

# Ho Chi Minh City: The Challenges Of Growth



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*David Dapice*

*Jose A. Gomez-Ibanez*

*Nguyen Xuan Thanh*

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# Foreword

Viet Nam's transformation over the past two decades from a least developed, transitional economy to a middle-income country has taken place hand in hand with a process of rapid urbanization. The most recent census data for 2009 places Viet Nam's urban population at well over 25 million, accounting for 29.6 percent of the total population, up by 40.4 percent from the previous census exercise of 1999. This process of urbanization poses important challenges to policy makers in a wide range of areas, from the promotion of the local economy, to the development of urban infrastructures and the provision of social services for its residents, migrant or registered. Nowhere are these challenges more pressing than in Ho Chi Minh City, the country's largest city and its commercial capital.

This policy dialogue paper focuses on two main challenges that Ho Chi Minh City currently faces in managing the rapid transformation of its urban landscape and population structure: traffic congestion and the development of new urban areas. The paper examines how interventions in areas such as traffic management, the improvement and expansion of public transport services and networks, transport infrastructure development and urban planning can help local authorities in Ho Chi Minh City successfully address these challenges in the coming decades. It also assesses their implications for public investment, public financial management and decentralization policies in Viet Nam.

Although the focus of this paper is on the specific case of Ho Chi Minh City, the findings reported in this study are also applicable to other expanding urban areas in Viet Nam. This obviously includes Ha Noi and its surrounding areas, the second largest urban concentration in Vietnam after HCMC, but also cities such as Hai Phong, Can Tho or Dan Nang, which are also experiencing an important transformation of their urban landscapes.

While the ideas expressed in the paper do not represent the official views of UNDP, we hope that the recommendations presented here will stimulate discussion and debate among researchers and policy makers in Viet Nam and elsewhere on this important topic for Viet Nam's development.

I would like to take this opportunity to thank the research from Harvard University's John F. Kennedy School of Governance's Vietnam Programme for their insightful analysis and constructive policy recommendations. I would also like to acknowledge the generous support received from the UK's Department for International Development (DfID) and the Spanish Agency for International Cooperation and Development (AECID) to UNDP's policy advisory work in Viet Nam, without which this paper would not have been possible.

Setsuko Yamazaki  
UNDP Country Director

# Abstract

HCMC is the largest city in Vietnam and is the economic center of the country. Its official population in 2007 was 6.6 million, a 3.1 percent annual increase from 2002. However, the total population including migrant workers may be as high as 8.7 million. Independent estimates based on enterprise employment, motorcycle registration, and construction permit data also suggest an absolute increase of 400,000-500,000 people in the city a year. Since infrastructure, beyond some minimum, should be related to population growth, the current amount of major urban investment is lower than it should be. As a result, the city is facing two critical and related challenges, namely, traffic congestion and development of new urban areas. These challenges have prompted the city government to develop a modern transportation system, including expressway and metro rail transit (MRT) systems, and a land use and urban development plan to accommodate the growing population and the higher income lifestyles that city residents could increasingly afford.

Recognizing the fact that motorcycles are fairly efficient users of street space, even if not as efficient as buses, the main priority in traffic policy is to discourage or delay the shift to the automobile. Bus use could and should be increased, but the prospect for dramatic relief from this quarter is probably limited especially now that HCMC residents have become accustomed to the convenience of a motorcycle. Nevertheless, exclusive lanes for buses and bus rapid transit should be explored. Despite all of these measures, the city must invest in added transportation capacity to accommodate its rapid growth. Both the MRT and expressway systems are expensive so that it is unlikely that they will be completed in their entirety. Therefore, it is important that the most valuable projects be built first with priorities being driven more by objective cost and benefit analysis than by funding opportunities.

To accommodate the growing population, development of large-scale new urban areas is inevitable. The city government must make sure that new urban developments be located on land appropriate for building, avoiding low-lying wetlands. The historic core of the city in Districts 1 and 3 should be protected, so that the city remains the Pearl of the Orient. Toward those ends, it is appropriate to develop satellite centers to disperse central business district functions and reduce pressure on the historic neighborhoods. However, these developments are not financially viable given the extremely high cost of land. When land costs tens of thousands of dollars for even a modest official plot, it puts ownership of urban housing beyond all but a very few. Hence, the government should seek to bring down the price of land through more transparent conversion of agricultural land into urban land at low transaction costs, and introduction of a local property tax system.

Finally, HCMC should be allowed to retain a larger portion of its tax revenue to finance its new transport and urban development projects. A new division of tax revenues between rich and poor provinces is needed to reflect this. However, simply allowing richer provinces to keep a larger share of their tax payments would not be productive without major enhancements to project planning and implementation.

The views expressed in this paper are those of the authors alone and do not necessarily reflect those of the Fulbright Economics Teaching Program or the Harvard Kennedy School.



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# Introduction

Vietnam faces important challenges in managing the explosive growth of its urban areas, and nowhere more than in Ho Chi Minh City (HCMC), the country's largest city and its commercial capital. Cities are central to Vietnam's economic success, since they are the locus of a disproportionate share of the country's economic growth and activities. But the growth of HCMC has pushed up real estate prices to high levels, making commercial and residential space less affordable for businesses and households. And development pressures are threatening the historic French colonial core of the city and the wetlands to the east and southeast. Traffic congestion is increasing as the city is registering 1,300 motorcycles and 150 cars every day. The city, which the French had christened the "Pearl of the Orient", is now referred to by some as the "motorcycle capital of the world."

According to official government statistics HCMC's population grew at an average rate of 3.5 percent per year over the last decade, reaching 6.6 million by 2007. The official statistics seriously understate HCMC's growth, however, since as many as 2 million migrants are thought not to be accurately registered with the city. Rural provinces do not have an incentive to report their population losses accurately since the central government redistributes tax revenues from wealthy provinces to poor provinces using a formula that takes population into account. And HCMC, as a wealthy area, is not highly motivated to report all the population it is gaining because the added services it would have to provide to the migrants might cost more than the additional tax revenues it would be allowed to retain. As a result, infrastructure investment, hobbled by transfers of 70 percent of tax collections to the central government, is completely inadequate to prevent severe congestion that will slow growth. While equity and political bargaining will always dictate some level of subsidy from richer to poorer areas, the level of transfer (or of borrowing for poorer regions) should not be so high as to strangle the growth in the most dynamic regions.

In March 2008, the People's Committee of HCMC approved a revised master plan designed to guide the development of the city through 2025. The master plan designates areas where growth is to be encouraged and includes a list of transportation and other infrastructure projects and policies designed to support the desired developments. Not all of the elements of the plan seem consistent with its goals, however, and the list of infrastructure projects is so ambitious—including four elevated expressways and six mass rapid transit (MRT) lines—that it is very unlikely that all will be built on schedule. Moreover, there is little reason to believe that the current plan will not suffer the fate of its predecessor, which was never implemented in part because the agencies responsible lacked the technical capacity and the political support.

HCMC must make some difficult choices about what policies and projects it should pursue. The city will never be able to expand expressway or MRT capacity rapidly enough to keep pace with the explosion of auto ownership and use that is likely to begin soon. As a result, city leaders must think carefully both about how to allocate existing street capacity between autos, motorcycles and buses, and about which of the expressways and MRT lines will be most effective in reducing congestion. At the same time the city needs to find a way to accommodate the strong pressures to expand the downtown and develop new urban areas without compromising significantly on the goals of protecting the historic center and preventing flooding. Finally, the city must strengthen the capacity of its government agencies to administer plans and policies.

# The Importance of Cities

HCMC and Vietnam's other cities are growing because of the economic opportunities they offer for residents and migrants. Cities exist because businesses and workers are more productive when they are located in close proximity. Economists call these gains from co-location agglomeration economies, and they arise in a variety of ways (Duranton and Puga, 2004). When firms from the same industry locate together they can better support specialized input or service providers or make customer search easier, for example, and when firms from different industries congregate they may benefit from knowledge spillovers transference and from a larger and more diverse labor pool. The higher productivity of urban labor and capital results in higher incomes, and thus it is no surprise that as a country develops it also urbanizes.

Vietnam is no exception—while agricultural output and productivity have increased significantly in the two decades since Doi Moi, urban output has risen even faster. The Vietnamese economy has grown at an average annual rate of roughly 7 percent over the last decade, but HCMC's economy has grown at an annual rate of around 11 percent, or roughly 50 percent faster (See Table 1). The concentration of production in Vietnam is vividly illustrated by realized foreign direct investment (FDI). The area in and around HCMC has over 55 percent of all FDI, while the area in and around Hanoi-Haiphong has another 25 percent. So, over 80 percent of realized FDI through July 2007 is in and around major cities.<sup>1</sup> Of course, FDI is only part of total activity. If 2005 enterprise employment is considered, taking all types of enterprises, then the southern urban group has about 40 percent of national employees and the northern urban group has 21 percent - so, in total, over 60 percent of all enterprise employees are in and around the major cities. Similar ratios are observed for exports, capital and tax payments.<sup>2</sup> In 2006, the official population of these two regions was 23 million or 27 percent of national population, split evenly between the north and south.

This concentration of economic activity is reflected in the movement of people. Vietnam's urban population is growing at an *official* 3.6 percent a year (1999-2005) but probably closer to 5 percent if unofficial urban migrants and urban sprawl into "rural" areas adjacent to cities were included.<sup>3</sup> The *proportion* of people who should be counted as urban is certainly over 30 percent and may be closer to 35 percent, while the official count is 27 percent.<sup>4</sup> With total national population growing just over 1 million a year, urban and near - urban population growth are probably now absorbing all population growth and some rural migrants each year. Given the low returns in agriculture and the tendency for younger educated workers to prefer non-farm jobs, it is likely that rural population is already declining as the formal sector continues to expand - and largely in urban areas.

But if there are advantages to concentrating activities in cities there are also costs, mainly in the form of congestion, pollution and competition for scarce centrally located sites. One of the most important functions of city government is to reduce or ameliorate these costs through the provision of infrastructure and land use planning. Roads and public transportation systems can reduce the congestion caused by large numbers of people living and working in close proximity, while drinking water, waste water and drainage systems can reduce the public health and flooding risks of concentrated activity. Thoughtful land use planning can contribute as well by locating activities on sites and at densities which generate substantial agglomeration benefits while keeping the congestion and pollution costs manageable. Housing, manufacturing and offices generate different levels of congestion and pollution, for example, and finding the appropriate match between uses and sites can be important since some sites are easier to service than others.

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<sup>1</sup> The HCMC area includes Ba Ria-Vung Tau, Dong Nai, Binh Duong and Long An. The Hanoi-Haiphong area includes Hai Duong, Ha Tay, Bac Ninh and Vinh Phuc.

<sup>2</sup> In 2000, these provinces had 53% of national GDP. The proportion is surely higher now.

<sup>3</sup> For example, the 2004 Living Standards Survey found over 70% of workers in the Southeast (HCMC area) had nonfarm jobs, compared to 84% for urban and 33% for rural. The ratio has risen since then.

