cargo) in Hanoi are 3.3 and 6.0 tons for short and long distance freight movements respectively, which are much smaller than those of HCMC (9.3 and 10.9 tons respectively).[6]

Finally, the main obstacles for trucking companies operating in two large special cities are demand constraints: less demand, oversupply, and price below the breakeven point. It is much less severe in class 1 cities (Figure 2.8). Considering these patterns, improving internal efficiency of trucking companies, particularly in large special cities, is an urgent priority. Potential reforms would include adoption of advanced logistics management systems and market reforms in the transport industry to internalize the logistics network externalities and attract private investments while maintaining the competitive market structure.

Figure 2.9 Transport price and yearly mileage, by city class and trip distance



Note: The figures are the average unit price and yearly mileage of freight movements from Hanoi/HCMC/class 1 cities/other cities to destinations of less (more) than 100km of one way trip distance.

[6] A caveat to note is that many survey interviews were done in Hanoi for trucks coming from HCMC. So there can be an upward bias for trucks in HCMC, which tend to be larger due to long journey from HCMC to Hanoi. However, the correlation between the unit price and the yearly mileage will be consistent.

Table 2.14 Haulage characteristics, by city class and trip distance

Haulage characteristics	Hanoi		Hcmc		C lass 1 cities		Other lower tier cities		Total
	Short distance (<100km)	Long distance (>100km)	Short distance	Long distance	Short distance	Long distance	Short distance	Long distance	
Age of trucks, years	15.2	18.1	14.0	17.1	16.5	17.2	19.7	17.1	16.8
Truck weight, without cargo, ton(a)	3.3	6.0	9.3	10.9	14.2	12.7	7.9	8.6	7.9
Average load, ton (b)	6.8	10.6	16.2	21.6	21.7	21.0	9.6	15.7	14.6
Average overload, ton (c)	3.5	6.6	6.6	11.0	8.2	8.6	3.0	8.0	8.2
Avg load/truck weight (b/a)	1.4	1.5	1.6	2.0	1.3	1.6	1.7	1.8	1.6
Avg overload/truck weight (c/a)	0.7	0.8	0.8	1.2	0.5	0.7	1.0	1.1	0.9
Number of turnarounds, year	38.1	34.1	61.6	47.5	97.1	76.2	76.9	60.8	45.8
Fraction of empty returns, %	26.8	22.7	48.9	20.1	86.5	29.3	40.1	9.0	27.5
Average trip distance, km	70.3	561.9	64.7	1,007.2	75.7	525.3	52.3	701.8	511.0
Average trip time, hours	2.4	15.5	2.2	30.0	2.0	14.0	2.0	17.6	14.4
Average speed, km/hr	34.1	37.1	29.7	31.6	36.9	35.7	30.7	34.6	34.1
Yearly mileage, km	10,672.8	27,002.5	13,216.4	42,718.3	21,053.0	33,484.5	15,583.4	35,999.7	27,445.2

Table 2.15 Transport price and cost structure, by city class and trip distance

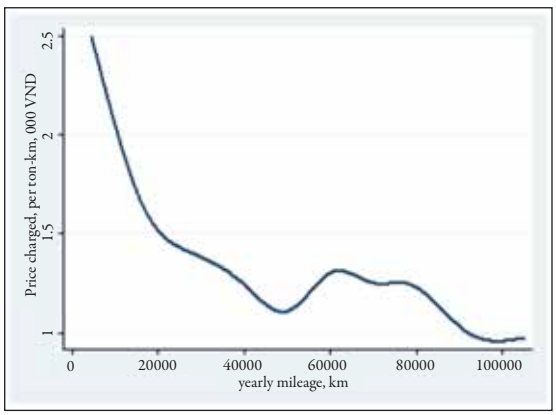
Haulage characteristics	Hanoi		HCMC		Class 1 cities		Other lower tier cities		Total
	Short distance (<100km)	Long distance (>100km)	Short distance	Long distance	Short distance	Long distance	Short distance	Long distance	
Price charged, to go, per ton -km, 000VND	4.8	3.4	3.0	1.3	1.6	1.5	3.8	1.6	2.8
(Us$)	0.245	0.172	0.153	0.068	0.080	0.074	0.195	0.081	0.145
Total operating costs, per ton-km, 000 VND	2.9	2.0	1.5	0.7	0.6	0.8	2.2	1.1	1.7
Share of total operating costs, %									
Fuel	60.7	68.3	46.3	62.7	50.7	61.8	54.9	61.2	65.0
Salary	20.0	15.3	18.4	14.7	14.6	14.3	22.9	15.8	15.5
Route allowance	2.5	1.0	4.4	0.9	10.2	1.6	3.2	1.2	1.2
Maintenance	6.4	4.1	10.8	5.6	5.7	6.4	7.0	6.8	5.3
Offical overhead costs (tolls, road taxes)	4.3	4.6	7.5	4.7	13.1	6.6	3.3	5.3	4.6
Informal facilitation payments (bride)	6.0	6.7	12.6	11.4	5.7	9.4	8.9	9.6	8.4
Yearly mileage, km	10,672.8	27,002.5	13,216.4	42,718.3	21,053.0	33,484.5	15,583.4	35,999.7	27,445.2

2.8.2 Econometric analysis

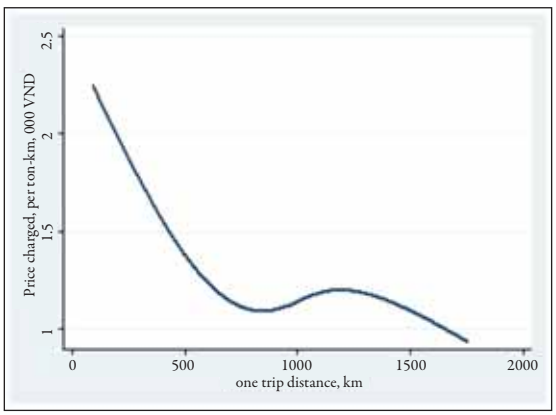
The simple correlation coefficient matrix of Table 2.12 in section 2.6 shows strong statistical association among selected variables collected in the trucking survey. Specifically, per ton-km unit price charged by truckers is highly correlated with the total operation costs (correlation coefficient: +0.87), yearly mileage (-0.29), truck age (-0.11), truck weight (-0.62), one trip distance and time (-0.34 and -0.30), and average speed (0.10). Yearly mileage, one trip distance, and truck size are considered as the main drivers determining the unit trucking price. Figure 2.10 confirms these strong regularities.

Figure 2.10 Unit trucking price per ton-km by a truck's yearly mileage, one trip distance, and truck size

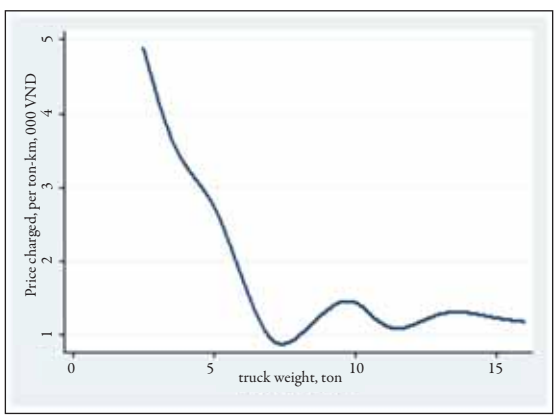
Yearly mileage, km



One trip distance, km



Truck size (tare weight without cargo), ton



Note: The graphs calculate cross medians and then use the cross medians as knots to fit a cubic spline.

Regression analysis (OLS) in Table 2.16 confirms that these three variables are statistically significant and explain 52% of the unit price variations (the first column). Specifically, a 10% increase in one trip distance, yearly mileage, and truck size reduces the per ton-km unit trucking price by 1.6%, 0.5%, and 0.9% respectively.

The second column in Table 2.16 highlights the main bottlenecks in Hanoi and HCMC, which drive up the trucking price. The regression results say that freight movements from Hanoi are 26% more expensive than other cities when other things being equal (or controlling for three aforementioned main price determinants). At the same time, freight movements from HCMC

are 16% more expensive in the same circumstance. It suggests significant freight movement bottlenecks in Hanoi and HCMC.

Operationally this isn't surprising, given (i) the concentration of economic activity already discussed in Hanoi and HCMC, which means these markets are "one-way attractors" out of which it is difficult to find a backhaul, and (ii) the congestion in these markets, which drives fuel and operating costs up much higher than in other cities.

Table 2.16 Factors determining trucking prices of inter-city freight movements

OLS	(1)	(2)
Dependent variable	Ln(price charged, per ton-km, 000 VND)	Ln(price charged, per ton-km, 000 VND)
Ln(one trip distance, km)	-0.164***	-0.167***
	(0.023)	(0.023)
Ln(yearly mileage, km)	-0.049**	-0.037*
	(0.023)	(0.022)
Ln(truck weight, ton)	-0.086***	-0.077***
	(0.005)	(0.006)
Dummy for transport		0.259***
From Hanoi		(0.069)
Dummy for transport		0.160**
From HCMC		(0.068)
Constant term	Yes	Yes
Observations	419	419
Adjusted R^2	0.519	0.541

Note: 1) Robust standard errors in parentheses
2) * significant at 10%; ** significant at 5%; *** significant at 1%

2.8.3 Moving forward

The urban evolution analysis of Chapter 1 identified the two special cities of Hanoi and HCMC and their economic regions as the engines of economic growth in Vietnam. These core metropolitan areas attract high-quality human capital and high-productivity manufacturing activities. They also become more productive by benefiting from agglomeration economies (and economies of scale) by concentrating economic activities. In order to maximize the benefits from agglomeration economies, the movement of production factors within/across the metropolitan regions should be smooth and low cost.

More importantly, section 2.1 (Table 2.2 and Figure 2.2), finds that 73% of road freight movements are concentrated in short distance trips of less than 100km. Considering the economic mass of the two special cities of Hanoi and HCMC, these short distance freight movements will be heavily concentrated in metropolitan corridors connecting the city center and its suburban areas.

However, the trucking survey has identified that these key metropolitan corridors suffer from logistics bottlenecks and the highest per ton-km transport costs. Reducing transport costs in these areas will be a high priority in order for Vietnam to facilitate successful urbanization.

Comparing different characteristics of freight movements in Hanoi and HCMC, differentiated policy interventions are needed. For Hanoi, high transport costs for short distance freight movements can be attributed to smaller truck size and lower vehicle utilization rates (yearly mileage). For HCMC, corruption is more severe compared to other cities. The (subjective) measure of severity of corruption in HCMC is 4.2 (out of 5), much higher than Hanoi (3.5) and the national average (3.7). For example, by reducing informal facilitation payments (bribes), the transport costs of moving freight within 100km from HCMC can fall by 13%. The same measure will reduce Hanoi's short distance (less than 100km) freight movement costs by 6%.

Taking a step back and viewing the issue from a logistics perspective: the cost of trucking is not the only factor driving logistics costs for a manufacturer based in HCMC or Hanoi. The trucking industry in Vietnam is very competitive and shippers mostly care about transport costs at the expense of inventory carrying costs. So truckers drive costs down at the expense of service quality (they overload their trucks, damaging the roads in an environment of limited maintenance, creating a vicious cycle). One of the key impediments to competitive logistics is service quality, and its corollary, high inventory carrying costs. The ability of the trucking industry to deliver high-quality services remains underdeveloped and is undermined by shippers' tendency to focus on managing transport costs alone rather than full logistics costs over the supply chain.

In summary, policy priorities will include (i) regulatory reforms to minimize collection of informal payments from road transport officials, (ii) improving the internal efficiency of the trucking and logistics industry, and most importantly, (iii) spatially targeted infrastructure investments in the two special cities of Hanoi and HCMC. The effects of these reforms will be significant. For example, the short-distance (less than 100km) freight transport costs in Hanoi and HCMC can be reduced by 67% and 57% respectively, if their unit costs are reduced to the level of class 1 cities.

Box 2.4 Regulatory reforms in road freight: case studies in OECD, Mexico, and South Korea

OECD countries(Boylaud and Nicoletti, 2001)

The road freight industry has grown very rapidly. There has been a tendency in many OECD countries to implement major liberalization reforms. Two broad categories of road freight regulations exist: (i) regulations on traffic and vehicles, and (ii) regulations on the operations of the market. The challenge facing road freight regulators is to do so without distorting the extent of competition within the industry and between the industry and other modes of freight transportation.

The available empirical evidence suggests that liberalization has promoted efficiency and consumer welfare. None of the adverse consequences feared by the industry have happened: in reforming countries competition is thriving in a stable industry environment and safety levels have generally improved. At the same time, freight rates have been reduced, productivity enhanced and innovative activity stimulated. In the future, viable comparative measures (indicators) of economic performance in the road freight industry should be identified.

Mexico (Dutz et al., 2000)

From an extreme degree of rigid regulation and government interference, Mexico implemented from 1989 regulatory reforms for the road transport industry based on free entry and market- based price setting. Main lessons of Mexico's experience for other countries include: (1) The positive role of increased competition in the road freight industry in fostering economy-wide innovation and growth; (2) Successful reform requires careful planning, execution and high-level political support; (3) Sufficient attention and resources should be devoted to assist the oversight institution in adapting to post-regulatory reform conditions; (4) Pro-market rules to offset remaining market failures should be introduced concurrently with removal of distortionary anti-competition rules; and (5) The competition agency has a critical role to play in any regulatory reform initiative, both in terms of up-front advocacy and ex post enforcement activities.

However, there are still unresolved issues that hold back a full-scale logistics revolution in Mexico: (1) The persistent segmentation between large, technologically sophisticated providers of road freight services and low-technology fringe providers; (2) The Mexican government's unwillingness to enforce technical standards and maximum load restrictions, and (3) Inability to fully implement the transportation related provisions of NAFTA and to ensure more homogeneous federal-state regulatory reforms.

South Korea (Smith et al, 1986)

When South Korea reached the intermediate stage of urbanization in 1984, the Korean Government evaluated the regulations governing its trucking industry. Its objective was to find whether deregulation could bring down costs, contribute to energy conservation, and serve users better. The study, overseen by the World Bank, drew the conclusion that the benefits of regulatory reform in trucking would indeed be large: US$ 240-400 million per year (about 6-9% of total trucking expenditure).

The highest priority should be attached to the truck size/freight consolidation issue. In addition, lifting the ban on private trucks operating for hire, though hotly opposed by the commercial trucking lobby, might be the second most beneficial among the reforms. However, the scope for freight consolidation and the use of larger trucks can be limited, due to the shortness of haul distances. The breakeven distance for commercial freight consolidation services is in the range of 150-250km, and in Korea's case, that excludes 60-80% of freight movements suitable for consolidation.

Finally, the report recommend to the Korean Government the following reform measures: (1) Eliminate the distinction between area, route and special licenses (with the effect of allowing ex-area trucks to take out-of-province backhauls and ex-area and ex-specials to part-load); (2) Limit operator licensing criteria to safety and professional competence; (3) Give licensed operators the freedom to choose the number of trucks they operate and their size; (4) Permit the use of containers in domestic trade; (5) Do not restrict private trucks as to quantity, and let them backhaul for hire, subject to the same safety and competence requirements as commercial carriers; (6) Strengthen safety enforcement mechanisms; (7) As regards truck taxation, remove discrimination by type of ownership; (8) Extend the new policy of allowing certain owner-operators to work independently to all, regardless of truck size; (9) Leave brokers alone; and (10) Monitor the productivity and cost indicators by sample surveys to see whether the predicted effects materialize and to provide a sounder basis for evaluating government intervention in the trucking market. [7]

2.9 How to prepare the next round of urbanization in Vietnam

The most urgent transport infrastructure issue in Vietnam is that its major cities, in particular two special cities of Hanoi and HCMC, simply do not have urban infrastructure to move to the next level of urbanization and industrialization in the coming years, the conclusion also developed further in Chapter 3. Significant and well-targeted infrastructure investments are needed in large metropolitan cities and their suburban areas, which are the main engines of economic growth in Vietnam.

The lessons and experience from many countries across the world also confirm that, as urbanization progresses, developing "metropolitan" transportation systems that span across local or provincial jurisdictions, become an urgent policy priority. These fast growing and dynamic large metropolitan areas will become quickly congested without timely expansion of urban infrastructure. Also, it has to be planned well in advance. The example of South Korea's

[7] The proposed indicators are as follows.

Productivity indicators	(1) Annual km's driven (2) Empty running (3) Load factor on loaded trips
Scale and scope of operation	(4) Truck size (5) Fleet size (6) Number of consolidation terminals (7) Scale of each terminal
Factor costs	(8) Overheads and profits (9) Wages
Vehicle technology	(10) Truck design (plain/special-purpose) (11) Fuel efficiency
Service characteristics	(12) Speed: freedom to charge premium for faster service (13) Reliability: requiring informed contracting between trucker and shipper

approach to metropolitan transport can be seen in Table 2.17. This is just one example, and there are many other excellent examples (such as the Greater Vancouver Region, Canada), that should be looked into in the next phase of research on this topic. Ultimately Vietnam will need to examine the various options and global experiences, and choose a path that is correct for its unique conditions. Such a detailed exploration is the subject of another study.

Table 2.17 South Korea's transportation policies at different stages of urbanization

Urbanization stage	Transportation policies
Incipient	• Forming the railroad network (1919): Opening the Kyoungbu railroad line at the end of Chosun dynasty • Road: complementing railroads • After Korea independence: improving railway network in Seoul (industrial railroad lines)
Intermediate	• Opening the Kyoungbu expressway: opening the era of expressway • Forming the national road network based on expressways • Metropolitan transportation systems: urban highways, regional railroads, electrification of metropolitan railways, and subways
Advanced	• Expanding metropolitan subway networks • Constructing the Korea Train Express (KTX, Korea bullet train) line: shrinking the entire nation into a half-day life zone
Future	• Ensuring quality of transportation facilities: pedestrian paths, green transportation system • Finding out solutions to traffic problems in metropolitan areas

Source: Korea Urbanization Review case study, 2011, KRIHS

Expansion of connective urban infrastructure is critical to solve congestion problems which are deteriorating. Developing metropolitan transportation systems is critical for large cities, as their economic activities spread beyond city boundaries to link with other domestic markets and also access international markets. Hence timely investments in intra and extra urban connective infrastructure are critical to sustain the competitiveness of large cities and therefore that of Vietnamese economy.

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Appendix 2A Institutional arrangement in the transportation sector in Vietnam (extracted from VITRANSS-2, 2009)

	Roads	Railways	Inland Water	Ports/ Shipping	Air Transport
Planning and Policy					
Multimodal Sectoral	MOT General Road Administration (GRA), reports to MOT	MOT Vietnam Railways Corporation (VRC), reports to MOT	MOT Vietnam Inland Waterway Administration (VIWA), reports to MOT	MOT Vietnam National Maritime Bureau (VINAMARINE), reports to MOT, VINALINES reports to PM Office	MOT Civil Aviation Administration of Vietnam (CAAV), reports to MOT
Regulation: Technical					
Safety, Standards, etc.	GRA	VNRA/VRC	VIWA for ports, channels, & vessel operations	VINAMARINE for ports & ship operation	CAAV
Licensing	Drivers licensing by Traffic Police	Train/Locomotive Operator, by VRC	Vessel Pilots licenses by VIWA	Seafarers registration by VINAMARINE	Pilots and aircraft technicians licensed by CAAV
Registration	Motor vehicles registered by Traffic Police	VNRA	VIWA registers & inspects vessels	Vietnam Maritime Register, under VINAMARINE	CAAV registers & inspects aircrafts
Regulation: Economic					
Entry & Competition	VEC for Toll roads; LGU's for bus operators	Monopoly: VRC	Most barges are private for own-use; otherwise VIWA	Unclear on ports; shipping services from VINAMARINE	CAAV
Pricing	Fares on public transport set by respective Peoples Committees (PCs)	VRC set fares, subject to MOF approval	VIWA sets river fees; subject to MOF approval; PC's sets port charges	Fees, air fares, charges subject to MOF approval	Fees, domestic economy air fares, charges subject to MOF approval
Program Management					
Investment programming	MOT, MPI, MOF	MOT, MPI, MOF	MOT, MPI, MOF	MOT, MPI, MOF	MOT, MPI, MOF
Infrastructure Delivery					
Construction Maintenance	PMU's under MOT and under GRA (excl. expressways & local roads)	Track infrastructure, to be spun off to Vietnam Railway Administration (VNRA)	Ports and channels, by PMU's under VIWA (except LGU ports and local rivers) Dredging by VINAWACO	Minor ports by VINAMARINE; major ports owned, built & maintained by Port Enterprises with varied ownership	By 3 Regional Airport Corporations, under CAAV

	Roads	Railways	Inland Water	Ports/ Shipping	Air Transport
Concession-ing	Vietnam Expressway Corp. (VEC)	In theory VRC	No single agency	No single agency	By 3 Regional Airport Authorities
Service Delivery					
Carriers	Bus operators owned by LGU's, cooperatives, private companies	Rolling stock and services, to be spun off to Vietnam Railway Corp (VRC)	Barging service by private companies & SOE's; VIWA's fleet is minority (~10%)	Vietnam National Lines (VINALINES) with 7 subsidiary companies , other shipping companies	Vietnam Airlines Corp, Jetstar Pacific, VASCO, Service Flight Corp (heli)
Public Users	Private cars, trucks, motorbikes	None	Bancas and small craft	Bancas and small craft	Private aircraft
Basic Law	MOT Decision No.3525/1998/QDBGTVT; also No. 3030-QD-BGTVT (6-Oct-04) for VEC	Vietnam Railway Law No. 35/2005/QH11	Decision No.23/2004/QH11 of 15 June 2004.	Maritime Code of Vietnam (June 1990) as amended by Resolution No. 51/2001 -QH10 (Dec 2001).	PM Decision No. 267/2003/QD-TTg on 19 Dec-2003; Order No. 08/2006/L-CTN (dated July 2006) .
Enforcement	Traffic Police	VNRA/VRC	15 VIWA River Management Stations	Vietnam Marine Police	Vietnam Air Traffic Management under CAAV

Source: VITRANSS-2 (2009)

Appendix 2B Sampling strategy of the trucking survey

The sample targeted 120 data points for each of 6 types of routes, for a total of 720 vectors of information (or O-D combinations), as shown in Table 2.B.1 below, with a minimum of two respondents for each of the 18 locations[8] of origin.[9] The sampling strategy was a quota approach, in which randomly selected respondents could provide information on one or more routes. Ex-ante, there was no limitation on the number of respondents to interview, or on the number of O-D combinations they served. From past experience in similar trucking surveys, the total expected number of respondents varied between 120 (if all respondents provided information on 6 routes) to 720 (if they all provided information on a single O-D combination), with a zero refusal rate. Table 2.B.2 presents the ex-ante case of coverage of 720 vectors of information target samples with 310 respondents.

Box table 2.B.1 Targeted sample by type of routes (Number of respondents and number of routes)

Companies operating on:	Number of routes
Movements to Hanoi	120
Movements to HCMC	120
Movements to the nearest major international port	120
Movements to the nearest major (inland) border post	120
Movements to the neighboring cities more than 100 000 population	120
Movements to the neighboring large rural village	120
Total	720

Box table 2.B.2 Targeted sample (Number of respondents by number of routes provided)

Companies operating on:	Number of respondents	Number of routests
6 types of route	50	300
3 types of route	80	240
One route	180	180
Total	310	720

[8] Ho Chi Minh City, Hanoi, Haiphong, Da Nang, Bien Hoa, Hue, Nha Trang, Can Tho, Qui Nhon, Rach Gia, Nam Dinh (Nam Ha), Vung Tau, Long Xuyen, Ha Long (Hong Gai), Phan Thiet, Lao Cai, Vinh and Phu Ly.

[9] The ideal would have been to obtain at least one information vector for each route type and origin (18*6=108); there is a high likelihood that some points of origins will not have direct transportation to all types of destinations.

3

Urban Expansion and Spatial Development in Vietnam's Cities

3.1 Introduction

This chapter examines the processes of urban expansion and spatial development in Vietnam's cities. It starts out by looking at housing, followed by an examination of urban form and mobility in the cities of Hanoi, Ho Chi Minh and Da Nang. While Vietnam has done well on some of the issues, there are other important factors that need to be addressed to ensure that achievements can be sustained by Vietnam's cities as they move on to the next stage of development corresponding to higher levels of urbanization. The chapter then looks into land and real estate markets and the urban planning process. Land markets and urban planning are critical factors in helping urban economies to function efficiently and equitably, and the chapter provides some initial suggestions for strengthening the approaches currently being implemented in Vietnam.

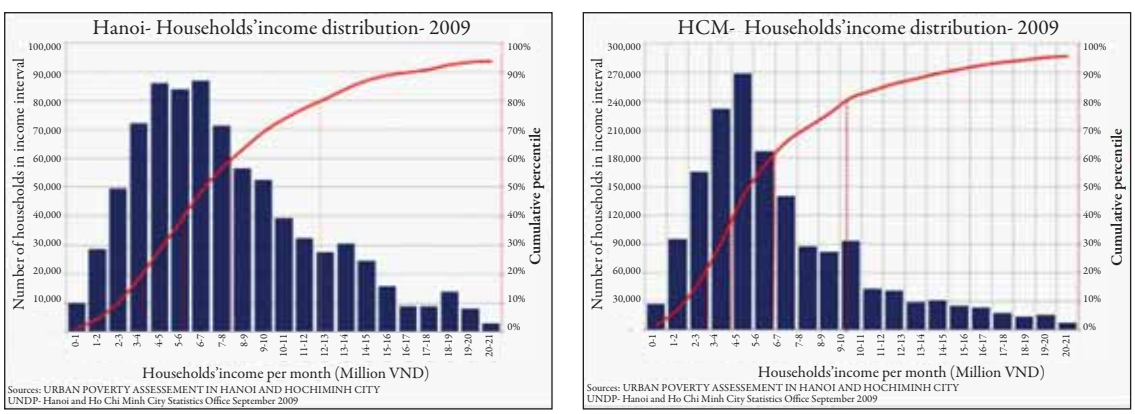
3.2 Housing

This section briefly examines some indicators of housing demand and housing supply. It is to be commended that Vietnam has managed to enable a flexible and pluralistic system of housing supply across market segments resulting in a very low incidence of slums for a country at this stage of development. The chapter looks into some emerging priorities and issues that would help strengthen these gains and consolidate the positive momentum.

3.2.1 Demand side

Disaggregating demand into market segments and quantifying some basic parameters and characteristics for these market segments (income, or access to finance) is an important step in understanding how the housing market functions as a whole, and to identifying from which segment the core demand for housing is originating. The income distribution curves for Hanoi (2009) and HCMC (2009) help to focus on an essential question: what type of housing is affordable for households within each income interval shown on Figure 3.1.

Figure 3.1 Household incomes distribution in Hanoi and Ho Chi Minh City



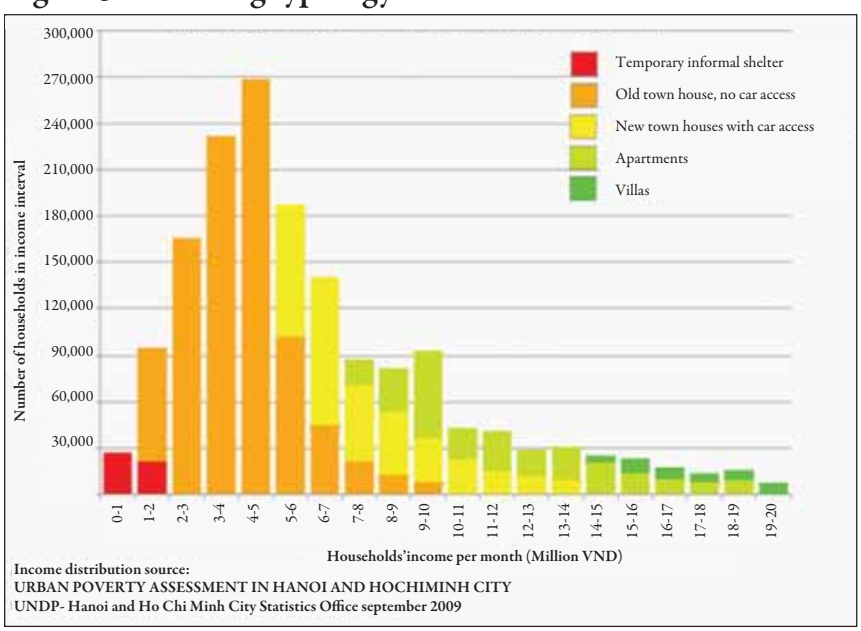
Source: Background papers by Alain Bertaud (2011a, 2011c), using data provided by ALMEC and UNDP

These graphs show that most household incomes in Hanoi and HCMC ranged over 2 - 10 million VND/month (about 100 to 500 US$/month) during 2009. While Hanoi has a more gradual distribution across categories within this larger bracket, HCMC has a more pronounced population spike within the 3 to 6 million VND/Month (150 to 300 US$/ Month) group. Based on household expenses data/estimations for these market segments, it is possible to gauge what fraction of income households spend on rent. It is also possible to estimate how long a household might have to wait before being able to purchase a home (based on the household savings rate), and how access to housing finance might make it easier for particular market segments to purchase homes.

3.2.2 Supply side

Going one step further, Figure 3.2 shows an illustration of how these various bands of household incomes might correspond to various types of housing supply. The ratio of color distribution in each bar of income shows the proportion by which the different supply streams relate to an income bracket. The purpose of this illustration is to emphasize that an accurate depiction of housing demand must reflect demand across all income segments, not just averages or median numbers. This analysis for HCMC is an initial indicative analysis, which needs to be refined with more data; the present diagram, however, provides a reasonable overview.

Figure 3.2 Housing typology and household income in HCMC



Source: Illustrative approximation from Bertaud, 2011c

It is important to look at the different systems of housing supply in a city and correlate this to demand segments, as the figure does. Such information can help a city or province focus its

overall housing policy toward real demand. These patterns are of course dynamic in nature – it is expected that migration to the city would increase the number of households within the lowest income intervals, and an increase in incomes would induce some households to move toward pricier homes. Policy can be targeted to further enable the market segments (through demand side or supply side strategies) that are most relevant. In general Vietnam seems to have a flexible and pluralistic system of housing supply across market segments resulting in a very low incidence of slums. The question of why Vietnam has such few slums, will be addressed, later on in this chapter.

What follows in a more detailed examination of the process of housing supply in the three cities of Da Nang, Hanoi and Ho Chi Minh City.

Da Nang

The first image (Figure 3.3) below shows the process of subdivision taking place along the northern beach area. In this case, each lot is about 100 m^2 (with about 89 m2 built-up area per floor and an average of 4 floors per lot), fronting a street varying in width from 10 to 14 meters, providing excellent access for cars and the possibility of street parking. It is close to the beach-front, and connected to the city's primary arterial roads through wide access streets. The land price survey conducted by USBV, ALMEC, and GHK in February 2011 found that floor prices in this area were around 23 Million VND/m2 (about 1,150 US$/$m^2$). Given the excellent city accessibility, the proximity to the beach and to the planned new CBD, it is likely that these prices will rise further, especially when demand for residential lots begin to compete with hotel and commercial demand as the potential of the beach is more fully realized in the near future.

Figure 3.3 Process of subdivision in Da Nang along northern beach area

Typical land use in new subdivision in Danang
Tran Dinh Tree- Kinh Duong Vuong street
16o04'56.92"N- 108o09'39.97"E

Block area	61,784 m^2	66%
Street area	31,613 m^2	34%
Total area	93,397 m^2	100%
Plot length	20,17 m	
Average plot width	5.25 m	
Plot area	105.88 m^2	
Building length	17 m	
Building width	5.25 m	
Floor area of 1 floor	89.25 m^2	
Number of floor	4	
Total floor area per lot	357 m^2	
Total number of lots	584 lots	
Total floor area	208.488 m^2	
Gross FAR	2.23	
FAR per lot	3.37	
Household per upper floor[1]	1.00	
Size of Hh	3.50 persons	
People per lot	10.50	
Current number of lots occupied	135.00	23%
Current density	152 p/ha	
Saturated density	657 p/ha	
Livable floor area per floor	87%	
Floor are per person	22.07 m^2	

[1] It is assumed that the ground floor is used for commercial or garage area

The above trend contrasts with the organic densification taking place a little farther away (4km away from the beach and emerging CBD, and 7.5km away from the original CBD). The development here is triggered and facilitated by widening the Hoang Van Thai road from 5 meters to 14 meters. As a result between 2002 and 2009 a low density semi-rural development has evolved into an urban node with a relatively dense subdivision of lots, smaller than the formal lots discussed above (see Figure 3.4). The lot sizes are around 60 m2 (with about 50 m2 built up area each floor), fronting streets that are about 2 to 5 meters wide (former rural lanes) allowing the circulation of emergency vehicles and motorcycles, but not individual cars or street parking.

Figure 3.4 Urbanization pattern along Hoang Van Thai road over 2002 - 2010

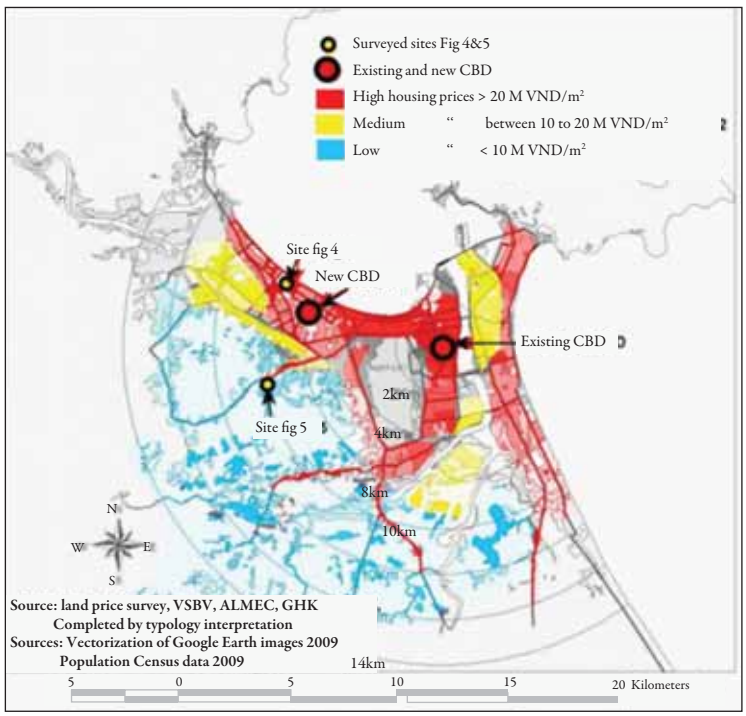
Development along Hoang Van Thai road in October 2002 Development along Hoang Van Thai road in February 2010

This type of organic development was not covered in the housing price survey. However, in a background paper, (Bertaud, 2011b) estimates that the floor prices here are likely to be lower than 10 Million VND/m^2 (about 500 US$/$m^2$), i.e. 50% lower than the formal development floor price. And since on average the housing unit size in an organic settlement is smaller (about 50m2 vs. 89 m^2 per floor), the unit price of such homes is on average 71% lower than the formal home. It is important to appreciate that the organically developed areas are providing a type of housing not structurally very different from the more expensive areas of Da Nang, and constitute an important supply of low cost housing that has the advantage of being demand driven.

These two sites are shown on the map of Figure 3.5 as 'site fig 4' and 'site fig 5' respectively. Given the heavy constraint in Da Nang on developable land supply due to topography and the central location of the airport – there is not much choice but to support such organic developments in the South West while guiding it by providing arterial roads with a right of way around 15 meters at about 500 meters intervals. Within the blocks created by these arterial roads, land subdivision and house construction could follow the pattern traditional to Vietnam (multistory town houses with a 4 to 5 m frontage), letting the market allocate land between roads and private lots. The increase in the supply of affordable housing could be facilitated by

the construction of new government built vehicular feeder roads similar to the widening of Hoang Van Thai road discussed above. One option might be for the Government to set aside some land in these gradually urbanizing low income areas for social facilities as it has done in formal areas. Such organic processes supported by Government investments will facilitate the private supply of houses affordable by the lowest income groups.

Figure 3.5 Estimated distribution of housing prices per m² in Da Nang



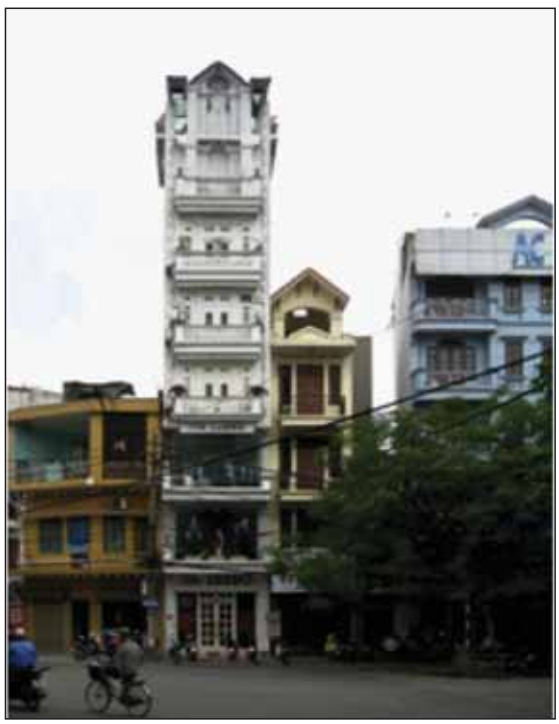
Hanoi

Hanoi has been able to absorb a large number of migrants during the last 10 years; the average growth rate of the urban population reached 3.35 % a year between 2000 and 2010. It can be observed that also demonstrates a similar richness in its options for housing supply. Bertaud (2011a) identifies four modes of housing production in Hanoi.

1. Formal large green field development by private or semi-private developers along major primary road networks planned by the government (New Urban Zones);
2. Formal plot by plot development along existing roads by individuals or small developers;
3. Building of individual traditional townhouses on farmland by farmers or small contractors;

4. In fill of individual traditional townhouses in existing settlements, often former villages;

Figure 3.6 Example of 'tube house' pattern in Hanoi



The area occupied by traditional townhouses (3) and (4) represents over 64% of the total built-up area of the 12 urban districts of Hanoi. It is probable that the largest addition to the housing stock every year is coming from development of type (3) and (4) and represents the low end of the market (this would correlate with the Hanoi income curve shown earlier). In addition a large area of floor space is likely to be produced every year by the vertical extension of town houses ("tube houses"), which are now often about 2 or 3 levels but which are often extended up to 6 or even 7 levels in areas of high demand (see Figure 3.6). As land prices increase in areas where there is a high demand for floor space, owners of existing buildings add new floors. This is an important process that increases the supply of floor space, thereby bringing down access and prices in areas where it has the most value. In addition this type of vertical expansion reduces the need for city suburban expansion in adjacent agricultural areas. Notwithstanding these benefits, there should still be controls in place to ensure the adequate quality of this kind of development.

It is important, however, to note that the land parcels in Hanoi (and other Vietnamese cities as well) are typically rather small (typically 40m2 to 180m^2); while they may be ideal for building family homes, they render it rather difficult and costly to acquire land for larger developments – and taller buildings. Land for large sites will cost a sum equal to the aggregation of several small plots, plus the transaction costs associated with amalgamating or consolidating those small plots, plus the increased price resulting from a relative scarcity of small plots clustered together. By assessing demand for larger plots, the Government might be able to enable this process. This is an area for further research.

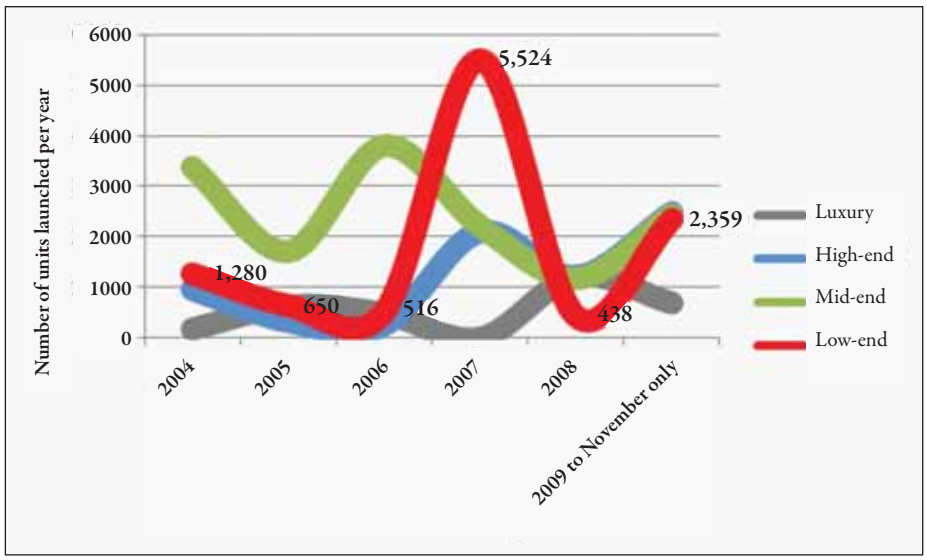
Figure 3.7 Comparative population densities in the built-up areas of Hanoi.