<sup>4</sup> In China, the official urban count based on registration cards was under 30%, but was moved up to 40% when actual residence was used. In Vietnam, the share of labor force in farming and fishing fell from 65% in 2000 to 55.7% in 2006, caused by a drop of over two million moving out of farming, while the total labor force grew by almost six million workers. Non-farm activities absorbed all growth in the labor force plus the 2.3 million who stopped farming. (Statistical Yearbook of Vietnam 2006, pp. 50-51)

# The Actual Population and Population Growth in the HCMC Area

HCMC is the largest city in Vietnam and is the economic center of the country. Its official population in 2007 was 6.6 million, a 3.1 percent annual increase from 2002. However, it is widely believed that the actual resident population is higher than that officially counted. The “floating population” might live and work in HCMC for most of the year, but be counted as coming from their home province. It is no easy matter to count these people as they often live in “illegal” housing on agricultural land. This section discusses several alternative approaches to estimating the actual population and its growth in HCMC.

## ***Enterprise Employment vs. Population Growth***

The key to a better estimate is to identify independent data sources that seem to be more reliable than the official population estimates. One such possible source is the annual Enterprise Surveys. Between 2002 and 2005 the official population of HCMC grew by 7.5 percent while the number of workers employed in enterprises increased by 39 percent:

	In millions of people	
	Official Population	Enterprise Employees
2002	5.48	1.08
2005	5.89	1.50
% Change	7.5%	39.0%
Absolute Change	0.41	0.42

If both the population and the employment statistics are correct then the proportion of HCMC residents with a job in the formal sector increased from about one in five in 2002 to one in four in 2005. This is quite a dramatic shift to occur in only three years, and it seems more likely to an artifact of under reporting population growth. If the new jobs in the formal sector were taken by workers migrating to HCMC rather than by existing residents switching to the formal sector, moreover, then the official figures imply that all of the reported population growth came from new workers migrating without their families. This later possibility is highly improbable given that part of the population increase must have been due to births to existing residents and that at least some workers are likely to migrate with their families. An enterprise employee normally has a spouse and/or dependents who are often not formal sector employees – the population/formal employee ratio is similar to that of family size. If all the new employees were migrants who were accompanied by an average of only two additional family members each then the population should have increased by 1.26 million persons over the three year period rather than 420 thousand. This seems like a high growth rate, but it is also quite possible that the 2002 actual population was higher too. If the *actual* 2002 population started at 6.5 million, for example, the 1.26 million increase would translate into a population growth rate of about 6% a year instead of the reported 2.5% per year. It would also suggest a 2007 population in the city of 8.7 million! If migrants were accompanied by an average of three family members that would imply a population increase of 1.68 million during 2002-05 and nearly 8% annual growth (using a 2002 population of 6.5 million as the base).

## ***Motorcycles***

Motorcycles are very popular in HCMC and almost a necessity for getting around, though buses, cars and bicycles are also used to some extent. In the 2004 Living Standards Survey in the Southeast there were reportedly 71% of all households owning motorcycles. The Houtrans person-trip survey in 2002 showed that more than 90% of HCMC households owned motorcycles and that 53% owned two or more motorcycles (JICA 2004). According to the HCMC Department of Transport and Public Works, 1,300 motorcycles a

working day are being registered and added in the city. If we assume 1.5 people per motorcycle (children and some spouses do not own them; a few household heads may not use them), that would imply 487,500 new people each year being added. If there were 8.7 million people, this would imply 5.6 percent a year population growth in HCMC. This is an upper bound for the population growth rate in as much as the number of motorcycles per capita is increasing in HCMC and some older motorcycles are presumably retired or sold to surrounding provinces.

### **Registered Construction**

Newly constructed private homes and apartments have to get a construction permit in order to be built. Of course, some smaller units on agricultural land may not get a permit, but most units do. There is a rule of thumb that there are 10 square meters per person, although experts expect this to rise over time to 12-15 meters per capita, at least for legal residents.<sup>5</sup> The official registered permits for new home/apartment construction (excluding major repairs and maintenance) in recent years have been<sup>6</sup>:

	2002	2003	2004	2005	2006	2007
Million square meters of permits	1.79	2.72	3.35	4.75	4.71	5.73
Implied increase in population (in thousands)	179	272	335	475	471	573

It is true that some of the permits for new home construction are actually for upgrading, and living space per capita tends to increase over time. However, these unobservable effects are offset by the unofficial units and unregistered expansions, which are also unobservable. According to the above table, the increase in implied population from the end of 2002 to the end of 2007 is 2.1 million or 425,000 people a year on average.

### **Comparing Results**

This attempt to use other information to estimate population growth has resulted in each independent estimate yielding higher population growth numbers than the official data. The official data state that population growth in HCMC was only 198,000 a year from 2002 to 2007. Let us compare the findings for HCMC annual population growth from 2002 to 2007 using alternative methods:

Official data: 198,000

Enterprise data: 400-500,000 (at a ratio of 1 to 2 or 1 to 3 enterprise jobs to population)

Motorcycles: 487,000 (at 1.5 people/motorcycle; good for recent years only)

Construction: 425,000 (at 10 meters square per capita excluding informal)

The surprising implication of this exercise is that the official data are missing over half and perhaps as much as two-thirds of the actual population growth.

The 2006 Population Change, Labor Force and Family Planning Survey found that out of 13.3 million people counted as living in the Southeast, there had been 588,000 births from 2003 to 2006. That is 196 thousand a year or a birth rate of 1.47% [births/population a year]. If the population of HCMC were 7 million, then we would expect to observe 103,000 births a year. The crude death rate is about 4.3 per 1000 or for seven million a projected 29,000 deaths, giving a natural net increase of only 74,000. In addition, the same survey found net migration in the twelve months to April 2006 of 142.5 thousand into the Southeast. If HCMC were a bit more than half of that – say 75,000 – then the “official” net natural increase and recorded migration would match the *official* population increase fairly well. So, the statistical net is consistent with respect to observed births, deaths and migrants as compared to official population growth.

<sup>5</sup> According to the HCMC Department of Construction, the average housing area per capital in HCMC in 2008 is 13.1 m<sup>2</sup>.

<sup>6</sup> HCMC Statistical Office, HCMC Statistical Yearbook 2007.

However, consistency is not the same as accuracy. If our three alternative estimates have any validity, the official statistical net is particularly poor at picking up “informal” or “floating” workers and their families. It would also mean that infrastructure investment in these heavy migrant inflow areas is grossly inadequate – especially given the dual redistribution of remittances to home provinces and tax transfers to deficit provinces. Actual urban growth of 5-7% a year instead of 2.5% to 3% has many implications for land policy, road and water and power investments, and school and clinic buildings and staffing. It raises serious questions about the current pattern of transfers of tax revenue from major cities and fast-growing provinces to other regions.

The estimates so far have only analyzed HCMC and not the surrounding provinces. It is likely that many of the same issues arise, to a greater or lesser degree. One informal source said that while the official 2006 population in Binh Duong was 964 thousand, the province believed that actual population was about 1.4 million, or 45% more than officially counted. (If HCMC had 8 million actual inhabitants in 2006, it would have been 31% over its official population.) If the four thriving adjacent provinces had 30% more than their official population, they would have not the official 5.5 million but 7.2 million in population. This is of course merely a guess, needing much more serious effort to make a secure estimate. However, if there were not the official 11.6 million in these provinces in 2006 but instead an actual 15.2 million, that would mean that planning had “missed” over 3.5 million people or nearly one-quarter of the possible actual population, and 4% of Vietnam’s total population! Even if the actual population is lower than hypothesized here, it is very likely that there is a large understatement of actual population in the region if official statistics are used. This would also suggest a significant underinvestment in infrastructure, since most infrastructure investment relates to population and output growth rather than levels.

At this point, it is speculative to estimate the region’s population level and growth. However, if we believe the provinces around HCMC (excluding Tay Ninh) also had 30% more population than officially counted in 2002 (that is, 12 million instead of 9.2 million) and if they were growing at 6%, then by 2007 their population would be 16 million, or four million growth in five years. The entire national population growth from 2002 to 2007 was 5.5 million. This would imply that nearly three-quarters of national population growth was concentrating in these provinces. Of course, this calculation is no better than the assumptions it is based on, and they are speculative. If the 2002 population were only 20% higher than officially recorded (11 million instead of 9.2 million) and if population growth was only 5%, the actual population gain would have been three million, or 55% of the national population growth. The region’s actual share of national population growth over the last five years is probably between 55% and 75%.

## The Two Key Challenges

HCMC's rapid growth has led to two main policy initiatives to develop master plans for the city's land use and infrastructure. The first planning effort was initiated in 1994 with financial support from the World Bank and produced an urban master plan for the year 2020, which was approved in final form by the Prime Minister in 1998. The 2020 plan proved ineffective, however, in part because it provided only general guidance on where growth should be encouraged and lacked the specifics on permissible land uses and densities. This defect of vagueness was reportedly compounded by weak and confused implementation. The city's Office of the Chief Architect and the Department of Land and Housing, the two agencies nominally responsible for implementing the plan, had few qualified staff. And the land permitting process was very cumbersome, and involved controls at both district and city levels. Lacking better guidance and control, development was often opportunistic, where real estate promoters and city officials believed the profits would be highest and resistance lowest.<sup>7</sup> Within a decade of the plan's completion it was already obsolete. Some areas of the city already had more population than was forecast for 2020, while other areas that were slated for growth were lagging.

The development that occurred during this period heightened concerns about two challenges. One challenge is traffic congestion, which increased rapidly because of an explosion in motorcycle ownership. The number of motorcycles in Vietnam grew steadily during the 1990s but this pace increased around 2000 (Table 2). During this period not only were incomes growing rapidly but the government reduced the import tariffs on motorcycles and the Chinese began to export inexpensive motorcycles to Vietnam. Prices for a 100-cc Japanese motorcycle fell by roughly half, from over \$2000 to a little over \$1000, while one could buy a new Chinese motorcycle for as little as \$500. Between 2000 and 2007, the number of motorcycles in the country tripled from 6.4 million to 20.2 million<sup>8</sup>, equivalent to a national ratio of one motorcycle for every 4 people. HCMC, being more affluent, had 3.4 million motorcycles by the end of 2007, or one for every two people. As early as 2002, 92 percent of all HCMC households owned one or more motorcycles, 2.6 percent of households owned cars, and only 5 percent of households were entirely dependent on buses or bicycles.<sup>9</sup>

A second challenge that emerged during this period is the development of new urban areas. HCMC has approximately 1 million housing units and flats in urban areas and about 140,000 houses in the suburb.<sup>10</sup> And this housing stock has to support 8.7 million people as estimated above. Currently, there is a conflict between the need to expand the city's downtown and the desire to protect the historic French colonial neighborhoods that surround it. Much of the city's population and job growth has been on the city's periphery, particularly to northwest of the city center in the Tan Binh and Go Vap districts near the airport, but also to the west near the Binh Tan district and to the north around the Thu Duc district. However, developers have begun to build office towers and residential apartment buildings in the downtown, on the west bank of the Saigon River in District 1. The fact that Vietnamese economy is growing so rapidly and that HCMC is Vietnam's commercial capital has stimulated a surge in demand for downtown office space. Meanwhile the cumbersome and complicated land use permitting system and the fact that some of the best downtown sites are occupied by government agencies has slowed the response of property developers. By 2007 the mismatch between demand and supply had driven the annual rents for class A offices—modern offices of the kind that multinational and large domestic corporations insist on having—to more than US\$400 per square meter, a figure comparable to New York City and major cities of continental Europe. And the prospect of such high rents is increasing pressures to expand the downtown into the surrounding historic neighborhoods of French-era villas and shady tree-lined streets.

To accommodate a growing population and higher incomes without encroaching on the historic neighborhoods around the downtown, the city government is developing an ambitious housing development plan with several new urban areas in the periphery (Figure 5). However, these efforts are thwarted by the

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<sup>7</sup> For criticisms of the 2020 plan see Urban Planning Institute of HCMC and Nikken Sekkki (consultants), "The Study on the Adjustment of HCMC Master Plan up to 2025", report to the Ho Chi Minh City People's Committee, 2008, pp. 2-23 to 2-34; and Huong Ha and Tai-Chee Wong, "Economic Reforms and the New Master Plan of Ho Chi Minh City, Vietnam: Implementation Issues and Policy Recommendations", *GeoJournal* 49 (1999), pp. 301-309.

<sup>8</sup> Ministry of Transportation, National Committee on Traffic Safety

<sup>9</sup> HOUTRANS data as cited by Systra MVA, Ho Chi Minh City Metro Rail System Study, HCMC Master Plan Ridership and Revenue Forecast Study, Final Report, January 2008, p. 8.

<sup>10</sup> Nguyen Van Hiep, "The track records and challenges of housing problem in Ho Chi Minh City at present and up to 2010", Mega City Research Project, Ho Chi Minh City.

extremely high cost of land. While housing construction costs for basic housing are reasonable – about \$100 to \$150 per square meter – the costs of land in the range of \$4,000-10,000 per square meter in the central business district (i.e. Districts 1 and 3), \$2,000-4,000 in other inner city districts, and \$850-4,000 in the newly developed eastern and southern peripheries<sup>11</sup> are so high that housing costs are well beyond the reach of most Vietnamese. As result new housing projects that are being developed are extremely skewed towards villas and luxury apartments serving high-income earners.

These two problems— traffic congestion, and expensive housing development —stimulated a second effort to prepare plans for the city. The cornerstone is a land use master plan for 2025 drafted by the Japanese planning firm Nikken Sekki and approved by the People's Committee of HCMC in March 2008. Two complementary transportation plans were also prepared, one covering the entire transportation system, both highway and rail, and a second detailing the plans for a 161-kilometer system of MRT and light rail transit lines. The preamble to the new 2025 land use plan establishes several laudable objectives. The plan should accommodate the growing population and the higher income lifestyles that city residents could increasingly afford. New developments should be located on land appropriate for building, avoiding low-lying wetlands. The historic core of the city in Districts 1 and 3 should be protected, so that the city remains the Pearl of the Orient. And the plan should be more specific and implemented more conscientiously. But the new plan leaves a number of key transportation and land use issues unresolved. These are examined in the sections that follow.

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<sup>11</sup> VietRees, Vietnam Real Estate Weekly Newsletters, 2009.



# HCMC Transport: Avoiding Gridlock on the Streets

## ***Current Traffic Conditions***

The 2025 plan places great emphasis on building MRT lines and expressways as an answer to congestion. But, as we will explain later, even if the new rail and expressway systems are built as planned most of HCMC's passenger trips will still be made on the existing streets, in motorcycles, buses or cars. Thus getting the most out of the existing street system is essential if HCMC is to avoid gridlock.

Any effort to deal with traffic congestion must cope with the city population's heavy reliance on the motorcycle and the pending explosion in car ownership. HCMC differs from most other large metropolitan areas in developing Asia in relying so heavily on the motorcycle and so little on public buses. The dominant mode of urban transportation changes as economies develop and per capita incomes increase. The usual trajectory is from human or animal powered forms of transportation—such as walking, bicycles or ox carts—to motorized public transportation—in the form of the bus or minibus—and finally to motorized private transportation—usually in the form of the automobile. HCMC has largely skipped over the motorized public stage, however, shifting directly from bicycles and walking to motorcycles. In other cities at similar states of economic development the bus typically accounts for 50 to 60 percent of urban trips, walking and bicycles roughly 20 to 30 percent, and private automobiles and motorcycles the remaining 20 or 30 percent. In HCMC, by contrast, motorcycles account for 74 percent of all non-walking trips with the bus only 5 percent, private auto 2 percent and most of the remaining percentage on bicycles.<sup>12</sup>

Bus ridership is low in HCMC in part because the bus system essentially collapsed in the two decades after reunification, so that there was little bus service available when Vietnamese incomes reached levels where they could afford to give up their bicycles and turn to a faster and more comfortable mode of transportation. Currently, HCMC's bus services are provided by the Saigon Bus Company, a public enterprise with two affiliates that operate about 900 buses, and by 28 privately-owned cooperatives which operate about 2,300 buses, many of them small size. This mixed public-private system is a legacy of the several private bus companies and the many owner-operators of lambros (a three-wheeled motorcycle with a tiny bus body on the back), bon banhs (a four-wheeled lambro) and mini-buses that existed before reunification. All public transport operators were nationalized on reunification but services deteriorated and in 1988 the government returned the vehicles that had belonged to small owner-operators to their original owners who were allowed to offer services as cooperatives. Neither the public enterprise nor the cooperatives received much support from the government, however, and bus service was extremely limited.<sup>13</sup>

Efforts to revitalize the bus system began in 1994 but have been only moderately successful. In that year the government formed a joint venture between Australian investors and the Saigon Bus Company to provide a skeleton network of four routes radiating out of the Ben Thanh, a large market in the center of the downtown. A further impetus for reform came a few years later, when the 2020 HCMC master plan concluded that the city had to develop a public transportation system. The Prime Minister endorsed the recommendation in 2000, and after two years of study the city's Transport and Urban Public Works Services (TUPWS) office implemented the "model bus" and "pilot route" reforms. The intention was to revitalize the bus system by helping to finance the purchase of a fleet of roughly 1,300 full-size, air-conditioned buses for both the Saigon Bus Company and the cooperatives, and by establishing "pilot routes" which the company or a specific cooperative would agree to service in return for government subsidies. The pilot route contracts specify the frequency of service to be provided and TUPWS uses a formula to calculate how much the service should cost and the subsidy required. Approximately 1,500 buses operated on pilot routes as of early 2006. The rest of the buses, mostly owned by cooperatives, operated on regular routes and received no subsidy. At some point during the reforms the lambros and bon banhs were banned from the city.<sup>14</sup> The model bus reforms resulted in a six-fold increase in ridership in just five years, from 57 million trips in 2002 to 380 million trips in

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<sup>12</sup> Systra MVA, Ho Chi Minh City Metro Rail System Study, HCMC Master Plan Ridership and Revenue Forecast Study, Final Report, January 2008.

<sup>13</sup> Based on interviews between the authors and officials at HCMC's Transport and Urban Public Works Services.

<sup>14</sup> The reforms are described in more detail in MVA Asia Limited, "Technical Assistance for Consolidation and Development of a Bus System in Ho Chi Minh City, Vietnam; Task 1 Report: Review of Status of Bus System", March 2006. The pre-reform system is described in Japan Bank of International Cooperation, "Urban Public Transportation in Vietnam: Improving Regulatory Framework" JBIC Research Paper no. 4, December 1999, p. 18 on

2007 (Table 5). The buses' share of trips in the city increased from 2 percent to only an estimated 5 percent, however, because the city's population and trip making rates were increasing as well.

Automobile registrations are beginning to pick up in HCMC, but so far only a small fraction of HCMC households own an automobile and many of the automobiles operated are official vehicles. Private automobile ownership is discouraged by heavy import duties and registration fees, which roughly triple the landed price of an automobile. For example, a new Toyota Camry that might cost US\$ 20,000 to land at the dock costs nearly US\$ 60,000 after taxes and registration fees.<sup>15</sup> However, small Chinese cars are beginning to be imported for around US\$ 20,000, including import duties. And if the current rate of economic growth continues it will not be too long before Vietnamese incomes reach the levels where auto ownership takes off.

### ***The Advantages of the Motorcycle***

HCMC's reliance on the motorcycle is more tolerable because they are fairly efficient users of street space, even if not as efficient as buses. Traffic engineers measure the amount of street capacity different types of vehicles require relative to the capacity required by a passenger car. Thus, for example, a bus in mixed traffic typically needs between 2 and 4 passenger car equivalents (PCEs) of capacity. A bus requires more street capacity than a car, not so much because the bus is physically larger but because it accelerates and decelerates more slowly and is less maneuverable. A bus operating express service, without stopping to pick up and drop off passengers, might have a PCE of 2 or less, for example. But a bus providing local service might have a PCE of 4 or more because the bus often blocks other traffic as it pulls in and out of curbside bus stops. However, an average bus can carry as many as 40 people, compensating for their high PCE ratio. The number of PCEs required by a motorcycle has not been extensively studied but seems to depend on the proportion of motorcycles in the traffic and the width of the traffic lanes. On streets used mainly by cars and trucks and with few motorcycles, studies suggest that a motorcycle requires two-fifths or one-third of a PCE. But on urban streets with a high proportion of motorcycles and lanes at least 3 meters wide, a motorcycle requires as little as one-fifth to one-tenth of a PCE.<sup>16</sup> In such conditions motorcyclists can often ride several abreast in a lane and maneuver past a queue of cars stopped at a red light to wait in front of the stop line, ready to take off more quickly than a car is able to when the light turns green. The municipal traffic engineer of HCMC believes that a motorcycle requires about one-sixth of a PCE under local conditions.<sup>17</sup>

These PCE estimates imply that while it would be advantageous to shift motorcyclists to buses, it is more critical to discourage motorcyclists from shifting to cars. For example, 100 people traveling on motorcycles would require 13.8 PCEs of street capacity (assuming each motorcycle requires one-sixth of a PCE and carries 1.2 passengers). The same 100 people carried on buses might require only between 4 to 8 PCEs of street capacity (assuming 2 to 4 PCEs and 50 passengers per bus). But the same 100 people in automobiles would require as many as 83 PCEs of capacity (assuming an average of 1.2 passengers per automobile). The shift from bicycles to motorcycles in the 1980s and 1990s alone probably contributed little to street congestion in HCMC because a bicycle probably takes up about as much street capacity as a motorcycle. The main source of added congestion in the last few decades was probably the increase in the total number of trips by either bicycle or motorcycle caused by the growth in the city's population and per capita incomes. A shift to buses would provide some margin to accommodate further population and income growth, but a significant shift to automobiles would quickly overwhelm the existing street capacity creating gridlock.

### ***The Difficulties of Promoting Buses***

Bus use could and should be increased, but the prospect for dramatic relief from this quarter is probably limited especially now that HCMC residents have become accustomed to the convenience of a motorcycle. Motorcycles have a disadvantage in that riders are exposed to weather and pollution, and the danger of traffic injuries is much higher. But the climate is relatively mild in Vietnam, and the motorcycle offers many of the conveniences of a private automobile, such as on-demand, door-to-door service, and the ability to make intermediate stops and carry packages and extra passengers. Many Vietnamese have more than one job and children to drop off and pick up at school, and thus value the flexibility of a motorcycle.