Hanoi has also been successful in increasing housing access on account of the pragmatic attitude of the government. It has legalized the densification of former village areas - described as (3) and (4) above – while actively promoting the development of a modern primary road network in the immediate periphery but carefully avoiding demolition of the older housing stock, except for road widening. This new primary infrastructure network has opened new land for formal developers but has also allowed better access and densification of existing rural settlements and their integration into the urban economy.

Figure 3.7 shows the trend in practice: the lower-income settlements visible in 2002 were not demolished even with the addition of a large higher-income development by 2008, except just a few to make room for a major road. Such practices help to ensure a balance between two important objectives: allowing fluid land and housing markets which permit the city to expand outwards and upwards, while ensuring also a supply of affordable and conveniently-located housing for low-income populations too.

While there have been some reports that formal housing developers are concentrating on high- and mid-income markets and not the low-cost housing, there are now indications that this trend is changing. For example, figure 3.8 shows that in Hanoi declining figures in the early part of the 2000s were then followed by a spurt of low-cost housing construction by the formal sector. (Note that numbered data points are for the number of low-cost housing units launched in Hanoi that year). However, this figure shows only formal low-cost housing construction. By and large most low-cost housing is not built in this manner.

Figure 3.8 Number of housing units launched per year in Hanoi



Source: CBRE Hanoi Research Food for Thought (Nov 9, 2010) Presented by: Marc Townsend & Le Minh Dung

HCMC

An initial assessment of HCMC housing typology also reveals a pluralistic supply comprising of 5 categories. Just as in Hanoi, the incorporation of former villages into the city has constituted a large portion of low income housing.

1. Temporary shelters
2. Old town houses without car access (located in informal subdivision, or former villages absorbed by the city)
3. New town houses located either facing main vehicular streets or in newer formal subdivisions with vehicular streets
4. Apartments
5. Villas on individual lots

In HCMC we can observe that as in most cities, the lowest income groups are usually living in the older part of the housing stock, in the case of HCMC this is old 3 to 4 story townhouses, typically on 3mx18m or 5mx18m lots facing a 1 to 3 meter street. The number of units in this housing type can increase only through vertical extension or subdivision of the existing

floor space. Each year a number of these types of units disappear because of street widening. Most neighborhoods where this housing type is dominant are well located to have good access to the job market. A large part of the older housing stock of HCMC is therefore providing affordable shelter to a large part of the low and middle income population. Improving the living conditions in these older neighborhoods might be the most effective way of providing well located housing to poor migrants.

Households whose income have increased are likely to move to larger, better located houses, vacating the older and less desirable part of the housing stock and making it thus available to poorer households. This is one of the reasons why housing supply and affordability should be monitored for the entire market and not only for some segments. A housing supply shortage for middle and high income groups will have a negative impact on the housing stock of the poor.

3.2.3 Why does Vietnam not have widespread slums?

As a lower-income and rapidly urbanizing country, why does Vietnam have so few slums? Vietnam has a permissive, accepting and sometimes proactive regulatory approach toward customary and affordable housing development. This coupled with the innovative small-scale private housing construction and rental sector, has resulted in there being a very low incidence of slums in Vietnamese cities. This is particularly striking when compared with cities in countries which have even higher urban incomes (India, the Philippines, Indonesia, and Brazil – to mention a few). More specifically, the following features have proven to be very successful.

1) The tolerance of small plot sizes, thereby letting people trade-off location for floor space (in many cases floor space as small as 25 m2).

2) A permissive attitude toward FAR increases, which has enabled an increase in the supply of floor space without the need for more land.

3) The incorporation and densification of peri-urban villages into the urban fabric.

4) Investment in primary/trunk infrastructure near these urbanizing villages (with communities then investing in incremental improvements within the village).

5) The dynamism of the efficient and entrepreneurial low-cost, self-help and small contractor construction sector –

Additionally, the history of people-friendly socialist practices and widespread government subsidies for housing in the past, as well as ongoing incremental upgrading practices (see Box 3.1), have helped bring about this situation. The very accepting attitude of Vietnamese people to inter-generational co-habitation in rural and urban areas, has also contributed to relatively better housing for lower income groups more than in comparator countries.

While these approaches have worked so far, the rate and scale of urbanization that Vietnam's cities will see in the next 20 years requires a more deliberate low-income housing strategy to prevent the formation of slums in the future. Rising incomes in cities will also increase demand for floor space per person. The approach followed by Vietnam so far can be enhanced as follows.

1) Formally incorporating a low-income housing strategy as part of the urban planning process, and mainstreaming it into the official strategic and master plans and land management strategies.

2) Deepening the current approach through the development and growth of housing finance across market segments.

3) Focusing on the urban poor through demand side subsidy schemes that target the weakest market segments in each city's housing demand profile.

4) As land is the fundamental input into housing production, Vietnam's housing policy will need to factor specific mechanisms and guidelines for land markets to function in a more efficient and inclusive manner.

Box 3.1 Neighborhood Urban Upgrading in HCMC

One of the most efficient ways to improve housing for the urban poor and the lower middle class is to upgrade the infrastructure of existing neighborhoods, in particular in areas of old town houses without car access. Often in HCMC and Hanoi, in particular, some of the most desirable housing units for lowest income groups are found in older neighborhoods, which are well located but that have been abandoned by higher income groups in part due to lack of infrastructure, in particular access.

Upgrading of access in low-income areas in HCMC

In HCMC a large scale urban upgrading project has been improving living standards in large areas in the Western part of the city as part of the Vietnam Urban Upgrading Project with World Bank Financing. The

first phase of the project has already reached 22,800 households. The project has included upgrading of the trunk infrastructure of the Tan Hoa-Lo Gom basin and has upgraded neighborhood level infrastructure including storm drainage, water supply, paving and improving of alleys, installation of new fire hydrants, and providing small housing improvement loans to households, while also assisting in clearing tenure titles.

One of the advantages of the upgrading is that it provides direct benefits to owners of existing houses but it also stimulates the rental sector, as it appears that many owners in upgraded areas rent floors to tenants. The danger that in the long run this type of upgrading would lead to gentrification is small; first, because the program is done on a massive scale, and second because the lack of car access will likely maintain this otherwise sound part of the housing stock in the lower part of the housing market.

Area being upgraded

Area after upgrading

3.2.4: Subsequent steps for the housing sector in Vietnam

According to data from the Ministry of Construction (MOC) in the past ten years the number of houses in Vietnam increased from 16.6 million in 1999 to 22.2 million in 2009. The total floor area per person reached 19.2 m2 in 2009 (in 1999 this was 10.23). Full details are given in Table 3.1.

Table 3.1 Expansion of housing facilities in Vietnam

Indicator	1999			2009		
(in sq-m)	total	urban	rural	total	urban	rural
Number of houses	16,661,366	4,026,015	12,635,351	22,198,922	6,761,476	15,437,446
Total floor area	709,032,271	251,688,647	457,343,624	1,415,261,686	476,309,937	938,951,748
Per person	10.23			19.2		

Source: Overall assessment of housing development in the period (1999 - 2009), MOC for UN Habitat. Draft November 2010

It seems that so far government estimates of housing demand are normally prepared on a square meter basis, without taking full account of housing market segmentation, data on demand, or information on the typology, size and affordability of units and property. There is some evidence that housing supply sometimes does not match demand across the country. In Hanoi and Ho Chi Minh City there is apparently a shortage, while according to MOC there is an excess in other areas, including Hai Phong, Hai Duong, Bac Ninh, Binh Duong, and Dong Na.[1]

It seems like much of the demand for housing in Vietnam, especially for low income groups, will be met through 1) small contractors constructing traditional townhouses where land is available within the city or in its immediate periphery, 2) Government facilitated densification through the extension of the road network to integrate former villages close to the city, and 3) the incremental upgrading and maintenance of the existing housing stock by individuals (including the increase in FAR by vertical extension), and the upgrading of infrastructure and services by the Government. By and large Vietnam's cities have managed to enable a pluralistic supply of housing to meet the needs of different segments. While this has worked so far, as urbanization increases in scale and changes in nature – and as incomes increase as well, the current approaches will need to be strengthened and adapted in a more deliberate manner. There are some signs that cities are now moving toward a 'new towns,' approach and that efforts to position themselves as 'modern' might be shifting policy focus to high-end iconic development. There are costs and benefits to this approach and the issues and risks relating to this are discussed in more detail in the section on urban planning.

One of the recommendations of the Urbanization Review is that there should be a more focused analysis into housing in different types of cities, and this analysis should inform how current strategies need to be adapted to accommodate the scale and nature of transformations to come with the next phase of urbanization. The next steps to further strengthen the housing system in Vietnam is to systematically 1) develop and monitor housing demand and affordability profiles for cities, 2) track how different supply options in the city (ownership and rental) are meeting the demand segments, and 3) conduct an analysis of how core demand side variables (access to housing finance) and supply side variables (access to land, regulations, etc.) are effecting each market segment in a particular city.

It is important to understanding well how the relevance of each variable changes across market segments and cities. It may be that access to finance is a critical issue for low income households but not a binding constraint to wealthier households. Possibly, access to land and high land prices are critical issues for Hanoi and HCMC but not for a range of medium sized cities? Furthermore, how these variables relate to each other can help direct housing policy focus and support more effectively. For example, the issuance of clear land titles might make it easier for poor households to access finance through mortgages.

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[1] Overall assessment of housing development over period (1999 - 2009), MOC for UN Habitat. Draft Nov.2010.

If the data for this analysis is geo-referenced (through GIS), then it further enables the housing market segmentation to be more easily spatially analyzed as well – allowing for the housing policy to be better integrated with transportation, infrastructure and urban planning efforts as well. However, in order to do so, local governments need stronger data management systems, and more expertise and familiarity with the core methodologies and analysis required to inform their urban planning strategies.

3.3 Urban form and mobility

3.31 Overview and general considerations

In looking at urban form and mobility, this section draws on three case studies written on Hanoi, Da Nang and Ho Chi Minh City for the Vietnam Urbanization Review.[2] The general insight provided in this section—especially by reference to case studies of Hanoi and HCMC—is that the high population densities and low amount of road space in cities indicate that the mass adoption of private cars is not sustainable as a major means of urban transport. Da Nang presently has relatively more road space for its level of population density than Hanoi and HCMC, and has an opportunity to use this for good public transport planning, especially as the city grows. The policy conclusion which emerges from this analysis is that the use of cars will need to be limited in Vietnam's cities, probably by pricing the road space that cars occupy—through congestion charging and/or higher parking fees. Motorcycles, on the other hand use road space much more efficiently, and together with well-planned transit systems, may provide a mobility solution suitable for Vietnam's larger cities. While motorcycles use less space, their use must also be controlled as part of a larger effort at traffic and parking management.

Currently, Vietnam's cities have relatively good mobility. According to a series of detailed surveys and studies carried out by ALMEC, average commuting times in Vietnamese cities are exceptionally short: 18 minutes in Hanoi, 15 minutes in Da Nang, and 20 minutes in Ho Chi Minh City.[3] These commute times may have increased since the surveys were completed, on account of rapid urban growth and increase in personal vehicle ownership--both motorcycles and cars.

One reason for such low commuting times is the prevalence of motorcycles as the predominant form of private transport in urban Vietnam. Their numbers have increased greatly over the last decade and as the case studies of Hanoi and Da Nang indicate below, they account for as much as 80% of all trips in Vietnam's major cities. However this level of mobility in the absence of adequate mass transit is only possible because there is still a low level or car ownership in these cities. The other reason for low commuting times is the characteristic mixed land use

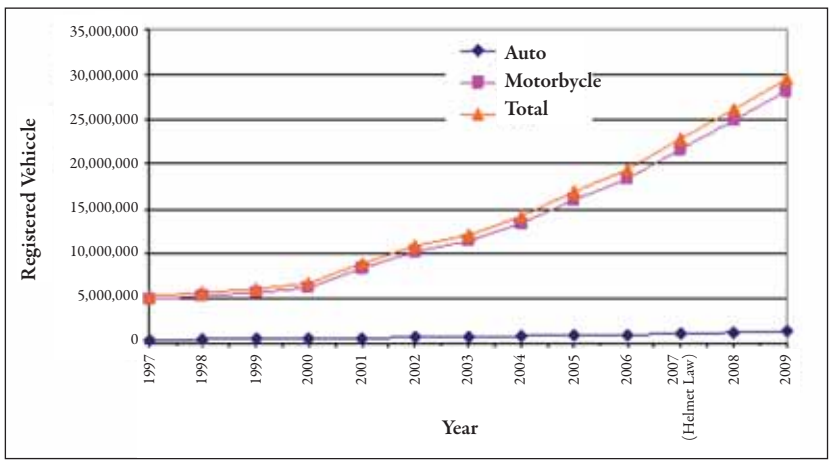
2 These are Bertaud 2011a, 2011b, and 2011c.

3 These data are taken from the substantial household surveys undertaken by ALMEC, in 2008 for Da Nang, 2004 for Hanoi, and 2002 for Ho Chi Minh City.

neighborhoods of Vietnam's cities, which result in the close proximity of many of the day-to-day trips individuals typically make. Also the prevalence of shop-houses, where many people live in the space above (or behind) their stores contributes to this low average commuting time.

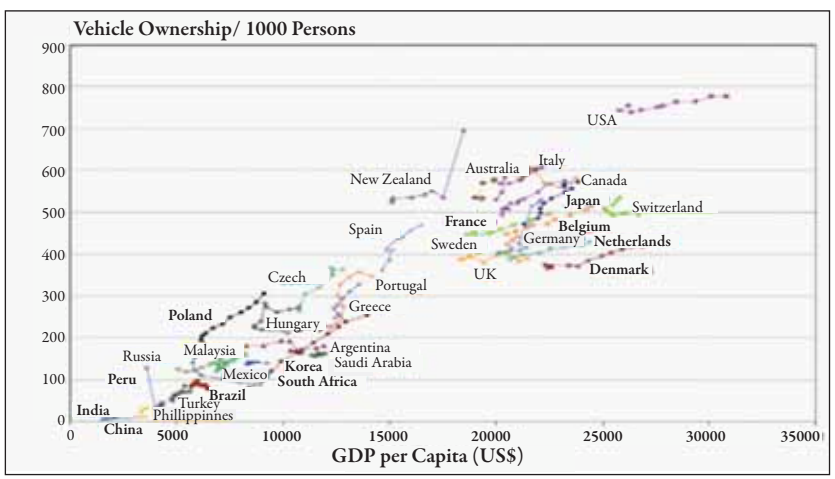
However, the number of cars is expected to increase substantially in coming years. The principal driver of that rise is likely to be increased per-capita incomes, as has been the case in most other countries. It may also be partly driven by the increasing severity (i.e. increase in fatalities) of road accidents, partly owing to the mix of two- and four-wheelers on Vietnam's urban roads. As can be seen from Figure 3.11, road accidents are declining in number, but the number of fatalities is increasing.

Figure 3.9 Number of registered vehicles in Vietnam, 1997-2009



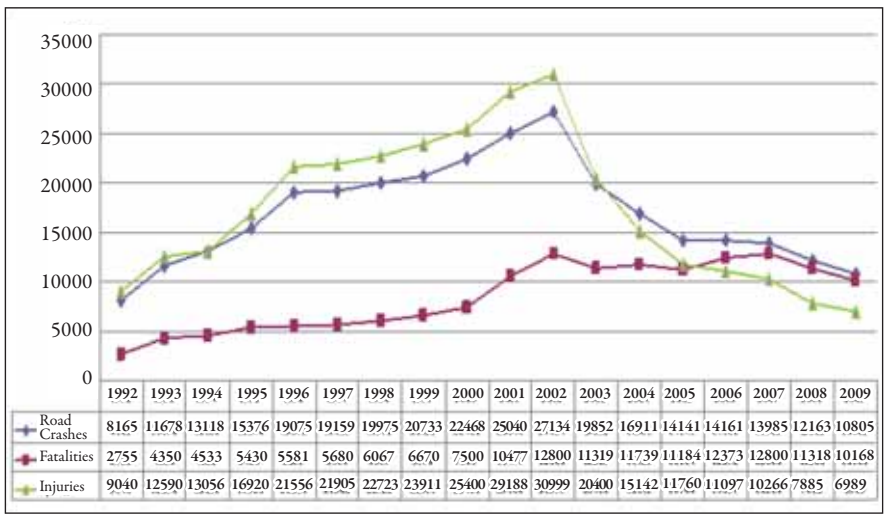
Source: Ministry of Transport, Hanoi, Vietnam

Figure 3.10 Higher incomes lead to increased vehicle ownership



Vietnam's major cities simply do not have an urban structure that would permit the mass adoption of private cars as a means of urban transport. According to the analysis presented in this section population densities are relatively high, and road space is relatively scarce. While a small motorcycle parked on a street occupies 1.8 m^2, a parked car occupies as much as 8 times that amount (14 m^2). A moving car occupies 40 to 65 square meters—around four times as much as a moving motorcycle. These differing road-space requirements are starkly illustrated in Figure 3.11 Number and severity of traffic accidents in Vietnam, 1992-2009

Figure 3.11 Number and Severity of Traffic Accidents 1992-2009



	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Road Crashes	8165	11678	13118	15376	19075	19159	19975	20733	22468	25040	27134	19852	16911	14141	14161	13985	12163	10805
Fatalities	2755	4350	4533	5430	5581	5680	6067	6670	7500	10477	12800	11319	11739	11184	12373	12800	11318	10168
Injuries	9040	12590	13056	16920	21556	21905	22723	23911	25400	29188	30999	20400	15142	11760	11097	10266	7885	6989

Source: Le Minh Chau (2010) Presentation: "National Road Traffic Safety Strategies by 2010 and Vision 2030," Ministry of Transport, Vietnam, September 2010 in Bangkok.

One option for Vietnam's cities is to invest in the construction and promotion of public mass transit systems, such as Bus Rapid Transit (BRT) routes – that are seen as integrated parts of a multi-modal system of transport. Several of Vietnam's cities are planning to construct such systems. But in the years before these become operational, it seems likely that Vietnam's cities will continue to become more polycentric because of continued prevalence of motorcycles.

Polycentric cities can also be served by mass transit, but usually require that the network is planned on a grid rather than a radial structure (see below the comparison between polycentric Seoul and monocentric Singapore). This does not preclude BRTs or metros, but requires investments in feeder routes or a grid-like mass transit network of a longer total length than radial routes alone. Hanoi does not currently appear to be planning for such a polycentric transport structure (as described below in the following section on Hanoi's urban structure and mobility).

These themes are now further illustrated by use of case studies from the cities, which follow next.

Figure 3.12: Road space required by 50 people driving cars (left), motorcycles (center), and riding in a bus (right)

Source: City of Muenster Planning Office, in GTZ (2005)

3.3.2 Hanoi's built environment and mobility [4]

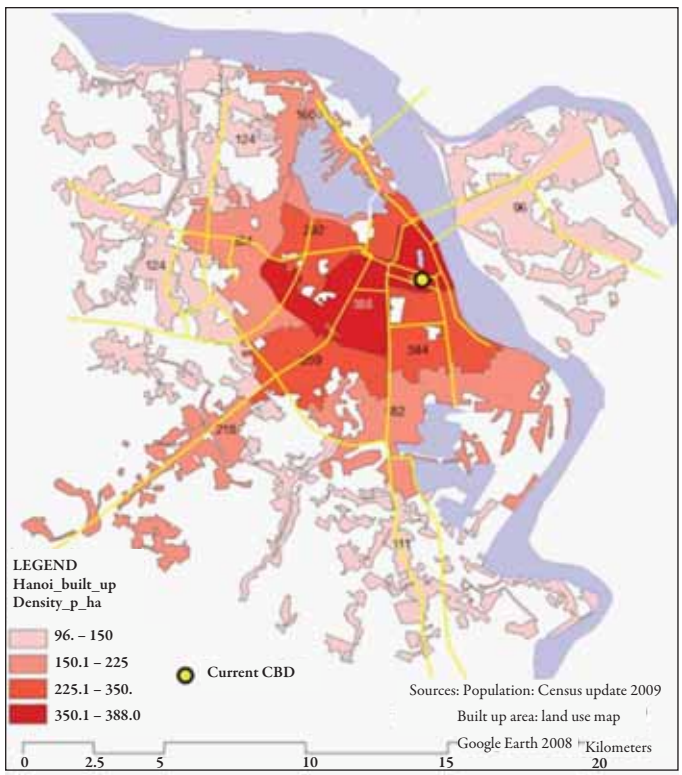
This section explores the linkage and interaction between urban structure, transport, and mobility—with reference to Vietnam's capital city, Hanoi. The overall finding is that the high population densities and sparse road networks of Hanoi are simply incompatible with adoption of private cars as a major means of transport. One of the city's main challenges is now traffic congestion and impaired mobility.

Hanoi is a high density city with a mutating urban structure. To get a better estimate of concentration, it is necessary to go beyond the nominal population density that is produced by dividing the city's total population by its gross land area. A better statistic is derived by subtracting areas of water and undeveloped land from the gross land area, to obtain the net land area. The real effective density is obtained by dividing population by net land area. Such estimates (shown in Figure 3.13) generate a mean population density of 188 persons/ha for

[4] This section is drawn from Bertaud, 2011a.

Hanoi in 2009 (i.e. more than 50% higher than the simple ratio of dividing the population of 2.3 million by an urban area of 186 square kilometers).

Figure 3.13 Map of Hanoi built-up densities, 2009.



Source: Bertaud, 2011a

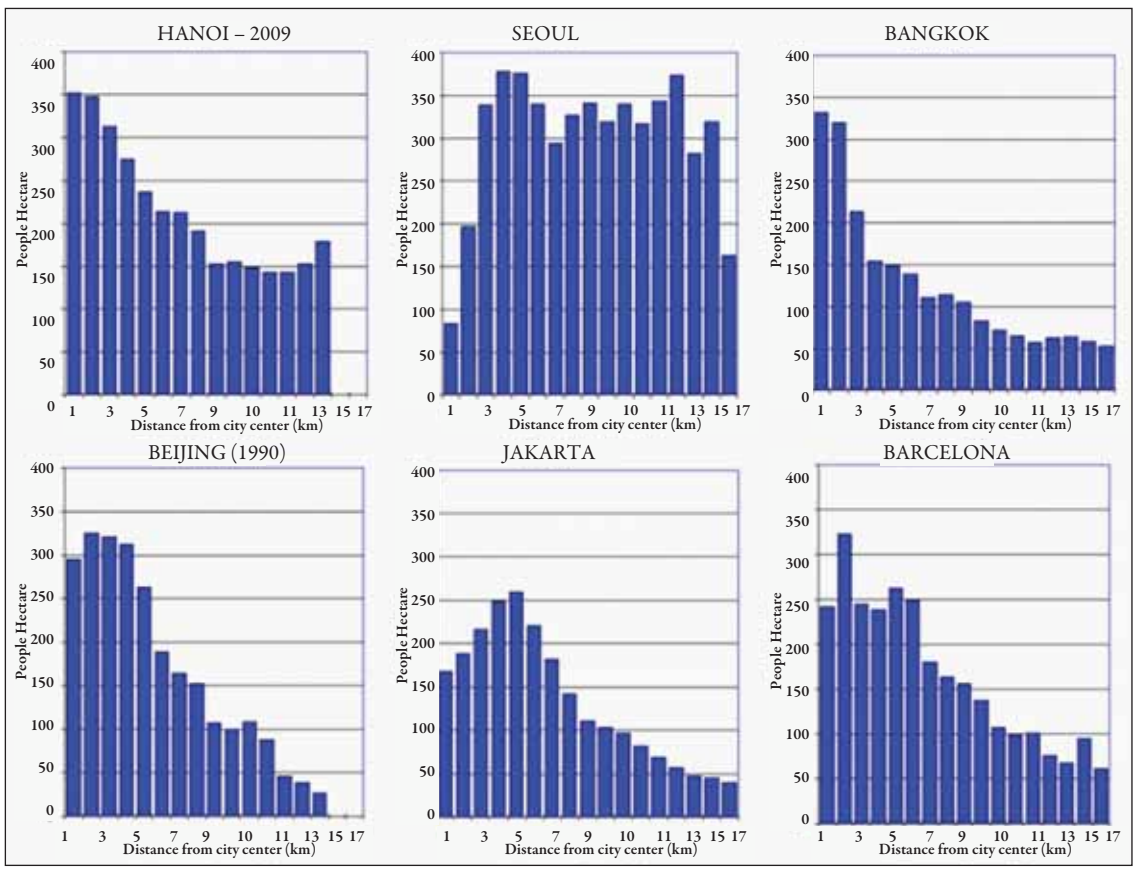
Hanoi city's density gradient is already flatter than that of many other large Asian cities. And with the emergent new center in south-west Hanoi, the city is likely to become more polycentric over time. Looking at Figure 3.14 one can clearly see Hanoi having a flatter gradient than the steeper density gradients of Beijing, Jakarta, Bangkok and Barcelona. This flatter gradient indicates Hanoi has a less-concentrated Central Business District (CBD) than those cities. Over time, with the new dense center being constructed in south-west Hanoi, the density gradient may become flatter still, as in Seoul—which is truly a polycentric city. In the south-west of the city, the combination of high rise towers with town-houses up to 5 floors allows high floor area ratios and high densities ranging from 500 p/ha to 1200 p/ha. These are higher densities than the densities found in the current CBD (the highest density in CBD is 800 p/ha in the Hang Kai ward of the Hoan Kiem district).

As urban household incomes increase further and the country continues to urbanize, demand for land, floor space, transport and infrastructure is bound to increase at an even faster pace during the next 10 years. The main challenge facing the government will be to respond to a rapid increase in demand for developed land and for new urban transport infrastructure. The demand for land and transport will be compounded by a simultaneous increase in the size of the urban population, a decrease in household size and a rise in floor space consumption per capita due to rapid growth in households' income and business investments.

One of the reasons why Hanoi's emergent polycentric structure can currently function efficiently is the prevalent use of the motorcycle as a means of transport: individuals can make point-to-point trips without the need to adhere to mass transit lines and hubs (Table 3.2).

However, the use of private cars in Hanoi is rising fast. Unfortunately, the use of private cars is—quite simply—physically incompatible with the high population densities and limited primary road network in Hanoi. The current road space area in Hanoi is small. In many neighborhoods, road space represents no more than about 20% of total built-up area; and at the average built up density of Hanoi, this translates into a road area of 11m^2 per person. Cars use a very large amount of road space for on road parking and for circulation (14 m^2 for a car parked on street and 40 m2 for a car running at 30 km/hour).

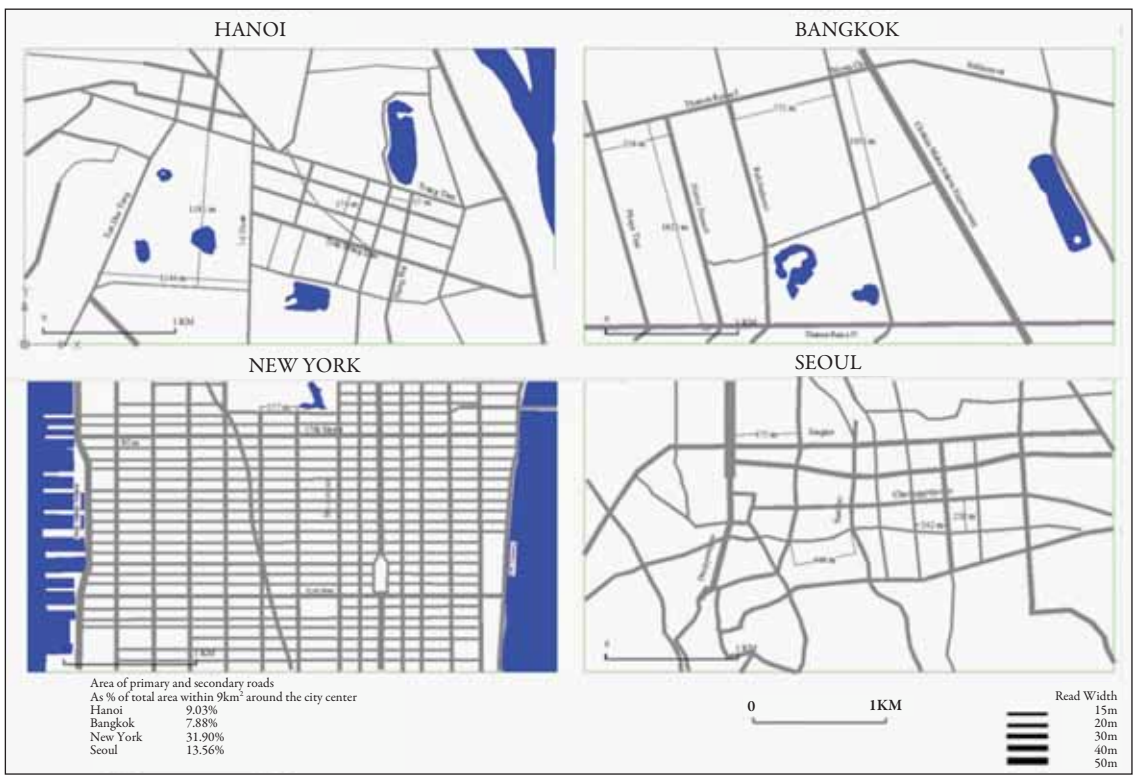
Figure 3.14 Population density gradients in Hanoi and selected comparator cities



The maps of figure 3.15 show the pattern of streets larger than 15 meters in the CBD of Hanoi compared with the streets in the CBDs of Bangkok, New York and Seoul. The maps are all on the same scale. They show that the pattern of major streets in Hanoi (9% of total area) are somewhat more dense than in Bangkok (7.8%) but much lower than in Seoul (13.6%) and in Manhattan mid-town (31.9%). In addition, both Seoul and New York have extensive underground transit networks which alleviate the need for surface transportation.

The current road network and the high density shown earlier in Figure 3.13 will be simply incompatible with the demand for road space created by a shift to individual cars for even a small fraction of the current trips made by motorcycles. For instance, at the current average Hanoi density (188 p/ha), a car ownership of 250/1000 (similar to the average for Malaysia but much less than in Kuala Lumpur) would require a vehicular street area occupying 19% of the total built up area – practically the entire current street right of way in Hanoi – just to allow half of the cars owned to run at 30 km/h. As the centrally located districts have densities close to 400 p/ha, a car ownership of 250/1000 would **guarantee total grid lock** in the central part of Hanoi.

Figure 3.15 Comparison of road density in Hanoi, Bangkok, New York and Seoul



Many households and firms currently using motorcycles as the main means of transport are very likely to upgrade to individual cars or trucks in the near future, as cars become more affordable while households' incomes increase. Figure 3.16 shows how the population densities of various neighborhoods (on the horizontal axis) translate into street area per person (on the vertical axis). The horizontal lines on the graph indicate the thresholds of street space required if each person had a motorcycle, parked car, or moving car—which requires a 40m^2 area at 15 km/hour, and a 65m^2 area at 30 km/hour. Clearly there is just about enough room in the three

Hanoi neighborhoods to have motorcycles parked on the street, but nowhere near enough room for each person to have a car—even if it is completely stationary!

Table 3,2 Hanoi transport modal split (2008)

	Modal Split
Buses	10.7%
Tourist buses	1.8%
Cars and mini vans	4.0%
Motorbikes	80.8%
Bicycles	2.5%
Light trucks	0.2%

Source: http//tramoc.com.vn/file_download/1235358776_305.pdf

Figure 3.16 Street area per person at various residential densities across the world

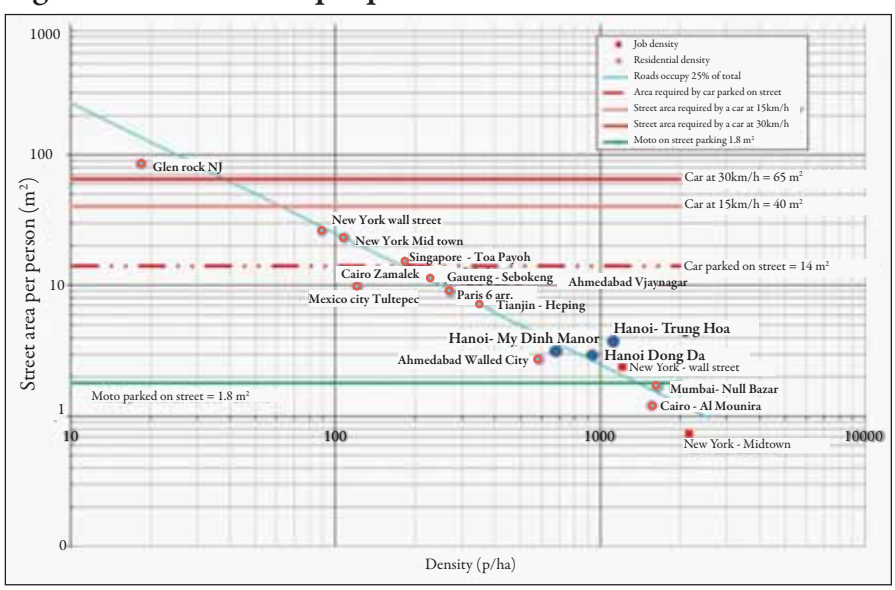
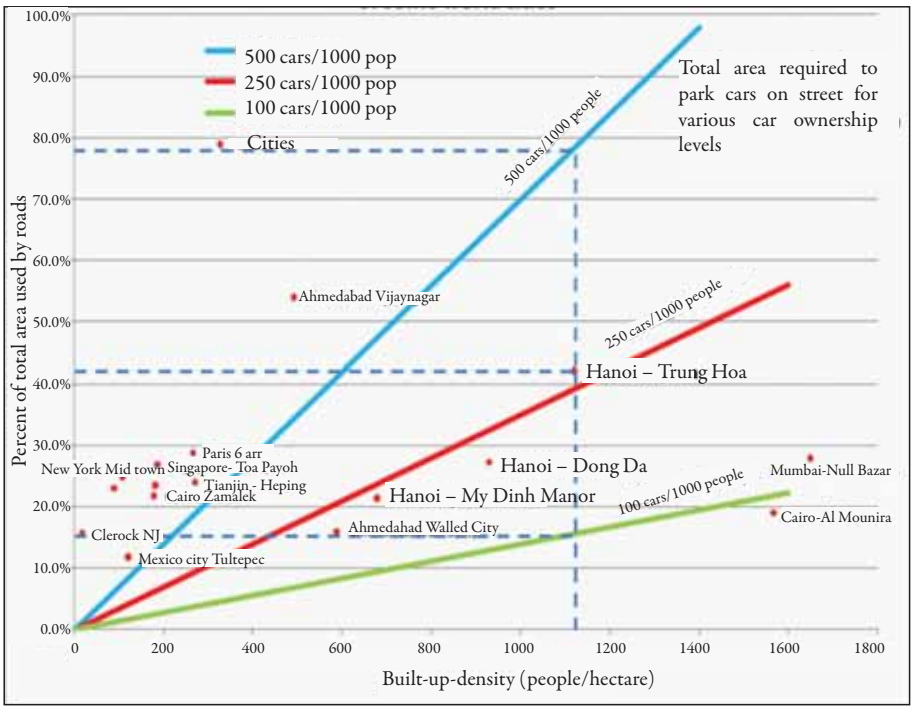


Figure 3.17 facilitates estimation of what levels of car ownership are possible: i.e. the minimum road area required in order to sustain different rates of car ownership at different population densities. It is clear that even modest car ownership of 250 cars per 1000 population is not sustainable in My Dinh Manor and Dong Da neighborhoods (i.e. their actual road space is below the red line), and is just about sustainable in Trung Hoa neighborhood (i.e. it is just above the line). Car ownership of 500 per 1000 population is completely impossible in all three neighborhoods: their population densities are so high they would require roads covering approximately 45% to 80% of their land area!

Figure 3.17 Relationship between density and road areas in neighborhoods of selected cities



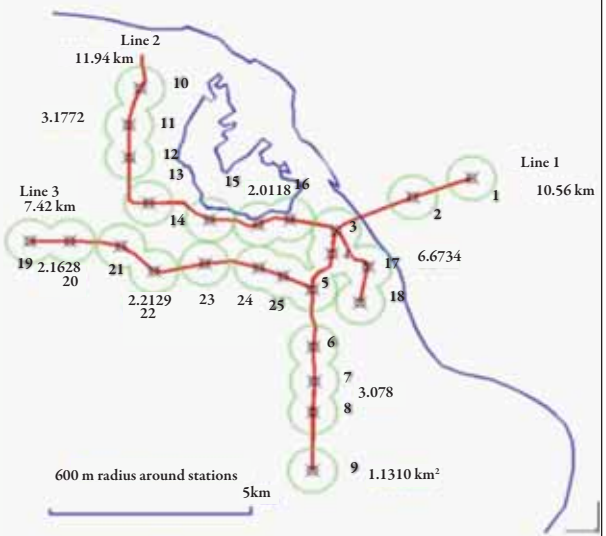
One option is to build more roads: but in practice this is rather difficult and is very expensive, given the financial and social cost of demolishing and relocating houses and businesses in dense neighborhoods. In Hanoi, the example of Xa Dan road which created a 40-meter right of way through a very dense neighborhood has been a step to increase local accessibility and reduce local traffic jams; but it didn't significantly increase the total road space in the city. Also recent studies from many developed countries show that building more road space alone, simply encourages more cars on the roads which leads to further traffic jams.

Another solution is to foster an efficient and effective mass transit system, but this system will not be fully operational for another 15 years; also it is necessary to ensure it is designed to accommodate the majority of Hanoi's population. Hanoi's urban mass rapid transit (as shown in Figure 3.18) is being planned with a radial structure converging on the geographical center of the city. But in the 15 years until it is completed, the city is likely to become even more polycentric than it is already. This means the transit route structure (periphery-to-center) is in danger of being too rigid for the point-to-point trips taken by Hanoi's population. In addition, even an optimistic analysis of its catchment area indicates that the urban mass transit system could capture only 22% of Hanoi's population. Figure 3.18's numbers assume it captures the entire population surrounding each station.