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<sup>15</sup> New automobiles are subject to import, special consumption, and value-added taxes whose rates were 70, 50, and 10 percent respectively. These three taxes are imposed in a cascading structure, for an overall tax rate of 180.5 percent

<sup>16</sup> Ing Husu, Ahamad Frahan Mohd Sadullah, Nguyen Xuan Dao, "A Comparison Study on Motorcycle Traffic Development in Some Asian Countries: Case of Taiwan, Malaysia and Vietnam", paper prepared for the Eastern Asia Society for Transportation Studies, October 2003, pp. 38-39.

<sup>17</sup> Interview with Le Minh Triet, Traffic Management Department, Transport and Urban Public Works Service, People's Committee of Ho Chi Minh City, May 9, 2007.

TUPWS officials argue that expanding the role of buses requires increased financial support from government and protection from congestion. The average bus fare (including transfers) is relatively affordable at 1,800 VND (US\$ 0.11) compared to monthly per capita incomes above 1.2 million VND (US\$ 75).<sup>18</sup> Fare revenues cover less than 60 percent of the bus operators' costs, however, with the government paying the balance; and government subsidies have increased from 40 billion VND (US\$ 2.5 million) in 2002 to 528 billion VND in (US\$ 33 million) in 2007. TUPWS argues that the buses are already fairly heavily loaded—carrying an average of 37 passengers per trip in vehicles with an average capacity of 50 passengers—so that more subsidies will be needed to carry more passengers, since expanding the role of buses will require purchasing a significant number of new vehicles.

But protection from congestion is more important than government subsidy. Most arterial streets in HCMC have two or three lanes in each direction. By law the curbside lane is reserved for slower moving vehicles, which means motorcycles and bicycles, the inner lane (or lanes) is for faster moving cars and light trucks, while buses can use any lane. (Heavy trucks are allowed on city streets only between the hours of 9:30 pm and 6:00 am.) These laws are largely followed by cars and trucks, although in traffic jams it is often difficult for cars turning onto a street to force their way into the inner lane. The motorcycles are less disciplined, typically ready to enter the inner lane when there is a gap in the auto traffic.

TUPWS officials argue that the difficulties of maneuvering in curbside lanes filled with motorcycles slows the buses greatly, adding to bus operating costs and reducing the attractiveness of buses to potential riders. There are no statistics available on the relative speeds of buses and motorcycles in traffic, but the popular impression is that a bus trip takes twice as long as the same trip on a motorcycle because the motorcycle is more maneuverable, has better acceleration, and does not stop to pick up passengers. As a result, busses tend to be used primarily for longer trips, where riding a motorcycle is too stressful. Thirty seven percent of bus riders are students, some of whom are probably too young to drive or unable afford the expense of a motorcycle.<sup>19</sup>

TUPWS experimented with exclusive lanes for buses to protect them from congestion nearly 10 years ago, but only a short lane at a bottleneck in District 5 remains in operation. The traffic police were opposed on the grounds that exclusive lanes might cause safety problems. But the more important objections came from the general public, which protested that traffic congestion on the remaining lanes became substantially worse. Motorcycles typically outnumber other vehicles by 10 or 20 to 1 on downtown streets, and thus forcing them all into the inner lanes with cars and trucks is likely to significantly increase congestion unless many motorcyclists switch to buses. And the improvement in bus services was apparently not enough to induce many motorcyclists to switch.

### ***Discouraging Auto Use***

As important as promoting bus patronage may be, discouraging travelers from shifting from motorcycles to private automobiles is more critical. The existing preventive policy is the high import tariff and special consumption tax on automobiles. However, it should be noted that the taxes may raise the income threshold needed to make car ownership affordable for most families, but eventually, as the economy grows, that threshold will be breached. Moreover, new car taxes and registration fees directly affect only ownership and do little to discourage those who own a car from driving in the rush hours on congested roads. As a result, other measures need to be instituted.

A relatively simple and effective strategy the government could use to discourage automobile use during congested periods is to maintain the current prohibition on automobiles in the curbside lanes. The government of HCMC has proposed to allow automobiles to use the curbside lanes on the grounds that the inside lanes are becoming seriously congested with the increase in auto traffic. But allowing automobiles in the curbside lanes would only slow the bus and motorcycle travel times relative to those for automobiles, and thereby accelerate the switch from buses and motorcycles to cars, with disastrous results for congestion. Tolerating higher congestion in the inner rather than the curbside lanes is desirable to reduce the travel times of motorcycles and buses relative to autos and thereby discourage further shifting to autos on congested roads at peak hours. It will be easier to continue to keep cars out of the curbside lanes now than to remove them from the lanes after auto drivers have come to rely on them.

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<sup>18</sup> Systra MVA's "willingness to pay" survey revealed that on average commuters between District 1 and 2 would be prepared to pay 6,100 VND for a better transport mode

<sup>19</sup> Systra MVA, Ho Chi Minh City Metro Rail System Study, HCMC Master Plan Ridership and Revenue Forecast Study, Final Report, January 2008, p. 11.

Another strategy is to charge motorists a fee to drive in congested central areas during the peak hours, much as Singapore and London do. These schemes need not be very complicated to administer as Singapore demonstrated in 1975 when it required that motorists display a simple paper license on their windscreen as proof that they had paid the special fee to enter the central area during rush hour. But such pricing schemes require careful planning and are often controversial, especially if they are implemented only after many travelers have already switched to cars. HCMC already has in place an effective scheme for limiting car use in the central area—the prohibition on automobiles in the curbside lanes—and maintaining that strategy probably would be far easier than shifting to a new policy of charging for downtown street use.

If HCMC is to continue to rely heavily on motorcycles it should try to reduce the associated safety and pollution risks. Vietnam has a very high traffic fatality rate thanks in part to its many motorcycles. The fatalities are probably disproportionately on rural roads, however, where speeds were higher. And the government took an important step in December 2007 in enforcing a law requiring motorcyclists to wear helmets. Virtually all Vietnamese motorcycles are 150-cc's or less, since larger motorcycles require a special permit and license, and the small size presumably helps reduce emissions and may cut injuries as well. But the government should investigate the possibility of taking further steps to promote safety and reduce emissions.

### ***The Hopes for New Rail Transit Lines and Expressways***

HCMC is growing so rapidly that it must invest in added transportation capacity even if it succeeds in discouraging or delaying the shift to the automobile. The greatest challenge will be to provide capacity in and around the already densely built up areas, and particularly the downtown. During the late 1990s and the early 2000s donors funded a series of studies of individual rail transit lines and expressways, with little effort toward establishing an overall plan or priorities.<sup>20</sup> To its credit, the government commissioned local and international consultants to prepare two transportation plans that were to be consistent with the 2025 land use master plan. The first of these plans, completed in 2007, was a transportation master plan covering both highways and mass transit. The second, completed in 2008, was a more detailed plan for a rail transit system. Much of the attention has focused on the rail transit plan, which calls proposals for 161-kilometer system including six new MRT lines plus a tram line and a monorail. But the transportation master plan also calls for a roughly 40-kilometer network of four elevated expressways that approach and encircle the existing center of the city. These expressways are inspired in part by the system of elevated highways that Bangkok built in the 1990s.

Both the MRT and expressway systems are expensive, however, so that it is unlikely that they will be completed in their entirety. The consultants for the transit plan offered an “order-of-magnitude” cost estimate that the entire network of 161 kilometers could be built for US\$ 9.7 billion, or an average of US\$ 60 million per kilometer.<sup>21</sup> This figure is a little low by international standards, especially if it includes rolling stock and equipment as well as civil works. Indeed the first line that is now under construction will reportedly cost twice the estimate in the plan. The MRT cost estimates are also for capital expenditures only and exclude operating costs. Most mass transit systems require significant and continuing government subsidies because they cannot recover their operating costs, never mind their capital costs, from passenger fares.

The expressways are projected to cost around US\$ 1.4 billion, or about US\$ 30 million to 40 million per kilometer, a figure that apparently excludes land acquisition costs. The proposed alignments are largely over existing streets and canals and the government hoped that the takings required would be minimal. But in some places the roads are too narrow and the canals too serpentine to avoid significant land takings. The government has experienced substantial delays and cost overruns in previous infrastructure construction projects, which further fuels concerns that these estimates will prove optimistic.<sup>22</sup>

Even if these new systems are completed on time and on budget, moreover, they will not provide enough additional capacity to make it unnecessary to manage the existing streets carefully. The 2025 mass transit plan projects that the proposed 161-kilometer rail system will increase public transportation's share of trips

<sup>20</sup> Among the studies were the “HOUTRANS” study funded by the Japan International Cooperation Agency, the “UMRT Line 1” study funded by the Japan Bank for International Cooperation, the 2003 and 2005 “Feasibility Study for the Two Priority Lines in the Metropolitan Rail System (METRAS)” study funded by the German government, the “MRT Lines 1, 2 and 3” study financed by the Russian government, a tramway study financed by the French government, a 1998 demand model financed by Britain's Department for International Development, and a bus rapid transit study sponsored by the World Bank.

<sup>21</sup> Forty-eight kilometers would be in tunnel (at an estimated cost of US\$90 million per kilometer) while 98 kilometers would be elevated (at US\$ 50 million per kilometer) and only the 15 kilometers of tram at grade (at US\$ 20 million per kilometer).

<sup>22</sup> Institute for Economic Research and United Nations Development Program, *Paying for Urban Infrastructure and Services: A Comparative Study of Municipal Finance in Ho Chi Minh City, Shanghai and Jakarta*, UNDP, Hanoi, June 2007, pp. 16-18.

carried to 44 percent, a dramatic improvement over the current 5 percent share. The consultants who produced these forecasts note, however, that only 21 percent of the public transportation trips would be by rail. If these figures are correct then 87 percent of all trips would still be made on the existing streets in busses, cars and motorcycles, although the share presumably would be lower on the approaches to the downtown (Table 4). Moreover, the consultants note that substantial improvements to the bus system, strong policies to discourage the growth in auto ownership, the efficient integration of bus and rail services and the concentration of development around rail corridors would all be needed to achieve the forecasts. Indeed in their supplementary report on ridership, the consultants warn that assumptions about bus speeds, parking charges and auto ownership “have been have been adjusted” to conform to the master plan’s target of a 45 percent public transport share by 2025.<sup>23</sup> With a continuation of current policies toward bus priority on streets and auto ownership, bus and rail’s share would increase to only 22 percent of all trips and 91 percent of all trips would be carried on the city’s streets.

Furthermore, the elevated expressways will provide relief to some parts of the street system but increase pressures on others. The four expressways are designed to relieve four congested radial arterials on the northern, western and southern approaches to the downtown as well as to provide a bypass around Districts 1 and 3 (Figure 3). The effects of these new roads depend heavily on their exact alignments and on the locations of the on and off ramps, which are still being determined. The bypass is likely to relieve pressure by on downtown streets by providing an alternate route for through trips but the radial spokes are likely to encourage more motorists to drive into the downtown, dumping additional traffic on streets that are already highly congested. And allowing the expressways to extend beyond the bypass and penetrate the downtown would threaten serious damage to the historic districts surrounding the downtown.

In this context, if in the end only some of the proposed rail lines and expressways are likely to be built, it is important that the most valuable projects be built first. Unfortunately, implementation priorities are more likely to be driven primarily by funding opportunities rather than by transportation needs. Each MRT line is associated with a donor country which has sponsored preliminary studies of the line, for example, and the order in which the lines are built is likely to be dictated by the order in which the countries are willing to offer concessionary financing. The first rail line under construction is the eastern half of Line 1, which runs from the downtown at Ben Thanh market across the Saigon River to an area in the northeast where the government is attempting to attract development with a new amusement park, an industrial park and a new site for the university. Constructing the western half of Line 1 would have brought more immediate transportation benefit since it connects the already heavily built up northwest of the city with Ben Thanh. But the eastern half was the segment that the Japanese had studied and their government offered a US\$ 1 billion loan to build it, although reportedly the cost estimate has doubled to US\$ 2 billion. The government agency responsible for the rail system is hoping that the western half of Line 2 will be built next, since it has been studied by the Germans and offers more immediate congestion relief by connecting the built up south western part of the city with Ben Thanh. The estimated cost of this segment is US\$ 1.2 billion, however, and the German government has offered only US\$ 400 million in low interest loans, enough to cover rolling stock and equipment (which German firms would supply) but not the civil works. The government has approached the Asian Development Bank for the balance.

The possibility that funding opportunities may distort transportation investments is even more likely with the elevated expressways. The government signed memoranda of understanding in 2007 and 2008 with three big construction firms from South Korea, Malaysia and Vietnam to develop feasibility studies for the four expressways. The construction companies are to propose a final alignment and financing scheme for each road. The onset of the world financial crisis shortly after the signing made financing more difficult and property values more uncertain, thereby delaying the construction companies’ proposals. But most observers expect that the roads are unlikely to generate enough toll revenues to recover all their construction costs, and that the construction companies will compensate by requesting additional land from the government along the right-of-way to develop for housing or commercial uses. It is possible that this procedure will generate imaginative proposals that coordinate the development of the expressways with adjacent parcels. But it is also possible that each company’s desire to maximize profits from its expressway and parcels will lead them to ignore undesirable impacts on others. And the lack of some kind of competitive process for soliciting and reviewing the proposals raises will make it harder to judge whether the proposed schemes are as beneficial as they might be.

Finally, given likely funding constraints it is unfortunate that the 2025 transportation plan does not include the relatively low cost option of bus rapid transit, or BRT. BRT systems attempt to provide service comparable in

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<sup>23</sup> Systra MVA, “Ho Chi Minh City Metro Rail System Study, HCMC Master Plan Ridership and Revenue Forecast Study, Final Report”, January 2008, p. 36.

quality to MRT lines by operating high frequency buses on exclusive bus lanes and stations. In many BRT systems boarding and dwell times are reduced by collecting fares in stations before boarding, raising the station platform to the level of the bus floor and buying buses with multiple doors. The World Bank pushed Vietnam to consider BRT as a cost-effective alternative to MRT and arranged funding for a study to identify pilot BRT lines in HCMC and Hanoi. The suggested line in HCMC was a little north of the alignment of the western half of MRT Line 2, running 17.5 kilometers from Ben Thanh market northwest to the airport and then beyond to An Suong. The estimated cost was US\$ 58 million, which included US\$ 7 million for a fleet of 30 specially designed buses. On most of the route the streets were wide enough to fit in BRT and still maintain two lanes in each direction for general traffic. When the line approached the downtown, however, it had to use some streets that had only two traffic lanes in both directions. The planners proposed a one-way loop that would maintain a lane for local access by general traffic but the city rejected the idea as too disruptive.<sup>24</sup>

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<sup>24</sup> MVA Asia Ltd, "Bus Rapid Transit", task 2 report of "Technical Assistance for Consolidation and Development of a Bus System in Ho Chi Minh City, Vietnam", March 2006.

# Development of New Urban Areas

One of the most important dilemmas in planning for HCMC is where to expand the central business district functions currently located in the downtown on the west bank of the Saigon River. Finding additional room for these activities is important because the city is Vietnam's commercial and financial center. The need for financial and business services is growing rapidly as Vietnam's economy grows. And firms providing business and financial services typically locate together in the centers of metropolitan areas because they benefit greatly from close contact with one another. The fact that the rents for modern offices in downtown HCMC are currently very high by international standards is testimony to the intense demand for and the limited supply of centrally located offices.

Up to now, only one new urban area has been developed in HCMC. That pioneering project was Saigon South New Town (also known as Phu My Hung), a 600 hectare residential and commercial development built on wetlands south of the Te Canal in District 7. The government leased the land in 1996 to a Taiwanese real estate developer in return for a 30 percent interest in the development. Few believed that much would come of the land deal because the site was so difficult to build on and was located 5 kilometers south of downtown. But the developer was experienced and well financed, and gradually built an extremely high-quality master planned community with over 25,000 residents that became one of the most prestigious residential areas in HCMC.<sup>25</sup> The success of Saigon South has encouraged local developers to build on wetlands nearby. Much of the land in the area is vacant and owned by the city government, which receives revenues from leasing the land to developers. (From 2001 to 2004 roughly 15 percent of the HCMC government's budget came from sales of land use rights and buildings.<sup>26</sup>).

Also since the mid 1990s, the city government has been pursuing an urban development strategy of eventually expanding the downtown to the east bank of the Saigon River in District 2, opposite the existing downtown. The area, known as Thu Thiem, has ample room and would relieve the pressure on the historic quarters of the city. But unlike South Saigon, it is densely inhabited by poor families who will have to be resettled elsewhere. Throughout the late 1990s and early 2000s, the government remained undecided over bridge building and compensation policy in Thu Thiem while speculators drove up land prices. As a result, the area has remained undeveloped wetlands over the last 10 years. Most recently, the project has been given new life with the completion of Thu Thiem bridge, the expected completion of Thu Thiem tunnel and Phu My bridge, and the government's decision to triple the land compensation price. In the long run, the development of Thu Thiem as an extension of the downtown is inevitable if the historic districts around the existing downtown are to be preserved. But Thu Thiem has many wetlands and its development threatens to exacerbate flooding in the city.

The new 2025 land use plan seeks to accommodate a growing population and higher incomes without building on flood-prone land or encroaching on the historic neighborhoods around the downtown. Toward those ends it proposes the development of satellite centers to disperse central business district functions and reduce pressure on the historic neighborhoods. The traditional downtown, Thu Thiem, the Chinatown business area in District 5 and South Saigon would function together as the new "extended central business district" (Figure 5). Other suburban business districts would be developed on the periphery of the city, outside the second ring road. And manufacturing would be encouraged in "growth corridors" with good transportation mostly located along major city highways leading out of the city.

The satellite center strategy seems to be an unhappy and perhaps unworkable compromise for the problem of the downtown. In the first place, the development of Thu Thiem and South Saigon as major business centers clearly requires building on wetlands, in conflict with the plan's goals. Equally important, it is unclear that the central business district functions can successfully be divided among four satellite centers, especially since Chinatown and Saigon South are several kilometers apart from the others. Moreover, the transportation components of the plan seems inconsistent with the satellite approach in that the MRT and elevated expressway systems are centered on Districts 1 and 3, practically inviting high rise office development in historic neighborhoods.

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<sup>25</sup> Seventy percent of the land had been developed as of 2007, and a population of 100,000 was expected when fully built out.

<sup>26</sup> Institute for Economic Research and United Nations Development Program, *Paying for Urban Infrastructure and Services: A Comparative Study of Municipal Finance in Ho Chi Minh City, Shanghai and Jakarta*, UNDP, Hanoi, June 2007, pp. 16-18.

Some of these defects are addressed in two more detailed plans for Thu Thiem and the historic downtown. The detailed plan for Thu Thiem, prepared by Sasaki, an American architectural and planning firm, calls for maintaining and enlarging some canals that flow through the site and for focusing most of the development in the north and center of the area, avoiding the southern edge which has the highest concentration of wetlands. There has been no detailed hydrological study of the consequences of developing Thu Thiem, however, so there is little assurance that these measures will be effective in limiting the flooding risk.

The detailed plan for the historic central area is being prepared by Nikken Sekki, the consultants who drafted the 2025 master plan. The main idea is to concentrate office and residential high-rise development along the river, and keep it from encroaching on the historic area behind. Toward that end, the consultants propose to move MRT lines 3 and 4 further east in the central area, so that their stations are closer to the river instead of in District 3 and the western part of District 1. Equally important is their suggestion to convert the obsolete port facilities immediately to the north and south of the traditional downtown into downtown uses. A four-lane boulevard that runs along the western bank of the river would be put underground in spots to strengthen the link between the downtown and the river and to increase the road's capacity. The conversion of the ports could turn underused facilities into valuable assets and buy some time to think through the development of Thu Thiem.

Even when the technical aspects of the city's land use plans are carefully considered, the financial feasibility of the new housing and commercial development is still in doubt given the extraordinarily high cost of land. A recent article put the cost of land next to major roads in Japan, a crowded and mountainous country with per capita GDP of nearly \$40,000, at \$1050 per square meter. Urban land in Vietnam is often more than this and even cheaper land near major roads is typically several hundred dollars per square meter. With Vietnam's per capita income still under \$1000, the relative cost of land is completely out of line with incomes<sup>27</sup> If land costs tens of thousands of dollars for even a modest official plot, it puts ownership of urban housing beyond all but a very few.

For typical housing projects developed recently in District 7, next to Phu My Hung, for example, land accounted for approximately three quarters of the final cost of townhouses built, ultimately making the units unaffordable for middle class families. The market price of land in the Phu My Hung area rose to VND 36 million in late 2007, at the height of the real estate bubble, but then declined to VND 16 million by late 2008, after the bubble had deflated. Even at VND16 million (or \$1,000) per square meter, a family would require VND 960 million to purchase a modest plot of 60 square meters of land in this project. By contrast, the construction on the site of a townhouse with 80 square meters of floor area would cost only VND 320 million, bringing the total cost to VND1.28 billion (or \$75,300):

Town House Development Cost in Phu My Housing Project, District 7:

Land cost:	$\text{VND}16 \text{ million} \times 60 \text{ m}^2 = \text{VND}960 \text{ million}$
Construction cost:	$\text{VND}4 \text{ million} \times 80 \text{ m}^2 = \text{VND}320 \text{ million}$
Total acquisition cost:	$\text{VND}1.28 \text{ billion} (\$75,300)$

At a 10% interest rate, the family would have to make an annual payment of VND135 million in 30 years to finance the acquisition of the house through a mortgage. Even an upper middle-class family with available annual savings of VND60 million (i.e. VND5 million a month) would never be able to finance the purchase of the house.