Figure 3.18 Catchment areas of the 25 stations of Hanoi's projected urban mass rapid transit

Evaluation of the number of people within the transit stations catchment areas

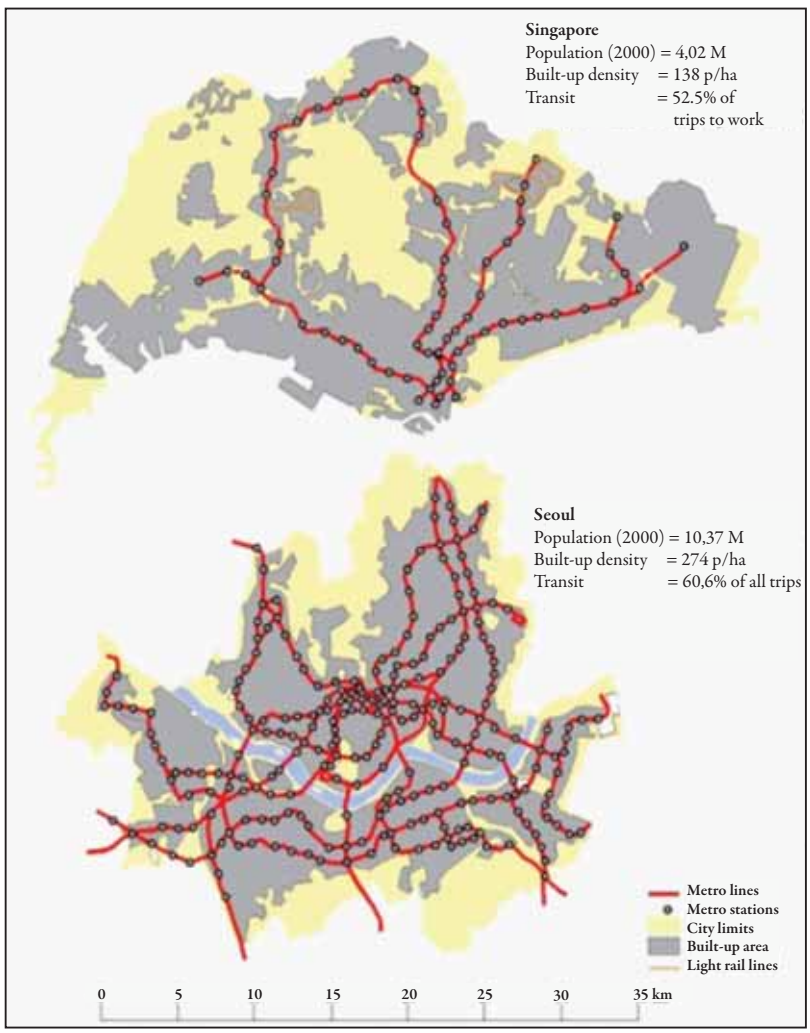
Station number	Area of station catchment areas (km²)	density (p/ha)	population in stations catchment areas
1	1.1310	96	10,857
2	1.1310	96	10,857
3	0.9533	346	32,954
4	0.9533	346	32,954
5	0.9533	346	32,954
6	1.0260	388	39,809
7	1.0260	344	35,294
8	1.0260	259	26,573
9	1.1310	82	9,274
10	1.0591	124	13,132
11	1.0591	124	13,132
12	1.0591	124	13,132
13	1.1310	204	23,072
14	1.1310	292	33,024
15	1.0059	292	29,372
16	1.0059	292	29,372
17	0.9533	346	32,954
18	0.9533	346	32,954
19	1.0814	204	22,061
20	1.0814	204	22,061
21	1.1065	296	32,751
22	1.1065	296	32,751
23	1.1310	292	33,024
24	0.9533	346	32,954
25	0.9533	346	32,954
	--------		--------
	26.1019	253	660,228
			22%
Total population (1) in 2009 =		188	3,044,455



Thus a reasonable adjustment to road-building and transit plans could be to move away from radial roads and instead to a grid-like structure to allow adequate mobility from suburb to suburb. Figure 3.19 shows examples of the different structural options in Singapore (with a radial system) and Seoul (with a grid system).

Though perhaps not a mainstream policy choice, Hanoi might consider encouraging the option of maintaining the motorbike as a core transport mode, rather than the car (albeit in electric non-combustion engine versions). The land use and urban design options will need to factor in the scales and routes at which the different modes function, and the inter-modal crossovers between public transport and motorbikes. An important priority will be discouraging the use of private cars by pricing the road space they occupy (e.g. through a congestion tax and higher car parking fees). Hanoi could conceivably also include the assignment of certain roads for use by motorcycles (or motorcycles and public transport) only, which might improve traffic safety. These options are not put out as the only possibilities, but there is an urgent need to institute some viable, pro-active response to the impending challenge, since the growing adoption of cars will become very costly for Vietnam's cities if no action is taken.

Figure 3.19 Comparison of radial mass transit route structure in Singapore (top) with grid-like mass transit structure in Seoul (bottom).



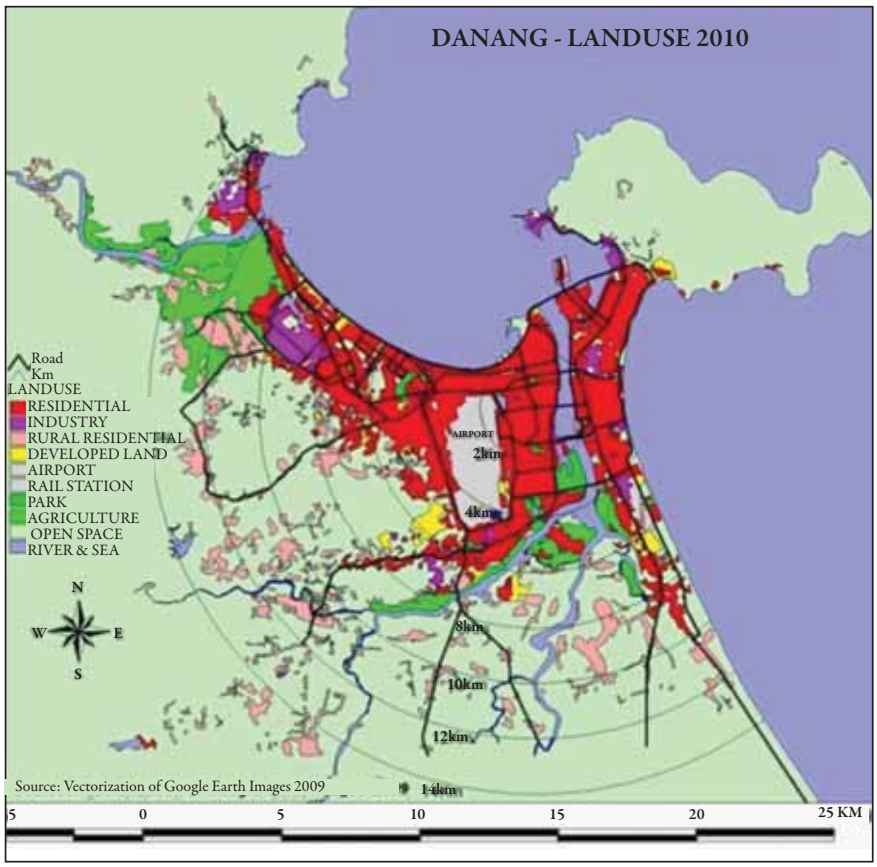
So, to summarize this section: while the current street network can accommodate the current motorcycle traffic, it will be totally insufficient when car traffic increases. Indeed, the demand for street space rises by about a factor of 4 with each trip that shifts from motorcycle to motorcar. The high mobility currently enjoyed in Hanoi is rather exceptional for a city of its size in the absence of a large transit mode share. This exception largely derives from the use of the motorcycle and the mixed-use land patterns prevalent throughout the city. Preserving this use pattern until an efficient and extensive rapid transit network has been built may be one of the pressing tasks for the Government.

3.3.2 Da Nang's urban structure and mobility

The topography of Da Nang is a determining factor in selecting a spatial strategy. The land use map shown on Figure 3.20 shows the complexity of Da Nang's topographical constraints, compounded by the presence of the main airport in the middle of the built-up area. Da Nang is developing mostly along the edges of the Han River and along the coast. The airport location and the hilly topography restrict any significant growth toward the South West. The decision to develop Da Nang as a major resort town to take full advantage of its sand beaches further reinforce the linear development of the city along the river and the coast. The newly developed Nguyen Tat Thanh road along the northern beach with a 40 meters right of way and four lanes of traffic will further reinforce the linear development of the city.

At 88 p/ha, the average density in the built up area of Da Nang is relatively low by Asian cities standards (compared with 142 p/ha in HCMC and 188 p/ha in Hanoi). However, observation of Google Earth imagery (dated Feb 2010) shows that the density is likely to increase significantly in the years to come as many of the lots in newly developed areas are still un-built. The local government has recently invested in primary road extensions along the northern beach and in formal land subdivision in areas adjacent to the new infrastructure. A sample of 9.3 hectares in a newly developed formal residential area selected at 6 km from the CBD shows that only about 23% of the lots are currently built. There are currently many similarly developed areas in Da Nang that have not reached their full potential built density. When these areas are fully developed and built with typical town houses of 4 floors the average built up density of the city is likely to increase significantly. As shown on Figure 3.20, the topographical constraints represented by the sea, the rivers, the swampy low lying areas and the nearby hills will significantly reduce the potential supply of land in the future to allow for urban extension. This constraint of land supply would suggest higher land prices, higher rents and consequently higher population densities in the future.

Figure 3.20 Actual land-use patterns in Da Nang

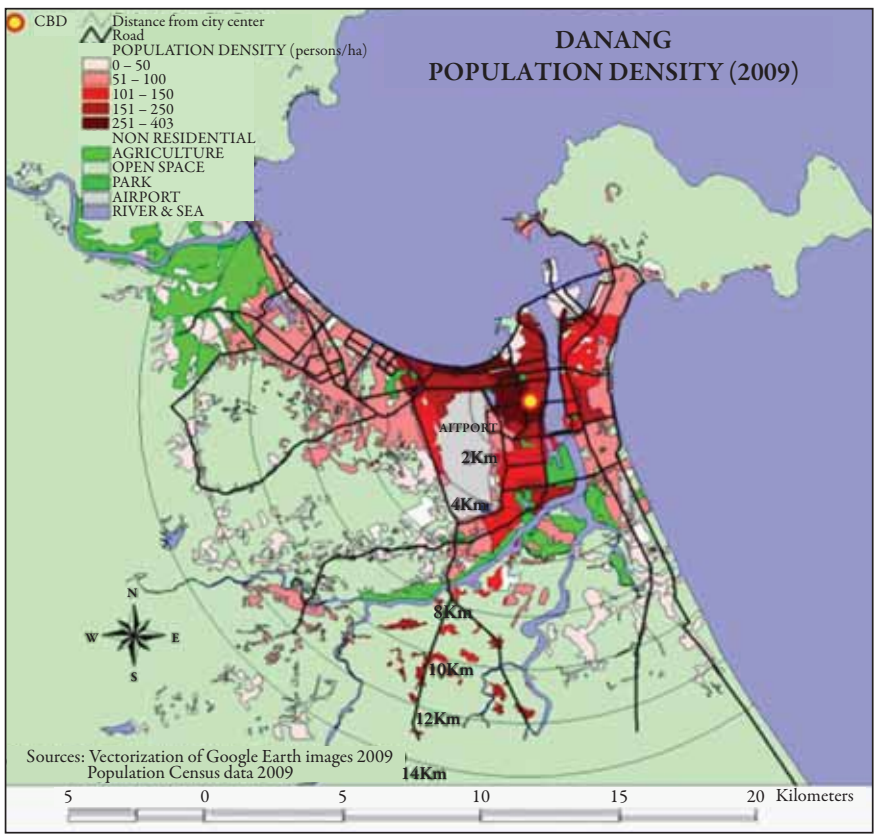


Source: Manual interpretation of satellite images, in Bertaud, 2011b

The spatial pattern of densities in the built-up area of Da Nang shows high densities (200 to 400 p/ha) only around the current CBD (Figure 3.21) but densities are falling quickly to 60p/ha or less beyond 5 km from the city center. The profile of densities shown on Figure 3.22 confirms the sharp fall in density at a distance of about 5 km around the city center. This type of steep density gradient would imply that at present Da Nang is strongly monocentric, i.e. a large number of jobs and amenities are concentrated in the CBD, attracting the majority of trips. This pattern of densities combined to the linear shape of the built up area would suggest an advantage for the success of a transit system as employment areas seems highly concentrated around the current CBD. However, because of the large areas of land that are already opened for development but only partially built, it is likely that the average density will soon increase and that jobs and amenities will disperse in areas made more accessible by the new infrastructure built by the local government.

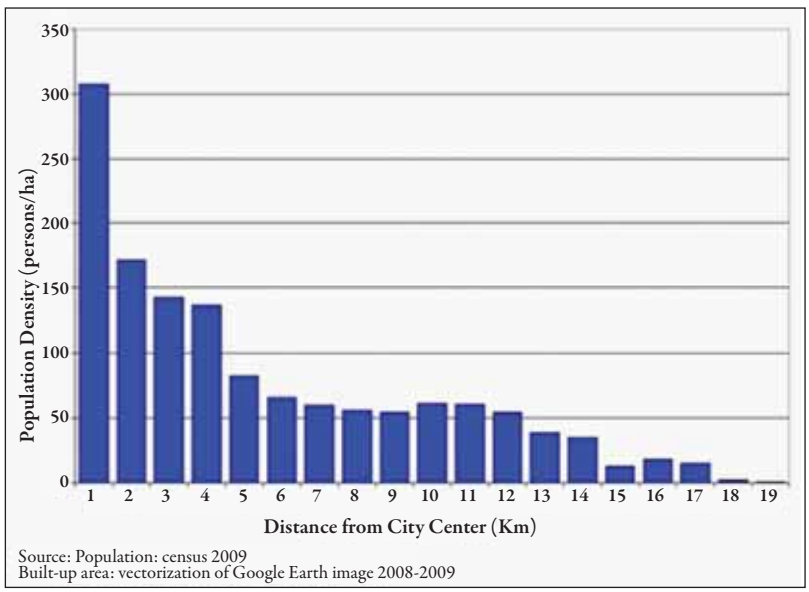
Furthermore, it is likely that part of the areas colored in blue in Figure 3.23 will be eventually developed organically (i.e. informally) and will provide affordable housing for lower income residents of Da Nang, in particular to migrants from rural areas.

Figure 3.21 Real population densities in Da Nang's built-up areas



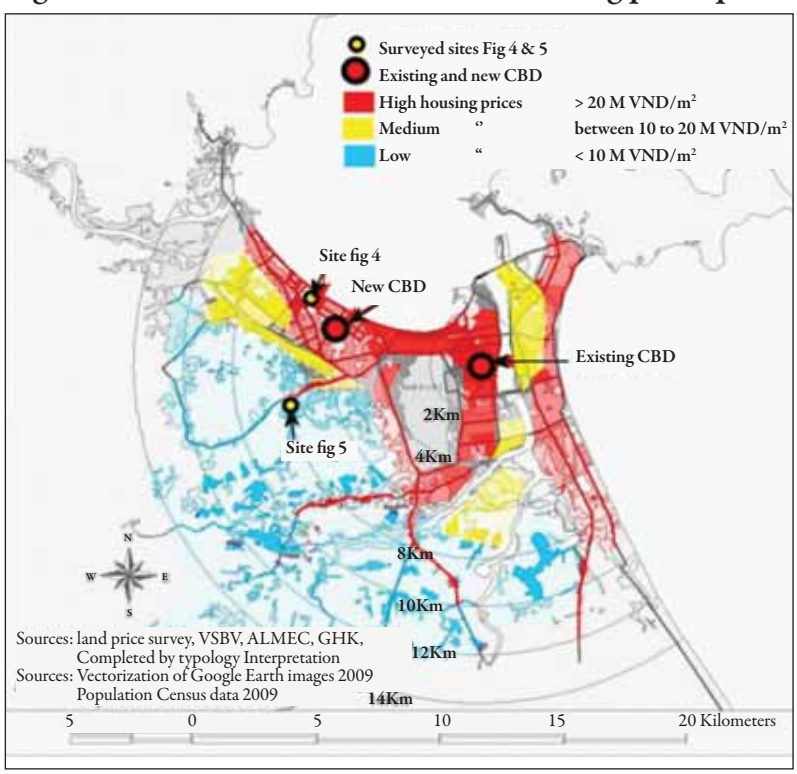
Source: Bertaud, 2011b

Figure 3.22 Population density gradient in Da Nang



Source: Population: census 2009
Built-up area: vectorization of Google Earth image 2008-2009

Figure 3.23 Estimated distribution of housing prices per m² in Da Nang



Sources: land price survey, VSBV, ALMEC, GHK,
Completed by typology Interpretation
Sources: Vectorization of Google Earth images 2009
Population Census data 2009

Currently, residents of Da Nang rely on two-wheeled transport almost as much as residents of Hanoi. According to the recent Transit Feasibility Report[5] prepared for Da Nang, 77% of trips are done by motorcycle, 22% by bicycle, and only 1% by buses and private cars. The report continues: "The street network in Da Nang has many wide roads which at present are operating well below capacity."

However, as in Hanoi, as households' incomes increase, a proportion of those motorcycle trips may be replaced by car trips, which use about 4 times more street space per trip. Ultimately, this presents similar problems of congestion to Da Nang as for Hanoi, though Da Nang's population densities are lower, and its street space rather more generous than in Hanoi.

Upstream planning for collective transport such as a BRT system at this stage in Da Nang's development is desirable. Curitiba, Brazil, considered one of the most innovative for public transit development, planned well in advance of its eventual growth, integrating BRT with land use and with other transport modes. Box 3.2 describes another successful BRT in Bogotá, Colombia. Da Nang will have to consider carefully current and future transport patterns, land use and development patterns as well as affordability issues when planning this transport network.

Box 3.2 Transmilenio in Bogotá, Colombia

"In Bogotá, where 85 percent of the people do not use cars for their daily transport, is it fair that cars occupy most of the space on the streets?" In trying to answer this question, Bogotá came up with the Transmilenio.

The Transmilenio is a very high quality Bus Rapid Transit (BRT) system, which has been used as a model by many cities around the world. With a route length of 84 km, it carries about 1.3 million passengers a day, at average speed of 26 km per hour, outpacing cars that get stuck in traffic. Estimates show that the Transmilenio saves people about 300 hours of commuting time annually. By way of comparison, the London Underground, with a network of 402 km, carries about 2.7 million passengers a day. Thus despite a network almost 5 times larger than the Transmilenio, it carries only about twice the number of passengers.

Though the Transmilenio is a bus system, it functions with several metro-like features resulting in a very high level of service. For example, features like a dedicated right of way for the buses, level boarding and alighting, off board ticketing, and high quality passenger information systems make it very similar to a metro rail system in terms of the service it offers. Using only about 1,500 buses, it offers a very efficient use of road space. With its unique logo and color scheme it creates an aura that makes it very attractive and dispels the adverse image that buses tend to have. In terms of carrying capacity, at almost 35,000 PHPDT (Peak Hour Peak Direction Traffic), it goes beyond what many light rail systems would carry and is almost half the capacity of a heavy rail system. Yet, it costs a fraction of what a heavy rail system would cost.

[5] Da Nang Bus Rapid Transit Pre-Feasibility" Study prepared by Gordon K Neilson (October 2010), final draft stage 2 report prepared for the World Bank.

Da Nang is currently preparing for construction of a Bus Rapid Transit (BRT) network, shown in Figure 3.24. On one hand the urban structure of Da Nang is rather naturally suited to a BRT network, since it is laid-out somewhat linearly along the coast, with one main CBD. On the other, some concern has been voiced about the extent to which the currently planned BRT network will coexist harmoniously with motorcycles, since it will disrupt left-turns across main avenues.

A recent feasibility report determines that using the planned BRT would begin to make economic sense only for trips longer than 15 km, for passengers having to use one feeder. As most individual motorcycle trips are shorter than 15 km, this limits the use of BRT and the likelihood that motorcycle users will shift to BRT. In addition the motorcycle is generally a more convenient, affordable and flexible way for people to travel. This underscores the crucial point that the BRT should not be designed as a substitute for motorcycle trips – but as a part of a system that together with motorcycle trips will compete in overall cost and convenience to the car. Appropriate design of an integrated BRT-Motorcycle system might be a priority area of research for Da Nang, which might also pave the way for similar approaches in other Vietnamese cities.

According to the BRT feasibility study, there is also a danger that the proposed BRT network is not sufficient to address the mobility challenges in Da Nang, while only attracting a relatively small proportion of the city's residents to become BRT users in the short term. For instance, in 2016 (line highlighted in Table 3.3), 4% of the passengers will be using cars against 3% using transit and 92% using motorcycles, but average speed on the avenue at peak hour will have decreased from 25.4 km/h to 20.18 km/h. Eventually, in 2025, passengers using cars will represent 9.1% of the passenger flow, while transit will still be 3%, but the flow of vehicles will be at a standstill at below 7.8km/h. While the passengers using transit will go hopefully faster than the passengers using cars and motorcycles, they will still have a much longer trip length than the passengers in 2011 using motorcycles.

The design and construction of a BRT network in Danang might well be part of the solution to maintain mobility in the future. However, the approach should be focused more on how to maintain overall mobility in an inter-modal system integrated with land use. It should also consider how to create traffic conditions where motorcycle users are safer and do not have significantly slower speeds in the future, while part of the trips shift to transit. The solution should not make it impossible for motorcycles to operate in order to boost transit use.

Two important questions should find an answer soon:

1) How to price car trips and car parking at their real cost to society?
2) How to manage motorcycle traffic in the future to make it safer and as rapid as it is now?

The answers to these questions are beyond the scope of this report but they should be found soon. There might not be many examples in the world of good motorcycle traffic management,

but maybe excellence and creativity in motorcycle management could be developed specifically by Vietnam's cities. Having roads entirely dedicated to motorcycle use might be one solution. Other roads will have a mix of cars and motorcycles and some roads entirely dedicated to BRT.

Figure 3.24 Projected BRT routes in Da Nang

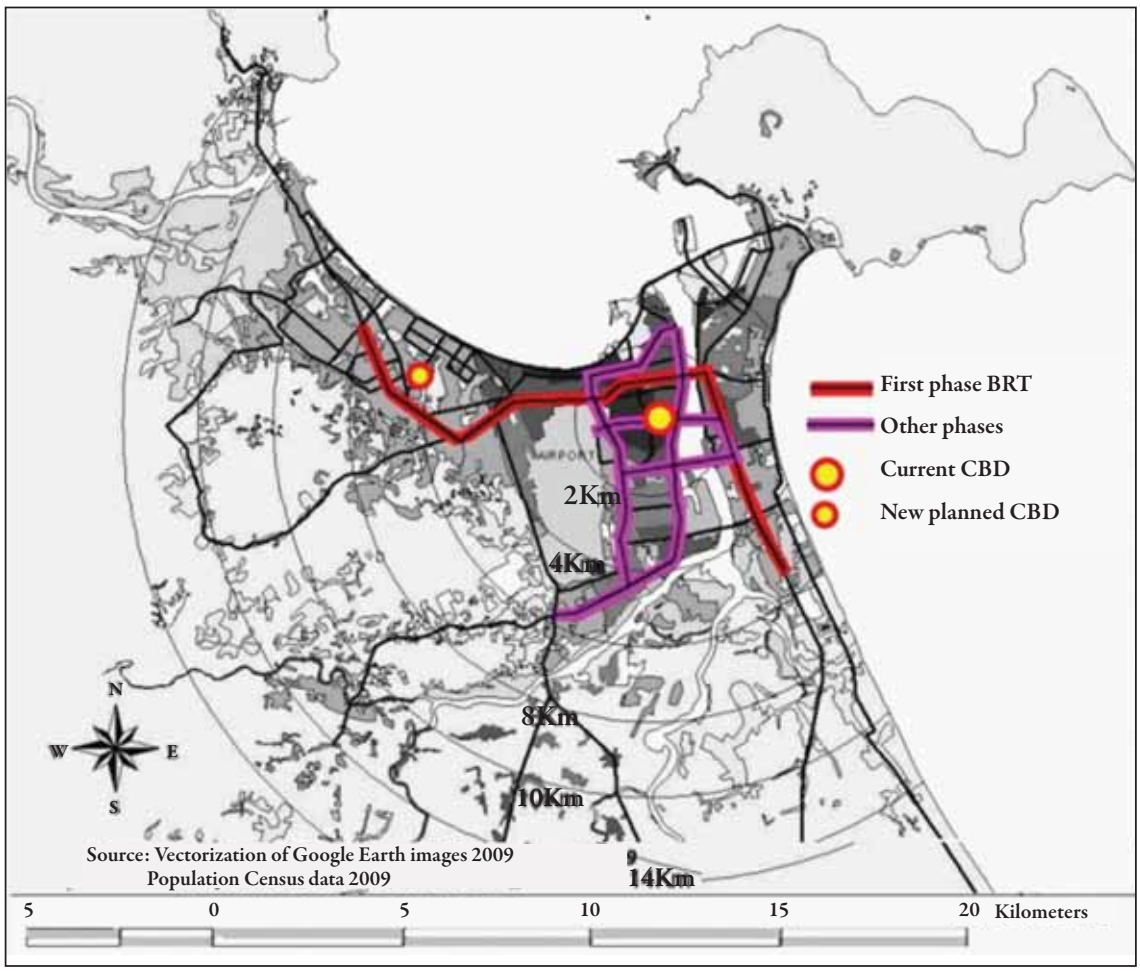


Table 3.3 Forecast GDP, car ownership, traffic composition, road capacity and vehicle speeds

						Dien Bien Phu (pm Peak Hour)									
												Existing lane arrangement		w/BRT	
Year	Pop (m)	GDP Growth (%)	GDP (USDm)	GDP/ Capita (USD)	Cars/ 1000 Pop	Pphpd	% by car	%m/c	% city bus	% other	Total pcu	v/c	General traffic speed	v/c	General traffic speed
2006	0.793		812	1027	5.7										
2007	0.806	17%	951	1180	7.3										
2008	0.821	11%	1056	1287	8.3										
2009	0.835	12%	1182	1416	9.5										
2010	0.850	10%	1301	1530	10.7	17208	2.0%	95.5%	1.50%	1.0%	3002	0.52	31.36	0.69	25.42
2011	0.866	10%	1431	1653	12.0	17518	2.2%	95.2%	1.50%	1.0%	3084	0.54	30.92	0.71	24.71
2012	0.881	10%	1574	1786	13.4	17833	2.5%	94.9%	1.5%	1.0%	3170	0.55	30.44	0.73	23.94
2013	0.897	10%	1731	1930	15.1	18154	2.8%	94.2%	1.88%	1.1%	3261	0.57	29.94	0.75	23.12
2014	0.913	10%	1904	2085	16.9	18481	3.2%	93.5%	2.25%	1.1%	3357	0.58	29.38	0.78	22.22
2015	0.930	10%	2095	2253	19.0	18813	3.6%	92.7%	2.63%	1.1%	3460	0.60	28.78	0.80	21.25
2016	0.946	10%	2304	2435	21.3	19152	4.0%	91.9%	3.00%	1.1%	3570	0.62	28.13	0.83	20.18
2017	0.963	10%	2535	2631	23.9	19497	4.5%	91.4%	3.00%	1.1%	3690	0.64	27.40	0.85	18.99
2018	0.981	10%	2788	2843	26.8	19848	5.0%	90.8%	3.00%	1.2%	3819	0.66	26.59	0.88	17.68
2019	0.998	10%	3067	3072	30.1	20205	5.6%	90.2%	3.00%	1.2%	3959	0.69	25.70	0.92	16.22
2020	1.016	10%	3373	3319	33.7	20569	6.3%	89.5%	3.00%	1.2%	4111	0.71	24.71	0.95	14.60
2021	1.035	7%	3610	3489	36.3	20939	6.8%	89.0%	3.00%	1.2%	4245	0.74	23.81	0.98	13.12
2022	1.053	7%	3862	3667	39.1	21361	7.3%	88.4%	3.00%	1.2%	4387	0.76	22.84	1.02	11.52
2023	1.072	7%	4133	3854	42.1	21700	7.9%	87.9%	3.00%	1.3%	4537	0.79	21.79	1.05	9.78
2024	1.092	7%	4422	4051	45.3	22090	8.5%	87.2%	3.00%	1.3%	4697	0.82	20.64	1.09	7.89
2025	1.111	7%	4731	4258	48.8	22488	9.1%	86.6%	3.00%	1.3%	4866	0.84	19.40	1.13	n/a
2026	1.131	7%	5063	4475	52.6	22893	9.8%	85.8%	3.00%	1.3%	5046	0.88	18.04	1.17	n/a
2027	1.152	7%	5417	4704	56.6	23305	10.6%	85.0%	3.00%	1.4%	5237	0.91	16.55	1.21	n/a
2028	1.172	7%	5796	4944	60.9	23724	11.4%	84.2%	3.00%	1.4%	5441	0.94	14.92	1.26	n/a
2029	1.193	7%	6202	5197	65.6	24151	12.3%	83.3%	3.00%	1.4%	5658	0.98	13.13	1.31	n/a
2030	1.215	7%	6636	5462	70.7	24586	13.2%	82.3%	3.00%	1.4%	5890	1.02	11.17	1.36	n/a

Source: Transit Feasibility Report, as cited in text

3.3.3 Ho Chi Minh City's built environment and mobility[6]

Mobility in HCMC, is practically almost entirely dependent on the use of the motorcycle (75% of all mechanized trips), while transit represents barely 2% of trips (ALMEC, 2004). The motorcycle provides a viable transport alternative in Vietnam's cities where some wide arterial roads are combined with narrow lanes giving access to dense residential neighborhoods.

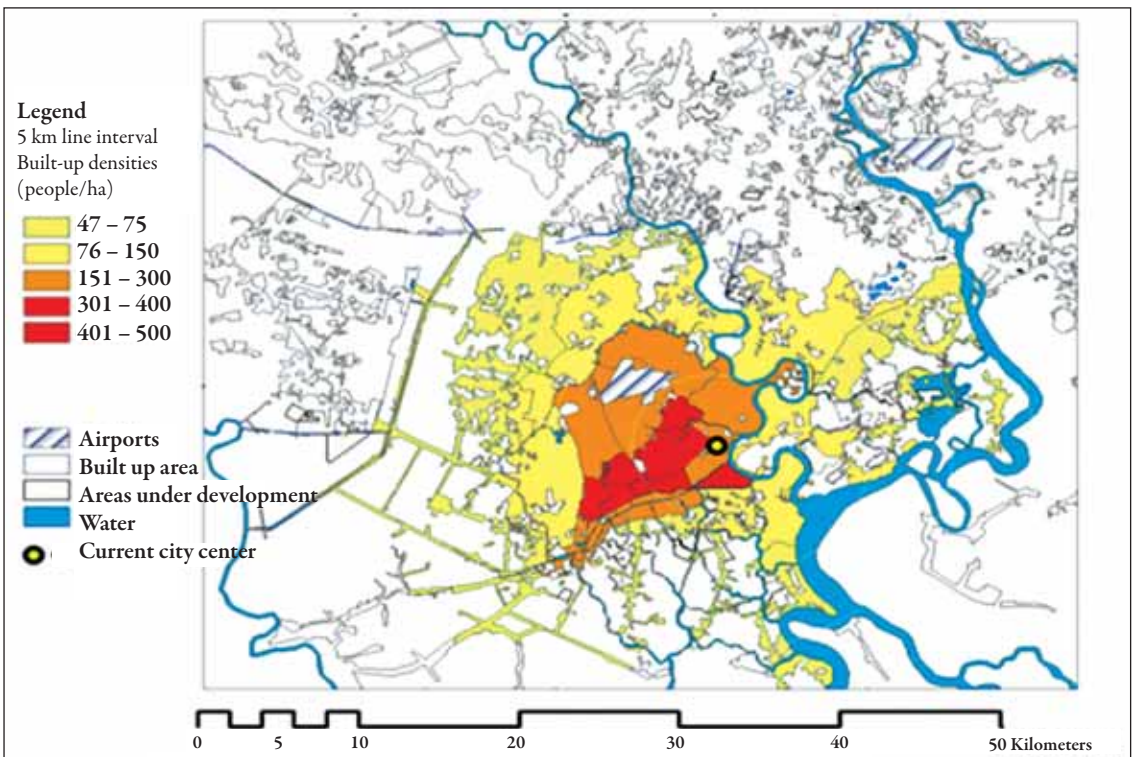
Figure 3.25 shows population densities for the central districts of Ho Chi Minh City. The city's average population density is 150 people per hectare, which makes it a dense city by general world standards, though fairly average compared to other Asian cities. Indeed, more than 75% of the city's population lives in districts with densities higher than 100 persons per

[6] This section is drawn from Bertaud, 2011c.

hectare. Just as in Hanoi and Da Nang, these high densities would be incompatible with the increased use of the individual car as a main means of urban transport.

As can be seen from the Figures 3.25 and 3.26 the city is currently strongly monocentric. As discussed before, a monocentric structure facilitates a greater coverage by public transport using a shorter network.

Figure 3.25 Population densities in Ho Chi Minh City

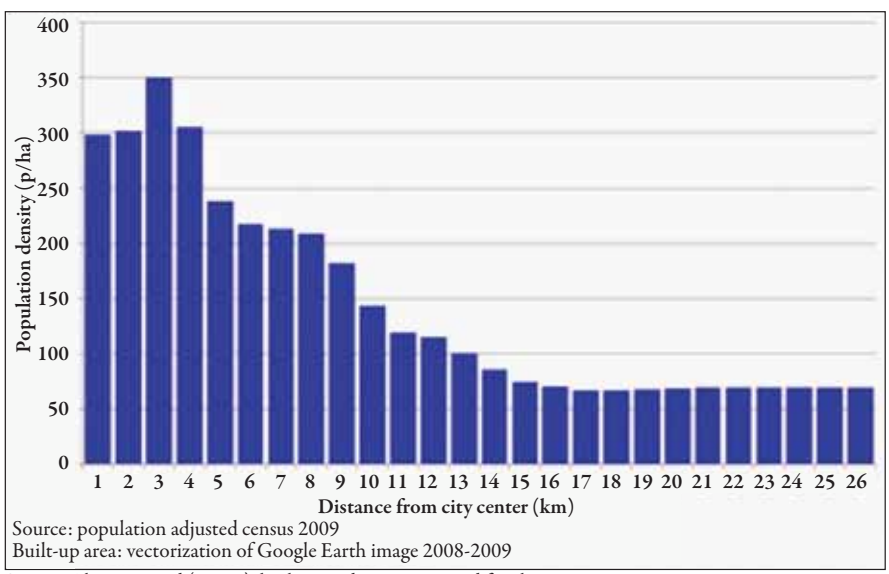


Source: Population: Census 2009
Built up area: vectorization of Google Earth image 2008, 2009

Population and built-up density of Ho Chi Minh City 2009 in the 22 urban districts district sorted by decreasing densities				
	population	built-up area	built-up density	cumulative population
		Km²	P/ha	%
District 4	179,640	3.68	488	3%
District 11	226,620	4.64	488	6%
District 5	170,462	4.21	405	9%
Phu Nhuan District	174,497	4.33	403	11%
District 10	227,226	5.69	399	15%
District 3	189,764	4.89	388	17%
District 6	251,912	6.81	370	21%
Tan Binh District	412,796	13.93	296	27%
District 8	404,976	13.69	296	33%
Binh Thanh District	451,526	15.91	284	40%
Go Vap District	515,954	18.70	276	48%
Tan Phu District	397,635	14.86	268	54%
District 1	178,878	6.80	263	56%
Binh Tan District	572,796	41.12	139	65%
Thu Duc District	442,110	37.44	118	71%
District 7	242,284	21.50	113	75%
District 12	401,894	41.67	96	81%
District 2	145,981	18.95	77	83%
Hoc Mon District	348,840	49.74	70	88%
Binh Chanh District	421,996	60.99	69	95%
District 9	255,036	37.94	67	99%
Nha Be District	99,172	21.20	47	100%
	6,711,995	**448.70**	**150**	

Source: Alain Bertaud (2011c), background paper prepared for this report

Figure 3.26 Profile of built-up densities in Ho Chi Minh City



Source: Alain Bertaud (2011c), background paper prepared for this report

However, this monocentric structure may not last long. Ho Chi Minh City's CBD is expanding vertically, but it cannot expand very far horizontally because of the proximity of the river and because of numerous large government buildings with historical value. This suggests that new CBD areas are required such as a more intensely developed District 3 which is currently being planned. Ho Chi Minh City should develop its mass transit systems in harmony with emerging land use patterns.

Figure 3.27 shows the transit system that Ho Chi Minh City is currently planning. It has a length of 110km, and will serve only part of the metropolitan area. While feeder buses could extend the catchment areas of the planned stations, trips involving several transfers are unlikely to be competitive with motorcycle trips, especially if many jobs and commercial areas are located out of walking distance from stations.

Figure 3.27: The planned transit system of HCMC

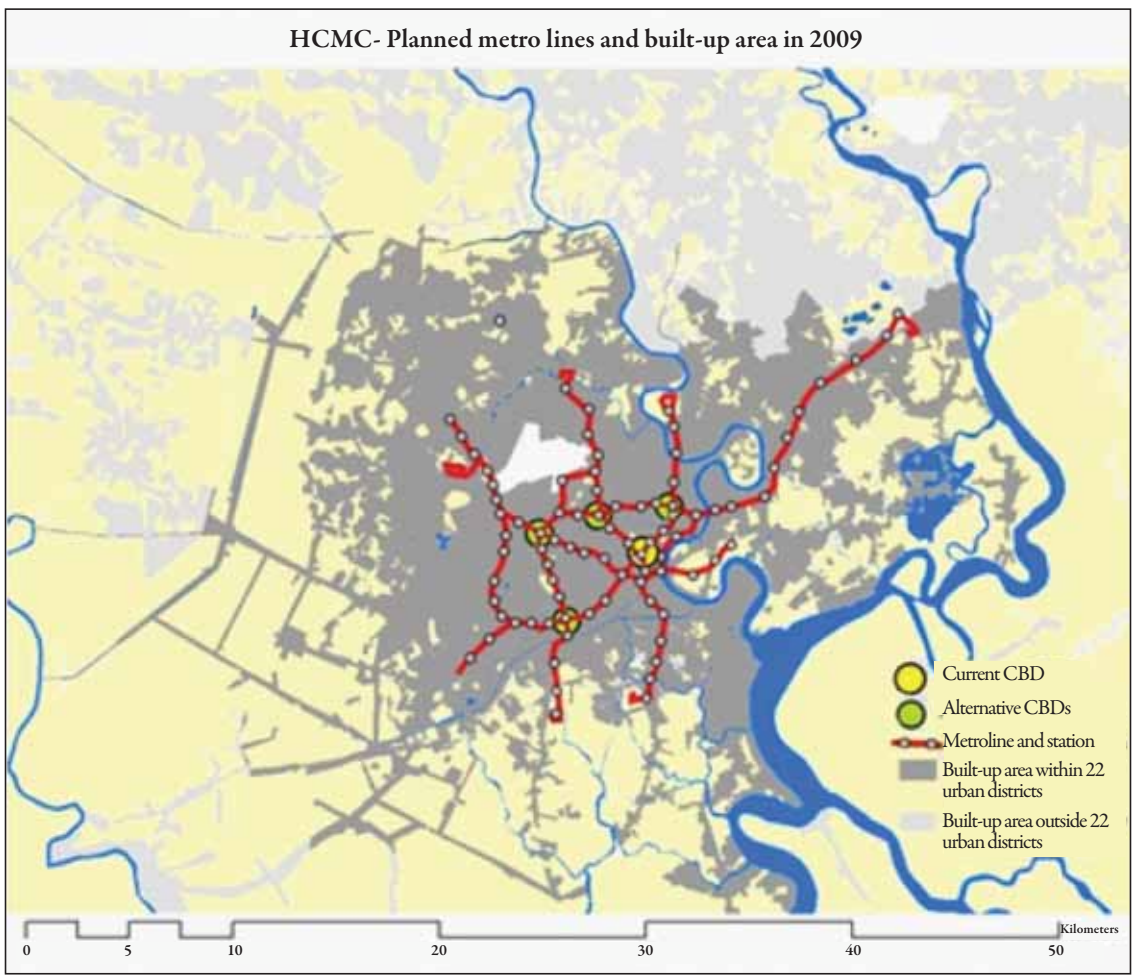
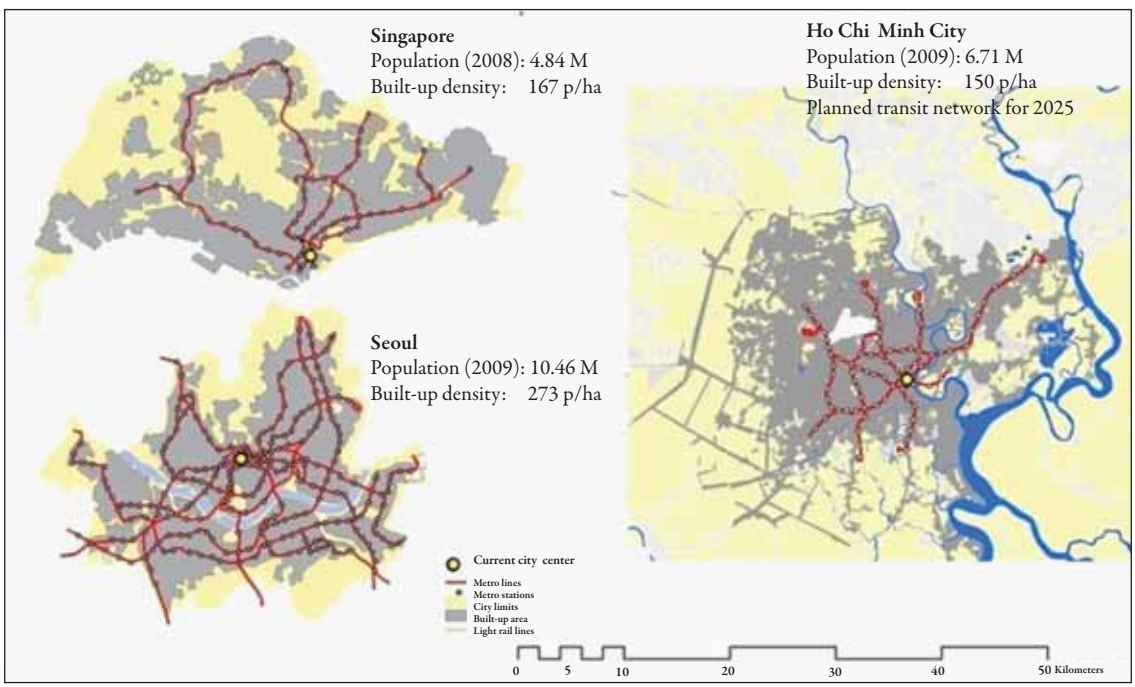


Figure 3.28a shows the built-up area, the transit network and stations in HCMC, Singapore and Seoul on the same scale. We can see the different transit and land use strategies adopted by Singapore and Seoul. In Singapore the network is centered on the CBD where most services, retail jobs and office space are concentrated. The metro lines are not covering the entire built-up area because stations are linked with bus feeder lines. The bus feeder lines do not require a very dense transit network but lengthen the travel time of passengers using transit (52 minutes average in 2008 in Singapore for passengers using transit). In Seoul by contrast, the transit lines cover very densely the entire built-up area. While Seoul has a large main CBD, many sub-CBDs have developed in other parts of the city and the jobs and amenities areas are widely dispersed. The network design needed to function optimally with this type of land use pattern is quite different from that which works for Singapore.