The high price of land is not the result of high compensation to farmers or high costs of fees to government or required infrastructure but rather appears to be caused by a shortage of permitted sites. The table below shows that the average development cost of land (including compensation, land-use right fee, and infrastructure) incurred by the developer in the above project was only VND4.72 million (or \$278) per square meter in 2007 prices. The mark up to VND 16 million per square meter must reflect some artificial constraint on supply, possibly caused by speculators holding back land in the hope of ever higher prices but more likely because of city officials holding back permissions for the conversion of land to urban uses. During the expansionary monetary policy period of 2006-2007, speculative activities did play a major part in fueling a real estate bubble in the newly developed southern and eastern peripheries as commercial banks were on

<sup>27</sup> Per capita income is valued at exchange rates, not PPP (purchasing power parity) in this comparison because that is the relevant concept to use. Real money is used to buy and sell land – it is not an imputed value multiplied to get an equivalent price to the United States or Japan.



an unprecedented real estate lending spree.<sup>28</sup> Nevertheless, the fact that land and housing prices have remained high after the burst of the bubble indicates scarcity as the fundamental factor.

#### Land Development Cost in Phu My Housing Project, District 7<sup>29</sup>

Project land area:	8.16 hectares
Housing land area:	3.93 hectares
Agricultural land compensation:	VND133.14 billion (VND1.63 mil/ m <sup>2</sup> )
Land-use right fee:	VND31.58 billion
Infrastructure cost:	VND65.34 bil (VND0.8 mil or \$47/m <sup>2</sup> )
Total cost:	VND 185.68 bil
Average cost per m <sup>2</sup> of housing land:	VND4.72 mil (\$278 per m2)

If the land price were VND 4.72 million instead of VND16 million per square meter, the total acquisition cost a town house would be only VND603 million (or \$35,500). The financing cost for the house at a 10% interest rate would be VND64 million a year (or VND5.3 million a month) in 30 years, which is within the reach of middle-income families in the city.

If land prices remain as high as VND 16 million per square meter, then the solution will be to develop high-rise buildings. As shown in the rough calculation below, the cost of development of a 65-square-meter apartment in a 20-storey building is VND 625 million (or \$36,700).

#### Apartment Development Cost in Phu My Housing Project, District 7:

Ratio of the footprint of the building to the plot area:	50%
Number of floors:	20
Land cost:	VND16 million per m <sup>2</sup>
Apartment construction cost:	VND8 million per m <sup>2</sup>
Average cost of land and construction per m <sup>2</sup> of apartment floor area:	VND9.6 million (or \$565) <sup>30</sup>
Cost of a 65-m <sup>2</sup> apartment:	VND625 million (or \$36,700)

However, just like land, there is also a huge difference between the market apartment price and its development cost. If developers typically incur VND9-10 million per square meter in cost for land as estimated above, the apartment price is bid up to VND16-18 million a square meter. At this price, apartments are no longer affordable to middle-income people.

The housing situation has worsened in the past decade. Previously most urban dwellers have received apartments or land from the state or from their parents. Indeed, in the 1999 Census only 11 thousand households were listed as not owning their urban living place out of 16.7 million people! However, the rapid migration of recent years together with strong income growth has increased the demand for housing and

<sup>28</sup> The State Bank of Vietnam's Banking Report 2008 shows that as of August 2008, nine banks out of the total 41 have more than 30 percent of their loan portfolios in real estate finance (with one bank reporting the proportion of 50 percent). Another nine banks have property-related lending accounting for more than 20 percent. The real estate prices peaked in January 2008, just a month after the peak in new loan disbursements (See Fulbright Economics Teaching Program, Policy Discussion Paper No. 3, 18 Sep 2008).

<sup>29</sup> Information taken from the ADC Phu My Project Feasibility Study adjusted for 2007 prices.

<sup>30</sup> For example, a 20-storey building with a footprint of 2,000 m<sup>2</sup> constructed on a 4,000 m<sup>2</sup> plot would have 40,000 m<sup>2</sup> of total apartment floor area and VND64 billion of total land cost. The average cost of land per m2 of apartment floor area would be VND1.6 million. The average cost of land and construction per m2 of apartment floor area would be VND9.6 million

driven up prices. Unofficial migrants more often rent than own, and often illegally. A 2004 study focused on migrants reported that of the migrants surveyed, 60% reported housing problems.<sup>31</sup> Sky-high land prices mean home ownership, or even affordable rents in decent housing, is difficult or impossible for most migrants. Their problems are intensified if infrastructure is not built for them.

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<sup>31</sup> The Quality of Life of Migrants in Vietnam, a volume in the 2004 Vietnam Migration Survey, Table 3.1. The survey is a joint General Statistics Office/UNFPA effort and was published in 2006.

# Urban Finance

In the end, the planned improvements to urban transport systems and the development of new urban areas will depend in part on the availability of municipal financing. According to a UNPD-funded study comparing municipal finance of HCMC, Jakarta and Shanghai<sup>32</sup>, HCMC is quite successful in mobilizing tax revenue, but is permitted to keep only roughly 30% of the taxes it raises. The revenues retained are significantly short of HCMC's budgetary needs, and despite creative financing the city has not been able to keep up with the its rapid growth and concomitant resource needs....Debt financing through the issuance of municipal bonds has become a significant source of income over the past four years rising from zero to half of all regular local revenue; other revenue sources have risen only slightly during the same period, so their relative shares of total local regular revenue have declined. The debt figures significantly underestimate HCMC effective borrowing in that they exclude the city's considerable contingent liabilities incurred through its explicit and implicit guarantees of off-budget borrowing by local government entities....This greatly limits the potential of a significant increase in HCMC debt financing to pay for future investments in urban infrastructure.<sup>33</sup> In short, HCMC is going deeply into debt to finance its infrastructure, but is falling behind in part because it can only keep 30% of the taxes it collects. But the *current pattern of debt accumulation cannot be continued* and HCMC will soon have to cut back sharply from the already inadequate levels it is investing.

HCMC's financial situation is in part due to a 2004 fiscal decentralization reform which cut back on central government transfers to richer cities while maintaining the high share of local taxes those cities must forward to the central government. In her study of the 2004 reforms Pham Lan Huong of the Central Institute of Economic Management (CIEM) reports that local governments no longer retain any share of import and export taxes, VAT and excise taxes on imports, petroleum industry related taxes, and corporate income taxes on enterprises with whole-unit accounting. Local governments get to retain only all land related taxes and a share of locally generated non-import VAT, other corporate taxes, the personal income tax, the special consumption tax, and gasoline and oil fees. The new law also allows provinces to borrow directly under conditions stipulated by the central government without further approval.<sup>34</sup>

Even before the 2004 reforms, the richer provinces supported the poorer provinces through a system of fiscal transfers designed to equalize per capita spending for social services, particularly health and education. Between 1998 and 2003 the share of supplementary transfers from the central budget in all local spending rose from 39% to 57%. In 2002, only 6 or 8 of Vietnam's 64 provinces had to pay out appreciable transfers<sup>35</sup>, while the rest retained all their local taxes and received transfers from the central government as well. Several poorer provinces received over \$50 (about 750 thousand dong) per capita in subsidies.

While the fiscal system has been remarkably successful in equalizing public spending per capita for health and education it may not adequately recognize the degree to which the rapidly growing urban provinces need to invest in infrastructure, schools and other public facilities. Public infrastructure investment per capita is higher in the richer and growing provinces. In 2002, for example, 6 provinces invested over 2 million dong per capita, while another 10 provinces invested between 1 and 2 million dong and the remaining 48 provinces invested less than 1 million dong per capita. But infrastructure investment needs may be a function of the rate of population growth as much or more than the population level. Even provinces that are losing population must invest in infrastructure because the existing facilities and services often need to be upgraded or extended to remote or underserved communities. However, rapidly growing provinces not only must upgrade the infrastructure that serves the existing population but also build new roads, schools, clinics

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<sup>32</sup> Institute for Economic Research and United Nations Development Program, *Paying for Urban Infrastructure and Services: A Comparative Study of Municipal Finance in Ho Chi Minh City, Shanghai and Jakarta*, UNDP, Hanoi, June 2007.

<sup>33</sup> Pages 1 and 2 in *Paying for Urban Infrastructure and Services: A Comparative Study of Municipal Finance in HCMC, Shanghai and Jakarta*.

<sup>34</sup> "Fiscal Decentralization from Central to Sub-national Government in Vietnam," Pham Lan Huong, CIEM, December 2006, p. 7. The new sharing follows the 2002 Budget Law implemented in 2004. The author argues that the VAT and corporate income taxes are "assigned" to major cities where corporate headquarters are even if the economic activity takes place elsewhere. But if this activity takes place in other rich provinces, the regressive impact of this is less than if it takes place in poorer provinces.

<sup>35</sup> The Ministry of Finance website gives data for the planned 2006 and 2007 budgets. Seven provinces or cities had more than one-third of the revenues collected in their borders directed on a net basis to the central budget: HCMC in 2007 had local spending/revenues of 18%; Hanoi had 20%; Haiphong had 22%; BR-VT had 4% (oil); Binh Duong had 30% and Dong Nai and Quang Ninh had 33%.

and power or water systems to accommodate new residents.<sup>36</sup> The close link between investment needs and population growth is the reason why it is so important to know the actual population growth in each area. Public investment, after the basics, *should* be skewed to those areas with growing needs and demands. In spite of the current distribution of investment, it is unclear that current investment patterns reflect the actual population or economic growth patterns. There may be “excess” investment in some lagging provinces and “deficit” investment in some fast-growing ones. Here, the actual population growth data are crucial.

As an aside, there is also huge room for improvement in the spending efficiency of HCMC on its infrastructure. Too often, the land compensation claims for roads or other infrastructure soar to incredible levels rather than learning from relevant experience in places such as China. There, the land taken for a new road extends some distance from the actual new roadway, and those who had land fronting on the old road get ground level ownership of a multistory building fronting on the new road. Those who had been one row back from the old road get second story apartments or shops in newly constructed buildings next to the new road. This reduces considerably the compensation payments, as the land owners are paid in kind, not cash.

It is not unusual for nations experiencing rapid industrialization to increase payments to rural areas. By its nature, agriculture cannot grow nearly as fast as industry and unless there is a large amount of rural nonfarm activity, rural areas will tend to have lower incomes and slower growth. This difference in income levels is often offset in part by domestic remittances as grown children work at better paid urban jobs and send some money home to their parents or other family members. Unfortunately, little is known about these within-family transfers.<sup>37</sup> Rural-urban disparities can also be ameliorated by fiscal transfers, such as those described above. It is normal and politically healthy to not allow differences in urban and rural incomes to become too large.

However, if virtually all of the nation's population growth is occurring in urban and near-urban areas, then the country faces a difficult choice between continuing to invest heavily in rural areas *after* their basic infrastructure is in place, even if little economic activity results, and supporting the thriving areas which most need new investment. It may be neither fair nor efficient that HCMC generates 30% of the nation's government revenues but spends only 9-11% of them. If stability comes from generating decent jobs for new workers then investing in thriving areas may be preferable but if reducing inequalities in regional per capita incomes is more stabilizing, even at the cost of some growth, then it may be better to continue to invest in slower growing regions.

In 2004, there were about VND 8.1 trillion invested by HCMC or about 1.1 million dong (or \$73) per capita in the local public investment budget. Most of this was financed through debt, land sales/transfers, or other methods such as BOT (build-operate-transfer). If these sources are limited over time, then only a few outcomes are possible. One is that the HCMC government finds a way to reduce the unit cost of its capital investment, making do with less but still getting critical infrastructure built. A second is that spending levels fall with roughly similar efficiency as now and much less infrastructure is built. A third possibility is that revenues now directed to poorer provinces are redirected to HCMC, with or without efficiency changes. A fourth is that the central government takes on debt payments for investments that are now paid for by the city. (This is similar in effect to option three, but with a different mechanism.) A fifth is an even greater use of BOT or land swap arrangements for infrastructure. (This negates the assumption that these methods have limits that are being approached.) What is likely to happen?

Vietnam already has a rather high ratio of government revenues and spending relative to GDP, given its level of per capita income. Expenditures are 28-31% of GDP in recent years while revenues are 25-27%.<sup>38</sup> It is not likely to be easy to increase these ratios efficiently, unless oil and gas production and revenues increase markedly or new sources of revenues are developed. (China has revenues and expenditures that are about 19% of GDP.) If indeed, revenues can not rise much faster than GDP, then the allocation of revenues will become even more important.

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<sup>36</sup> The 2004 Living Standards Survey reported that 91.6% of rural households surveyed had electricity, up from 82.7% in 2002. While the Northwest region had only 72% and the Central Highlands and Mekong Delta had only 86-87%, the 2007 data are certainly even better. If power availability is a good proxy for infrastructure, the basic extension of services is progressing well and is fairly far along.

<sup>37</sup> In the 2002 Living Standards Survey, “other” income is \$45 per person a year or \$3.57 billion. This amount is within the range of some estimates of foreign remittances, and as it might include gifts from nearby relatives as well, it is not useful to try to extract rural-urban payments from this single data point.

<sup>38</sup> These data, and those for China, are taken from Key Indicators 2007 of the Asian Development Bank.

## An Illustrative Calculation

In 2007, the region around HCMC (including HCMC province and five provinces surrounding it) was budgeted to collect 170 trillion dong in taxes and fees, or 58% of the national total. However, this amount includes 74 trillion from Ba Ria-Vung Tau, which is largely oil – a clear national resource. Subtracting that province's revenues and spending leaves 96 trillion in non-oil revenues compared to 21.4 trillion in spending, a ratio of 22%. Similarly the region around Hanoi (consisting of the provinces of Hanoi, Haiphong, Quang Ninh and Vinh Phuc) was budgeted to collect 68.5 trillion in revenues and spend only 16.5 trillion, a 24% ratio. Together, these richer provinces around HCMC and Hanoi provide 75% of the nation's non-oil governmental fees and taxes but account for only 32% of spending. (Ba Ria-Vung Tau is excluded from both revenue and spending in this calculation.)

That means that all other provinces provided only 25% of non-oil revenues but spent 68% of total provincial spending. If the richer provinces were allowed to keep one-third of their non-oil revenue, that would transfer 17 trillion, or 20% of current spending, from the poorer provinces to the richer ones.<sup>39</sup> This would increase the resources available to the richer provinces by nearly 45%. Such a hypothetical switch would be unpopular with the poorer provincial governments who already see themselves as hard-pressed. Yet if the cutbacks focused on less productive capital projects rather than on equalizing health and education, the real disadvantage might be minimal. Of course, having large projects in one's own province is politically popular. If many workers are going elsewhere (as seems to be the case), however, perhaps more of the "rich province" taxes should stay where they were collected to provide needed services and infrastructure.

It bears repeating, however, that the *quid pro quo* for allowing the richer provinces to retain more revenue should be greater efficiency in their investments. Serious transportation and urban plans that minimize distances from home to workplace or school would be one place to start. Avoiding drainage problems from filling in wetlands, and treating land compensation more rationally would be other steps. Setting aside land for urban rail and roads might be another idea. The point is that these "extra" funds, while needed, will do little good if wasteful and conflicting plans and projects continue. Vietnam cannot afford highly expensive and inefficient urbanization. Too many workers want to live in the vibrant economic regions. If these regions include a number of provinces adjacent to the major cities, the problems of crowding and congestion could be contained. Indeed, successful development tends to spread outward, helping ever more remote provinces. A more rational and efficient distribution of infrastructure projects would help this outcome.

For those who argue that the large disparities between richer and poorer provinces should require more spending in the poorer areas, the question must be how much good the existing pattern of public investment actually accomplishes. Recall that with its oil revenues, Vietnam already has a 50% higher ratio of government spending to GDP than China does. This high level of spending is skewed towards the poorer provinces. Basic infrastructure has been put in place. More needs to be done with rural roads and other improvements, but the temptation is to continue construction beyond what is productive.

There is currently little good information on the comparative advantages of public investment in various provinces. Of course, there are projections based on wishful thinking about growth, but these are seldom reliable enough to be taken seriously. Proponents of a particular project seldom investigate whether other approaches might satisfy the need at a lower cost. The result is that most choices are political and administrative, with only weak input based on probable productivity.

For projects that could be built with private funding and should recover costs, the obvious way to check for efficiency is to require cost recovery with reasonable charges. Extending electrical transmission and distribution lines<sup>40</sup>, building ports and airports, putting in place urban water and sanitation, or constructing major bridges, tunnels and expressways could all be based on this principle. Having private developers involved with some of their own capital at risk (without a sovereign guaranty – based only on project revenues for success) is sometimes a good way to ensure that the revenue projections will be serious rather than fictional.

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<sup>39</sup> The current system provides for some taxes that go entirely to the locality and some that are subject to a split. This is a good idea, for if all taxes went largely to the center, there would be little incentive for the richer locality to collect taxes, and more fees and other charges would appear.

<sup>40</sup> There has also been a tendency to prefer hydroelectric generation over other types, even though this contributes to dry season supply shortages and is often more capital-intensive than alternatives. The issue of choice of electrical generating type is a complex subject beyond the scope of this paper.

However, there is a large class of projects that cannot reasonably be expected to recover costs. Rural and minor urban roads, small bridges, drainage and rural water supply (among others) need to be financed and maintained out of general revenues. Some electrical or telephone transmission to very remote areas might also fit in this category. In such cases, it is best to develop comparative standards and build to a certain density of service consistent with funding availability. This ensures fairness and minimum infrastructure standards.

For industrial estates, the tendency has been to take land cheaply and then put in infrastructure with a “build it and they will come” attitude. The trouble is, “they” have not come in many cases. Many industrial estates are underutilized and have wasted land and money, besides displacing many thousands of families. In these cases, less investment is desirable. Most of these estates already have the minimum needed infrastructure. Without more indication of need – that is, interest from non-state investors – the argument for central funding of these estates is weak. This would be an obvious place to reduce capital spending.

Finally, there are “breakthrough” or “strategic” public investments such as the proposed \$56 billion high speed rail line between HCMC and Hanoi. There is no realistic prospect of cost recovery in such cases. European and Japanese experience indicates that for trips over four hours, passengers prefer to fly. Given that the only two major origin and destination points would be Hanoi and HCMC, and these would be a day’s trip, the prospect of attracting large numbers is limited. The existing flights are frequent and cheap – cheaper than the cost of a rail ticket would be. For proponents, the lack of cost recovery is only proof of how bold the project is. One response must be that the real cost of such projects is not the dollars spent, but the congestion, time wasted, and slower growth in major cities that are starved of needed infrastructure. While prestige projects are observed everywhere, they are best kept to a small fraction of total spending and subsidiary to essential investments.

## Conclusion

This paper has argued that the actual population levels and particularly the rate of population growth in HCMC are higher than officially measured. In the face of the explosion in population growth, two key challenges have emerged, namely, traffic congestion and development of new urban areas. It is critical that the government agencies responsible for developing and implementing city's transportation and land use policies have the capacity to do so. The preparation of the 2025 land use and transportation plans was an extremely useful exercise in forcing the city to confront the issues raised by economic growth. But in many respects planning is just the beginning of the effort.

Even with the plans, there are still many important decisions to be made. In the area of transportation, for example, which of the many MRT lines and expressways should be built first given that there may not be funds to build them all? How can the alignments of the expressways and MRT lines be adjusted to minimize the unsightliness of the facilities themselves, and to better support development where it is desired and discourage development where it is not? How should the capacity of existing streets be managed given that the new facilities will provide never provide all the capacity needed? Similarly in the area of land use, exactly how do the general guidelines in the master plan translate into standards for the density and uses allowed on particular tracts of land? How should the expansion of the traditional downtown be managed, especially if Chinatown and Saigon South can not attract central business functions? And are there reasonable strategies to cope with the flooding threats posed by the development of Thu Thiem and Saigon South?

And where the decisions have been made, the capacity for implementation will be essential. The cost of new MRT lines and expressways can inflate rapidly, for example, if procurement is poorly managed. And policies to manage existing street capacity typically depend on the willingness of police to enforce them. Similarly in the benefits of land use controls depend on the ability of the agencies in charge of permitting new developments to issue and enforce the supporting regulations.

Finally, since infrastructure, beyond some minimum, should be related to population growth, the current amount of major urban investment is lower than it should be. This has been offset by non-sustainable debt and land sales, but these expedients are temporary. A new division of tax revenues between rich and poor provinces is needed to reflect this.

However, simply allowing richer provinces to keep a larger share of their tax payments would not be productive without major enhancements to project planning and implementation. Many public projects are currently being built well ahead of demand, too expensively, or inferior to alternatives.

The first step is to count the people actually living in each province. The second is to agree upon a rational division of tax revenues. The third is to develop a stronger review process for selecting and implementing public investments, including ways to recover costs when feasible. If these three things are accomplished, the urbanization and development of Vietnam will be more rapid, sustainable and equitable than if cities are starved of essential investments while slowly growing rural areas are subsidized beyond a point where the investments are productive.

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**Table 1. Growth in Gross Regional Product, HCMC Province and Vietnam**

Year	HCMC	Vietnam
1997	14.6%	8.2%
1998	12.1%	5.8%
1999	6.2%	4.8%
2000	9.0%	6.8%
2001	9.5%	6.9%
2002	10.2%	7.1%
2003	11.4%	7.3%
2004	11.7%	7.8%
2005	12.2%	8.4%
2006	12.2%	8.2%
2007	12.6%	8.5%

Source: General Statistical Office, Vietnam Statistical Yearbook 2007; Ho Chi Minh City Statistical Office, Ho Chi Minh City Statistical Yearbook 2007

**Table 2. Population and Motor Vehicle Registrations in Ho Chi Minh City**

Year	Population (thousands)	Motorcycles (thousands)	Cars (thousands)
1990	4,118	n.a.	12.3
1991	4,259	500	13.5
1992	4,426	n.a.	14.7
1993	4,531	n.a.	16.1
1994	4,582	844	17.5
1995	4,640	n.a.	19.4
1996	4,749	n.a.	38.0
1997	4,853	1,200	n.a.
1998	4,958	n.a.	n.a.
1999	5,064	n.a.	n.a.
2000	5,249	1,571	131.0
2001	5,449	1,970	
2002	5,659	2,285	158.2
2003	5,867	2,306	221.7
2004	6,063	2,429	253.0 (115.0 private)
2005	6,240	2,623	267.8
2006	6,425	2,903	296.1
2007	6,651	3,406	399.0 (202.0 private)

N.a. indicates not available.