Figure 3.28: The transit system of HCMC compared to Seoul and Singapore



The data shown in the Table 3.4 compares some land use and transit line indicators between HCMC's planned network and those of Seoul and Singapore. An important indicator is the surface of built-up area to be served per station.[7] The built up area per station is 1.56 km^2 for Seoul but 5.15 km^2 for HCMC. It shows that the HCMC network is not dense enough to service all the population without feeder buses. The percentage of population that is within

[7] Obtained by dividing the number of stations by the total built-up area of a city

walking distance from a station reflects the density of the network and the relative density of different parts of the built-up areas served by metro station. In Seoul a very high 69% of the population is within 800 m from a metro station, compared to 43% in Singapore and 38% for the projected network of HCMC. More important even, in Seoul 72% of jobs are within 800 m from a metro station, insuring that a large majority of jobs are accessible without any lengthy mode transfer. Finally, the outcomes of the metro investments in Seoul and Singapore are that 38% of trips are done by metro in Seoul as against 17% in Singapore.[8] The total percentage of transit trips (buses, metro, suburban rail and light rail) are of course higher with 66% of all trips in Seoul and 52% in Singapore.

Table 3.4 Land use parameters and transit features in HCMC, Seoul and Singapore

Comparison between the planned mass transit rail system of HCMC, with the current metro system of Seoul and Singapore

	HCMC	Seoul	Singapore
Year of census	2009	2009	2008
Population	6.71	10.46	4.84 [1)]
Built-up area	448	383	289
Built-up density	150	273	167
Length of transit network [2)]	110	334	119
Number of stations	87	245	81
Km^2 of built-up area per station	5.15	1.56	3.57
Km of line per station	1.26	1.36	1.47
% of Population within 800 m from metro station	38%	69%	43%
% of Jobs within 800 m from metro station		72%	
% of motorized trips using Metro rail transit [3)]		38%	17%
% of motorized trips using all forms of transit		66%	52%

1) Including non residents
2) Metro lines within municipal boundaries, for HCMC metro lines as planned in 2010
3) Excluding other transit mode like buses and regional railways

Source: Cities' census, author's measurements, Seoul and Singapore Transport Statistics

While it is not possible to project in advance an accurate percentage of trips done by metro based solely on physical parameters like density, spatial coverage and length of networks, it is nevertheless instructive to note that the current extensive and expertly managed metro networks in Seoul and Singapore are able to attract only 38% and 17% of all passengers' trips. The relatively modest contribution by metro to the number of total trips is however essential to

[8] This figure includes the trips that use only metro or feeder buses trip combined with a metro trip; of course it does not includes non-metro transit trips, buses, light rail or suburban train when they are not combined with a metro trip.

limit congestion in Seoul and eliminate it in Singapore. It should reminds planners that metro investments, however large, will not by themselves reduce congestion, but only one part of a multi-faceted transport policy involving managing multimode traffic and transport, land use policy, pricing for parking and roads, etc.

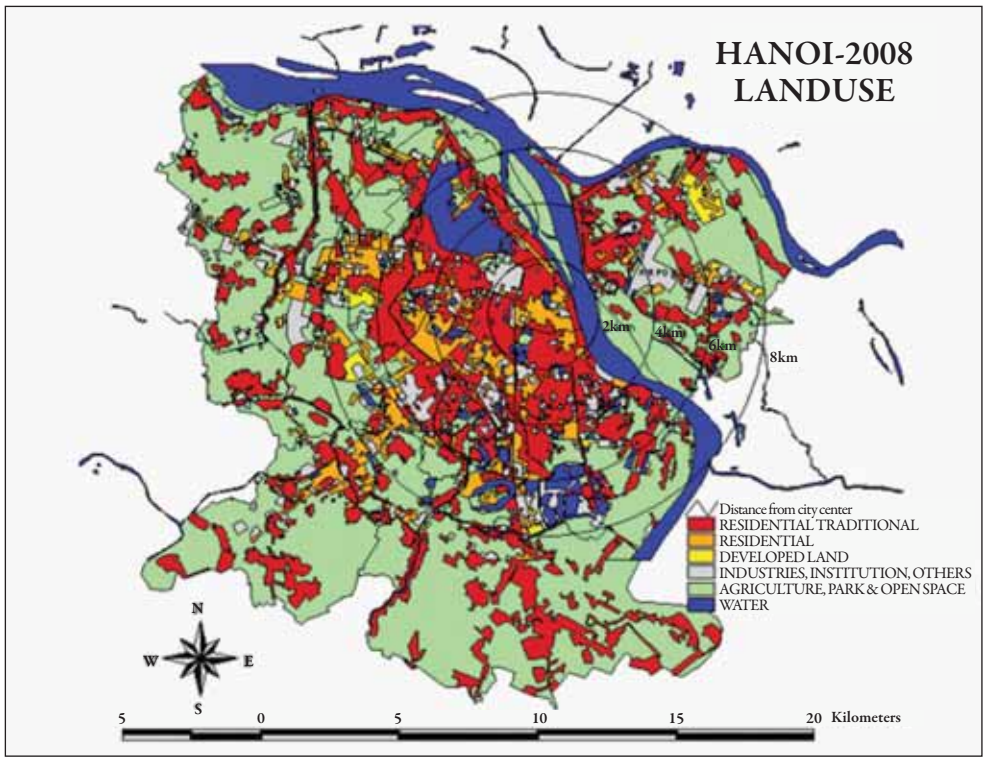
In Vietnam's cities the transport priorities seems to be first to manage motorcycle traffic to make it safer and more efficient, and second, to prevent the growth of car traffic by pricing parking at its real market price and encouraging the practice of off street privately operated parking garages.

3.4 Land and real estate

This section provides an initial overview and reviews available data on prices for land and real estate in urban Vietnam. It summarizes the findings of a limited survey commissioned for this report, which included questions on housing characteristics. It should be noted that due to time and access constraints this survey focused on more easily available data and may exclude information of lower income segments. A larger survey is recommended for subsequent research to yield results that are more widely applicable. The section then looks at regulations that impact land and real estate transactions, and their impact on business climate.

Before proceeding further, it might be useful to take a look at the land use map of Hanoi for reference. Bertaud (2011a, 2011b, 2011c), used a series of satellite images of Hanoi taken from Google Earth, and manually categorized the whole built-up area of the city based on site visits to the various sections on the map – in order to understand more accurately the land use typology. The results are shown in Figure 3.29 and Table 3.5. Since land use on the ground is often inconsistent with official land use maps – it is recommended that such land use assessments be carried out for cities. Bertaud (2011b) also carried out a similar exercise for Da Nang, which can be seen in the previous section on urban form and mobility in Figure 3.20. An understanding of the broad land use patterns across the city and the topographic and constructed elements that influence, induce or constrain land use – is a good point of departure for a spatial analysis of land and real estate in a city.

Figure 3.29 Actual land-use patterns in Hanoi



Source: Manual interpretation of satellite images, in Bertaud, 2011a

Table3.5 Actual land-use patterns in Hanoi

Hanoi: Twelve urban districts		
Land use	Area (km^2)	%
Residential traditional townhouses+ commercial	92.424	64
Residential + commercial	25.915	18
Institutions and community facilities	10.032	7
Industries	13.742	10
Major roads, utilities and railways yards	2.515	2
Total	**144.628**	**100**

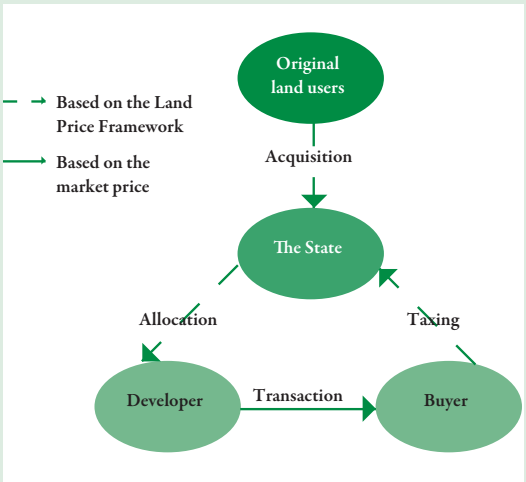
Source: Manual interpretation of satellite images, in Bertaud, 2011a

3.4.1. Prices

As an introduction to better contextualizing the analysis on land prices it would be helpful to review Box 3.3 which describes the 'two-price' land system and gives a good indication of some of the important governance and political economy issues related to land markets in Vietnam.

Box 3.3 Vietnam's Two-Tiered Land Price Land System

In a market economy the price of land is determined by the dynamics between demand for land and its supply. In Vietnam, however, the Government aquires land from land users and allocates it to developers and investors using an imposed land price framework (LPF) that does not follow market principles. This price is commonly refered to as the 'set price.' Once this land is developed or re-sold to a buyer by the developer, it is done so at 'market prices.' In addition to determining the price of land for acquisitions, compensations, allocations, and land leases - the LPF is also used to determine the value of land when used as a resource input in joint venture enterprises, and the when calculating tax for land transfers to a new user (Han and Vu 2008). The LPF is increasingly used by Governments as a way to increase FDI inflows. For example consider the overtly controversial passing of Decree No. 84/2007/ND-CP (dated 25 May 2007), that states if a project is 100% privately funded by foreign investors, land can be involuntarily taken from owners and converted by the state.



The government price and market price in Ho Chi Minh City in 2009

Location	Land price (VND 1000/sq.m)		Ratio
	Maximum of Government Price[a]	Maximum of Asking price[b]	
Central Districts			
Hai Ba Trung street, District 1	48,400	293,000	600%
Tu Xuong street, District 3	22,000	213,000	970%
Urban Districts			
Dinh Bo Linh street, Binh Thach Dist.	12,500	79,200	640%
Dat Thanh street, Tan Binh District	6400	66,700	1040%
Peripheral Districts			
Do Xuan Hop street, District 9	3500	40,000	1140%
Ha Huy Giap street, District 12	4400	32,000	730%
Rural Districts			
Le Van Luong street, Nha Be Sub - district	2200	28,700	1300%
Nguyen Thi Ranh street, Cu Chi Sub - district	660	2000	300%

[a] The government price of land was collected (the maximum price of land along certain streets) from the Land-Price Framework of Ho Chi Minh City in 2009 issued on 20 December 2008 (Decision 89/2008/QD-UBND of Ho Chi Minh City People's Committee).

[b] The asking price (Aking prices of land lots and properties close to market price since sellers announcing selling prices in real estage agents based on their expected prices to sell and consultancies of reasonably sellable prices from real estate agents) of land lots/properties on the streets was collected from some real estate agents.

The two-price system transfers huge value and benefits, and creates opportunity for coalition between two powerful groups of actors – developers (often SOEs), investors, and speculators (who benefit greatly and directly from the two-price system) and state officials (who are the gate-keepers of the regulations that determine this benefit). This perpetuates strong interest in maintaining the two-price system. On the other hand the system causes similarly huge losses to the displaced land users, and also to the public at large. Since land allocations, joint venture deals, taxes, concessions and permissions for developers and investors are based on artificially deflated land values – the Government is significantly forfeiting the creation of public benefit from one of its most valuable assets.

As a result of the two-price system there is a significant amount of conflict and resentment relating to land acquisitions. For instance MONRE (Lawsuits on land in Vietnam, MONRE 2008) reports that during 1993-1995, when the LPF and market prices were not too far apart, complaints relating to the use of LPF in land acquisition were modest at 800. However, as the divergence between the LPF and market prices widened, complaints have increased to 12,708 (over 1996 – 2005). As the amount of land tied up in conflict rises (thereby significantly reducing the completion rate of projects), a supply bottleneck is created which further increases the market price for land and housing – which in addition to being a distortion in the market, further increases the gulf between the LPF and market prices. Also the artificially lower priced land stimulates a proliferation of land sales that leads to rapid urban sprawl and the high infrastructure inefficiencies and capital costs associated with it. It seems the Government is trapped in a two-price system that continues to benefit developers over the public.

Market and government land prices in some new urban areas

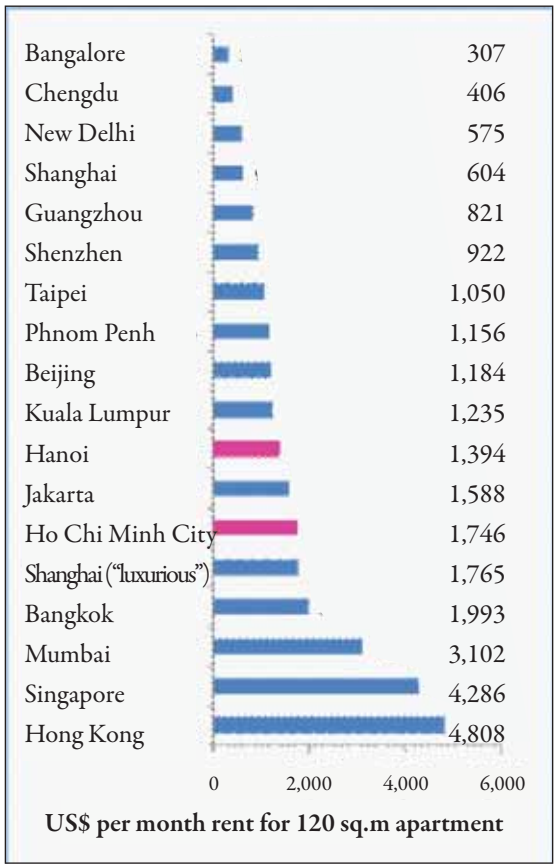
Location	Market price[a] Dec 2006 (VND million/sq.m)	Market price[b] Dec 2007 (VND million/sq.m)	% of change	Government price[b] Dec 2006 (VND million/sq.m)	Government price[b] Dec 2007 (VND million/sq.m)	% of change
Ho Chi Minh City						
Phu My – Van Phat Hung, District 7	11.0	27.0	145%	1.6	2.2	38%
Thai Son, Nha Be Subdistrict	5.5	16.0	191%	1.5	1.7	13%
Hong Linh, Binh Chanh Dist.	4.3	13.0	202%	1.15	1.4	22%
Thanh My Loi, Huy Hoang, Dist.2	16.0	26.5	66%	1.2	1.4	17%
Gia Hoa, District 9	5.5	14.0	155%	0.95	1.2	27%
Adjacent provinces						
Long Tho -HUD, Nhon Trach, Dong Nai Province	1.0	2.5	150%	0.4	0.5	25%
Long Hau, Long An Province (6/2007)	3.2	6.5	103%	0.45	0.6	33%
Chanh Nghia, Thu Dau Mot, Binh Duong Province	6.7	26.0	288%	0.7	0.9	29%

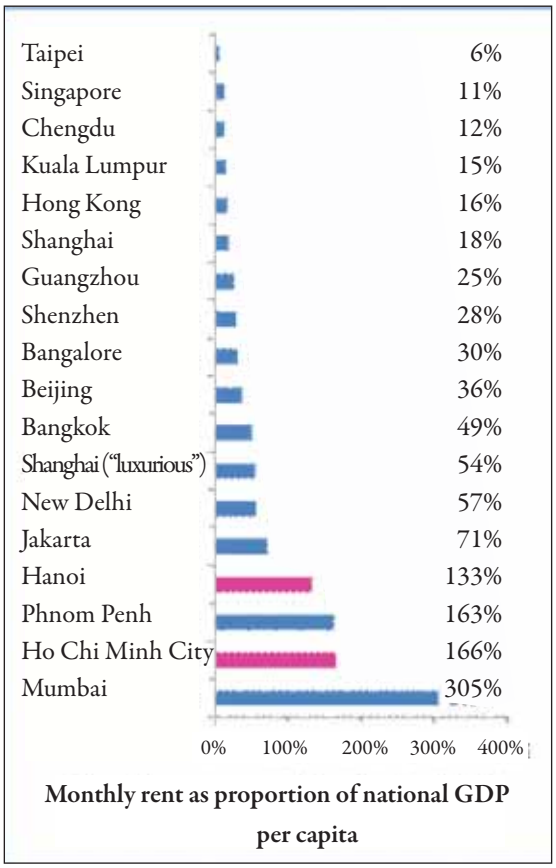
[a] Vietnam Program 2008.
[b] Land-Price Frameworks of Ho Chi Minh City, Long An, Dong Nai, Binh Duong Provinces Issued on December 2006 and 2007.

Source: Adapted from Truong Thien Thu and Ranjith Perera; Habitat International 35, 2011. All figures and tables for this box are extracted directly from the cited document.

An initial review of real estate prices in Hanoi and Ho Chi Minh City suggest that prices are rather high compared with comparator cities in Asia (Figure 3.30). While it is likely that this represents the higher-end of the market – it still might be indicative of distortions within the market, and that prices are rather high when contrasted with income levels

Figure 3.30 Monthly apartment rents in Vietnam in relation to other major Asian cities





Source: Urbanization Review team calculations from World Development Indicators and www.globalpropertyguide.com. Prices are average prices for 120sqm apartments at the center of city in 2008-09)

For a representative coverage of average residents, the analysis relies on the findings of a small-scale survey of internet rental listings commissioned for this report. This data was sourced from the most widely used Vietnamese internet site www.muaban.net. The choice is explained in Box 3.4. The advertisements on this site are listed by local Vietnamese businesses that specialize in rental accommodation and by individual owners. Residential rents were assessed from every apartment listed for rent in every location in Hanoi and HCMC in February 2011 in a selected range of apartment sizes (75 - 90 square meters). The objective was to capture data for property of a similar size within and between cities. In a limited number of locations, property of a larger, or smaller, size was available. Based on this data a median rental price was worked out for each location. Figures 3.31 and 3.32 depict the results for Hanoi and HCMC (the complete data set is contained in Tables 3A.1 and 3A.2 in Appendix 3A). The data indicate that rent prices in Hanoi and HCMC are generally comparable.

Next, data on vacant land prices are plotted in Figures 3.33 and 3.34, for Hanoi and Ho Chi Minh City respectively. These cover vacant residential land plots in new urban areas, or a "for sale" listing of vacant residential land in an older established urban area. Data were sourced from newspaper and internet advertisements, plus enquiries from local real estate brokers. For some localities, the vacant land research identified vacant land for sale in older established areas of particular districts and vacant land for sale in new urban developments in the same district.

Box 3.4 Sources for market prices of real estate in Vietnam

The market price of property may be determined through **auction results, real estate agent** enquiries, **taxation reports** and from **newspaper and internet advertisements** (listings for sale).

The **auctions** are regarded as difficult to interpret since they often yield widely differing prices for similar land.

Real estate agents—local Vietnamese brokers, usually sole traders—are considered to have a vested interests and information from this source was treated cautiously.

Figures provided in **taxation reports** are usually discarded from consideration as market value evidence because of the tendency for understatements being submitted to the Taxation Authority.

The most credible evidence of open market activity is **newspaper and internet advertisements.** The difficulty with this is determining the discount (if any) to be applied to the asking price, and that not all property types are traded via newspaper or internet advertisements.

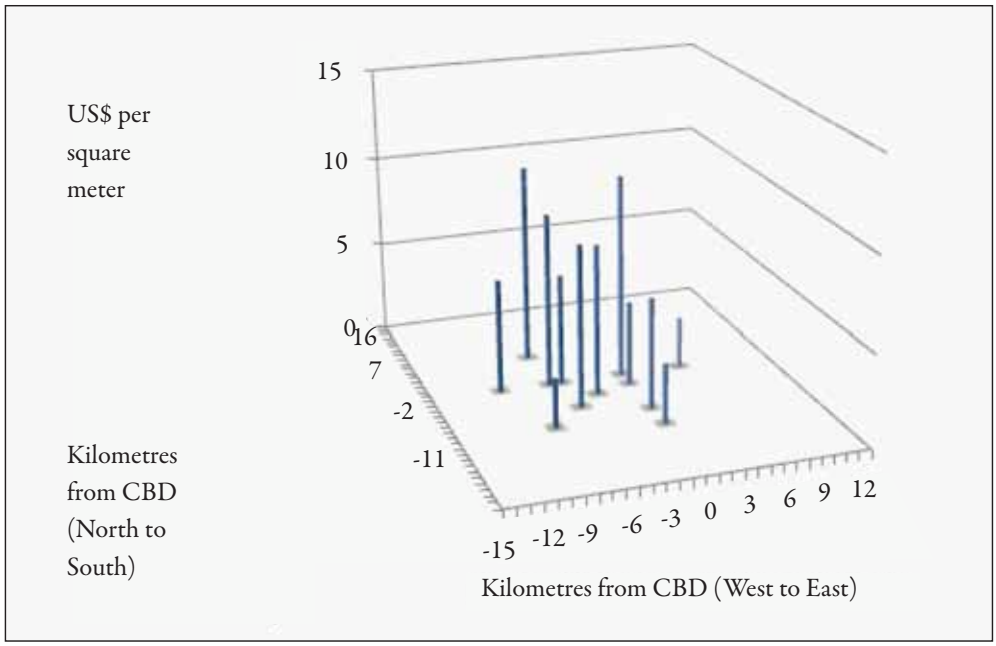
A further source of price data is private advertising by the owner which may include a 'Nha Ban' ('For Sale') sign on the property, or simply by word of mouth from the local residents that the property is for sale.

Source: p. 58 in UPLH Background Paper

From Figures 3.33 and 3.34, the following characteristics of vacant land prices can be identified.

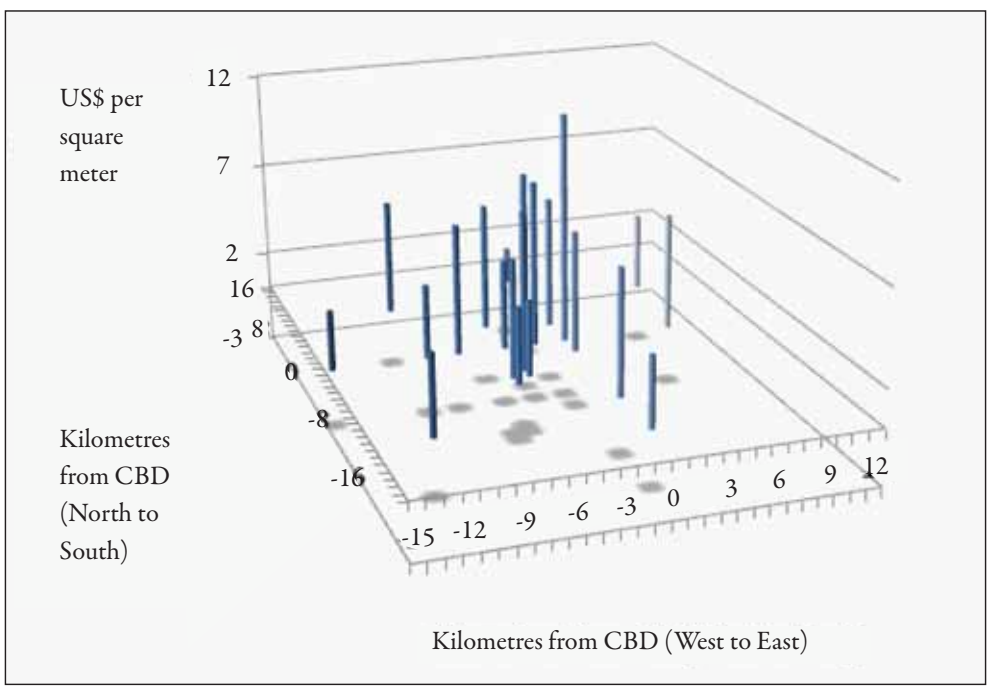
- At the urban fringe, vacant land prices are roughly $\$500/m^2$ and above in both cities.
- Closer to the center, vacant land prices are far higher in Hanoi than in HCMC: as much as $\$7,000/m^2$ or $\$8,000/m^2$ in Hanoi, but more like $\$4,000/m^2$ in HCMC. This is surprising, given that the population is much larger and the per capita income higher of HCMC when compared to Hanoi. At this stage, it can only be conjectured why that might be so; three plausible reasons are (i) bottlenecks in land supply as well as tighter land regulations in Hanoi, (ii) large tracts of land being reserved for government use, and (iii) a premium paid for proximity to the national center of government (though this is unlikely to create such vast divergences in price).
- Available plots were primarily land sites designated for the construction of a single townhouse—ranging in size from 40 to 180 m^2.
- There exists a price premium for land in new urban developments, compared to established residential areas. On the basis of data collected here, land in new urban developments, fetch prices in the range of 12% to 200% higher than nearby land in established residential areas.

Figure 3.31 Advertised monthly residential rents in Hanoi, Feb 2011



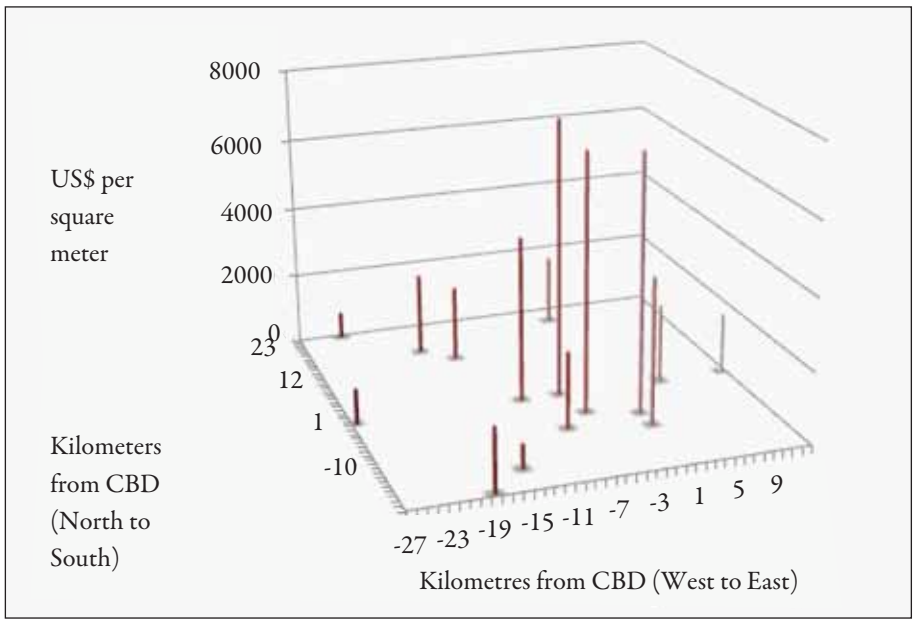
Source: www.muaban.net

Figure 3.32 Advertised monthly residential rents in Ho Chi Minh City, Feb 2011



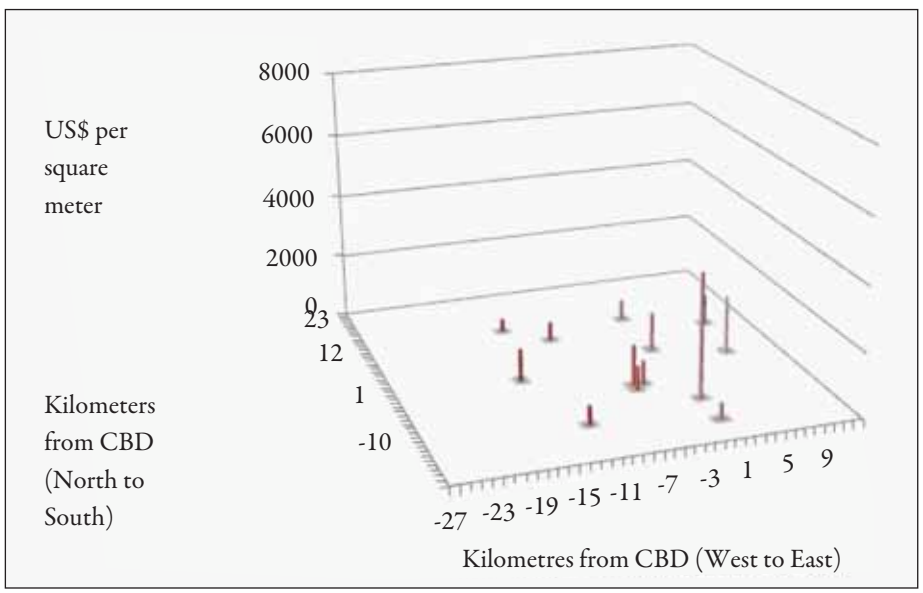
Source: www.muaban.net

Figure 3.33 Vacant land prices in Hanoi



Primary data collected for UPLH Background Paper, pp. 61-65. See Appendix 3A to this document for tables.

Figure 3.34 Vacant land prices in Ho Chi Minh City



Primary data collected for UPLH Background Paper, pp. 61-65. See Appendix 3A to this document for tables

Meanwhile, when comparing the four graphs an even more striking phenomenon is observed: there is massive segmentation of rental and sales markets in Hanoi. Vacant land exhibits prices

that approach almost 1,000 times the monthly rent for housing at the same location. In other words, vacant land is priced at around 80 years value of monthly rent. This is an unusually large difference. It suggests that vacant land prices reflect a strong expectation of increased rents or resale values in the future, in order to pay off such high initial sales prices—and perhaps also a lack of other options for storing wealth. These numbers suggest that perhaps only 5% of the population in Hanoi can afford to buy properties at these inflated prices.[9]

Inquiry into housing and rental markets and also the functioning of land markets in Vietnam should be a priority area for follow-up work to this urbanization review.

3.4.2. Access to finance

Table 3.6 Payment structure in Vietnam's residential housing markets

City / Land Market		Payment To		Payment Format		Money Borrowed	Lender			
		Owner/ Seller	Broker	One time	Install-ment		Bank	Family/ Friends	Other lenders	Combi-nation
Hanoi	High	100	0	0	100	15	33	33	0	33
	Medium	100	0	100	0	3	0	0	100	0
	Low	83	17	86	14	43	12	47	18	24
	IZ*	100	0	100	0	0	-	-	-	-
	Total	93	7	79	21	16	17	42	17	25
HCMC	High	91	9	64	36	30	33	67	0	0
	Medium	93	7	47	53	45	22	22	11	44
	Low	92	8	58	42	30	33	33	0	33
	Total	92	8	55	45	35	29	38	5	29
Bac Ninh	High	100	0	100	0	0	-	-	-	-
	Medium	100	0	90	10	30	17	67	17	0
	Low	89	11	78	22	45	33	11	56	0
	IZ	89	11	78	22	40	0	100	0	0
	Total	94	6	85	15	28	19	52	29	0
Total		93	7	72	28	23	21	44	17	18

- Industrial zones

Source: Resident Surveys in UPLH Background Paper, Urban Solutions p. 80

[9] Kato, Hironori & Le Hong Nguyen (2011), 'Land Policy and Property Price in Hanoi, Vietnam', p. 4. Journal of East Asia Society for Transportation Studies, Vol 8, page 4, 2010.

Findings from a small residents' survey sheds some light on how access to finance is conditioning Vietnam's housing market. The survey included questions on payment methods for land and real estate. The responses to these questions show that a large proportion of such transactions are made in cash, as one-time payments, with money borrowed from friends rather than loans and installment transactions from banks.

Table 3.6 shows the percentage of respondents who borrowed under the 'Money Borrowed' heading and the source of the finance, as a percentage of the 'Money Borrowed' figure, under the 'Lender' heading. The table also shows the percentage of transactions that involved a local Broker, and the high percentage of transaction done directly between Vendor and Purchaser. An interesting statistic is the 100% 'installment' payment for high end property in Hanoi, but only 15% was subject to any form of finance, and only 5% was bank financed. The findings are summarized in the 'Total' percentages row at the end of the table.

Since a high proportion of real estate sales are made with one-time payments, it is very likely that high land and real estate prices reflect a lack of other options for storing wealth. In other words, people who are able to enter the land and real estate markets do not need to borrow money—they can already source it as cash—and this suggests that there is an unusual degree of liquidity in Vietnam and possibly a lack of adequate alternate options for investing wealth.

3.4.3 Regulation

This section reviews a series of indicators on land & real estate regulation in Vietnam.

Table 3.7 'World ranking' of regulations on construction permits and property registration

COUNTRY	WORLD RANKING (de jure)
New Zealand	1
Georgia	2
Singapore	**3**
Thailand	**4**
...	...
United States	9
United Kingdom	10
...	...
Hong Kong, China	**19**
Canada	23
...	...
Korea, Rep.	**29**
Australia	31
Japan	32
...	...
Vietnam	**40**
...	...
Mongolia	44
Taiwan	**48**

COUNTRY	WORLD RANKING (de jure)
Nepal	57
South Africa	59
...	...
Indonesia	**70**
Turkey	72
Kazakhstan	79
...	...
Malaysia	**100**
Philippines	**111**
China	**118**
Brazil	121
...	...
Israel	140
Russian Federation	145
India	**150**
...	...
Sierra Leone	175
Ukraine	176
Nigeria	177

Source: World Bank Doing Business Indicators, 2010, http://www.doingbusiness.org/

In several other countries where Urbanization Reviews are being carried out, land and real estate regulations have emerged as a core constraint on the efficient functioning of land and real estate markets. The core objective of such regulations must be to allow the change of land uses to reflect demand for land, while regulating only as much as is necessary to enable desirable urban form and to safeguard other objectives, such as social, environmental, public health and safety concerns. In some other countries, this was not the case—for example in India, where highly restrictive Floor Space Index (FSI) limits[10] tend to artificially inflate land prices by generating a supply crunch. In Mumbai, for example, FSI limits are 4.5 in Nariman Point, 4 in Bandra-Kurla (both the core business districts of the city) and 1.33 in the rest of the city, and 1 in the suburbs.[11] These limits compare with a FAR of 25 in central Singapore, 15 in New York, and 10 in Seoul.

What about Vietnam? How do land & real estate regulations measure up? The first indicator examined is taken from the World Bank's "Doing Business Indicators", and is a measure of the ease of obtaining construction permits and completing property registration. This indicator ranks countries according to the number of procedures, the number of days taken to complete the process, and the costs as a proportion of per capita income. On this measure, Vietnam performs relatively well, and is ranked 40th in the world. Table 3.7 shows this indicator for Vietnam alongside some comparator countries.

However, Vietnam slips down the world rankings if de facto rather than de jure measures are used. While "Doing Business Indicators" measure the de jure regulations, another data source from the World Bank, called 'Enterprise Surveys', measures the de facto implementation of those regulations.[12] Figure3.35 compares the de jure and de facto data on how long it takes to obtain a construction permit. In Vietnam—like most countries—the de facto time is actually a lot shorter than the de jure regulations suggest, possibly because the process can be expedited by good relationships with officials or through informal payments. But notably Vietnam's de facto times are rather lengthier than in other countries: Vietnam does less well on this measure—even if the overall number of days that are necessary to obtain a permit is, in absolute terms, not very long.

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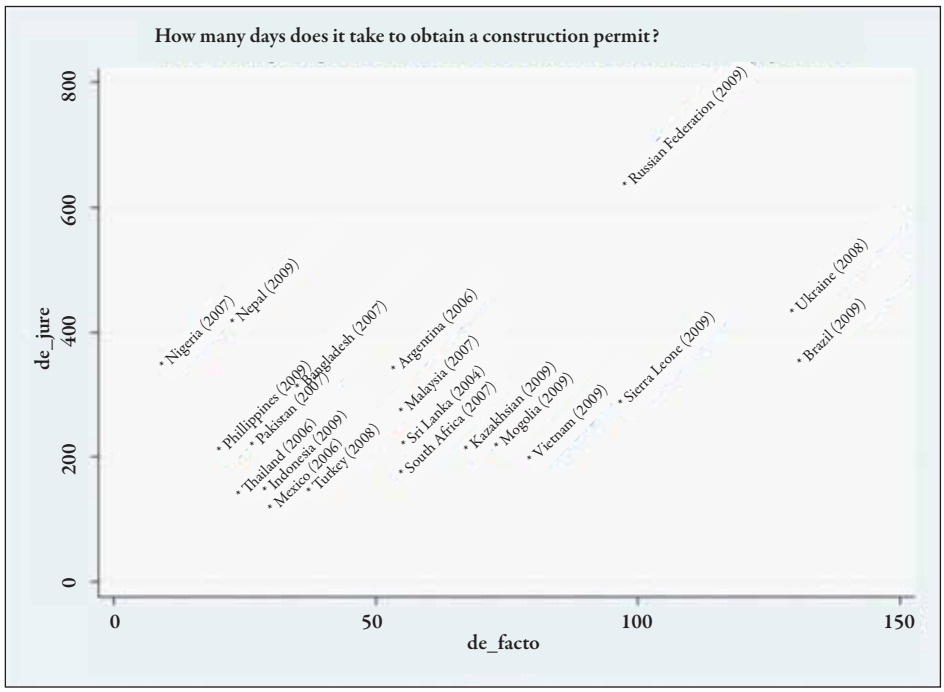
10 The FSI is equivalent to the Floor-to-Area Ratio (FAR), calculated as the total floor area of all buildings on a plot divided by the total land area of that plot.

11 Ramanan, Sumana, 'To shine, Mumbai must rise', The Mumbai Project, Hindustan Times. http://www.hindustantimes.com/news/specials/bombay/Main%20article14.shtml

12 N.B. There is some difference in the sampling framework employed in these data sources. Doing Business indicators examine the regulations faced by predominantly small- and medium-sized firms in the country's largest business city. Enterprise Surveys are administered to firms of a range of sizes, and in several cities not just the largest one. For more detail on the characteristics of these data sources—as part of an research exercise which makes a similar comparison of de jure and de facto as we do here—see Mary Hallward-Driemeier & Lant Pritchett (2010), 'How Business is Done and the 'Doing Business' Indicators: the investment climate when firms have climate control', http://www.hks.harvard.edu/fs/lpritch/how%20business%20is%20done.pdf

Figure 3.35 Vietnam slips down the rankings if de facto rather than de jure measures are used



Source: World Bank Staff estimates from Doing Business Indicators data [de jure] and Enterprise Survey data [de facto] on numbers of days required to obtain a construction permit.

The next stage of this investigation of land & real estate regulations is to examine how they vary within Vietnam. Figure 3.36 displays the findings of the Vietnam Provincial Competitiveness Index for 2009. These measures reflect the percentage of firms in possession of a LURC (Land Use Registration Certificate), the total land in the province with official LURCs, the firm's rating of expropriation risk, the fairness of land compensation, and so on.[13] This index indicates that Access to Land and Security of Tenure vary widely across Vietnam.

The final stage in this investigation is to examine how those regulations are changing over time. The Enterprise Survey data show how these have changed between the two large surveys of Vietnamese firms conducted in 2005 and in 2009. This data indicates a substantial improvement in firms' rating of their ability to access land. Figure3.37 shows how access to land remains rather more problematic in the Red River Delta than elsewhere, but overall has improved dramatically in all regions of Vietnam. It is a 'Severe Obstacle' to doing business for far fewer firms in 2009 than in 2005, and though it remains a 'Major Obstacle' for a substantial proportion of firms, the trend is definitely one of improvement.