Sources: Population figures from Ho Chi Minh City Statistical Office, "Ho Chi Minh City Statistical Yearbook 2007", pp. 22 and its website <http://www.pso.hochiminhcity.gov.vn>. Vehicle registrations for 1990-1996 from Japan Bank of International Cooperation, "Urban Public Transportation in Vietnam: Improving Regulatory Framework" JBIC Research Paper no. 4, December 1999, pp. 5 and 8. Vehicle registrations for 2000-2007 from Ho Chi Minh City Road Traffic Police Department.

**Table 3. Percentage of Trips in Ho Chi Minh City by Mode Used, 1996 and 2002**

	1996, without walking		2002, without walking	2002, with walking
Walking	---	Walking	---	17.1%
Bicycle	20.4%	Bicycle	17.4%	14.4%
Bus	0.2%	Bus	1.7%	1.4%
Motorcycle	76.5%	Motorcycle	74.5%	61.8%
Car	2.2%	Car	1.4%	1.2%
Truck	0.7%	Conventional taxi and other	4.1%	3.4%
All modes	100%	Motorcycle taxi (Xe Om)	0.8%	0.7%
		All modes	100%	100%
Trips per weekday (millions)	8.2			11.9

Sources: 1996 figures from DFID 1998 Ho Chi Minh City Transportation Study as cited by Japan Bank for International Cooperation, "Urban Public Transportation in Vietnam: Improving Regulatory Framework, JBIC Research Paper no. 4, December 1999, pp. iii and 12. 2002 figures estimates from Almec Corporation, "The Study on Transportation Modes and Feasibility Study in HCM Metropolitan Area (HOURTANS)", vol. 1, Summary, June 2004, p. 2-17.

**Table 4. Demand Forecasts for 2025 with 161 Kilometer Rail Transit Network**

	Forecast consistent with master plan goals		Forecast consistent with current policies toward bus speeds, auto parking and auto ownership	
Share of trips by mode	All modes	Public only	All modes	Public only
Motorcycle and bicycle	38%		49%	
Car	18%		29%	
Public transport				
Rail	9.2%	21%	6.8%	30.7%
Bus	30.8%	70%	12.9%	58.5%
Ferry	0.4%	1%	0.1%	0.4%
Intercity rail and bus	3.5%	8%	2.3%	10.4%
Subtotal public	44%	100%	22%	100%
All modes	100%		100%	
Modes on urban streets	87%		91%	
Modes not on urban streets	13%		9%	
All modes	100%		100%	
	Forecast consistent with master plan goals		Forecast consistent with trends	
Riders by line	Weekday	Peak load per hour	Weekday	Peak load per hour
Line 1	863,000	29,200	716,000	28,300
Line 2	551,000	24,900	405,000	27,900
Line 3	474,000	14,300	313,000	11,200
Line 4	366,000	12,000	260,000	11,600
Line 5	525,000	8,000	320,000	5,500
Line 6	69,000	2,700	52,000	2,000
Tram	386,000	9,100	225,000	5,800
Monorail	22,000	1,500	20,000	1,400
Total	3,256,000		2,310,000	

Source: Systra MVA, "Ho Chi Minh City Metro Rail System Study, HCMC Master Plan Ridership and Revenue Forecast Study, Final Report", January 2008, pp. 47, 60, 63, 66

Figure 1. Map of Ho Chi Minh City



Source: Government of Vietnam Tourism Office

**Figure 2. Map of Ho Chin Minh City's Inner Districts**

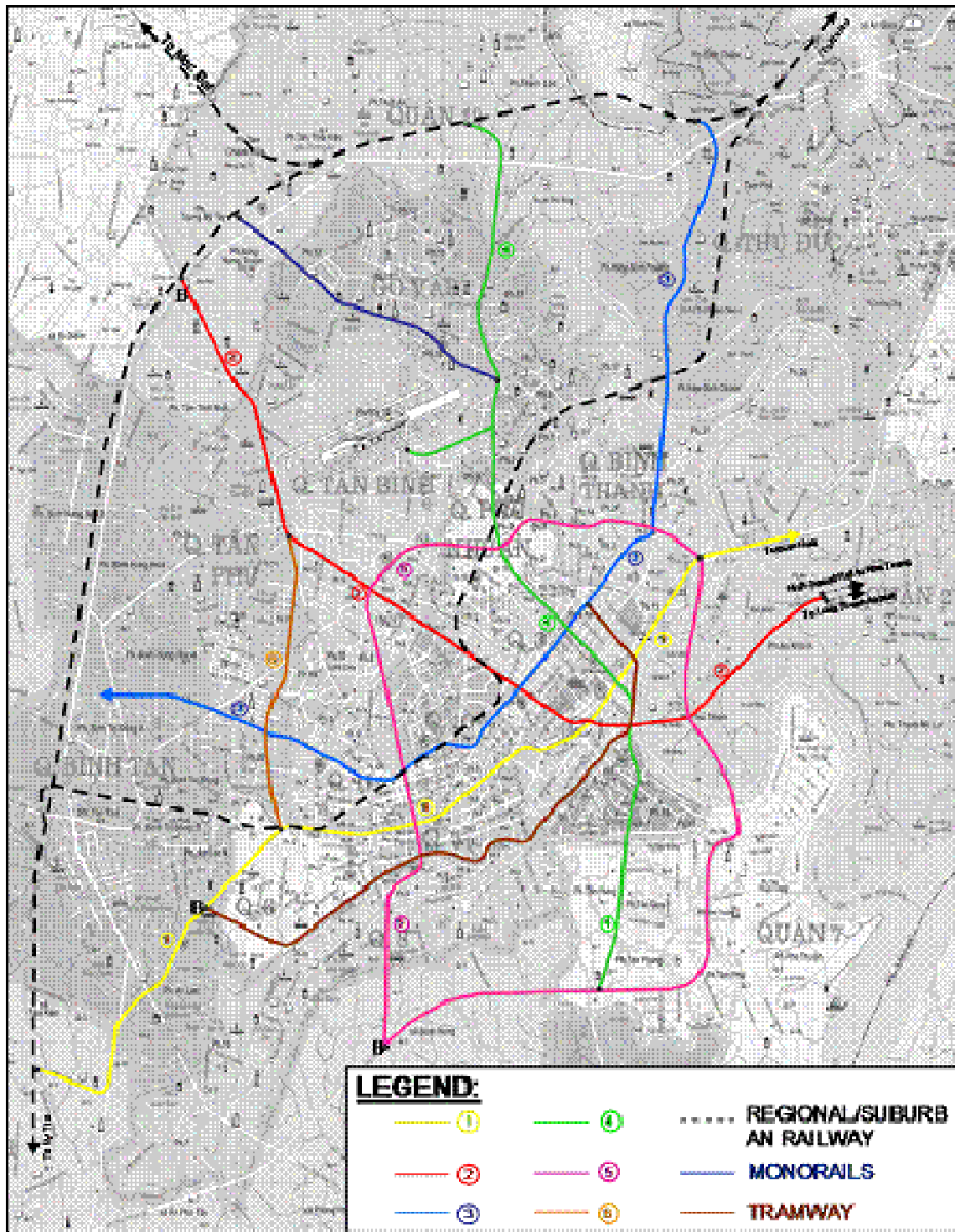


*Source: Government of Vietnam Tourism Office*

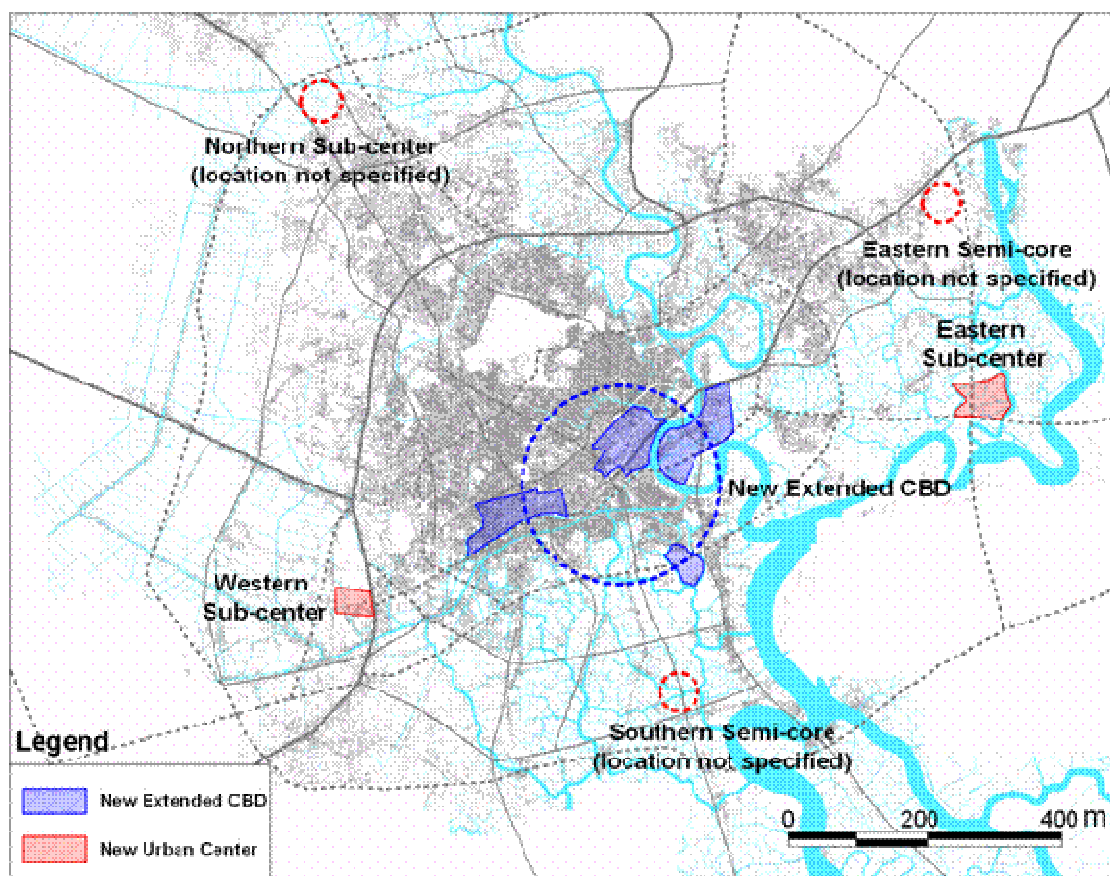
**Figure 3. Plan for Four Elevated Expressways**



### Figure 4. MRT Plan as of 2008



**Figure 5. Location of Business Centers in 2008 Master Plan**



Source: Urban Planning Institute of HCMC and Nikken Sekkki (consultants), "The Study on the Adjustment of HCMC Master Plan up to 2025", report to the Ho Chi Minh City People's Committee, 2008.