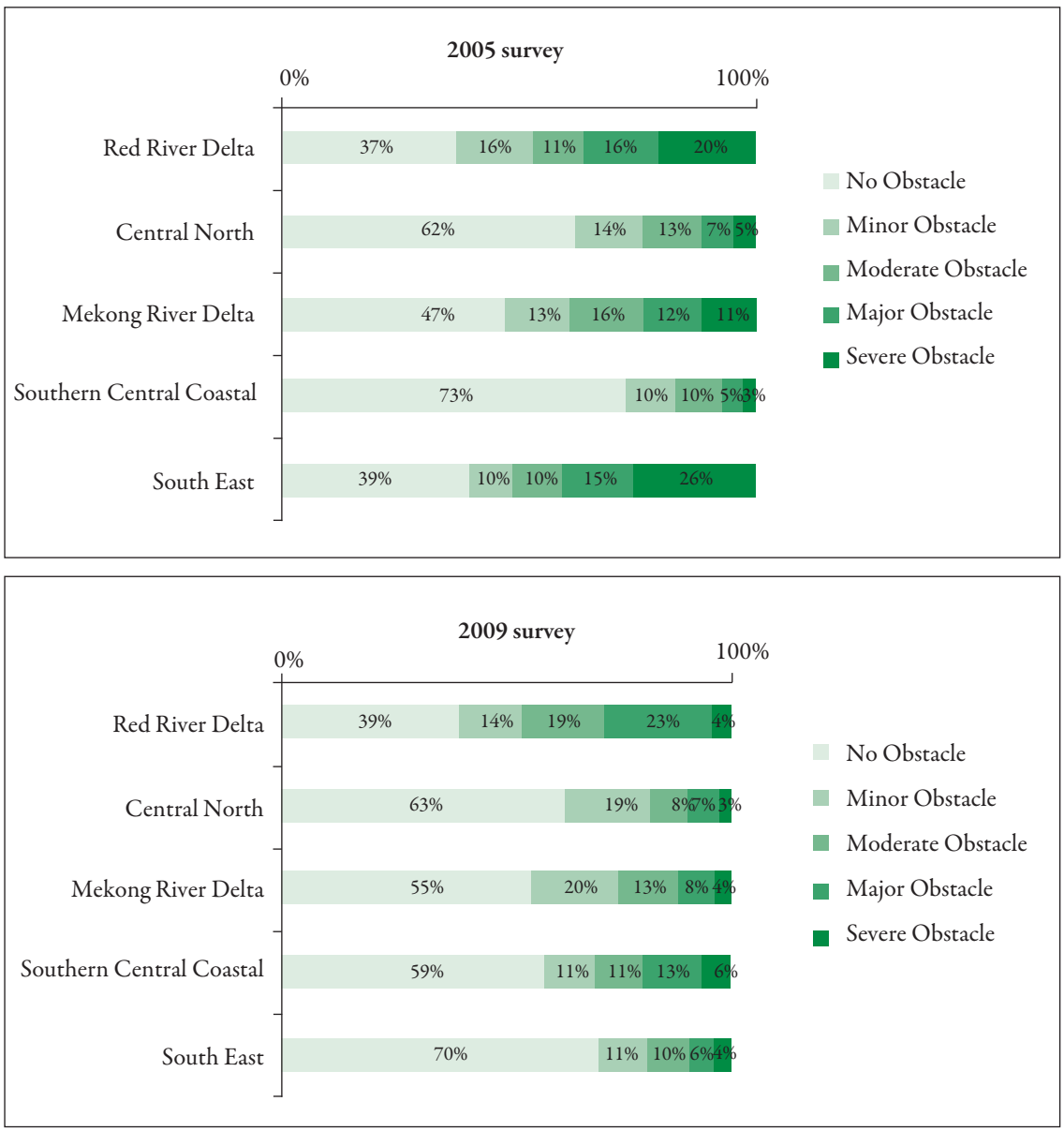
[13] For full details, see pp. 63-65 in http://www.vnci.org/sites/default/files/VNCI_No14_PCI%202009%20report%20EN_final.pdf

Figure 3.36 Access to land and security of tenure vary widely between provinces in Vietnam

Notes: Access to Land is a measure of how long and how costly it is to obtain business premises. Security Tenure is a measure of the risk of expropriation or loss of business property. Both dimensions account for 50% of the final index.

Source: Vietnam Provincial Competitiveness Index 2009.

Figure 3.37 Region-wise responses to question 'To what extent is access to land a problem for the operation and growth of your business?' in 2005 and 2009



Source: World Bank Staff estimates from World Bank/IFC Enterprise Surveys.

These findings—about the improvement of land & real estate regulations over time—are corroborated by data on the Land Use Right Certificate System. According to the Vietnam Provincial Competitiveness Index (2009), the percentage of firms in possession of a LURC,

and the total land in each province with official LURCs, has increased substantially from 2006 to 2009 (see Table 3.8). The residents' survey similarly indicates that 81 percent of households in the five cities surveyed are in possession of an LURC (see Table 3.9).

Table 3.8: Recent improvements in Land Use Right Certificate system in Vietnam

Indicator	Source (2009 Survey)	Measure	2006	2007	2008	2009
Percentage of firms in possession of a LURC.	PCI Survey Question: B4	Min	23.29	51.35	38.36	46.82
		Median	55.28	75.57	81.16	73.68
		Max	77.78	92.45	94.74	94.51
		Correlation w/ Previous Year		0.76*	0.70*	0.77*
Total land in province with official LURCs.	Ministry of Natural Resources and the Environment Datasets†	Min	11.3	13.28	19.52	23.52
		Median	69.2	63.13	77.56	77.89
		Max	96.5	97.46	98.75	98.56
		Correlation w/ Previous Year		0.85*	0.78*	0.87*

Provincial-level data from Vietnam Provincial Competitiveness Index 2009

Table 3.9 How often do residents actually possess a 'Red Book' (LURC)?

	Hanoi	Bac Ninh	Da Nang	HCMC	Bien Hoa	Average
High-income area	83	97	74	92	61	83
Medium-income area	86	94	71	85	100	85
Low-income area	70	87		57	82	71
Industrial zones	63	87	80	87	100	81
Average	77	93	73	82	81	81

Source: Residents Surveys for IPLH Background Paper, Urban Solutions, p.91

Further regulatory improvements are now being made, with a new decree which sets time limits for procedures to grant certificates. According to Decree 88/2009/ND-CP, dated October 19, 2009, 'Decree on Grant of Certificates of Land Use Rights and House and Land-Attached

Asset ownership', time limits are being set for completing procedures to grant LURCs, from the date of receiving complete and valid dossiers:

1. Fifty (50) working days, for the grant of new certificates.
2. Thirty (30) working days, for grant of renewed land use right certificates with additional certification of land-attached asset ownership, or re-grant of lost certificates.
3. Twenty (20) working days, for grant of renewed certificates.

With respect to formal costs involved in obtaining Land Use Right Certificates, the Ministry of Natural Resources and Environment advised that 'The amount of fees required for the process is listed on a table possessed by the Ministry of Finance. Change of name and inheritance would take 15 days and no payment is needed. Replacement of loss or flawed LURC would take 30 days and no payment is required.'

However, more work remains to be done on implementing these improvements. For example, of 1,053 firms surveyed in the World Bank's Enterprise Surveys in 2009, 22% of firms had submitted applications for a land use certificates in the previous two years—and an informal gift or payment was expected or requested in fully 31% of cases.[14] And of the 28% of firms that had submitted an application to obtain a construction-related permit within the previous two years,[15] fully 41% were accompanied by a request or expectation of an informal payment or gift.[16] Such findings are corroborated by another study in five provinces, which finds that 85% of households encountered corruption in the management of land.[17]

[14] Question VN_G2 to VN_G4 on the 2009 Vietnam survey. Data is freely available at http:/www.enterprisesurveys.org/

[15] Author's analysis of question G2 on the 2009 Vietnam survey. Data is freely available at http:/www.enterprisesurveys.org/

[16] Question G4, Ibid.

[17] VIR December 2010.

Table 3.10 Time needed for LUR approval in 5 selected cities

City / Land Market		First LUR Application Process (days)				LUR Name Change Process (days)			
		Average	Maximum	Median	Minimum	Average	Maximum	Median	Minimum
Hanoi	High	172	1,095	80	14	53	120	30	10
	Medium	143	370	105	10	45	60	45	30
	Low	200	1,095	60	15	145	730	30	7
	IZ	27	60	25	7	7	7	7	7
	Subtotal	153	1,095	60	7	80	730	30	7
Bac Ninh	High	85	730	30	7	32	60	30	10
	Medium	99	730	30	3	304	1,095	45	30
	Low	60	365	105	15	49	90	30	7
	IZ	53	365	30	1	-	-	-	0
	Subtotal	78	730	30	1	125	1,095	30	7
Da Nang	High	48	180	30	30	16	30	14	7
	Med-Low	39	60	45	7	20	30	15	14
	IZ	216	1,460	45	15	-	-	-	-
	Subtotal	72	1,460	45	7	18	30	15	7
HCMC	High	435	2,190	303	17	69	180	53	14
	Medium	368	2,555	60	7	52	210	35	2
	Low	100	180	90	60	177	730	90	30
	IZ	118	365	60	14	49	120	40	7
	Subtotal	309	2,555	90	7	97	730	60	2
Bien Hoa	High	133	180	120	60	97	365	75	7
	Medium	386	1,825	180	15	54	60	60	30
	Low	187	365	105	14	37	100	30	10
	IZ	78	365	30	23	60	90	60	30
	Subtotal	210	1,825	120	14	79	365	60	7
Total		175	2,555	60	1	83	1,095	45	2

Source: Residents Surveys for UPLH Background Paper, p. 92

The need for further improvements is also corroborated by residents' surveys in five cities. As shown in Table 3.10, generally the time taken for approval of LUR certificates and name changes varies greatly (from a minimum of 1 day in Bac Ninh industrial zone, to 7 years in one case in Ho Chi Minh City!). The process is considerably smoother for tenants of industrial zones: surveys indicate they experience dramatically, and consistently, shorter approval times.

Table 3.11 Land use changes of residential land

City / Land Market		Percentage reporting a change in *de facto* land use from Residential to Commercial or Agricultural	Sub-categories within those *de facto* land use changes (total of these six columns sums to 100%)					
			Eatery	Retail	Manufacturing	Farming	Other	Mixed
Hanoi	High	**40**	19	61	0	0	19	0
	Medium	**28**	29	29	0	0	43	0
	Low	**48**	16	60	4	4	12	4
	IZ*	**63**	0	53	5	5	21	16
	Subtotal	**42**	16	54	2	2	21	4
Bac Ninh	High	**38**	0	75	6	0	19	0
	Medium	**22**	0	67	0	0	33	0
	Low	**24**	0	60	40	0	0	0
	IZ*	**73**	9	45	18	9	9	9
	Subtotal	**36**	3	63	13	3	16	3
Da Nang	High	**41**	0	33	0	0	67	0
	Med-Low	**19**	14	57	14	14	0	0
	IZ*	**50**	0	80	0	0	20	0
	Subtotal	**32**	4	50	4	4	38	0
HCMC	High	**15**	29	71	0	0	0	0
	Medium	**15**	0	80	0	20	0	0
	Low	**57**	14	24	10	5	48	0
	IZ*	**29**	10	40	10	0	40	0
	Subtotal	**28**	14	42	7	5	33	0
Bien Hoa	High	**21**	14	29	29	0	29	0
	Medium	**19**	0	100	0	0	0	0
	Low	**12**	0	100	0	0	0	0
	IZ*	**33**	20	20	0	0	60	0
	Subtotal	**21**	12	47	12	0	29	0
Total		**34**	11	52	6	3	25	2

• Industrial zones

Source: Residents Surveys for UPLH Background Paper, p. 39

The potential for improvement in regulatory practices is also indicated by the high proportion of land transactions which take place informally. Estimates suggest that between 60% and 85%

of land transactions are informal (CIEM 2006, FIAS 2005). Furthermore, the resident survey commissioned for this report finds that 34% of respondents had informally changed their property from residential to another use—mostly to retail uses. Full details of these results are shown in Table 3.11. Survey results from urban peripheries in each city are somewhat similar—as shown in Table 3.12.

Table 3.12 Land use changes of residential land in fringe areas

Fringe area of City/Land Market	Percentage reporting a change in de facto land use from Residential to Commercial or Agricultural	Sub-categories within those *de facto* land use changes (total of these six columns sums to 100%)					
		Eatery	Retail	Manufacturing	Farming	Other	Mixed
Hanoi	40	7	75	0	4	11	4
Bac Ninh	20	0	83	0	0	17	0
Da Nang	28	0	50	13	13	25	0
HCMC	57	14	24	10	5	48	0
Bien Hoa	12	0	100	0	0	0	0
In Fringe Areas	35	8	57	5	5	25	2

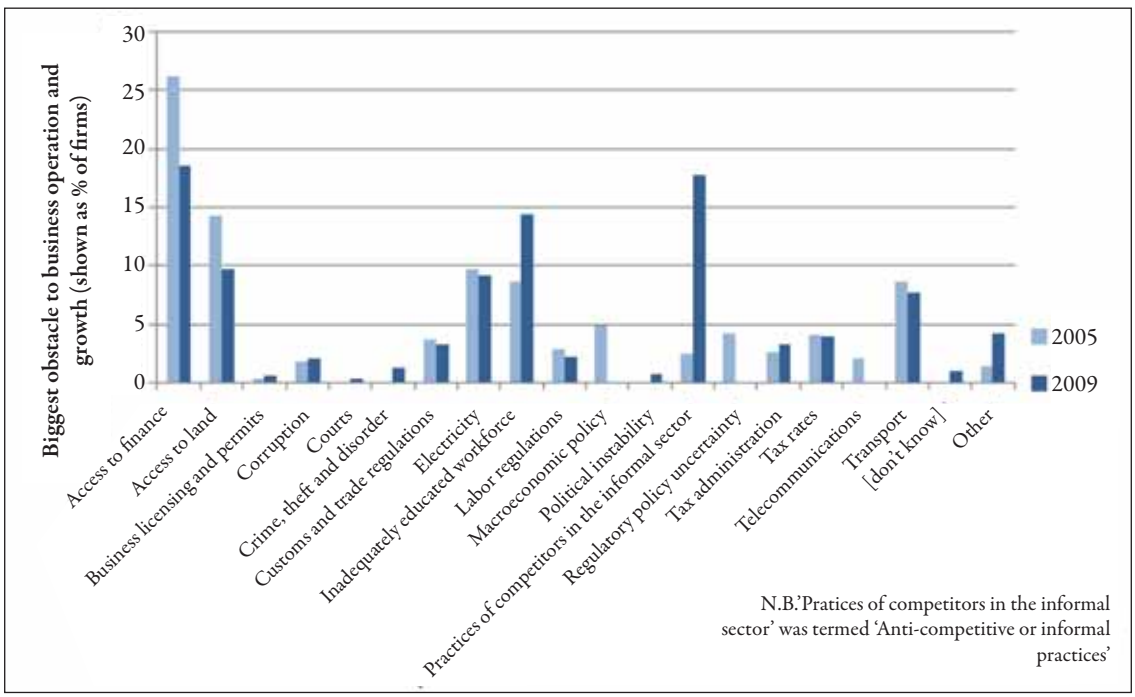
Source: Residents Surveys for UPLH Background Paper, p. 39

The prevalence of the practice of informal changes in de facto land use—even in New Urban Projects—is indicated by the findings of an inspection team established by the Hanoi Municipal People's Committee. The team examined seven new urban development projects in Sai Dong, Co Nhue - Xuan Dinh, Dang Xa, Van Quan - Yen Phuc, South Thang Long, Dong Me and south-east Tran Duy Hung urban areas. All seven projects were found to have changed from the original approved plan. Some had even changed more than once. For example, after approval, the Dong Me residential area had an increased total housing floor space. In Van Quan - Yen Phuc area, two blocks, which initially were supposed to be built as 6 storey buildings, turned out to be much higher. Another block of land was converted from a tree planting area into shops, clubs, and restaurants.[18] The Hanoi Department of Construction said: "Most of the projects were adjusted from the initially approved plans". Planning adjustments were mainly initiated by investors to increase the area for housing, business services and shops.

[18] Findings from Government survey, DOC, 2010—as reported in UPLH Background Paper, p. 89.

Prior studies indicate that informal practices like these derive from excessive administrative burdens (e.g. too many regulations, or cumbersome administrative procedures), and because of differential treatment by the government of various businesses and households.[19] Furthermore, there is some evidence that titling is deferred, in order to: (i) avoid land transfer taxes and income tax; (ii) avoid converting allocated land use rights into leases from the State that incur annual fees; and (iii) to enable properties to remain in a "twilight zone" so that rents can be captured through unsanctioned plot subdivision and house construction or extension.[20]

Figure 3.38 Access to Land has become less of a problem in Vietnam, relative to informal practices and workforce education



Finally, it is pertinent to ask what other factors are obstacles to doing business, if the ability to access land in Vietnam is improving. Figure 3.38 shows the other obstacles cited by Vietnamese firms: clearly access to land is still an important obstacle (perhaps because there are more aspects to such access than merely obtaining a LURC, such as the price of land itself), but it is relatively less important than access to finance, an educated workforce, and informal practices.

19 Teven, S et al. 2003. Informality and the Playing Field in Viet Nam's Business Sector. IFC (page 77 and 87).
20 EAP Sustainable Development on the Fringe. Viet Nam Country Case Study. 2007. World Bank

3.5. Urban planning in Vietnam

This section reviews the urban planning system in Vietnam. The urban planning system in Vietnam has two fundamental areas where it can be strengthened. The first is that the prevalent master planning approach is largely supply based – and can be strengthened to more accurately respond to the dimensions and locations of demand and of market forces. The second is that like many other countries, the planning system is fragmented and silo based system without adequate integration and coordination across either functional or spatial jurisdictions.

3.5.1. Risks of current urban planning approach: planning is not evidenced based

A strong element of the centralized planning system of many countries was the idea of planned economies. This approach often did not factor the value and force of market dynamics, and functioned on the assumption that a state can plan and induce development. It is indeed true that state intervention through urban planning and regulations, land and housing policy, and infrastructure investment, can have a powerful impact on development. But if these interventions are not premised on and responsive to market realities, it is very likely that the following consequences follow.

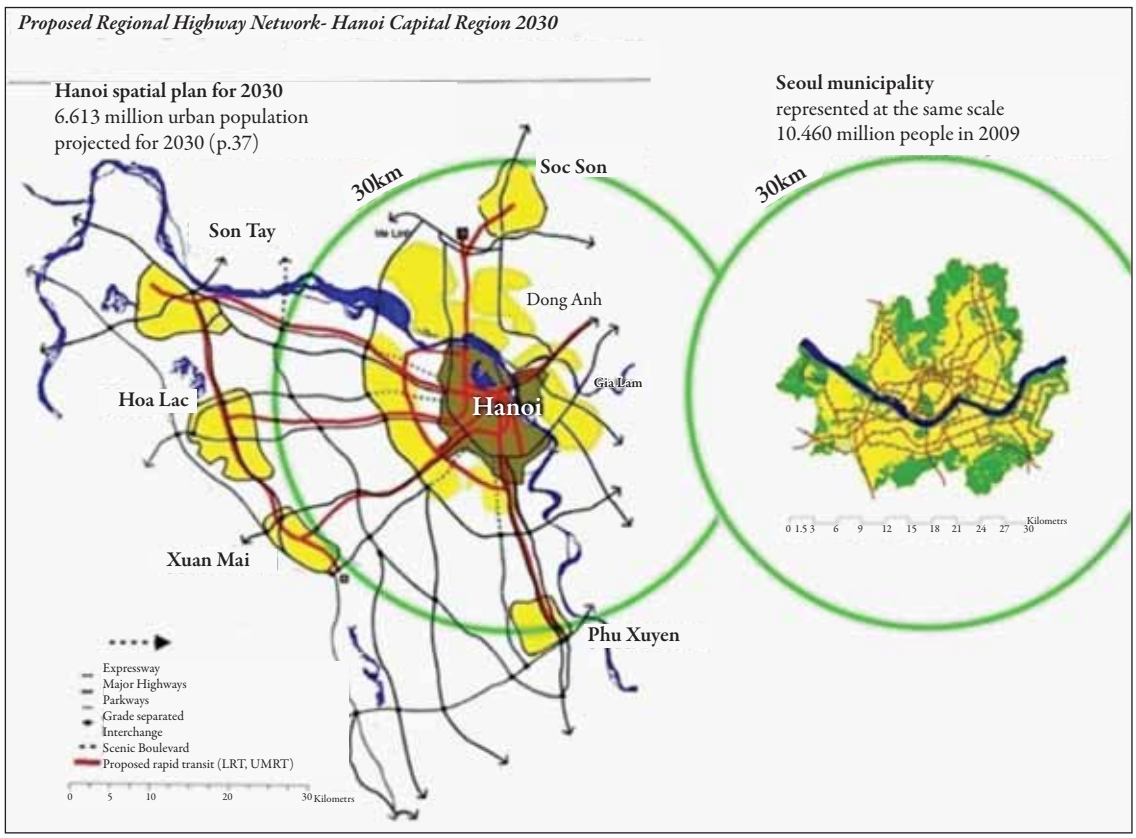
1) The state may end up investing in costly infrastructure where there is little demand.
2) The market (i.e. citizens and firms) suffer largely on account of the lack and neglect of state attention to its real, manifest core requirements at the correct location, scale and on the correct issues.

As Vietnam transitions more toward a market economy, its cities have been exhibiting dynamic urban economic growth. Much of this has been supported by government investment in infrastructure, the liberalization of the economy and the opening up of land to private leasehold entitlements.

However, much of the master planning process in Vietnam is increasingly based more on ideas rooted in physical design (not socio-economic realities). Spatial plans for Vietnamese cities remain heavily prescriptive with an emphasis on physical planning (i.e. creating cities 'by design') and on permitted land uses—often down to the ward or project level—without necessarily taking account of the underlying socio-economic needs or market realities for that same city or area, which may be considerably more complex.

Consider the proposed Master Plan for Hanoi (HCCMP). Hanoi's current urban population is 2.8 million, and the plan projects this will increase to 6.6 million in 20 years. The new pattern of development proposed by the plan consists in developing five satellite towns located at a distance varying from 26 km (Soc Son) to 40 km (Son Tay) from Hanoi's current CBD. The new satellite towns are projected to shelter 1.6 million people (see Figure 3.39).

Figure 3.39 Reviewing the Hanoi Capital Construction Master Plan to 2030



The planned satellite towns are built in areas where there is very little demand for land, while a green belt (where development will be severely restricted) is located in areas much closer to Hanoi core city where there is currently the most demand for land. The distance from the satellite towns to the urban core as planned by HCCMP are uncommonly long by international standards and as a result the construction cost of the transit lines is estimated at US$20 billion.

An observation made by Bertaud (2011a) is that none of the norms for land and floor consumption per person (on which the spatial plan has been developed) are based on current consumption of land and floor space in specific neighborhoods of Hanoi. It is legitimate to use norms when these are based on current consumption and eventually updated for assumptions in changes in income and prices or shift in demand and supply. However, HCCMP doesn't mention prices or supply and demand even once in the entire report, making the consumption norms proposed completely abstract and arbitrary.

HCCMP also assumes that the satellite towns planned will be self-sufficient and therefore would not generate too much exogenous traffic. This is in fact contrary to all experience in

already built satellite towns from Stockholm to Cairo to Seoul. All satellite towns rely on a high volume of daily commuting from and to the main city. Based on experience in satellite towns in other nations the travel demand generated by these towns is likely to be much higher than the one projected by HCCMP.

Table 3.13 Industrial Zones in 6 selected provinces

	Overall rating for infrastructure in province	Number of industrial zones (IZ) and concentrations in province	Percentage of total IZ surface area that currently has occupants	Firm rating of provincial IZ quality (% very good or good)
Hanoi	6.60	6	73%	27%
Da Nang	6.63	4	70%	52%
HCMC	6.87	15	63%	40%
Bac Ninh	5.93	4	44%	43%
DongNai	7.18	23	64%	58%
Binh Duong	7.26	15	66%	79%
[National minimum]			0%	0%
[National median]			31%	24%
[National maximum]			94%	79%

Source: Vietnam Provincial Competitiveness Index, 2009

The construction of these satellite towns would result in an enormous increase in distance travelled per person when compared to a type of spatial development that would be contiguous to the existing Hanoi built-up area. The 'at scale' comparison of the proposed plan for Hanoi with the existing system in Seoul is interesting: the length of Seoul metro network was 286km in 2003, currently serving an urban population of 10.5 million.

Similarly, and more broadly across the country, it seems that the provision of industrial zones may be a little out of synchronism with demand. This observation is made by looking at occupancy rates in industrial districts, which vary widely across the country. High and low values are highlighted in red. One particularly curious location is Hanoi, which has only six Industrial Zones (compared to Ho Chi Minh City's 15), and reports high occupancy rates despite also showing a relatively low rating of the quality of those IZs. From those figures it is possible to guess that there is a shortage of IZs in Hanoi, since even poorly-rated IZs have high occupancy rates. These results are consistent with data shown in Chapter 1, which shows that

Hanoi and the Red River Delta are emerging industrial hubs specialized in heavy manufacturing industries, which will be located in IZs irrespective of their quality.

Box 3.5 Challenges of new towns

Often in the case of 'new town' planning there is a risk of building too much too fast, on the basis of demographic and economic projections, and future real estate valuations. The laying of costly new infrastructure, the negotiation of extremely large land transitions with powerful interest groups, and the almost instantaneous construction of a city from scratch – typically in locations far away from where there is real demand for land (or benefits of agglomeration economies), is financially risky for all involved. The successes of such ventures are contingent on many uncontrollable variables that are hard to capture and 'model' in projections. In a competitive and globalized world with increasingly more mobile labor, fluid capital and economic risks – an incremental approach located where market demand is indicated (city fringe) provides a safer and more adaptable development path. Incremental moves made by a multitude of private actors and the government in turn can reduce the socio-economic costs related to large scale land speculation and the over sizing of infrastructure for an uncertain future. It can better enable the market to function based on demand and supply within the broader planning parameters, and to exercise self-correction at a much smaller scale and in shorter time spans.

In addition to financial risks associated with building too much too fast, what has generally been observed is that new towns that are disconnected from an existing urban fabric, and developed within a short time-span, provide little authentic cultural and social context for inhabitants. Often a critical mass of an existing social core is required to provide a sense of place, history, context and belonging – all of which help cities grow and remain resilient in hard times.

The desire to develop satellite cities, new towns and the costly infrastructure required to connect them is one of the growing manifestations of the supply driven (and often contract led) approach to urban planning. This trend which has proven unsuccessful and challenging many cases across post war Japan and Europe has been increasing as a trend in China as well (World Bank 2009).

Many new towns were developed in the suburbs of Tokyo, Japan during the 1960s in order to meet a huge demand for housing. While some of them might have initially helped people access housing, these towns were eventually not sustainable. For instance, the development of Tama New Town started in 1967, 35 km southwest of the Tokyo city center. About 28.8 km2 of land was developed for a planned population of 342,200. The town attracted families with children and housing supply reached a peak. However in the 1990s people choose to live closer to the center of Tokyo with better access to transportation, work, and cultural activities – and moved away from the remote Tama New Town. Population in 2004 was 201,443, only about 60 percent of the target population. As a result the vacancy rate of the first floor shops was 30 percent in 2004. Residents in Tama report a lack of social interaction and an absence of a sense of community.

Meanwhile, the shape of Vietnam's emerging cities is powerfully conditioned by fiscal conditions. In particular, Vietnam's fiscal transfer system is set up in such a way that it incentivizes the fast expansion of Vietnam's cities. Since land sales often comprise one of the largest sources of revenue for provinces, and since increase in administrative boundaries and urban land push a

city higher up in the urban hierarchy – there is an incentive to sell land and expand outward (even when there is no clear demand). Land revenues are different from most other revenues since provinces are permitted to keep all their land revenues, while they must send part of other revenues to the central government. Thus cities benefit greatly from land sales, and are thus incentivized to sell as much land as possible. Section 4.2 and Table 4.2, in Chapter 4 of this Review show the extent to which Vietnamese cities gain revenues from land transactions. This phenomenon is likely to be important in explaining Vietnam's fast outward expansion of cities including the choice of a 'satellite city' design outlined earlier. Box 3.5 sounds some cautionary notes on long-term prospects of fast land expansion and New Towns.

Box 3.6 Experiences of land pooling and land readjustment

Land pooling and land readjustment schemes have proven to be useful in some countries in leveraging land values for development in an inclusive, efficient and transparent way on the urban periphery of cities. Land pooling and readjustment typically involves the organized urbanization of a large land area comprising of many rural (or urban peripheral) land parcels - and the re-zoning and subdivision of these into urban use within the overall vision and context of the city's long term development strategy and master plan. The scheme ensures that original owners of land retain their ownership – so no land acquisition is required. In a typical scheme, participants will pool their land together and give up a percentage of their land area (typically around 30% - 40%) so that it can be used for a range of public purposes: roads, infrastructure, public facilities, and in some cases for low income housing. Some of the land is also used for project cost recovery through land sale/lease. Land owners are comfortable giving up a percentage of their land, assured that the value and use of their remaining land (70% - 60%) will be much higher after the scheme as a result of the infrastructure investments and re-zoning, than their original 100%. If after the scheme rural/original inhabitants want to sell their land – they can do so in an open and free market and benefit from the large value creation.

This method has been successfully in many countries. For instance in Japan, by the end of the 2006 fiscal year, 11,808 projects involving a total land area of 394,484 hectares (ha) had been undertaken under the provisions of the City Planning Law, 1919 and the Land Readjustment Law, 1954, (Takashi 1995). This accounts for about 33% of the urbanized land area of Japan (Sorensen, 2000). In South Korea, the Seoul City Government produced 132.6 ha of urban land in the 1950s, 5,912.3 ha in the 1960s, 3,990.8 ha in the 1970s, and 1,442.1 ha in the 1980s, through a total of 41 large-scale land pooling and readjustment projects. In East Asia, Taiwan, Malaysia, and Indonesia have also used such schemes. In the Indian state of Gujarat these schemes have been called 'town planning schemes' and have also been met with widespread success. The World Bank has just started to implement its first Land Pooling and Readjustment project in the country of Bhutan, and hopefully this will pave the way for similar projects in other countries.

By and large such schemes have 1) prevented sprawled ad hoc, patch-work and irregular urbanization on the urban fringe (and the high infrastructure inefficiencies and costs associated with this), 2) unlocked finance for infrastructure and public services (in some cases low income housing as well) through the gains from higher land values and the rezoning of land to residential/commercial use, 3) created a basis for urban connectivity and the sensible extension of transport networks and 4) ensured that the original rural landholders participate in the gains of urbanization as they retain their claim to the land through the scheme.

The interaction of municipal finance, the intergovernmental fiscal system, land markets and urban form – is a priority area for further research outlined in this Review. The Government should also focus on developing mechanisms and policies that enable provinces to engage in an equitable, transparent and efficient leveraging of value from land (such as land pooling and readjustment schemes, or transparent and open government land auctions coordinated within the framework of a strategic master planning process). Box 3.6 explores the very successful approach of land pooling and readjustment used in many countries which has wide potential applicability in Vietnam.

3.5.2. Opportunities for more spatial and sectoral integration

Unlocking gains from urbanization requires coordination across levels and functions of government. While the reality is that economic and social interactions spill across administrative divisions, public policies often are designed and implemented within functional or spatial jurisdictional silos. This often translates into lost opportunities in getting higher gains from connective infrastructure (transit systems to integrate labor markets), common built or natural assets (ports, airports, beaches and other tourist destinations), common institutions (arrangements for pooling natural endowments for common utility networks and uniform tariff policies; environment and business regulations), and targeted incentives (reducing adverse competition).

Functionally fragmented planning

Functional fragmentation is an issue within (and across) spatial jurisdictions. In Vietnam typically the socio-economic development plans (under the purview of departments of investment planning), the land use plans (under the purview of departments of natural resources), the urban master-plans (under the purview of departments of construction), the transport and infrastructure plans (under the purview of departments of transport and construction) and the housing plans (under the purview of housing agencies under departments of construction) are not well coordinated with each other, or with the city level administration. They often run on different schedules and often use inconsistent data and projections for planning. This makes functional fragmentation a critical bottleneck to the planning process.

There are some steps being made in the right direction. Recognizing the significant challenge of this planning approach, the HCMC people's committee created HIDS which is supposed to integrate in one technical institute the process of socio-economic development planning with urban master planning. This is a first in Vietnam, and if the model proves worthwhile it might be a good direction for other cities in Vietnam to move in. Also the city of Hai Phong is currently engaged with the Bank on the issue of integrated and long term urban planning and management through the Bank's Eco2 Cities program. Hai Phong has shown strong commitment and is interested in revising its existing official plans and its planning process to reflect a holistic and balanced development vision based on integrated and long-term planning.

Spatially fragmented planning

How regional economic networks are governed affects their ability to deliver and pay for services as well as their effectiveness in coordinating service provision across municipal boundaries. Coordination is especially important for services that cross regional boundaries such as transportation, regional and urban planning, water, and sewage. Effective systems of governance are needed to ensure efficient delivery of services. However, few cities in the developing world have administrative structures that are well adapted to best capture the gains of urbanization, and cities in Vietnam are no exception.

In Vietnam, the first administrative tier of government under the national government is the provincial government. Vietnam has 58 provinces and 5 "provincial cities" (Ho Chi Minh, Hanoi, Da Nang, Can Tho, Hai Phong) – totaling 63 provincial level authorities. Through the Doi Moi reforms – particularly during the second decade of its implementation (from year 2000) – there has been a significant devolution of political powers and responsibilities to the provinces. Within and across these provinces one can clearly see the emergence of regional economic clusters and core city areas forming due to market forces. However, the decentralization reforms have not empowered the next level of government (districts) sufficiently – so provinces are in a sense the only sufficiently endowed tier of government bellow the nation state. Provincial governments have gained substantial decision-making authority in private and foreign investment too (VDR 2009).

As the first administrative tier under the national government, the average land area (5265 Km^2) and population base (1.4 million) of Vietnam's provinces are smaller than other countries, though similar to the Philippines. As a result, their individual resources and budgets are more diluted and uncoordinated, and the planning, policy and investment scale does not allow them to make the most of economies of scale. The Philippines has a similar challenge with its 80 provinces – and has taken some steps towards addressing this challenge by creating regional levels of Government, albeit with inadequate powers.

In a more typical case of urban jurisdictional fragmentation, where the land territory of the first tier of Government under the national level is sufficiently large (Indonesia or India in Table 3.14 above), it would be reasonable to expect jurisdictional fragmentation manifested as separate cities needing to coordinate within a higher tier of Government. This higher tier of Government might provide some benefit as it would have a vested interest and a overarching responsibility in the meaningful coordination between its cities to support overall regional growth, investment efficiency and policy coherence (like the State of Gujarat in India for instance).

Table 3.14 Spatially fragmented planning compared for a number of major Asian countries

	Population	Area Km²	First Administrative Tier (Total)	Av. Province Size K m²	Av. Province Population
Vietnam	90,000,000	331,698	63	5265	1428571
Philippines	91,000,000	299,764	80	3747	1137500
Indonesia	238,000,000	1,919,440	33	58165	7212121
Brazil	190,000,000	8,514,877	28	304103	6785714
India	1,190,000,000	3,287,263	35	93922	34000000
China	1,341,000,000	9,326,410	22	423928	60954545

However since Vietnam has many provinces at a much smaller scale (land area and the population base of provinces are small) than the more typical scenario, it is more likely that separate cities need to coordinate across provincial boundaries. They are not coordinated within a single 'higher' tier of Government – rather they are spread across different and often competing 'higher' tiers of government, while themselves having little power. The fact that in Vietnam 'cities' are not really sufficiently endowed administrative tiers (in most cases) – but are often managed by the provinces themselves, further complicates matters. In a context where neighboring provinces are competing with each other in a race to attract more capital – there is neither the governance framework nor the incentive basis for coordination, which makes Vietnam's case particularly more challenging than the more typical type of jurisdictional fragmentation.

Some of the effects are:

- Inefficient and excessive capital expenditure across provinces: to establish their prominence many provinces feel the pressure to invest in emblematic infrastructure such as airports and sea ports, even when in many cases it might be better from a cost, network and efficiency point of view to have fewer but better coordinated ones serving a broader and well integrated catchment area across a few provinces.
- Provinces are competing to attract investment – often through strong efforts on supply-driving their economies (like ad hoc declaration of investment zones, construction of infrastructure based on desired targets rather than on projected demand, and other measures).
- Provinces are developing rather independently with no coordination of a strategic

economic vision, master planning processes and infrastructure investments in a larger regional context – even though this is actually the functional and economic scale at which urbanization and urban-rural linkages might be unfolding

- Positive economic spillovers are not being maximized to their fullest potential
- Environmental externalities are increasingly common across provinces: provinces upstream are often accused of polluting water sources, environment etc.

Recognizing the need for regional coordination Vietnam has taken steps to plan on the regional level by creating the Development Strategy Institute (DSI) and the Department for Regional Development Research, in the Ministry of Planning and Investment. The Urbanization Review does not study this issue in depth, but Box 3.7 summarizes the Philippines' experience with the issue of spatial fragmentation which may be of value to Vietnam's policy makers as they consider options for fostering integration or cooperation on a regional level.

Box 3.7: The Philippines attempts at regionalization

Like Vietnam, the Philippines has many (and therefore smaller) provinces as the first administrative tier of government, and this results in the fragmentation of planning, policy, budget and investment coordination (as well as loss of scale economies). The National Government's attempt to address some of these issues was to introduce a spatial approach to development by creating administrative regions in the Philippines. This started as early as the post-war years (1950s). Field services areas (called regions) were identified in terms of groupings of provinces and cities to effect efficiency and economy in the delivery of public services of national government. Eight regions were formed based on the following criteria: contiguity and similarity in geographic features; homogeneity of cultural and language groupings; functionality of economic development factors (e.g., commonality of transportation and communications facilities); and relatively equal size of population and land area.

Regionalization as a development strategy was made more prominent in the 1970s. The National Government had to consciously bring "development" to the countryside in response to the heightening social unrest resulting from increasing regional growth disparity. Regionalization was also made a strategy in support of the export-oriented trade policies of the country. The National Government ***deliberately created a regional system*** to strengthen national and local relations. Regional groupings of provinces and cities were still based on the earlier criteria cited above (the number of regions increased from 9 to 13). National government line agencies were mandated to establish regional offices. Regional development councils were also organized to coordinate the preparation of regional physical framework plan, regional development plan and investment program as well as various efforts of national government agencies in the regions. The regional plans and investment programs are the basis of the national development plan and investment program.

With the Government's decentralization policy in the early 1990s, the role and relevance of regions have diminished. Many of the national government functions, previously lodged in the region, were devolved to LGUs (province, city and municipality). Now the national government still has regional offices but they only serve as the "implementation arm" of national government programs. The Regional Development Councils

were retained with the same function of coordinating the preparation, implementation, monitoring and evaluation of regional development programs, physical framework plans, and investment programs. The programs and projects in the regional development plans, however, are only those that require national government support in terms of approval and budget. LGU- initiated programs and projects are not part of these plans.

Realizing that there were weaker economies of scale at the provincial level 'The Local Government Code,' provides for consolidation of LGUs so that economies of scale are achieved. But this provision is almost untouched after 20 years. Instead of consolidating, the default mode is creating new LGUs culling from old ones which contribute further to fragmentation. While the National Government did attempt to address these issues by creating a regional system, it has been challenging, and as is often the case, politics just do not work well with economics.

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APPENDIX 3A: Residential rent tables

Table 3A1 Advertized residential rents in Hanoi, Feb 2011

Location	Median rent[21] (US$ per month)	Median size (m^2)	Comment: general real estate characteristics in neighborhood
Ba Dinh	510 (F)	86	Mid end
Cau Giay	840 (F)	90	Mid end
Dong Da	650 (F)	80	Mid end
Ha Dong	260 (U)	98	Low end
Hai Ba Trung	419 (F)	93	Mid end
Hoan Kiem	1,100 (F)	100	High end
Hoang Mai	510 (F)	86	Mid end
Long Bien	230 (F)	85	Mid end
Tay Ho	1,200 (F)	112	High end
Thanh Xuan	770 (F)	88	Mid end
Son Tay	N/A	N/A	Low end
Ba Vi	N/A	N/A	Low end
Chuong My	N/A	N/A	Low end
Dan Phuong	N/A	N/A	Low end
Dong Anh	N/A	N/A	Low end
Gia Lam	60 (U)	150	Low end
Hoai Duc	N/A	N/A	Low end
Me Linh	140 (U)	90	Low end
My Duc	N/A	N/A	Low end
Phu Xuyen	N/A	N/A	Low end
Phuc Tho	N/A	N/A	Low end
Quoc Oai	N/A	N/A	Low end
Soc Son	N/A	N/A	Low end
Thanh Oai	N/A	N/A	Low end
Thanh Tri	255 (U)	80	Low end
Thach That	N/A	N/A	Low end
Thuong Tin	N/A	N/A	Low end
Tu Liem	565 (F)	93	Mid end
Ung Hoa	N/A	N/A	Low end

Note: Findicates Furnished. U indicates Unfurnished.
Source: www.muaban.net

[21] The advertisements listed the rental in either VND or USD. For the purpose of the Tables the VND rentals were converted to USD equivalents using a rate of USD1=VND 19,500.

Table 3A2 Advertized residential rents in Ho Chi Minh City, Feb 2011

Location	Median rent [22] (US$ per month)	Median size (m^2)	Comment: general real estate characteristics in neighborhood
District 1	1,200 (F)	80	High end
District 2	550 (F)	90	Mid end
District 3	700 (F)	81	Mid end
District 4	540 (F)	85	Mid end
District 5	700 (F)	85	Mid end
District 6	560 (U)	91	Mid end
District 7	550 (F)	83	High end
Phu My Hung	600 (F)	81	High end
District 8	330 (U)	83	Low end
District 9	300 (F)	74	Mid end
District 10	350 (U)	75	Mid end
District 11	800 (F)	117	Mid end
District 12	150 (U)	80	Low end
Binh Chanh District	360 (F)	85	Low end
Binh Tan District	250 (F)	80	Low end
Binh Thanh District	550 (F)	80	Mid end
Cu Chi District	N/A	N/A	Low end
Nha Be District	360 (F)	97	Low end
Phu Nhuan District	800 (F)	93	Mid end
Tan Binh District	615 (F)	94	Mid end
Tan Phu District	360 (F)	80	Low end
Thu Duc District	560 (F)	86	Low end
Hoc Mon District	N/A	N/A	Low end
Can Gio District	N/A	N/A	Low end
Go Vap District	410 (F)	84	Low end

Note: Findicates Furnished. U indicates Unfurnished.
Source: www.muaban.net
Note: It is common in both Hanoi and HCMC for residential properties to be furnished when leased. The furnishings are generally of a modest standard. Research indicates that there is no measurable difference in rent prices between furnished or unfurnished housing.

[22] The advertisements listed the rental in either VND or USD. For the purpose of the Tables the VND rentals were converted to USD equivalents using a rate of USD1=VND 19,500.

APPENDIX 3B: Land price tables

Table 3B1 Vacant land prices in Hanoi, Feb 2011

No.	Location	Size (sq m)	Asking price (Us$)	Us$/ M^2	Comment	Distance / direction from CBD
1	Ba Dinh	N/A	N/A	N/A	Mid end No new urban development No secondary data	4.5km West
2	Cau Giay	40	308,000	7,700	Mid end New urban development	6.1km West
3	Dong Da	N/A	N/A	N/A	Mid end No new urban development No secondary data	3.5km Southwest
4	Ha Dong	120(1) 97(2)	300,000(1) 174,000(2)	2,500(1) 1,800(2)	Low end (1) New urban development (2) Established urban area	11km Southwest
5	Hai Ba Trung	N/A	N/A	N/A	Mid end No new urban development No secondary data	2km South
6	Hoan Kiem	N/A	N/A	N/A	High end No new urban development No secondary data	CBD
7	Hoang Mai	61	440,000	7,200	Mid end New urban development	6.5km South
8	Long Bien	64	140,000	2,200	Mid end New urban development	5km East
9	Tay Ho	N/A	N/A	N/A	High end No new urban development No secondary data	8.5km Northwest
10	Thanh Xuan	50	360,000	7,200	Mid end New urban development	7.5km Southwest
11	Son Tay	100 80	59,000 46,000	590 575	Low end (1) New urban development (2) Established urban area	45km Northwest
12	Ba Vi	N/A	N/A	N/A	Low end No new urban development	55km Northwest

No.	Location	Size (sq m)	Asking price (US$)	US$/ m^2	Comment	Distance / direction from CBD
13	Chuong My	92	64,000	700	Low end New urban development	21km Southwest
14	Dan Phuong	90	207,000	2,300	Low end	23km Northwest
15	Dong Anh	80	156,000	1,950	Low end New urban development	21km North
16	Gia Lam	136	230,000	1,690	Low end New urban development	12km East
17	Hoai Duc	80	84,000	2,100	Low end New urban development	19km Northwest
18	Me Linh	100	74,000	740	Low end New urban development	33km Northwest
19	My Duc	N/A	N/A	N/A	Low end No new urban development No secondary data	45km South
20	Phu Xuyen	N/A	N/A	N/A	Low end No new urban development No secondary data	35km South
21	Phuc Tho	N/A	N/A	N/A	Low end No new urban development	38km Northwest
22	Quoc Oai	180	180,000	1,000	Low end Minimum land size for villa development New urban development	27km West
23	Soc Son	N/A	N/A	N/A	Low end No new urban development No secondary data	35km North
24	Thanh Oai	100	179,000	1,790	Low end New urban development	27km Southwest
25	Thanh Tri	98.3	403,000	4,100	Low end New urban development	10km South
26	Thach That	N/A	N/A	N/A	Low end No new urban development No secondary data	35km West
27	Thuong Tin	N/A	N/A	N/A	Low end No new urban development No secondary data	19km South

No.	Location	Size (sq m)	Asking price (US$)	US$/ m²	Comment	Distance / direction from CBD
28	Tu Liem	65	299,000	4,600	Mid end New urban development	10km West
29	Ung Hoa	N/A	N/A	N/A	Low end No new urban development No new urban development	40km South

Table 3B2 Vacant land prices in Ho Chi Minh City, 2011

No.	Location	Size (sq m)	Asking price (US$)	US$/ m²	Comment	Distance / direction from CBD
1	District 1	N/A	N/A	N/A	High end No new urban development No secondary data	CBD
2	District 2	100(1) 115(2)	210,000(1) 173,000(2)	2,100(1) 1,500(2)	Mid end (1) New urban development, (2) Established urban area	6.5km East
3	District 3	N/A	N/A	N/A	Mid end No new urban development No secondary data	2.0km West
4	District 4	N/A	N/A	N/A	Mid end No new urban development No secondary data	2.0km South
5	District 5	N/A	N/A	N/A	Mid end No new urban development No secondary data	5.0km Southwest
6	District 6	84	110,000	1,300	Mid end New urban development	7.5km Southwest
7	District 7	100(1) 100(2)	250,000(1) 120,000(2)	2,500(1) 1,200(2)	High end (1) New urban development (2) Established urban area	9.5km South
8	Phu My Hung	111(1)	430,000(1)	3,900(1)	High end (1) New urban development	9.5km South
9	District 8	120	90,000	750	Low end New urban development	7.0km Southwest

No.	Location	Size (sq m)	Asking price (US$)	US$/ m^2	Comment	Distance / direction from CBD
10	District 9	100[1] 90[2]	100,000[1] 80,000[2]	1,000[1] 890[2]	Mid end [1] New urban development [2] Established urban area	12km Northeast
11	District 10	N/A	N/A	N/A	Mid end No new urban development No secondary data	4.0km West 7.0km
12	District 11	N/A	N/A	N/A	Mid end No new urban development No secondary data	West 12.0km
13	District 12	80	66,000	660	Low end New urban development	North 17.0km
14	Binh Chanh District	100[1] 108[2]	100,000[1] 36,000[2]	1,000[1] 330[2]	Low end [1] New urban development [2] Established urban area	Southwest 15.0km West
15	Binh Tan District	100	100,000	1,000	Low end New urban development	
16	Binh Thanh District	120	144,000	1,200	Mid end New urban development	3.0km North

4

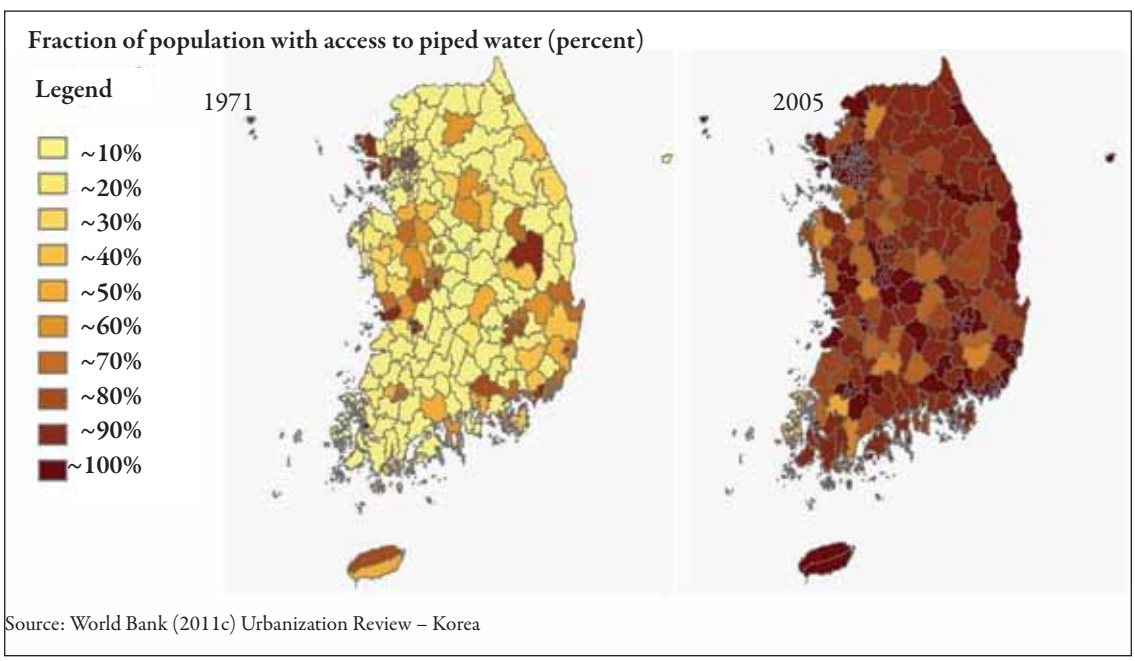
Access to Basic Services

4.1 Status of basic services: moving towards universal access

International experience suggests that convergence of living standards will generally precede convergence of incomes throughout a country. As a country's average income starts increasing, social disparities increase as well. Then, as countries start to develop, they initially focus on basic services, such as water, electricity, sanitation, health, and education. As they move toward higher development levels, access to basic services converges. Disparities between urban and rural areas persist and only start declining when countries reach upper-middle income levels (World Bank, 2009a). Therefore, at early stages of urbanization, countries should focus on achieving universal access to services, rather than on convergence of incomes across the national territory. Convergence of access to basic services usually comes first.

The United States and South Korea are examples of countries that moved from uneven towards more even access to basic services. The movement has been coupled with a movement towards more uneven income distribution. In the 1960s, economic activity was more or less evenly distributed within these countries. Today, economic activity is concentrated in just a few locations, but access to basic services is evenly distributed throughout the countries' geographical boundaries. Figure 4.1 for South Korea illustrates this point.

Figure 4.1 Reducing disparity of access to basic services – South Korea's experience.

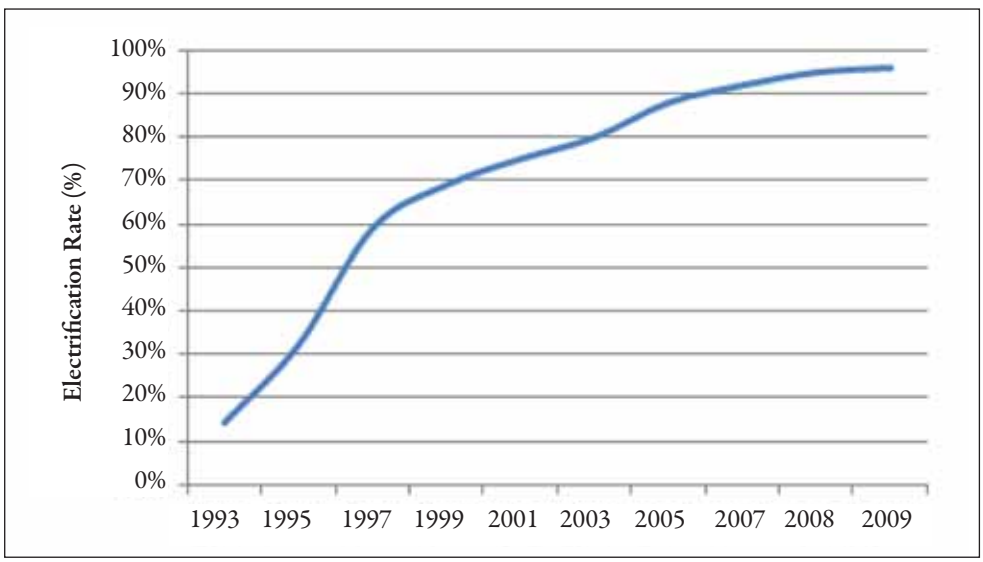


Source: World Bank (2011c) Urbanization Review – Korea

Vietnam, has achieved high coverage of electricity at an incipient stage of urbanization. Access to electricity in Vietnam has increased dramatically in recent years, from around 14 percent of

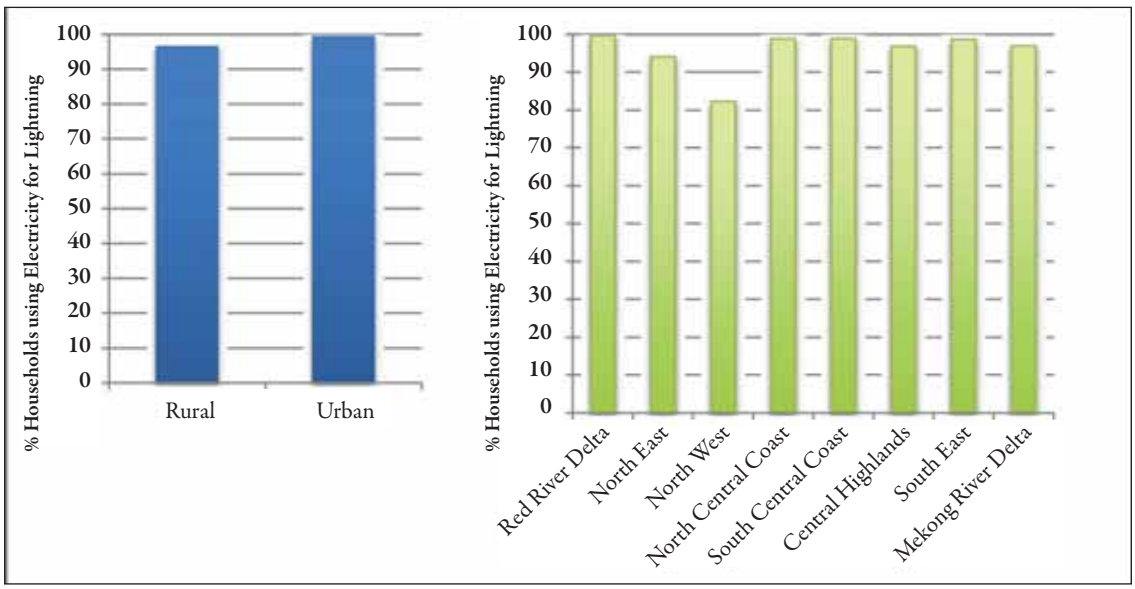
total households in 1993, to above 96 percent (Figure 4.2) as of 2009 (EVN 2009). This figure is considerably higher than the regional average of 90.8 percent (IEA 2010), and according to 2009 data from the IEA, it places Vietnam seventh in the region behind Singapore, Brunei, Malaysia, Thailand, China and Chinese Taipei; it also places Vietnam ahead of both the Philippines and Indonesia. Indeed, when Vietnam's low per capita GDP is taken into account its high levels of electrification are seen as even more remarkable. Indonesia, with a per capita GDP almost twice as high as that of Vietnam, has an electrification rate of only 64 percent.

Figure 4.2 Vietnam achieved near to universal electricity coverage in just over 15 years



Source: World Bank (2009)

Figure 4.3 Access to electricity: gaps between urban and rural areas have disappeared but some regional unevenness remains



Source: LSSV (2008). The variable represented in this graph is the percentage of households that use electricity as their main source of lightning.

Access to electricity has extended almost universally across the national territory, with urban-rural gaps closing, but some regional disparities persist. Access to electricity is above 90 percent throughout the country, even in most rural areas. Box 4.1 provides a description of the process that has led to high access to electricity throughout the country. While rural-urban gaps in access to electricity have almost completely closed, there are still some regional gaps (see Figure 4.3). In particular, the North Western region show access levels just above 80 percent, which contrasts with levels above 95 percent for all other regions.

A closer examination of the urban portfolio suggests urbanization and access to electricity are not strongly correlated. As an example, while Da Nang and Ho Chi Minh (HCM) –the two provinces with the highest urban populations as a proportion of total population – have electrification rates of 100 percent, Thai Binh and Ha Nam, provinces with urban populations just above 8 percent, also have electrification rates of 100 percent (ENV 2009).

Box 4.1 How Vietnam achieved high rates of electrification

Vietnam's electrification rates increased from only 14 percent in the early 1990s to close to 100 percent in 2009. Initial efforts appear to have been focused on connecting households in already electrified communes rather than on extending the grid, leading to drastic increases at a lower relative cost. The goal of electrification in the early nineties was to contribute to the objectives of national economic programs focused on ensuring the production of food supply, production of consumer goods, and export commodities. Therefore, connecting

agricultural areas, industry and transport networks took precedence over residential connections in rural areas (Khandher et al, 2009).

With this in mind, therefore, both Khandher et al (2009) and Shrestha et al (2004) suggest that it wasn't until the creation of EVN in 1995 that widespread rural household electrification really took place in Vietnam. EVN was established in order to consolidate under the management of one holding company the electricity sector activities which had previously been carried out across a number of organizations. This restructuring was intended to achieve the following objectives, as outlined in the Power Sector Policy Statement, issued by the Ministry of Industry on 1 December 1995:

Rationalize power sector institutions and functions;

Commercialize the operations of sector entities through financial and management restructuring;

Introduce an appropriate legal and regulatory framework for the sector;

Adopt appropriate bulk and retail tariffs, both in terms of tariff level and tariff structure;

Encourage and introduce private sector capital and direct participation in the sector;

Introduce electricity conservation and load management practices;

Prepare and implement a plan to bring electricity to rural areas.

In order to prepare and implement a plan to bring electricity to rural areas, EVN established a rural electrification department to take care of the approval of rural electrification projects, which were subsequently implemented by regional companies. In August 1997 Vietnam's power sector policy was updated to move the focus of electrification away from agriculture and small industries to households. The establishment of EVN was a landmark event in the rapid electrification of rural Vietnam. Indeed, Shrestha et al (2004) identify three key developments in the rural electrification process in Vietnam (i) the shift in priority from agriculture and small industries to households (ii) the development of a range of management modes which came about as a result of the creation of EVN and (iii) the completion of the 500kV line that stretches from north to south of the country, which "facilitated connection of the villages to the main grid and thus increased national electrification levels". Although this actually occurred in 1994, and therefore before the onset of reforms, it can still be considered an important part of the reform package. With the creation of EVN and the subsequent change in Vietnam's power sector policy, the potential of the country-length 500kV line was fully realized.

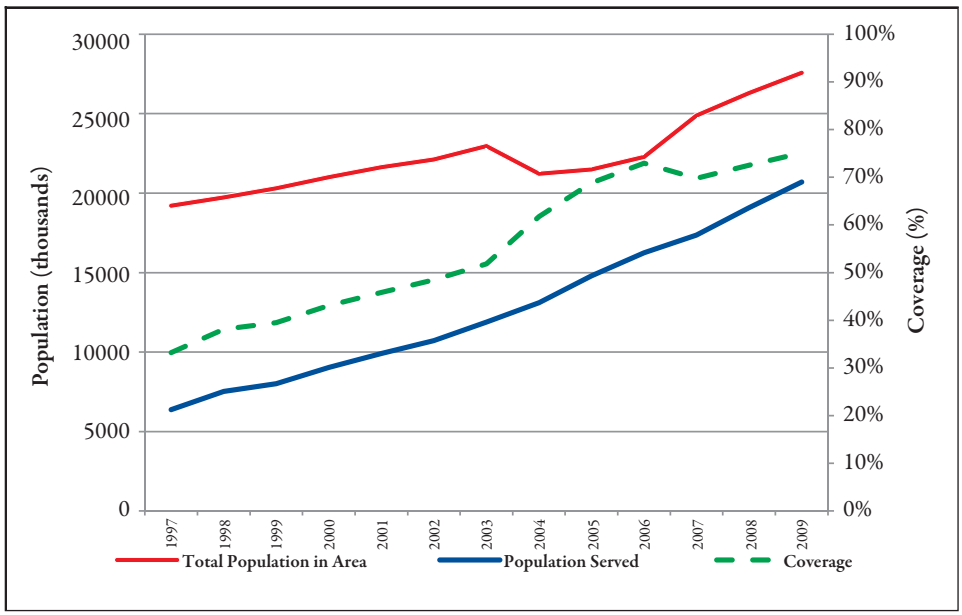
After these early initiatives, a number of donor-supported projects have been undertaken and the Vietnamese government has passed additional legislative reforms to further boost access to electricity throughout the country.

Source: Mekong (2010)

While Vietnam has also done a remarkable job increasing access to water in urban areas in the last ten years, access is still not universal; Vietnam has an uneven social landscape in terms of access to water. Data from 65 utility companies (see Box 4.2) show that only 12 percent of households in the area covered by the companies had access to the water network in 2002. By 2007 more than 70 percent of the population in the area was connected. However, there is still

much to be done in extending access to water throughout the nation. Coverage has increased with urbanization (see Figure 4.4), but more needs to be done so that coverage improves.

Figure 4.4 Urbanization and Water Coverage



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

Box 4.2 – Water Utilities Data

The International Benchmarking Network of Water and Sanitation Utilities (IBNET) is the source for all information on water accessibility used in this chapter. These data includes information for over 64 water utility companies in Vietnam for 2002 through 2009. These companies serve more than one city/town in many cases, therefore, to classify them using the city class classification the company is assigned to the class of the main city it serves. The sample includes 3 utility companies for Special cities, 5 for Class 1 cities, 10 for Class 2 cities, 31 for Class 3 cities, and 15 for Class 4 cites. It is important to recognize the limitations of the data as one evaluates the analysis in this Chapter. First, the city size classification is only an approximation as the data pulls together information from all towns served. It is assumed that average access levels are representative of access levels in the largest city served. Given that access levels might be lower in relative terms in smaller towns in the vicinity, access levels for the largest city served might be slightly higher than the data suggest. Access levels are measured as households with access relative to total households in the area served by the company. Given that water utility companies only cover urban areas, the analysis is limited in that rural areas neighboring cities are not considered.

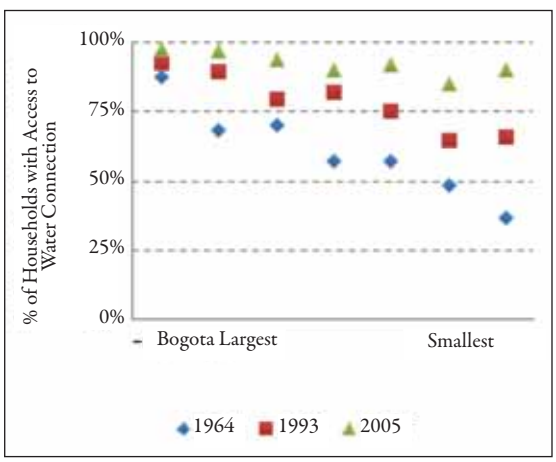
For additional information about IBNET visit www. ib-net.org

For urban places alone, access to water seems to be positively correlated with city size. Using data from the Vietnam Water Utilities Database, it is observed that water coverage is higher in larger cities. Coverage is lowest in Class 4 cities; interestingly, coverage seems to be lower in Special cities compared to Class 1 and Class 2 cities. Coverage levels in larger cities are above 75 percent, in Class 4 cities coverage is 57 percent. Further, while in 1997 access in special cities was close to 50 percent, in all other city classes, access levels were below 30 percent. The gap in accessibility between smaller cities and special cities has closed over time. But Class 4 cities still lag with only 57 percent access, suggesting a 15 percent gap with other city classes.

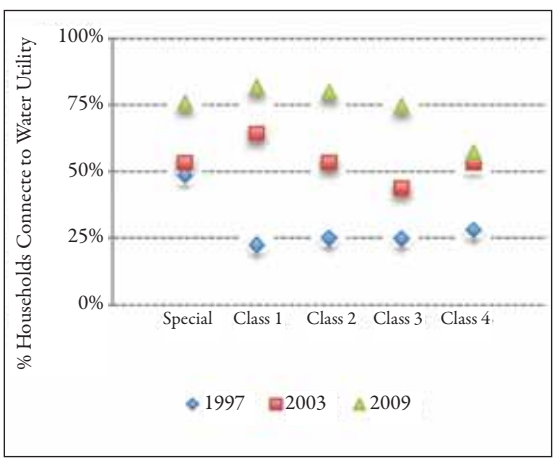
This pattern is not unique to Vietnam. Colombia is an example of how gaps in access to services across city sizes can considerably narrow over time as urbanization takes place (Figure 4.5). As of 1964, Colombia's largest cities had access to water levels that were already considerably high (88 percent), while access levels were only 37 percent for the smallest cities. Today, access levels are above 85 percent for all city sizes. Access levels in Vietnamese smaller cities resemble levels in Colombian cities in 1993. However, special cities in Vietnam have access levels considerably lower than what Bogotá and other large cities in Colombia had at that time. As Vietnam moves to middle income levels, the movement towards convergence in access to basic services should replicate the pattern evidenced in South Korea and the US, where near universal access has been achieved. Access to water is measured as households connected to a water utility company.

Figure 4.5 Covergence of Living Standards is possible

Colombia



Vietnam



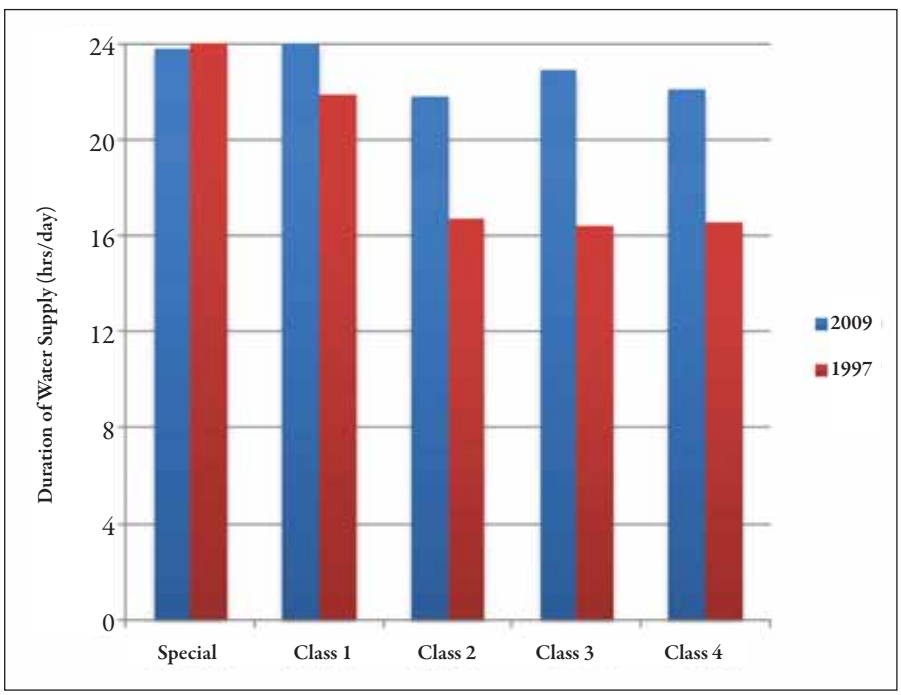
Source: World Bank (2011b) Urbanization Review - Colombia, International Benchmarking Network of Water and Sanitation Utilities (IBNET) and World Bank Staff calculations. For a detailed description of the data see Box 4.2.

Reliability of access to water has improved through time, but it is still lower in smaller cities (Figure 4.6). Reliability of water supply has also improved considerably over the last 10 years, especially for smaller cities. In 1997, smaller cities had only about 16 hours/day of supply. By

2009, all city sizes had over 20 hours of supply per day. Class 2, 3, and 4 cities still seem to have some problems with reliability of service.

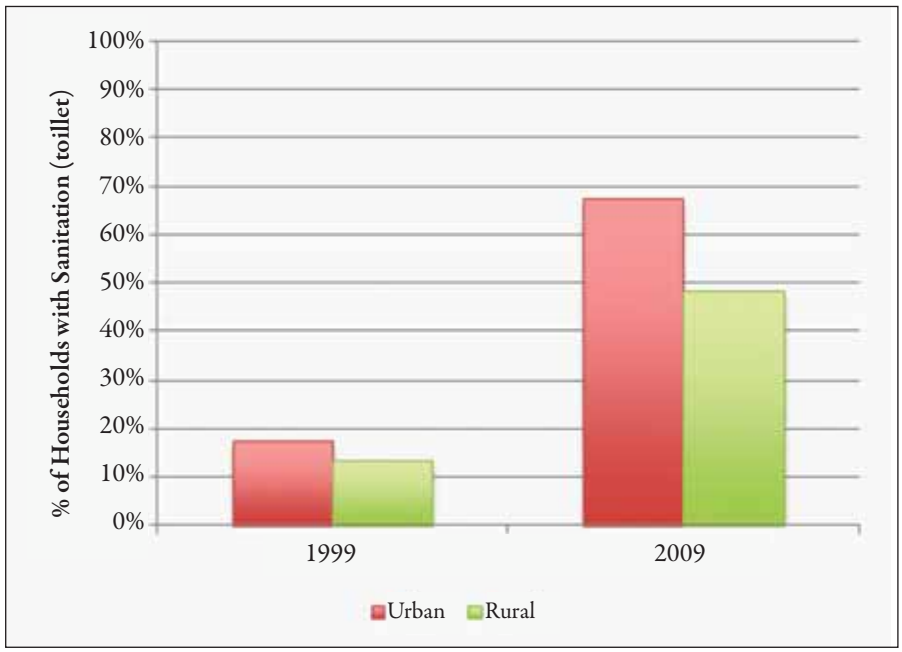
Access levels to sanitation are low and also exhibit an uneven distribution across the country. The situation appears very uneven when looking and the various measures of access to sanitation. Wastewater collection and treatment, and sanitation infrastructure systems are deficient both in urban and rural areas. Despite the dramatic increase in the percentage of households with access to a toilet, urban-rural gaps are still of considerable magnitude today (see Figure 4.7). From low levels around 17 percent in 1999, more than 67 percent of households in urban areas had access to a toilet in 2009. While rising from a very low 13 percent, rural areas still lag typical urban access levels, with only 48 percent of households having a toilet.

Figure 4.6. Water supply is reliable in larger cities but less so in smaller cities.



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

Figure 4.7 Access to sanitation has Improved but urban-rural gaps remain

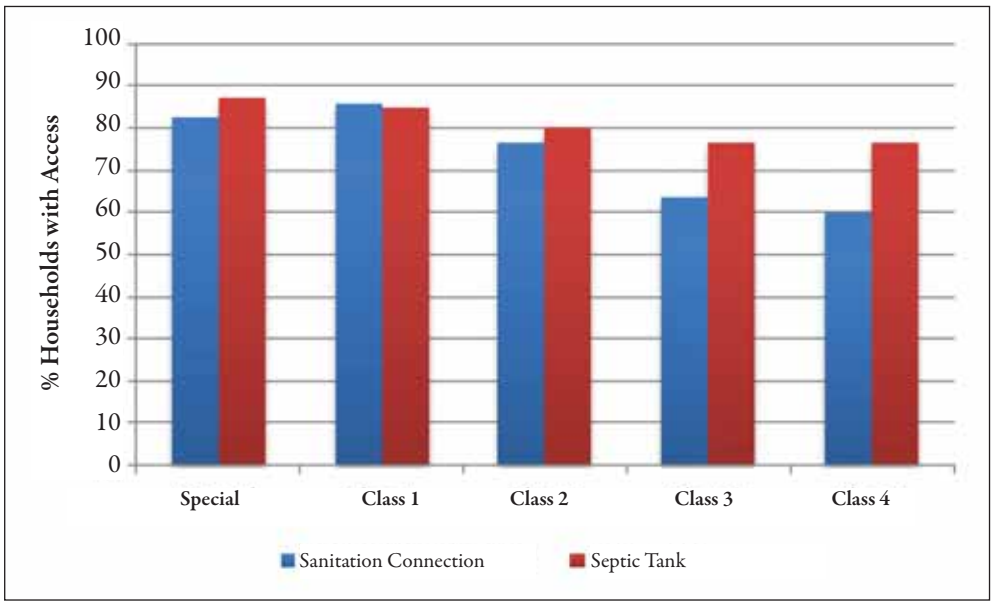


Source: General Statistics Office (GSO).

Access to sanitation also decreases with city class (Figure 4.8). While larger cities such as Hanoi have access to sanitation connection rates above 80 percent, smaller cities like Bac Kan have access rates below 15 percent.[1] On average, differences persist, with Special cities having over 80 percent of households connected to the sanitation network or having a septic tank, while Class 4 cities have less than 60 percent of the households connected to the sanitation network. The disparities across city sizes are smaller in terms of households having septic tanks; almost 77 percent of households in Class 4 cities have septic tanks.

[1] IBNET data. Also see Box 4.2 for a detailed description of the data.

Figure 4.8 Access to Sanitation Varies by City Class



Source: World Bank staff calculations using MARD/DARD (2009) data for 63 cities.

Wastewater treatment operates at very low levels in Vietnam even in urban areas. In 2004 none of Vietnam's cities collected or treated municipal wastewater; by 2009, only six cities had wastewater treatment plants (WWTP) built (Da Nang, Halong City, Hanoi -West Lake, HCMC-Binh Chanh, Da Lat, and Hue). This represents a total treatment capacity of less than 380,000 metres/day, compared to the 4.3 million cubic metres/day that is produced; thus only about 8% of the waste water produced in Vietnam is being treated (AFD, 2010).

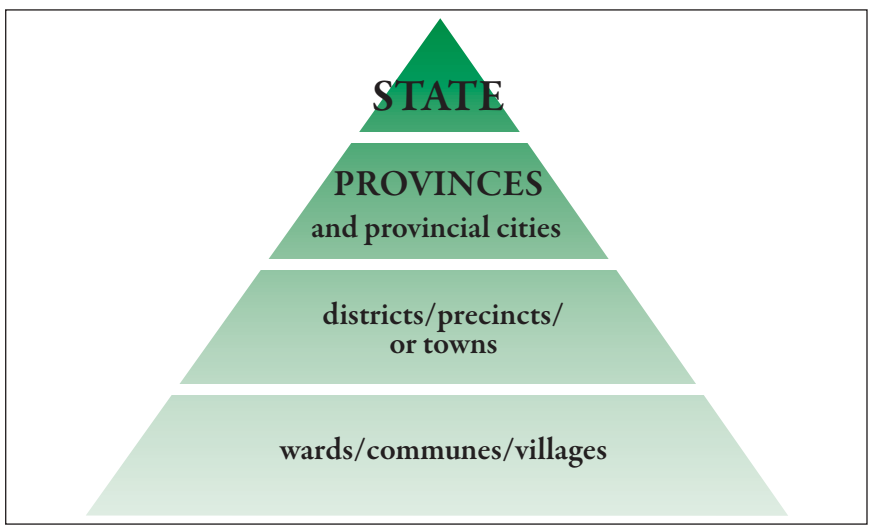
4.2 Financing public services: different provinces – different sources

This section draws on extensively from a study commissioned by the AFD in 2010, and also the VDR 2009, published by the World Bank. As efforts to extend basic services throughout the country are implemented, it is important to understand how they are financed, and how financial constraints may pose some challenges. Vietnam has achieved great improvements in access to basic services across the country. Understanding how these improvements have been financed in different provinces and the obstacles encountered, will shed light on future constraints. Provinces are financed through equalization transfers from the central government, taxes, land sales, short-term debt, local development investment funds, and through what is in often essence a cross-subsidy from the more profitable subsidiary entities of provincial public utility companies.

Over the past decade and a half, the central government in Vietnam has introduced many reforms inducing decentralization. The devolution of decision-making power in the economic sectors has been followed by considerable devolution in other spheres as well. Sub-national governing bodies have received increased authority in several areas including allocation of budget resources and investment decisions (VDR 2009, p.2).

In Vietnam, the first administrative tier of government under the national government is the provincial government (Figure 4.9). Vietnam has 58 provinces and 5 "provincial cities" (Ho Chi Minh, Ha Noi, Da Nang, Can Tho, Hai Phong) – totaling 63 provincial level authorities. Through the Doi Moi reforms – particularly during the second decade of its implementation (from year 2000) – there has been significant devolution of political power and responsibilities to the provinces. Amendments to the State Budget Law in 2002 gave provincial authorities explicit powers to prioritize resources - including determining budget allocations to different sectors and to the lower levels of government. At the same time the share of expenditures allocated at the sub-national level reached 48% in 2002, up from 26% in 1992.

Figure 4.9 The four levels of government of the Vietnamese state



Source: AFD (2010)

Within and across the provinces one can clearly see the emergence of regional economic clusters and core city areas forming on account of market forces. However, the decentralization reforms have not empowered the next level of government (districts) sufficiently – so provinces are in a sense the only adequately endowed tier of government below the national state (see Box 4.3). Provincial governments have gained substantial decision-making authority over private and foreign investment as well (VDR 2009).

Box 4.3 Decentralization of public investment

In the area of public investment, provincial governments, in 1999, "were empowered to decide on small and medium investment projects, and district and commune governments were allowed to decide on the same type of projects, if assigned by the provincial government and authorized by the Provincial People's Council. Later in 2005, provincial governments were given the authority to decide on the largest public investment projects out of a list set by the Prime Minister. Provincial governments have gained substantial decision-making authority on private and foreign investment, too. In 2005, provincial governments were given the authority to issue licenses for foreign investment and in 2006 to assess and approve ODA capital investment projects."

Source: VDR (2009, p.28)

Decentralization has been accompanied by a system of transfers from the central government to provinces, based on equity objectives. Vietnam redistributes provincial taxes as fiscal transfers across its 63 provinces based on a set of criteria embodied in the equalization formula. Equalization transfers are defined by the National Assembly for a 3-to-5-year period, and are based on budget allocation norms including criteria covering provincial demographic characteristics, poverty rates, and considerations such as a province's disadvantaged location, among others. Larger and richer provinces have expressed some resistance to this transfer system. Data on tax revenues and transfers are given in Table 4.1.

Table 4.1 Planned tax revenues and transfers from state to provincial budgets, 2010

Province	Tax Revenue (million VND)	Fiscal Transfers from the State Budget to Provinces		Fiscal Transfers Received as Proportion of Tax Revenue Contributed
		(in million VND)	% of total transfers in 2010	
Northern Mountainous region	10,908,300	26,939,138	12.7%	247%
Ha Giang	425,000	2,058,346	1.0%	484%
Tuyen Quang	465,300	1,651,577	0.8%	355%
Cao Bang	367,000	1,559,273	0.7%	425%
Lang Son	1,900,000	1,998,633	0.9%	105%
Lao Cai	1,130,000	1,776,373	0.8%	157%
Yen Bai	530,000	1,792,642	0.8%	338%
Thai Nguyen	1,347,000	2,356,559	1.1%	175%
Bac Kan	183,000	969,322	0.5%	530%
Phu Tho	1,315,000	2,564,563	1.2%	195%
Bac Giang	1,003,000	2,656,235	1.3%	265%

Province	Tax Revenue (million VND)	Fiscal Transfers from the State Budget to Provinces		Fiscal Transfers Received as Proportion of Tax Revenue Contributed
		(in million VND)	% of total transfers in 2010	
Hoa Binh	1,094,500	2,316,488	1.0%	212%
Son La	733,200	2,521,839	1.2%	344%
Lai Chau	161,700	1,302,650	0.6%	806%
Dien Bien	253,600	1,414,644	0.7%	558%
Red River Delta region	154,642,200	61,944,259	29.3%	40%
Ha Noi	85,417,000	28,984,296	13.7%	34%
Hai Phong	29,233,000	4,583,443	2.2%	16%
Quang Ninh	16,160,000	4,663,620	2.2%	29%
Hai Duong	3,650,000	3,484,938	1.6%	95%
Hung Yen	2,081,000	2,195,023	1.0%	105%
Vinh Phuc	10,020,000	5,991,440	2.8%	60%
Bac Ninh	3,087,200	3,124,519	1.5%	101%
Ha Nam	844,000	1,300,253	0.6%	154%
Nam Dinh	1,090,000	2,775,219	1.3%	255%
Ninh Binh	1,790,000	2,173,861	1.0%	121%
Thai Binh	1,270,000	2,667,648	1.3%	210%
North Central and South Central Coast region	46,593,000	38,672,965	18.3%	83%
Thanh Hoa	2,695,000	6,096,655	2.9%	226%
Nghe An	2,506,000	5,338,837	2.5%	213%
Quang Tri	640,000	1,396,161	0.7%	218%
Ha Tinh	980,000	2,580,510	1.2%	263%
Quang Binh	889,000	1,886,854	0.9%	212%
TT-Hue	2,301,000	2,630,885	1.2%	114%
Da Nang	6,274,000	4,339,968	2.0%	69%
Quang Nam	1,950,000	3,004,610	1.4%	154%
Quang Ngai	13,735,000	1,831,212	0.9%	13%
Binh Dinh	2,367,500	2,293,044	1.1%	97%
Phu Yen	828,000	1,496,231	0.7%	181%
Khanh Hoa	6,168,000	2,755,185	1.3%	45%
Ninh Thuan	350,500	883,064	0.4%	252%
Binh Thuan	5,009,000	2,139,748	1.0%	43%
Central Highlands region	7,400,500	11,552,317	5.5%	156%
Dak Lak	2,188,000	3,583,448	1.7%	164%
Dak Nong	631,000	1,282,187	0.6%	203%
Gia Lai	1,925,000	2,769,789	1.3%	144%

Province	Tax Revenue (million VND)	Fiscal Transfers from the State Budget to Provinces		Fiscal Transfers Received as Proportion of Tax Revenue Contributed
		(in million VND)	% of total transfers in 2010	
Kon Tum	778,000	1,384,112	0.7%	178%
Lam Dong	1,878,500	2,532,781	1.2%	135%
Southeast region	252,228,000	45,680,148	21.6%	18%
HCMC	144,200,000	28,235,584	13.3%	20%
Dong Nai	14,008,000	4,614,672	2.2%	33%
Binh Duong	12,725,000	4,519,128	2.1%	36%
Binh Phuoc	1,459,000	1,831,843	0.9%	126%
Tay Ninh	1,486,000	1,593,448	0.8%	107%
BRVT	78,350,000	4,885,478	2.3%	6%
Mekong Delta region	28,728,000	26,974,445	12.7%	94%
Long An	2,473,000	2,732,660	1.3%	110%
Tien Giang	1,682,000	2,213,466	1.0%	132%
Ben Tre	750,000	1,619,759	0.8%	216%
Tra Vinh	472,000	1,416,700	0.7%	300%
Vinh Long	1,050,000	1,571,581	0.7%	150%
Can Tho	4,318,000	3,128,120	1.5%	72%
Hau Giang	391,000	1,088,593	0.5%	278%
Soc Trang	525,500	1,470,487	0.7%	280%
An Giang	2,377,000	3,046,103	1.4%	128%
Dong Thap	2,360,000	2,848,218	1.3%	121%
Kien Giang	1,923,000	2,566,588	1.2%	133%
Bac Lieu	630,000	1,177,986	0.6%	187%
Ca Mau	1,776,500	2,094,183	1.0%	118%
Total	492,500,000	211,763,272	100.0%	43%

Source: Mekong (2010); Official figures from the Ministry of Planning and Investment (2010). Tax revenue = payments to the central government; fiscal transfers = payments redistributed to the provinces by the central government.

In 2010, three provinces (HCMC, Hanoi and BRVT) contributed almost 63% of tax revenue and received 29% of total fiscal transfers from the central government (Table 4.1). However, the fact that indicators of access to basic services are moving towards convergence across Vietnam's landscape, suggest that having equity as an objective has paid off in this respect. For most of the poorer provinces these transfers represent the bulk of their budgets and are critical for their ability to provide services. Therefore maintaining access this source of finance is important.

The poorer provinces have relied mainly on fiscal transfers to finance infrastructure. For poor provinces these equalization transfers represent up to 90% of their local budgets and are often several times larger than what they collect and contribute by way of tax revenues (AFD 2010). The northern mountainous region (14 provinces) gained the most from fiscal transfers – giving out only 2% of tax revenue and receiving 13% of fiscal transfers; by contrast, the economically dynamic Southeast region contributed 51% of tax revenue but got only 22% of fiscal transfers. Richer provinces have relied on many sources in addition to fiscal transfers, financing public expenditure by selling land and/or taking on debt, directly or through subsidiary entities.

One of the most common sources of funding for affluent provinces is land, and since revenues collected from land are not subject to redistribution through the equalization formula, this creates further incentive for provinces to sell land. For example Da Nang financed around 51% (in 2003), 47% (in 2004), 42% (in 2005) and 30% (in 2006) of its budget from land allocations. Table 4.2 shows the total revenue for 5 cities originating from land sales and taxes between 2002 and 2008. The table differentiates between the total revenue collected in the province, and the total revenue the province may use after transfers based on the equalization formula discussed above. Table 4.2 suggests land revenues are a considerable share of revenues in several cities.

These land transactions may take a variety of forms: the transfer of land (often acquired through eminent domain) to investors (state owned enterprises, domestic, foreign); the issuance and transfer of land use rights; possible adjustment to constructability rules and regulations; the re-zoning of land; tax advantages to investors; and as permitted in the new urban planning law – allowing investors to draw up the detailed plans of the area they are developing (AFD 2010). Land transactions provided bursts of much needed liquidity in the short run; but as currently practiced these are not likely to constitute a sustainable source of revenue on account of issues about their equitableness and efficiency (See Chapter 3).

Debt financing is another source that can be further utilized by provinces. In order to meet public investment expenditures, provinces are able to borrow (usually from the Treasury Department of the Bank of Vietnam) as long as the value of outstanding debt is not greater than 30% of the value of investments set out in the annual budget (on average, investments represent about 25% of provincial budgets). Hanoi and HCMC, being special cases, may borrow up to 100%, and this may be in the form of bonds – creating more flexibility and funding space. However, by and large, there seems to be no long-term debt at the level of local authorities, though some long-term debt is being issued by some local public companies instead. In general the lack of long-term debt creates situations where loans are only allocated for operations with high repayment capacities that are providing rapid returns on investment (AFD 2010).

Table 4.2 Revenue from land for major city-centered provinces

Land Rental Revenue (from foreign companies + Ag. Land Use Tax + Housing and land Revenues (Million VND)	2002	2003	2004	2005	2006	2007	2008
Hanoi Revenues from Land	595,550	1,257,591	2,320,463	3,114,695	3,723,060	n/a	n/a
Total Revenue Collected		20,940,634	26,460,638	30,747,832	38,613,364		
Total Revenue for Use		6,554,256	7,691,741	11,512,773	13,844,807		
% of total Revenue for Use		19.19%	30.17%	27.05%	26.89%		
HCMC Revenues from Land	1,908,790	2,516,697	3,096,801	2,768,117	3,314,211		7,606,471
Total Revenue Collected		41,543,335	55,397,087	54,201,342	64,232,362		115,708,742
Total Revenue for Use		14,661,801	17,724,212	22,505,719	25,066,286		42,693,975
% of total Revenue for Use		17.16%	17.47%	12.30%	13.22%		17.82%
Da Nang Revenues from Land	531,107	1,429,537	2,043,328	1,953,525	1,582,540	4,476,129	3,595,290
Total Revenue Collected		3,558,278	5,121,625	5,515,509	6,489,759	9,569,306	11,886,279
Total Revenue for Use		2,786,249	4,338,343	4,584,416	5,188,245	7,954,243	9,453,842
% of total Revenue for Use		51.31%	47.10%	42.61%	30.50%		
Bac Ninh Revenues from Land	58,060	99,484	363,837	342,210	460,608	652,570	748,930
Total Revenue Collected		660,126	986,299	1,194,401	1,357,094	1,844,162	2,477,079
Total Revenue for Use		924,340	1,268,422	1,735,358	1,934,881	2,739,884	3,457,819
% of total Revenue for Use		10.76%	28.80%	19.72%	23.81%	23.82%	21.66%
Dong Nai Revenues from Land	87,000	145,174	29,069	300,827	n/a	n/a	743,779
Total Revenue Collected		5,368,377	7,155,385	8,527,157			15,251,055
Total Revenue for Use		2,734,821	2,609,743	4,880,593			6,289,861
% of total Revenue for Use		5.31%	11.11%	6.16%			11.83%

Source: Provincial budget statement, Website of Ministry of Finance, compiled by Urban Solutions, 2011.

Local Development Investment Funds (LDIFs) provide yet another option to richer provinces. LDIFs are "locally based state financial institutions" that are financed through share capital subscribed by the province, domestic medium and long term loans, bonds, and official development assistance loans from the World Bank, AFD or other development partners through the Ministry of Finance. Their mobilized capital cannot exceed six times the amount of their charter capital. The first LDIF was piloted in HCMC in 1997, and there are now at least 21 LDIF's - though the largest is HIFU (HCMC). The funds in LDIF's might be used to implement urban and economic infrastructure projects across a wide range of sectors,

including: health, education, water distribution and treatment, waste management, sanitation and wastewater treatment, roads and bridges, transport logistics, ports, ICT, residential development, industrial areas, energy transmission, etc (AFD 2010).

LDIFs are relatively new and there is a strong need for more professional management, capacity building, and supervision of these entities, to ensure they can function effectively. For instance, there is no accounting consolidation (with provincial accounts) of these entities at the provincial level– though the financial risks and third party contracts they take-on, are ultimately borne by the province. More broadly, there is no accounting consolidation by the province and entities which are dependent on them. Also, there is no overall vision of results, internal transfers, overall debt, and commitments or contracts with third parties or with each other (AFD 2010).

Many provinces manage to provide services through an effective cross-subsidy from profitable subsidiary entities of provincial utility companies. Services in Vietnam are mostly provided through a group of provincial public sector companies involved in water production and supply, wastewater collection and treatment, transport, cleaning of public areas, construction and development, etc. Some of these companies also work in industrial, commercial and financial activities. The provinces play a key role in appointing the senior management for these companies, and in setting tariffs for services. Provincial water companies and 'urban environment companies' (URENCOs) are responsible for water and sanitation respectively. In the larger provinces, some of these companies act as holding companies with their subsidiary companies engaged in a diverse range of activities. Often, the relation between the core activity and the subsidiary companies can be quite distant – such as water company subsidiaries involved in property development and construction. As tariffs are usually set very low by the provinces, these parallel activities end up helping public companies to break even – for instance the Thanh-Hoa Water Company earns 50% of its revenues from drinking water production (AFD 2010). Challenges specific to the electricity sector are highlighted in Box 4.4.

In some cases, a slow privatization of these companies is taking place, in tranches, with holding companies opening up their more profitable subsidiaries to shareholders (these are usually members of the general public, private Vietnamese companies; a part is also reserved for employees (AFD 2010). For the core business or holding company to attract private capital, these initial steps, along with the raising of user charges might usher in more capital. As demand for more quality and access to basic services is increasing – there is a growing need to leverage private investments in production capacity and/or network extension. Build-own-operate or build-own-transfer contracts, service provision contracts and infrastructure financing are some of the ways forward for partnerships with the private sector. But they will need better legal frameworks and reform measures – as well as more robust profits, through tariff increases and cost-cutting (AFD 2010).

Box 4.4 Governance challenges in the electricity sector

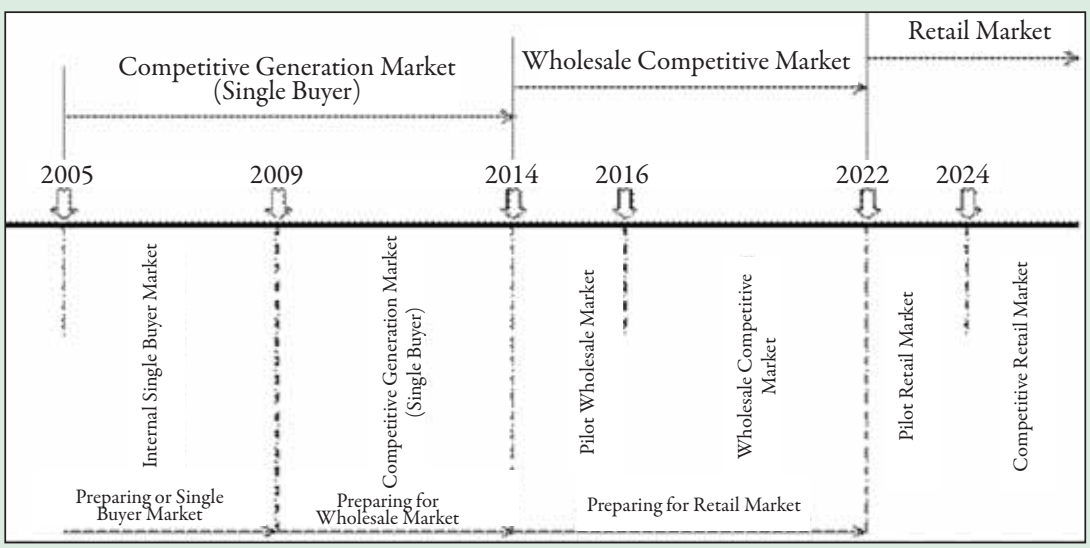
The conglomerate model that EVN is pursuing to take advantage of its government-approved status as a "business group" has led it into many new business areas. For instance EVN Telecom, which was established as a fully-owned subsidiary, is growing rapidly to become a major player in the domestic telecom market. Meanwhile, in 2005, EVN became a strategic investor in An Binh Joint-stock Commercial Bank (ABB) controlling 30% of the bank's capital, while during Q407 EVN established four real estate companies: EVN Land, EVN Land Central, EVN Land Nha Trang and EVN Land Saigon. Most recently, EVN Finance Company – in which EVN and An Binh Bank have controlling interests – started operations in September 2008.

As these activities grow (and become more profitable) it is only natural that ENV tends to lose focus on its primary task of providing electricity effectively and profitably at reasonable cost. Indeed, in 2007 EVN was supposed to add 700MW of new capacity to the system, but only 64MW from a hydro plant in central Vietnam came online. Moreover, most of the 18 generation projects currently under development by EVN are falling behind schedule according to Thanh (2010).

In addition to this, Thanh (2010) highlights that the conglomerate model is incompatible with the power market development roadmap stipulated in the 2004 Electricity Law, which is to be key in attracting both domestic and foreign private investments in power generation.

The idea of a market development roadmap is certainly a move in the right direction, and is essentially what happened in China and Poland when they restructured their power sectors. However, the proposal made by EVN to create the Power Trading Company which would act as a single buyer represents a significant departure from this successful model. EVN's proposal, put forward in 2007, would allow for the single buyer to be 51% owned by EVN, while at the same time keeping EVN's structure intact. This would potentially create a serious conflict of interest as the single buyer would be under pressure to favor EVN's power producers and those of other shareholders. As a result, not only would existing independent power plants be discriminated against, potential investors would be discouraged – which defeats one of the primary goals of the power market development roadmap.

Power Reform Roadmap



Source: World Bank (2010)

Indeed, it is a fundamental requirement that the single buyer is independent of the vertically-integrated electricity company which currently dominates Vietnam's electricity sector, which would essentially mean that EVN must be broken up so that the generation, transmission and distribution activities are separated. The single buyer proposal was eventually rejected by the government, but as long as EVN continues to express a strong unwillingness to be disaggregated, and its desire to pursue investment opportunities to strengthen its conglomerate structure, the power market roadmap will likely be delayed.

4.3 Looking ahead: achieving universal access and improving quality

For services where high accessibility levels have been achieved, it is important to now move forward toward better quality. Given the high electrification rates in Vietnam, the key issue in this case is not connectivity (or lack of it), but rather service quality. Vietnam's ranking of 98 out of 139 countries for quality of electricity supply underscores this (World Economic Forum, 2010). According to the World Bank Enterprise Survey (2009), there are on average 2.0 power outages in Vietnam a month. While this is less than the regional average of 4.5 and the 8.9 average for all countries surveyed by the World Bank, power outages in Vietnam lasted for an average of 8.2 hours, compared to 3.2 hours across the region as a whole and 5.5 hours for all countries surveyed. Meanwhile, the value lost as a result of power outages in Vietnam is reported as 3.4% of sales value, higher than the 3.0% reported for the region, although lower than the 4.9% for all countries included in the survey.

Vietnam should try to replicate its own success in access to electricity across other services. As Vietnam urbanizes and moves towards middle incomes, basic services will influence the speed of these transformations. A recent study estimated that annual economic losses from poor sanitation alone in Vietnam are around 780 US$ million (WSP, 2007). Achieving improvements in the quality of basic services might require efforts on several fronts, including (i) improving cost recovery, (ii) increasing efficiency in service provision, and (iii) promoting inter-jurisdictional coordination for service provision.

4.3.1 Increasing cost recovery

In general, prices for basic services in Vietnam are low and in many cases do not cover operational, capital, and debt service costs. Ensuring cost recovery through tariffs is important as it opens possibilities for financing that may otherwise be impossible. It might also open the doors for private investment and take some of the load away from sources of public finances.

The cost-recovery principle has been recently adopted in the electrical power sector. Major changes to the tariff structure were introduced in February 2009. Average electricity retail

tariffs were raised to the 2008 cost of supply, i.e. to 948 VND /kWh in 2009. In 2010, tariffs were increased once again to cover 2009 costs of supply and therefore the average retail tariff was set at 1,058 VND/kWh, approximately 5 US cents/Kwh.

Electricity has remained affordable even after recent tariff increases; the poorest have not been seriously affected (Table 4.3). In 2008, even after several electricity tariff increases, the share of electricity expenditures over total expenditures remained close to 2004 levels. For most expenditure distribution deciles, this proportion even decreased between 2004 and 2008. The poorest 10 percent of the population allocates about 2.9 percent of its total expenditures to electricity, while the richest 10 percent allocates only 3.6 percent.

Electricity prices have also remained low by international standards. While countries like the Philippines and Japan charge more than 15 US cents/Kwh, the average tariff in Vietnam is just above 5 US cents/kwh. This is low compared even to Indonesia, Thailand, Taiwan, and Malaysia (see Table 4.4). However, in real terms, the average tariff seems to be high. This has probably induced households in Vietnam into being low consumers of electricity. In 2008, 65 percent of all households consumed less than 100 kwh per month; among the poor, this number increases to about 91 percent in urban areas and 99 percent for rural households.

Table 4.3 Electricity expenditures as percentage of total cash expenditures

	2004	2006	2008
Poorest 10%	3.2	3.2	2.9
Decile 2	3.3	3.1	3.1
Decile 3	3.3	3.3	3.2
Decile 4	3.3	3.3	3.1
Decile 5	3.5	3.3	3.2
Decile 6	3.4	3.3	3.1
Decile 7	3.5	3.4	2.9
Decile 8	3.6	3.3	3.2
Decile 9	4.0	3.8	3.3
Richest 10%	4.6	4.0	3.6

Source: Kozel and Cuong (2010) and Mekong (2010)

However, only 14 percent of households in Vietnam consumed below the subsistence level, which has been estimated to be around 45 kwh per month (World Bank 2010). While Vietnam's tariffs seem to be on the high end when measured as a percentage of GDP/capita, they are in fact low in absolute terms by comparison with neighboring countries.

Despite tariff increases, electricity remains remarkably affordable to residential consumers in

Vietnam (Table 4.3). In 2008, households in the poorest 10 percent of the population paid on average 2.9 percent of total cash expenditures for electricity. By contrast, the wealthiest 10 percent of households paid 3.6 percent.

Table 4.4. Electricity rates in Vietnam remain low compared to international standards

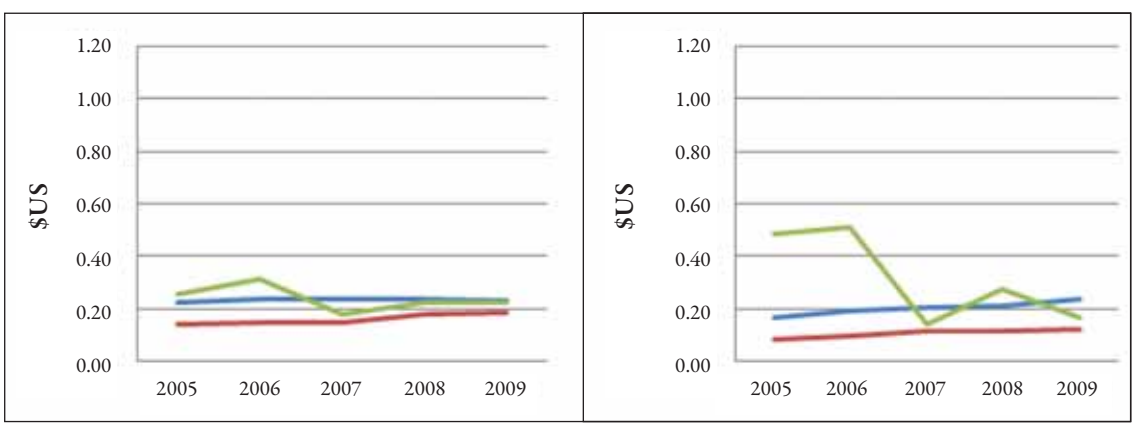
	Average Tariff (USD/Kwh)	Average Tariff as % of GDPpc
Hong Kong	11.20	0.036
South Korea	9.00	0.041
Taiwan	8.28	0.049
Japan	20.02	0.052
Malaysia	9.64	0.117
Thailand	8.81	0.218
Indonesia	6.73	0.230
Vietnam	5.34	0.517
Philippines	17.73	0.962

Source: Tenaga Nasional Berhad and WDI. With the exception of South Korea (2007) and Vietnam (2009), all data are for 2008.

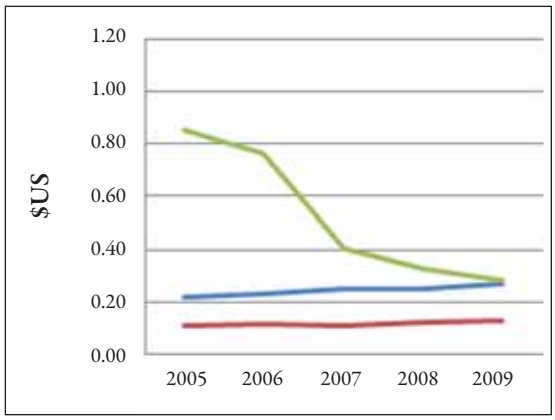
Water tariffs for users are only at levels that are sufficient to meet operating costs. However, these tariffs are often not sufficient to generate enough revenue for the amount of required investments, and not even to cover debt service costs (see Figure 4.10). Water tariffs in Vietnam remain heavily subsidized up to about 40 percent (Watson et al. 2009).

Figure 4.10 Water tariffs are below O&M plus debt services costs in most city classes

Special Cities Class 1



Class 2



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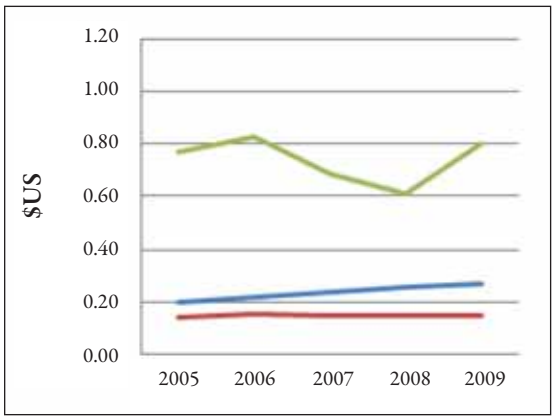
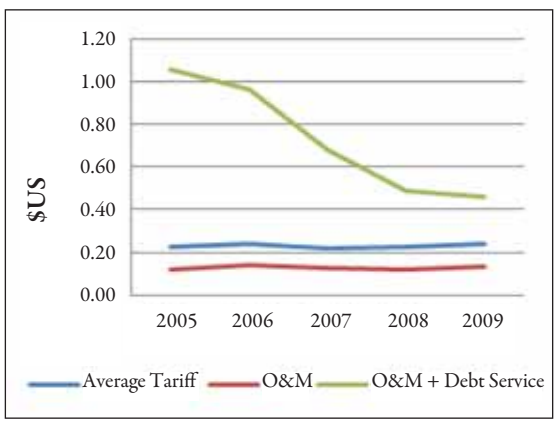


Class 4



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

Adding debt servicing costs to O&M suggests that on average tariffs do not cover operating and debt servicing cost.[2] While for special cities and Class 2 cities tariffs seem to barely cover these two types of costs, in Class 3 and 4 cities, on average these costs are higher than tariffs. Class 1 cities have managed to set tariffs at levels that cover operating and debt service costs.

Water tariffs in Vietnam are low compared to international benchmarks. Tariffs in all Vietnamese cities in the sample show average tariffs that are below the EAP average (0.25 USD/m3). Furthermore, the city of Lai Chau has a tariff that is below the average tariff for lower-

[2] The drastic decrease in debt servicing costs observed for the years 2005 through 2007 correspond to the massive debt forgiveness that took place as part of the sector's corporatization.

income countries (0.11 USD/m3); lower middle-income countries have average rates above 0.31 USD/m3. Higher levels are observed in LAC (0.41) (Foster and Yepes, 2006). Further, for all city classes, the average water tariff represent only between 3 and 4 percent of the GNI per capita, suggesting that there is room for increasing water tariffs to cover both operational costs and support infrastructure investments (see Figure 4.11).

Fees for sanitation are too low to cover operational costs. Currently, an Environmental Fee set by law at 10 percent of the related water tariff is collected to cover wastewater, environmental sanitation, and solid waste treatment. While the law allows for the collection of additional waste water fees to cover O&M costs plus movable assets, few provinces apply this extra fee. Considering the average water tariffs in Vietnamese cities as a reference point, these environmental fees would be between 0.01 and 0.024 USD/m3. Low sanitation fees, may have large and long-term negative environmental impacts. Currently, looking to cut costs on sludge treatment, operators dump untreated waste into the nearest waterway leading to considerable sanitation and environmental problems. Increasing collection fees in combination with enforcing wastewater treatment seems to be an immediate need.

4.3.2 Improving efficiency as a way to increase access to and quality of basic services

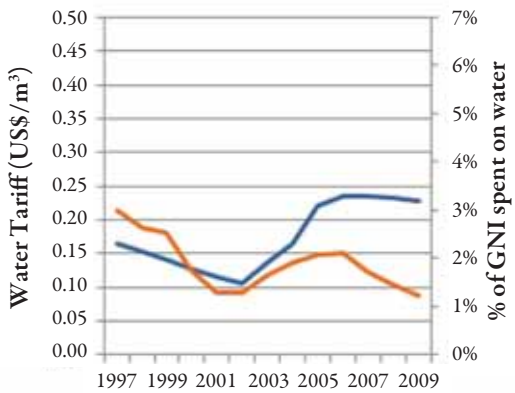
As Vietnam moves closer to universal access in all basic services, a leap must be taken towards looking also at quality of services. Increasing efficiency in services provision becomes an important tool to guarantee not only high access levels but also high quality services. Higher efficiency may lead to lower costs and higher supply of basic services resulting in improved accessibility and better quality. Box 4.5 provides an example of how reforming utility companies to increase their efficiency can lead to higher access and better quality.

Inefficiencies in water provision in Vietnam are evidenced by the still high percentage of unaccounted for water (UFW) (see Figure 4.12). Using the percentage of unaccounted for water (UFW) as a measure of inefficiency, Vietnam water utility companies appear to be highly inefficient. Today, UFW levels in Vietnam are above 20 percent across city classes. Special cities have UFW levels as high as 30 percent. UFW levels for Class 1 cities are at 21 percent.

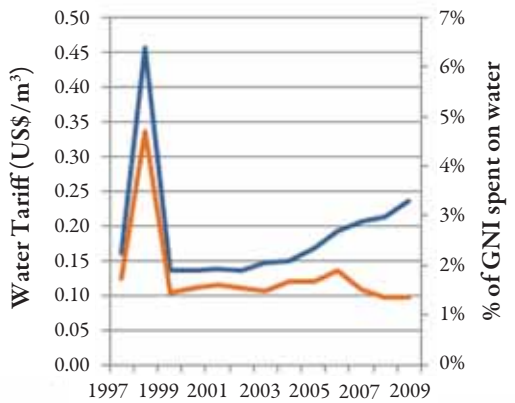
Improvements have been made through time, bringing UFW down from levels above 35 percent in the late nineties. However, the high levels of UFW suggest an opportunity to considerably increase supply at very low cost. Reducing UFW would lead to increased water availability, higher fee collection, and reduction in unitary costs.

Figure 4.11. Average water tariffs remain low and affordable

Special Cities

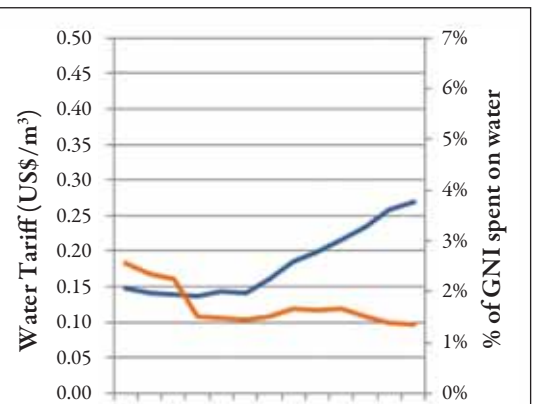


Class 1

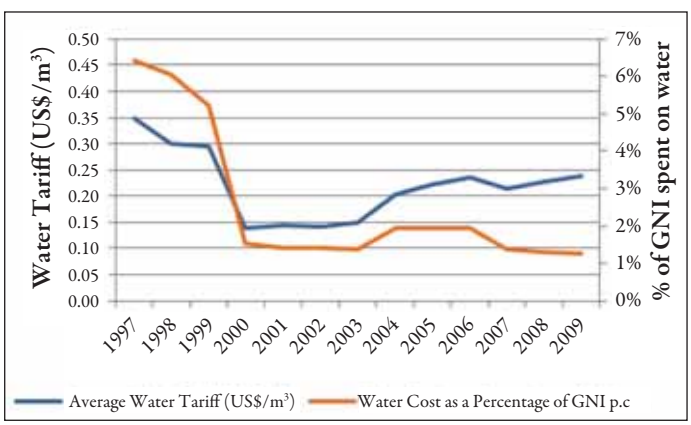


Class 2

Class 3

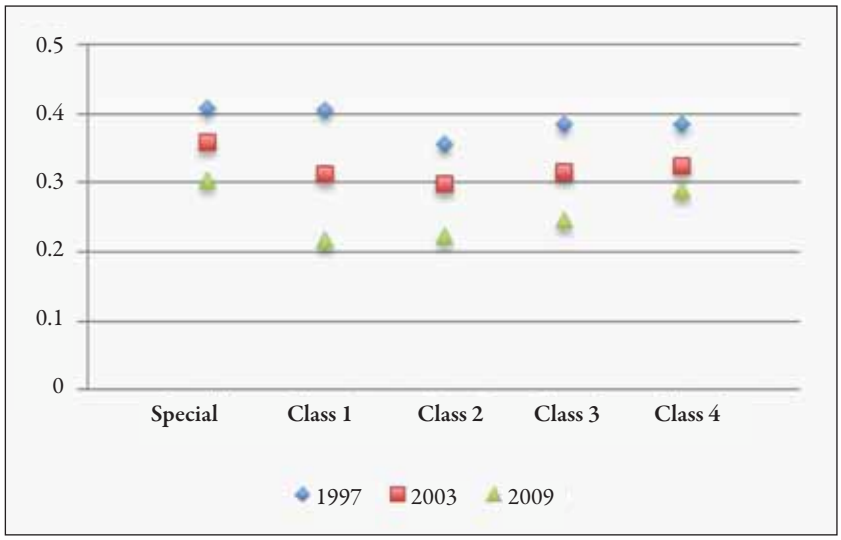


Class 4



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET)

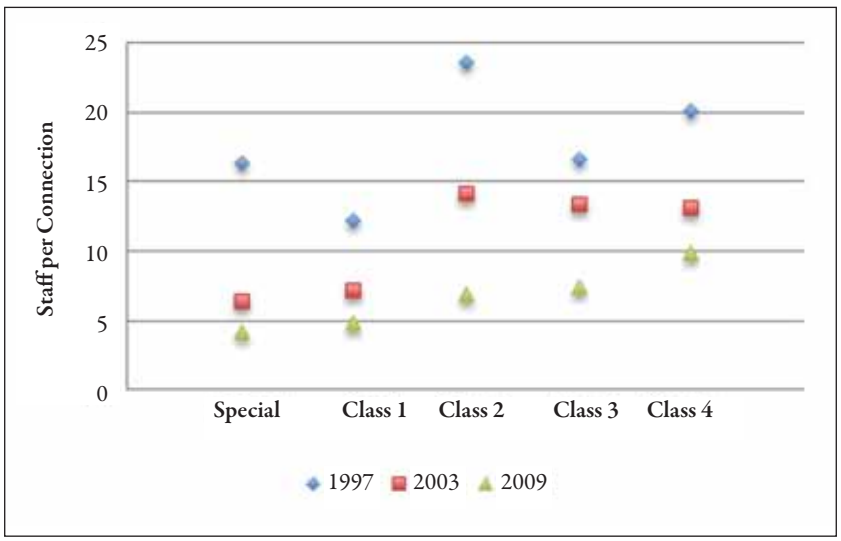
Figure 4.12 Unaccounted for water is still high across city classes



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

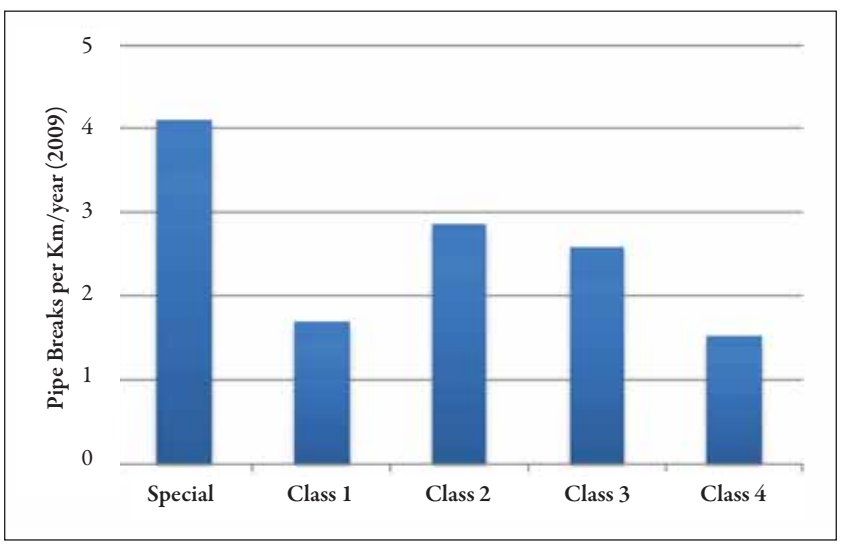
Inefficiencies of water provision in Vietnam are further confirmed by looking at the staff per 1000 connections. International standards suggest that efficient numbers are around 2 staff members per 1000 connections (McIntosh 2003). Figure 4.13 shows that in Vietnam, the average number of staff per 1000 connections is well above standard efficiency levels (12- 24 staff depending on the size of the city). However, this average hides some heterogeneity across cities. While Nha Trang has staff ratios of 3.9, i.e. twice as much as the efficiency benchmark, cities like Long An and Can Tho have up to four times more staff than what would be efficient by international standards. Further inefficiencies are observed through the number of pipe breaks per km/year (Figure 4.14). The higher number of pipe breaks in special cities might be an important reason behind the higher UFW levels compared to other city classes.

Figure 4.13 Staff per connection has decreased over time but there is still room for improvement in all city classes



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

Figure 4.14 Further inefficiencies evidenced by the number of pipe breaks per km/year



Source: International Benchmarking Network of Water and Sanitation Utilities (IBNET) and authors calculations

Box 4.5 Lessons from water utility reform in Cambodia

The Phnom Penh Water Supply Authority (PPWSA), water utility in Cambodia, is an example of how it is possible to reform a utility company that is underperforming into an outstanding one. In less than 15 years PPWSA expanded its area coverage from 25 to 90 percent of the country. Not only did coverage increase dramatically but several internal reforms led to increased efficiency. The staff-connection ratio decreased from 22 to 4 staff per 1,000 connections, the collection rate went from below 50 to 100 percent, and from being heavily subsidized the company moved to full cost recovery. Increases in efficiency led to increased production capacity by more than three times which resulted in extending supply duration from 10 to 24 hours per day. Several things allowed these changes to happen. First, the company was given administrative autonomy while the government still provided strong support. Independence from government, accountability, and the widespread use of a fee for service scheme contributed to the transformation of this company into an excellent service provider.

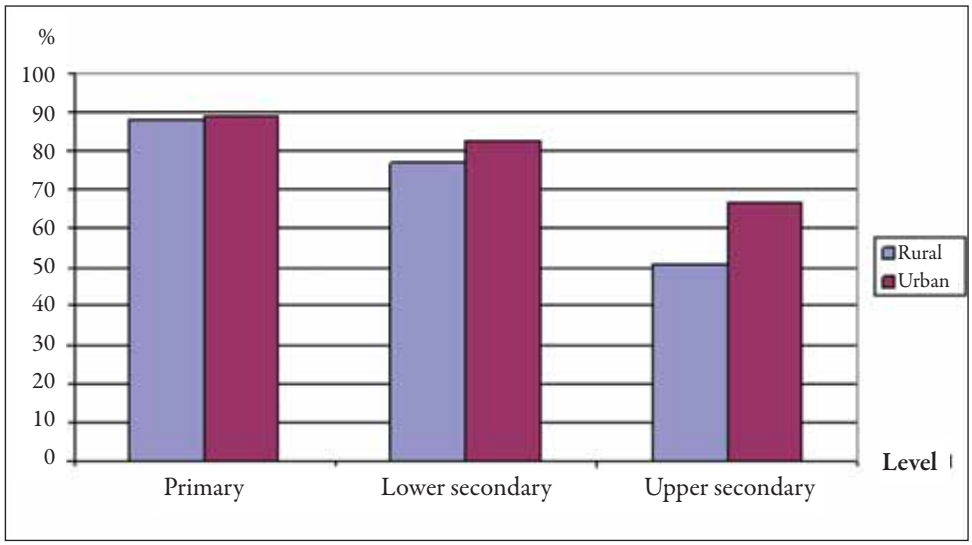
ADB (2009)

4.3.3 Education in Vietnam

Box 4.6 A brief note on education in Vietnam

Vietnam has achieved high primary education enrolments in both its urban and rural regions (almost 90%) which can be attributed to the government's policy of mandatory universal primary education. Enrolment rates for lower secondary education are almost 80%; this tapers down to about 56% for upper secondary education, where the divergence between rural and urban educational attainment becomes more pronounced (see Figure 4.15). However, national averages mask differences between the rich and the poor, between Kinh and Chinese on the one hand and ethnic minorities, and between regions. For example, while increases in educational attainment in rural areas are concentrated at the primary and secondary levels, they are concentrated at the vocational and undergraduate levels in urban areas. Completion rates in rural areas are about two-thirds of those in urban areas. These differences in educational attainment and completion over time translate into increasing inequality, considering that the urban population accounts for only 30 percent of the total population and the intergenerational reproduction of these types of inequalities.[1] In general and as might be expected, the more urban a province is (the higher the share of its population that is 'urban'), the higher student attainment.

Figure 4.15 Net enrollment rates by general education level across regions (2008)



Source: GSO (2008)

The higher education system in Vietnam is fast-developing and already accommodates one in two prospective students seeking admission. In 2009, 376 universities in Vietnam had room for only 400,000 out of the 1.2 million candidates who sat for university entrance exams (around 33.3 %) (Nuffic NESO, 2010). This is despite the fact that new universities and colleges are being built. The MOET (2009) reported that the number of higher education institutions increased from 178 in 2000 to 403 in 2009.

Currently, universities are present in 40 out of the 63 provinces while 60 out of the 63 provinces have colleges and 62 out of the 63 provinces have at least one college or university (except Dak Nong province). The number of universities and colleges in the mountainous and socio-economically disadvantaged areas has also increased creating more opportunities in the rural, remote, mountainous and ethnic minorities' living areas.

While more institutions are being built, one of the challenges faced by Vietnam is to improve the qualification of teachers in higher education establishments. Possible approaches might include raising teachers' salaries and wages that have been severely stagnant. Also, investment in training teachers to higher qualifications might prove very useful.

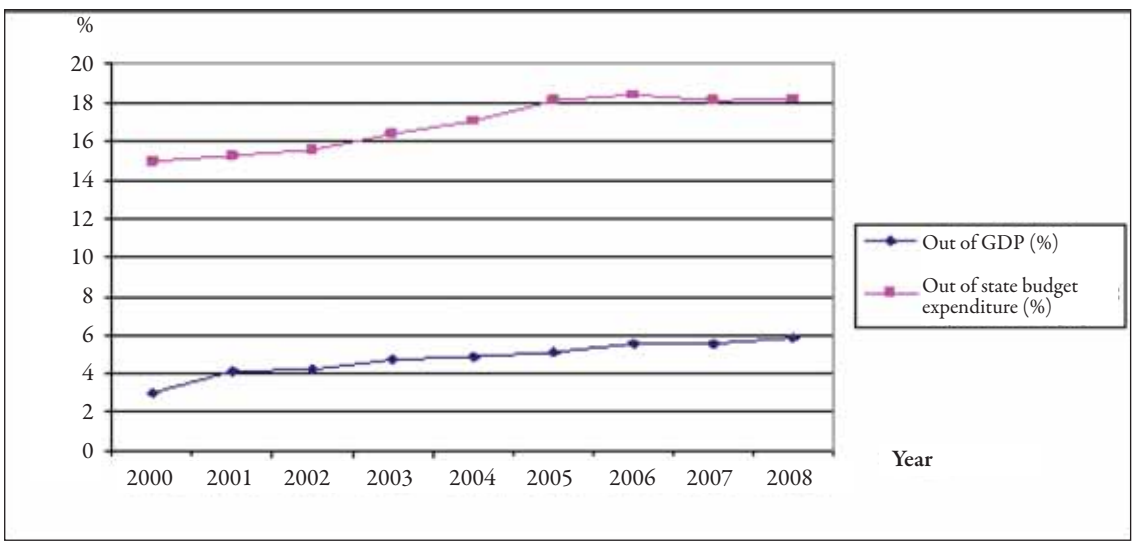
While Vietnam has done well with access to education and with primary and lower secondary education, the focus going forward will need to be on pre-primary and on higher education as well as on quality of education.

Vietnam has made significant strides in raising quality, as evident in the results from grade 5 student assessments. However, the grade 5 assessments also reveal that large gaps in scores

remain between urban and rural/remote, between rich and poor and between majority and minority students. If anything, the evidence suggests that inequities may have been rising over the last few years, driven by lower rates of improvement for disadvantaged groups.[1]

The priority placed by the Government on education is evident in the Education Development Strategy for 2001 – 2010 and in decision No. 201/2001/ QD-TTG, dated 28/12/2001, issued by the Prime Minister which states that there will be an "increase in the education expenditure of the total state budget from 15% in 2000 to at least 18% in 2005 and 20% in 2010." Accordingly, the implementation of this mandate has reserved a percentage of the state budget that must be allocated to education and training services (Figure 4.16). In 2008, education expenditure reached 18.2% out of total state budget. The education expenditure out of GDP almost doubles from 2000 to 2009 (3% and 5.9% respectively). Coupled with the correct set of policy approaches, the commitment of the Government to education will prove essential as Vietnam emerges as a more dynamic economy requiring a more diverse, specialized and competitive pool of human capital.

Figure 4.16 Ratio of state budgets contributed to education: 2000-2008



Source: Ministry of Finance (2008)

4.4 Concluding Remarks

This chapter provides a general view of the state of access to basic services in Vietnam, with a focus on the urban system. Vietnam has done a remarkable job in achieving close to universal coverage in access to electricity. However, access to other important basic services such as water and sanitation still remain at low levels. It is found that access to water and sanitation seem to

increase with city size. This pattern of increasing access with city size is not specific to Vietnam. Countries like Colombia and South Korea, which are now at advanced stages of urbanization, also faced uneven social landscapes as they moved from incipient to intermediate urbanization levels. Vietnam, at an incipient stage of urbanization has reached electrification rates that Colombia only achieved in 2005 at advanced urbanization levels. However, in terms of water and sanitation, Vietnam is still at levels of Colombian cities were in the early 60s, with larger cities lagging behind compared to the largest Colombian cities at that time. Colombia and South Korea managed to move towards universal access to water as urbanization proceeded. The indicators presented in this chapter suggest however, that Vietnam faces three additional issues in the process of achieving a flatter social landscape.

First, it is important to make use of the potential of tariffs as a source not only of recovering operating costs but also as a way to finance infrastructure investments. In the coming years, Vietnam will have to introduce reforms so that fees reflect operating costs, and allow for recovery of other costs like debt financing and infrastructure investments, as well as supporting moves towards higher quality of services and sustainability. However, setting prices for goods that have traditionally been subsidized by the government might be difficult. For that, it is important to understand not only the costs of provision but also how these compare to what individuals can and will pay.

Second, as Vietnam moves to higher income levels and universal access is achieved in other services as has been done with electricity, the next goal should be to focus on quality of services. For instance, quality of education services will need to improve if Vietnam is to position itself to build a resilient and diversified high income economy. In some of the other sectors like water and sanitation, inefficiencies and quality deficiencies are high in the provision of public services. Reducing inefficiencies in service provision is a strong tool to increase accessibility at low additional costs and improve quality. Increasing the orientation of these companies towards more efficient service provision, creating more transparency, and promoting private sector participation (where it makes sense), are all strategies for improving the efficiency and quality of service providers.

Third, provinces and their subsidiary companies are financing themselves through a range of sources: equalization transfers from the central government, taxes, land sales, short-term debt, local development investment funds, and sometimes through cross-subsidy from profitable subsidiary entities of provincial public utility companies. The merits and risks of these approaches need to be further examined, as alternatives are considered (see Box 4.7). For the poorer provinces, the equalization formula has been a cornerstone in enabling access to basic services, and should be maintained. At the same time, there is room for improvement in strengthening and deepening the ability of provinces to leverage other sustainable sources of financing..

Box 4.7 Municipal Development Funds as an alternative source of financing basic services

Municipal Development Funds (MDFs) are parastatal institutions that lend to local governments for infrastructure investments. These are essentially financial intermediaries that provide credit to local governments and are usually seen as an intermediate step in the way towards self-sustaining municipal credit systems that can access domestic and international capital markets for financing. There are two main types of MDFs. The first type, currently more widely used in the developing world, functions as a substitute for government capital grants to local authorities. These MDFs provide capital at below-market rates combining subsidized loans with grants. Usually, these MDFs exploit the favorable terms of their loans to impose strict standards of project preparation and implementation, Furthermore, MDFs can support central or state government priorities through their decision of which projects should be funded. Market deregulation has allowed MDFs in Western Europe (e.g. Credit Local de France) to transform in time into institutions that compete freely with private-sector lenders. This type of MDFs has been usually used in countries where there is little or no private lending to local governments. It has also been used in cases where public authorities believe that private credit markets cannot be developed in the short and medium term.

A second type of MDFs is those that are used to serve as a bridge between local governments and the private credit market. These MDFs lend at market rates, allocate capital according to decisions of private lenders, transfer all credit risk of municipal loans to private lenders, and keep a record of municipal creditworthiness. Examples of these market-oriented MDFs include the one developed in the Czech Republic and FINDETER in Colombia. The Czech Republic's MDF borrows funds from abroad with a national government guarantee, and then transfers these funds as loans to commercial banks which in turn provide loans to municipalities. The MDF just acts as a guarantor, confirming the creditworthiness of commercial banks and makes capital available to them. FINDETER, in Colombia, has a poverty alleviation mandate that it has tried to fulfill by favoring loans directed toward investments in water and sanitation. This MDF leaves all commercial risk to private banks, but supplements the banks' project appraisal capacity, improving the technical quality of their lending.

Source: World Bank (http://go.worldbank.org/RMA8XTGZG0)

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Policy Issues And Options for Further Analysis

Vietnam is now widely considered a developmental success story. Driven by the Doi Moi reforms begun in 1986, Vietnam has rapidly evolved from one of the poorest countries in the World into an emerging middle-income country. In the span of about 25 years its GNI per capita has risen from less than $100 to over $1000, living standards have tripled and the poverty headcount has fallen by 80%. With its accession to the World Trade Organization (WTO) in 2007, Vietnam has emerged as a global and regional powerhouse: international trade represents 160% of GDP; exports have grown by 14% annually from 2006-2010 and many industrial exports have grown much faster. Vietnam attracted more net foreign direct investment commitments than Indonesia, the Philippines and Thailand combined as of 2011.[1]

The country's long-term development prospects are solid, but the sustainability of its growth will necessitate a shift from a reliance on low-cost labor and natural resources exploitation to a greater focus on productivity growth and technological advances while also ensuring greater macroeconomic stability.[2] As Vietnam emerges as a middle income country the focus will necessarily shift to addressing sustainability, quality and equity of growth while tackling universal problems of weak governance that could threaten the other three pillars of the development agenda. An integral part of Vietnam's transition from low to middle income and beyond will depend on how well it manages the transition from a largely rural to an urban-industrial economy – a transition that is now well underway.

Urbanization is a central element of Vietnam's economic growth strategy. No country has achieved high income status and strong economic growth without urbanizing and nearly all countries become at least 50% urbanized before fully reaching middle income status. Vietnam is very definitely on that path. Vietnam's urbanization process will continue at a rapid pace for the next 10 to 15 years, and between 2020 and 2025 it is expected that 50% of the population will be living in urban areas.

The rural to urban economic transition is happening at an even faster rate and consequently Vietnam will need to carefully manage the tradeoffs that will come with rapid urbanization. There is the potential for increased congestion costs, regional inequalities, increasing urban poverty and rising land and housing prices. Many of these risks are already manifest and increasing rapidly. Urban poverty and its consequences can proliferate rapidly, especially in smaller urban areas less equipped to address these problems. Pollution from urbanization will also increase without proper mitigation. At the same time, Vietnam must be ready to employ urbanization as an instrument to sustain economic growth. This will mean, inter alia, ensuring the economic competitiveness of key economic regions, ensuring the social and environmental sustainability of cities making them desirable places to live and work for all segments of society and increasing productivity through accelerated technological advances and a better trained, educated and mobile labor force.

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1 World Bank East Asia and Pacific Economic Update, 2011: Securing the Present, Shaping the Future

2 Country Partnership Strategy for Vietnam, September 9, 2011 (Working Draft)

5.1 Summary of emerging issues

The Vietnam Urbanization Review provides an overview of the on-going urban transition that is happening in Vietnam. The analytical approach of looking at the transition across five areas (economic, administrative, demographic, physical and welfare) provides a useful framework for understanding how well Vietnam is making the transition from a rural to an urban society. On most accounts the transition has been positive with rising incomes, reduced levels of poverty and strong economic growth. The Review, however, identifies some areas on which policy makers may need to pay more attention as Vietnam continues to urbanize and modernize.

5.1.1 Spatial considerations

The Urbanization Review indicates that Vietnam's economic growth and most of its urban population growth are driven by the two independent dominant core-periphery urban systems of Ho Chi Minh City and Hanoi. It also suggests that these two areas are developing in different ways, with Hanoi moving more rapidly into heavy and higher technology manufacturing over the past ten years, while HCMC is still the largest manufacturing region in the country. The more rapid growth in higher value added manufacturing in the Hanoi region may be due to its proximity to the industrial centers of China or it may be due to having started from a lower industrial base than HCMC and the possible saturation of lower value added industries in HCMC compared to Hanoi. The dominance of the two major economic regions of the Red River Delta Region and the Southeast, together with the emerging economic region of the Mekong Delta Region are to be expected at this stage of Vietnam's urban development and economic growth. Ensuring the global competitiveness of HCMC region in particular will remain important. HCMC and the region still accounts for the bulk of economic activity in the country, including 71% of seaport throughput and 62% of industrial activity, if the Mekong Delta Region is included. The country's economic growth and competitiveness will depend on the competitiveness of these regions. Understanding the differences in economic competitiveness of these regions would imply that different policy options need to be considered to ensure the economic competitiveness of these two important regions.

Notwithstanding the rise of important urban centers, rural areas are still the major source of livelihood for a large part of Vietnam's population and 93% of its poor. For areas without strong economic potential comparable to large cities, a different set of policy interventions will be needed, depending on the specifics of local endowments.[3] Investing in people (education and health) as well as infrastructure (roads) and universal access to basic services will level the playing field and facilitate the fluidity of factor markets. This will enable firms and households to choose the best location for economic activities, and therefore maximize the efficiency of economic development in Vietnam. Agriculture and agribusiness

[3] For instance, cash crop production in areas of favorable agronomic potentials is a clear possibility.

activity account for a combined 40 percent of GDP and more than one-third of the country's merchandise exports. Over the past decade, major advances have been achieved in reducing rural poverty, expanding agricultural output and trade, and improving the access of Vietnam's rural population to transport, water, and other services. Yet, there are growing concerns about the quality and sustainability of agricultural growth, a growing gap in living standards between urban and rural areas, the lack of connectivity of certain regions and communities, and the vulnerability of rural areas to extreme weather events and incipient climate change impacts. While the thrust of Vietnam's economic planning contains the vision of a modern industrial society, a core challenge facing Vietnam during the coming decade is how to transform its agricultural sector and rural economy. If this does not occur, then progress toward the larger socio-economic vision will be delayed or even derailed. What role cities, especially small and medium sized cities can play in bridging this divide in Vietnam would be an important policy question when considering rural-urban linkages and ensuring an even flatter social landscape between urban and rural areas as the country continues to urbanize.

5.1.2 Connecting the urban portfolio

Investing in logistics infrastructure will be critical to developing and sustaining the competitiveness of the country's strongest economic regions. In order to maximize the benefits from agglomeration economies, the movement of production factors within/across the metropolitan regions should be smooth and low cost. Considering the economic mass of the two special cities of Hanoi and HCMC, freight movements will be heavily concentrated in metropolitan corridors connecting the city center and its suburban areas and ports. Reducing transport costs in these areas will be a high priority in order for Vietnam to facilitate successful urbanization. When comparing different characteristics of freight movements in Hanoi and HCMC, it is clear that differentiated policy interventions are needed. Connectivity can be improved not only through strategic transport and logistics investments, but through regulatory reforms to improve service quality in trucking and logistic services. These remain underdeveloped and are undermined by shippers' tendency to focus on managing transport costs alone rather than full logistics costs over the entire supply chain. Potential cross sector analytical work would be focused on trade and logistics studies for the most economically competitive regions.

5.1.3 Urban planning

Planning and urban management in Vietnam rather than facilitating the fluid functioning of land and housing markets is still overly based on static design principles,. In order to ensure that Vietnam's cities continue to play a catalytic role in the country's economy, planning processes and agencies need reform. Policy priorities would focus on improving integration and effectiveness of planning agencies, moving from static to dynamic plans, using sharper tools to better monitor real changes taking place in the land and housing markets in real time. This might include developing city wide housing demand and affordability profiles, which are

monitored frequently, tracking supply and demand for housing across diverse market segments and analyzing core demand and supply variables affecting access to land and housing across the entire market.

Vietnam would be well advised to consider complementing its master-planning approach with more frequent strategic planning updates, and adaptive management strategies based on current socio-economic data and real market trends to complement and lead design oriented development. This will facilitate better integration of overall planning with other planning processes (such as socio-economic development plans and land use plans). The setting up of agencies such as the Ho Chi Minh City Institute for Development Studies which brings together social, economic, land use and physical planners is an important development in that direction. The Institute for Research and Urban Planning of Curitiba has been globally recognized as a model for integrated and long-term planning that delivers results and is evidence based. In Asia Singapore and Hong Kong are often cited as examples of international good practice for planning, enabling closer coherence between spatial objectives and effective provision of physical and social infrastructure. More precise tools can also be developed to allow city managers to better implement urban management strategies. Introducing such flexibility will be important for cities to develop in ways that meet the demands of the 21st century and to compete in a globalized economy.

5.1.4 Urban mobility

Vietnam's cities, including its largest cities, still have relatively good mobility, due in large part to the predominance of motorcycles as the main mode of transportation. This is changing rapidly. Hence a priority would be the development of road networks and transit systems that are compatible with rising urban densities and land use trends and that reflect consumer demand for location of housing and commercial facilities. A central challenge will be to ensure that this infrastructure is in place before there is widespread transition from two wheelers to automobiles as the largest Vietnamese cities cannot accommodate that shift in personal transport. No city in Vietnam currently has a well functioning urban transport system and even regular bus services are largely underdeveloped in HCMC and Hanoi. In the short- to medium-term, motorcycles should not be neglected, as an efficient and effective means of urban transport; and car use should be discouraged by accurately passing on its costs, including social costs such as congestion, on to car drivers. In the longer-term—i.e. in the timescale for construction of new transport infrastructure—Vietnam should prepare for motorization by investing in metropolitan urban infrastructure and urban transport systems, as South Korea has done in the preceding decades, and China is doing now. Investing in knowledge, capacity and management is also vitally important. There are few examples of cities in Vietnam where there is a comprehensive urban transport and traffic management system. Institutional fragmentation abounds in the sector and this represents an area of development focus. In addition, integrating transport and land use planning and development will be another important policy and practice

area as Vietnam continues to urbanize.

5.1.5 Urban land and housing markets.

Land and housing markets are critical factors in helping urban economies to function efficiently and equitably. Efficient land markets are essential to provide land to both households and firms. While labor and capital can move geographically, land is fixed and must therefore be able to adapt to different uses as determined by market demand for land intensity and development. As a result of practical limitations to increasing land supply in urban areas and the propensity for natural monopolies, government intervention may be required. Public involvement in land and housing markets seeks to enhance the efficiency of the market to deal with positive externalities associated with private development and ensure the potential for equitable access to land (and housing) assets. There is scope for considerably more analytical work to understand how housing and land markets are functioning in Vietnam. By some accounts, firms are indicating a greater ease to accessing land and the fact that Vietnam has few slums (albeit housing is often crowded) would suggest that land markets are working relatively efficiently. On the other hand, land prices in major urban areas are high compared to incomes and expected rents diverge considerably from land prices with massive segmentation. In addition, many planned projects, such as industrial zones, remain unused in many areas and land is often used for purposes other than designated uses. These would point to potential problems of over regulation, lack of transparency, use of land as a form of wealth accumulation, and possibly other inefficiencies and inequities of the market. The Urbanization Review recommends that more analytical work can be done in this area. One of the recommendations of the urban review is that there should be a more focused analysis into housing in different types of cities, and this analysis should inform how current strategies need to be adapted to accommodate the scale and nature of transformations associated with the next phase of urbanization.

5.1.6 Basic urban services

Vietnam has done a remarkable job in achieving close to universal coverage (i.e. 96%) in access to electricity. However, access to other important basic services such as water and sanitation still remain at very low levels. It is found that access to water and sanitation seems to increase with city size. This pattern of increasing access with city size is not specific to Vietnam. Countries like Colombia and South Korea, which are now at advanced stages of urbanization, also faced uneven social landscapes as they moved from incipient to intermediate urbanization levels. Several challenges are emerging as Vietnam moves along the urbanization curve. First, increasing access in some key service sectors will still be a priority as the country urbanizes, especially in medium and small cities. But as importantly, Vietnam will have to also focus on improved financial sustainability of these services as well as focus on improving the quality, efficiency and reliability of key services. Indicators suggest that Vietnam faces three additional challenges that promise to pose obstacles in the process of achieving a flatter social

landscape: tariff policy and increasing cost recovery; improving service quality; and financing for basic services.

Another policy area of importance is the challenge of local government finance for these infrastructure services. Legislative changes in 2002 devolved increased powers and responsibilities to the provinces and to the special cities. The share of expenditures allocated to the sub-national level since then has increased to 48% in 2002, up from 26% in 1992 and these continue to increase. But most local government revenues come in the form of intergovernmental transfers from the central government and most of those revenues (63%) originate in HCMC, Ba Ria Vung Thao and Hanoi. Local governments have limited options to raise own-source revenues and increasingly rely on the sale of land for investment. In 2008 nearly 20% of HCMC's budget was financed through land sales and 30% of Da Nang's budget in 2006. User fees in most services do not cover operating costs and do not generate revenues for investment. Many utilities rely more on non-core functions for revenue than they do on service fees: the Thanh Hoa Water company earns only 50% of its revenue from its water supply services, EVN has established four real estate companies and many provinces generate revenues from profitable subsidiary companies through activities such as property development and construction. Sustaining strong investment in cities will depend on more sustainable sources of financing.

5.2 An emerging program for continued World Bank support

The World Bank has been a strong supporter of Vietnam's urban development. But as Vietnam moves from a low income country to a middle income country and beyond, the urbanization process and urban development will become an increasingly important part of the Bank's development assistance in Vietnam. A greater focus will be placed on knowledge and services in Vietnam to assist policy makers and other stakeholders to better address these development challenges. One of the primary objectives of the Urbanization Review is to identify challenges for a smooth urban transition and to identify areas for further analytical work that will build on the initial analyses and messages of the Urbanization Review. Some of the analytical work that will be undertaken over the next three years as a point of departure from the Urbanization Review are discussed below. It is not an exhaustive list, but rather an indication of the emerging importance of the urban sector in the Bank's support to Vietnam and responds to some of the policy challenges indicated above.

Spatial Dimensions of Urban Poverty: Urbanization is not just about changing geography. It is also about profound changes in the way people live and work. Poverty, measured in terms of core basic needs, is still predominately a rural phenomenon in Vietnam. But this is changing. Workers are moving out of the agriculture sector and into industry and services in growing numbers, accompanied by high rates of internal migration – to large cities, but also smaller cities and rural townships. Young workers are highly mobile: according to the

2009 Census, 23 percent of 21-25 year olds living in urban areas moved there in the last 5 years. New opportunities come with increased risk, as witnessed by employment and wage impacts of the 2009 global economic crisis, and Vietnam is struggling to keep up with rising demand for local public goods and services due to rapidly growing urban populations. The face of poverty is changing in Vietnam and inevitably will become more urbanized in the future. A greater understanding of how poverty, both in terms of incomes/consumption expenditures and access to public services, varies across the urban hierarchy is needed to inform poverty reduction strategies in Vietnam. The work on urban poverty will focus on the following:

(i) ***Describing poverty across the urban hierarchy:*** The analysis will demonstrate that while poverty remains largely rural at the aggregate level, urban poverty in Vietnam is indeed growing in importance. An important objective of the work will be to answer the question of whether efforts to address urban poverty in Vietnam should explicitly recognize its spatial distribution and attach particular significance to small towns.

(ii) ***Explaining differences in urban poverty rates:*** Having described poverty across the urban hierarchy, the research study will examine more closely how city size and poverty are related and investigate whether the observed poverty-city size relationship in Vietnam could arise out of a particular spatial distribution of cities in which town size declines with distance from a dominant metropolitan area. In other words, the research study will ask whether agglomeration externalities radiate out only from dominant cities such as Hanoi and Ho Chi Minh City or arise also out of growth in other conurbations.

(iii) ***Rural-urban linkages:*** The research study will then investigate whether growth and poverty alleviation in Vietnam's small towns could also serve as an important entry point to rural poverty reduction.

Logistics for Trade in Vietnam: The Vietnamese economy grew at an average annual rate of 7.1% in real terms over the 20-year period ended in 2010. While the current transport and logistics system (defined as the combination of infrastructure networks, service delivery, and the regulatory environment) has not impeded Vietnam's export-induced, investment-led growth, logistics costs remain high by comparison to other countries in the region and beyond. High logistics costs reduce growth potential and could soon become a more critical impediment to economic growth sustainability. In addition, as Vietnam transitions to middle-income status there will be new demands on the country's transport and logistics system in order to meet the more complex business requirements associated with the movement of higher value-added commodities. The country's increasing integration into global supply chains, accentuated by Vietnam's 2007 accession to the World Trade Organization, has brought about particular performance challenges for the handling and management of international shipments. Such competitive mandate will only intensify in the years ahead. Consequently, the country faces

the challenge of not only addressing constraints in the current system but also developing more modern logistics, capable of meeting the current and future demands of an increasingly connected middle income country.

At the same time, the risks posed by climate change underscore the need for Vietnam to address the challenge of reducing greenhouse gas (GHG) emissions—including those generated by the freight transport sector. Among non-air-freight transport modes (air freight, by far the most carbon-intense mode, captures a negligible share of freight transport in Vietnam), road transport produces, in most applications, more CO^2 emissions per ton-kilometer than any form of rail or waterborne transport. Vietnam is increasingly becoming a road-intensive economy: it's roads account for about half of all freight flows by tonnage and for almost 40% of total freight in ton-kilometers. Perhaps of more significance, road freight volumes have grown faster than those hauled by rival modes over the recent past and are projected to continue to do so for years to come. Given the existence of capacity constraints in the country's road network and the increasingly costly environmental impact of road use for freight movements, it is desirable for Vietnam to develop and maintain viable, greener alternatives to road freight transport as an integral component of any strategy to improve the competitiveness of multimodal transport and logistics.

To help the Government of Vietnam assess the nature of costly transport and trade logistics bottlenecks country-wide, the World Bank is currently undertaking a Trade and Transport Facilitation Assessment (TTFA) to identify regulatory, institutional, economic, and physical impediments to efficient domestic and international commodity flows. In addition, to help the Government find ways to both increase logistics competitiveness and reduce GHG emissions, the Bank is carrying out a two-phase study on Inland Waterways and Coastal Shipping to identify opportunities to better utilize coastal and inland waterways in cargo transport, with the objective of proposing economically viable, emissions-impacting interventions in this area. To operationalize these ideas, the various recommendations coming out of both these studies will then be brought together into a coherent narrative, prioritized and, where viable, further developed into feasibility studies that may lead to Bank-financed investment lending.

Financing for Local Infrastructure: Since 2002 Vietnam has undergone a gradual process of fiscal and functional decentralization. Provincial authorities are endowed with specific powers to prioritize resources and determine budget allocations to different sectors and to the lower tiers of governments. As a result, the share of expenditures allocated to the sub-national level has increased substantially since 2002. But how public expenditure are financed at the local are limited. Most investments are financed through equalization transfers and land sales. Provinces are allowed to borrow up to 35% of the value of capital investments annually, with the exception of HCMC and Hanoi which can finance 100%. There is, however, a general lack of long-term debt financing. User fees and tariffs should represent another potential source of investment financing, but in many important urban sub-sectors, such fees are not sufficient for such investment. Water supply tariffs, for example, are generally 'subsidized' on average up to

40%, sufficient only to finance operations and maintenance. The sale of land is often used by local governments to finance investments in infrastructure, and on average represent about 20% of local budgets. While these arrangements are useful to provide bursts of liquidity, it is likely not sustainable, can lead to over consumption of land and infrastructure and generate unintended negative social and economic impacts. Local Development Investment Funds (LDIFs) are an increasingly popular vehicle for provinces to finance local infrastructure investments. But there are some risks inherent in these funds: contingent liabilities are present as the financial risks and third party contracts are ultimately borne by the provinces; there is a general lack of vision as to how these funds figure into a broader sub-national financing strategy; and there is a need for more professional management and supervision of these funds. The World Bank is active in this sector and will undertake a comprehensive review of the sub-national financing framework in Vietnam. The work will look at current practice and at options for Vietnam, by looking at global good practice, for developing a more sustainable and suitable long-term strategy and framework for local infrastructure financing.

Improving Water Supply Sector Efficiency: Market development for urban water supply has increased substantially in Vietnam. From the 1997 to 2009 the market quadrupled from a value of about $50 million to $300 million. And investment in the sector has increased with urbanization. In 1997 there were 10 water companies that served 100,000 customers or more. By 2009 that number increased to 38, a nearly fourfold increase. Remarkable increases in coverage were also realized during this period: The serviced population increased from 5,000,000 in 1997 to more than 20,000,000 in 2009; coverage increased from about 35% of the urban population to about 75% during that same period. But as indicated previously, the increases in coverage have not been even. While larger cities have coverage levels around 90%, smaller utilities and smaller cities have much lower coverage levels and these are urban areas which will be experiencing higher rates of population growth during the next round of urbanization. Despite major investment and much improvement in the sector over the past decade there is still much to be done. The agenda in the urban water supply sector increasingly rests on improving services quality and sector efficiency, an agenda consistent with a country moving to a higher level of urbanization and development. Non revenue water losses are high – as much as 40% in Ho Chi Minh City. Tariffs are low, barely covering operating and maintenance costs and there is ample room to increase tariffs and still maintain affordability for the urban poor. Some utilities derive as much as 50% of their revenue from non-core activities such as real estate development and construction services. Work in this sector will focus on improving the efficiency of water utilities in part by helping the Government of Vietnam develop financing frameworks for the sector that will promote greater efficiency while making resources available for continued expansion of coverage.

Expanding and Improving Urban Sanitation: Poor sanitation in Vietnam causes large financial and economic losses. Financial losses – reflecting expenditure or income losses resulting from poor sanitation are equal to roughly 0.5% of annual Gross Domestic Product (GDP),

while overall population welfare losses are equal to 1.3% of GDP. The majority of economic losses are shared between health (34%), water resources (37%) and the environment (15%). The annual losses per capita equal US$9.38 or VND 150,770 according to a 2009 Water and Sanitation Program report. There are also great inefficiencies in the financing of sanitation in Vietnam: in most large cities wastewater fees cover only 1/10th of operating and maintenance costs; investment needs are estimated at $15 billion over the next ten years; and there is no clear strategy for financing the sector. Moreover, there is a lack of strategy to gradually increase coverage and treatment of wastewater in Vietnam. Many cities are financing expensive, energy intensive wastewater treatment plants, but have no policy for connecting households, most of which have private septic tanks, to the wastewater collection system. This leads to inefficient and wasteful public spending. These problems are further compounded by aone-size-fits all approach to wastewater collection and treatment leading to further inefficiencies and overspending in inappropriate technology. The World Bank will work programmatically with the Government of Vietnam to systematically address many of these policy issues in order the assist the Government develop a clear policy for expanding urban wastewater collection and treatment, including developing appropriate technologies, financing and subsidy policies, and institutional and financial models for wastewater utilities.

Urban Transport and Land Use: Currently, Vietnam's cities have relatively good mobility with low commute times in large cities like Hanoi, HCMC and Da Nang. One reason for such low commuting times is the prevalence of motorcycles as the predominant form of private transport in urban Vietnam. Their numbers have increased greatly over the last decade and as case studies of Hanoi and Da Nang indicate, they account for as much as 80% of all trips in Vietnam's major cities. However this level of mobility in the absence of adequate public transit is only possible because there is still a low level or car ownership in these cities. The other reason for low commuting times is the characteristic mixed land use neighborhoods of Vietnamese cities, which result in the close proximity of many of the day-to-day trips individuals typically make (e.g. a dispersion of jobs and housing). Also the prevalence of shop-houses, where many people live in the space above (or behind) their stores contributes to this low average commuting time.

However, the number of cars is expected to increase substantially in coming years. The principal driver of that rise is likely to be increased per-capita incomes, as has been the case in most other countries and a propensity for individual, private transport. Land use and transport modes are intricately linked. While Vietnam's cities have densities high enough to support mass transport systems, cities like Hanoi and HCMC are global outliers with virtually no mass transit systems in place for such high density cities. The transition to mass transit will require significant work. The World Bank will continue to work with Vietnam on making the transition to mass transit and to smart urban development. This will include, inter alia, working with cities such as HCMC, Hanoi, Hai Phong and Da Nang on improving public transport sooner rather than later, promoting transit oriented design (TOD) to better control land planning and

development and maintain high density. In addition, the Bank will provide technical support and advisory services on travel demand management (including parking management for motorcycles), pollution control for motorcycles (including e-bike and emissions standards), and improving safety and comfort for walking and non-motorized transport.

Ho Chi Minh City Development Assistance: Ho Chi Minh City has played a critical role in Vietnam's economic development. HCMC, together with the Southeast Region is leading the country's transition from a rural to an industrial society. More than 20% of the country's GDP is generated in HCMC and 45% of industrial manufacturing is concentrated in HCMC and its economic region. Its economic geography is also helping to generate increasing industrial growth (especially agro industry) in the Southwest and especially the Mekong Delta region. But the growth comes with many challenges. Logistics and transport costs are very high which threatens to reduce the competitiveness of the region. Rapid population growth is pushing growth outward, rather than upward leading to a dispersion of jobs and sprawl. This is largely induced by the expansive use of the motorcycle, which leads to a dispersion of housing and jobs. Virtually no mass transit options currently exist in HCMC, despite densities high enough to support it. Though this is changing, it will be many years before the planned systems are built. Transit will have to take into account the changing land use patterns of the city.

The outward expansion is also leading to development in the lower lying regions of the city. Already flooding events, which threaten to increase with sea level rise and increased rainfall from climate change, are increasing on the urban periphery. Basic urban services in HCMC are not keeping pace with the urbanization: only 7% of wastewater in HCMC is treated leading to increased pollution of water ways; water losses are over 30%; and only about 15% of sewer drains have been upgraded to meet current demands. The city has few tools to finance much needed investment with few options for own source revenue generation and a heavy reliance on land sales for a large share of the budget. But high land prices also suggest affordability for land and housing is increasingly a problem. The World Bank will work with local institutes in HCMC, such as the Ho Chi Minh City Institute for Development Studies, to assist the city in understanding these challenges more deeply as it emerges as a mega city in South East Asia. The main focus of the work will be to understand the impacts on the city's economic competitiveness and social and environmental sustainability objectives and the demands the pending structural transformation will place on its human and physical fabric. Much of the other analytical work outlined in this concluding chapter, will serve to support this effort.

Housing Market Segmentation Studies: As discussed in this report, Vietnam has so far managed to foster a rather pluralistic system of housing production in the country. However, as urbanization increases in scale and changes in nature – and as incomes increase as well, the current approaches will need to be strengthened and adapted in a more deliberate manner, and integrated with the overall urban planning and land use development process. Further analytical work would serve to deepen the very initial housing market segmentation analysis done for Hanoi and Ho Chi Minh City in this review, as well as to extend the approach to

profile cities of different sizes and different locations. The objective is to use a standard approach to understanding how housing markets function across different types of cities in Vietnam - and to use this analysis to help shape a focused housing sector policy for Vietnam. This would be part of a regional set of housing market assessments that would allow policy makers to better understand market dynamics before developing long-lasting policies. The objective of these assessments would be to systematically implement the following actions.

(i) Develop and monitor housing demand and affordability profiles for cities, by looking at household income and expenditure brackets.

(ii) Track how different supply (housing production) options in the city are meeting the demand segments. Analyzing these different streams of supply, and the bottlenecks they face, is a crucial step in formulating more precise and targeted Government programs.

(iii) Conduct an analysis of how core demand side variables (access to housing finance) and supply side variables (access to land, materials, etc.) are effecting each market segment in a particular city and understand how the relevance of each variable changes across market segments and cities, and how these variables relate to each other.

Land Governance and Land Market Assessments: Land is one of the fundamental inputs into urbanization. The management of land and the policies and institutions (formal and informal) which govern land development, land market transactions and land use are at the core of the urbanization process. At the same time the value of land (present and future) is often the basis of financing a lot of urban infrastructure in cities. In countries where the local revenue collecting possibilities are insufficient due to institutional frameworks and intergovernmental fiscal policies that are more tilted towards higher levels of Government, there is a strong increase in the local government incentive to sell land to finance its activities. Often local governments focus on marketing land assets to investors (often domestic and foreign speculators) for new towns, or IT parks, or Industrial Zones – without an objective assessment of the true dimensions and locations of demand. Often these transactions are not based on market prices, and eventually prove expensive to the Government - while also impacting the efficiency of the urban form and the potential for agglomeration economies. There is a powerful linkage between land, municipal finance, infrastructure, urban form and overall city socio-economic performance.

Understanding the dimensions of Land Governance and Land Markets in a country is fundamental to developing a viable and long-term approach towards desirable urban development. While there is some understanding of these issues in Vietnam, a deeper understanding would help inform land policy for a rapidly urbanizing Vietnam. The Urban Review recommends a systematic analysis of this issue. The assessment would include analysis of land markets and land governance dynamics across different types of cities - and also look at the crucial linkage between national and provincial policies, practices and regulations and their

impact on land markets in Vietnamese cities. More systematic and detailed land price surveys will be carried out to inform the analysis. Finally the Land Governance and Land Market assessment would also provide more detail on relevant mechanisms and policies used by other countries to engage in an equitable, transparent and efficient leveraging of value from land (such as land pooling and readjustment schemes, or transparent and open government land auctions coordinated within the framework of a strategic master planning process). This would also be part of a regional initiative.

Urban Planning and Management Systems in Vietnamese Cities: As mentioned, the urban planning system in Vietnam has two fundamental areas where it can be strengthened. The first is that the prevalent master planning approach in Vietnam is not evidence based – and can be significantly strengthened to more accurately respond to the dimensions and locations of demand and of market forces. The second is that like many other countries, the planning system is a fragmented and silo based system without adequate integration and coordination across either functional or spatial jurisdictions. These are both very important problems to remedy – especially as the efficiency of the urban form and the benefits of long-term economic agglomeration will strongly depend on the extent to which these deficiencies in the urban planning system can be addressed. Through the ongoing Eco2 Cities program, the Bank will be providing support to a few cities on improving their overall urban management and urban planning systems. This work would be focused in cities where the Bank is actively engaged in an urban lending program.

5.3 A final word

5.3.1 Limitations of the Urbanization Review

The Urbanization Review focuses on some key areas for successful urban development: connectivity; land and housing, urban planning, urban transport and basic urban services. These areas were chosen after extensive discussions with government, non-governmental and private sector stakeholders who identified these topics as among the priorities for review. This is by no means an exhaustive list of the topics and policy areas that will be important to consider within the context of Vietnam's urbanization process. Governance, for example, is a topic that cuts across all of Vietnam development challenges and is only addressed in a very indirect and implicit way in this report. But issues such as the weaknesses in institutional capacity and public sector management, lack of accountability, the need for stronger citizen participation in society, improving transparency and reducing corruption are as much constraints to Vietnam's urbanization process as they are to its overall development.

Similarly, the Urbanization Review does not discuss the challenges in health and education that will present themselves as Vietnam moves to modernize its economy, maximize welfare through economic growth and strives to meet the targets set out in Vietnam's Socioeconomic

Development Strategy for total factor productivity and human development index performance benchmarks. The report only briefly touches on issues of urban poverty, but this, together with growing inequality, may become problems to address as Vietnam urbanizes. That these important areas are not discussed in detail in this report is a reflection of the need to limit the scope of the work, and is not meant to downplay their importance. The World Bank is indeed addressing these issues through other forms of analytical work that will contribute greatly the urbanization agenda. It is hoped that this report will lay the foundation for more in-depth and focused analytical work on the urbanization agenda, and will prove a valuable resources to policy makers and urban development practitioners in the future.

5.3.2 Creating a learning network

The urban agenda in Vietnam is broad and it is deep. The urban transformation, as has been indicated, will shape and be shaped by Vietnam's overall development process. The urbanization challenge process itself will be one of the driving forces of the country's development and it will present policy makers and society with new challenges. To support the overall policy dialogue, the World Bank will support the Government of Vietnam through the development of a learning network. This can take many forms, but for the urban sector it would be grounded in the Vietnam Urban Forum. The Vietnam Urban Forum, led by the Ministry of Construction, but open to a wide variety of stakeholders including other Ministries, local governments, donors, NGOs and private sector stakeholders, can provide a unique opportunity to share knowledge about urbanization challenges, policies and good global practices. The Urban Forum will be the primary, but not only vehicle, through which World Bank supported analytical work on urban development issue will be disseminated and discussed with a large audience. This provides an opportunity to work across a variety of partnerships to strengthen our collective knowledge about Vietnam's urbanization and to provide the best advice to the Government of Vietnam.

Vietnam Urbanization Review

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