VIETNAM: SUBNATIONAL DEMOGRAPHIC AND SOCIO-ECONOMIC VARIATION
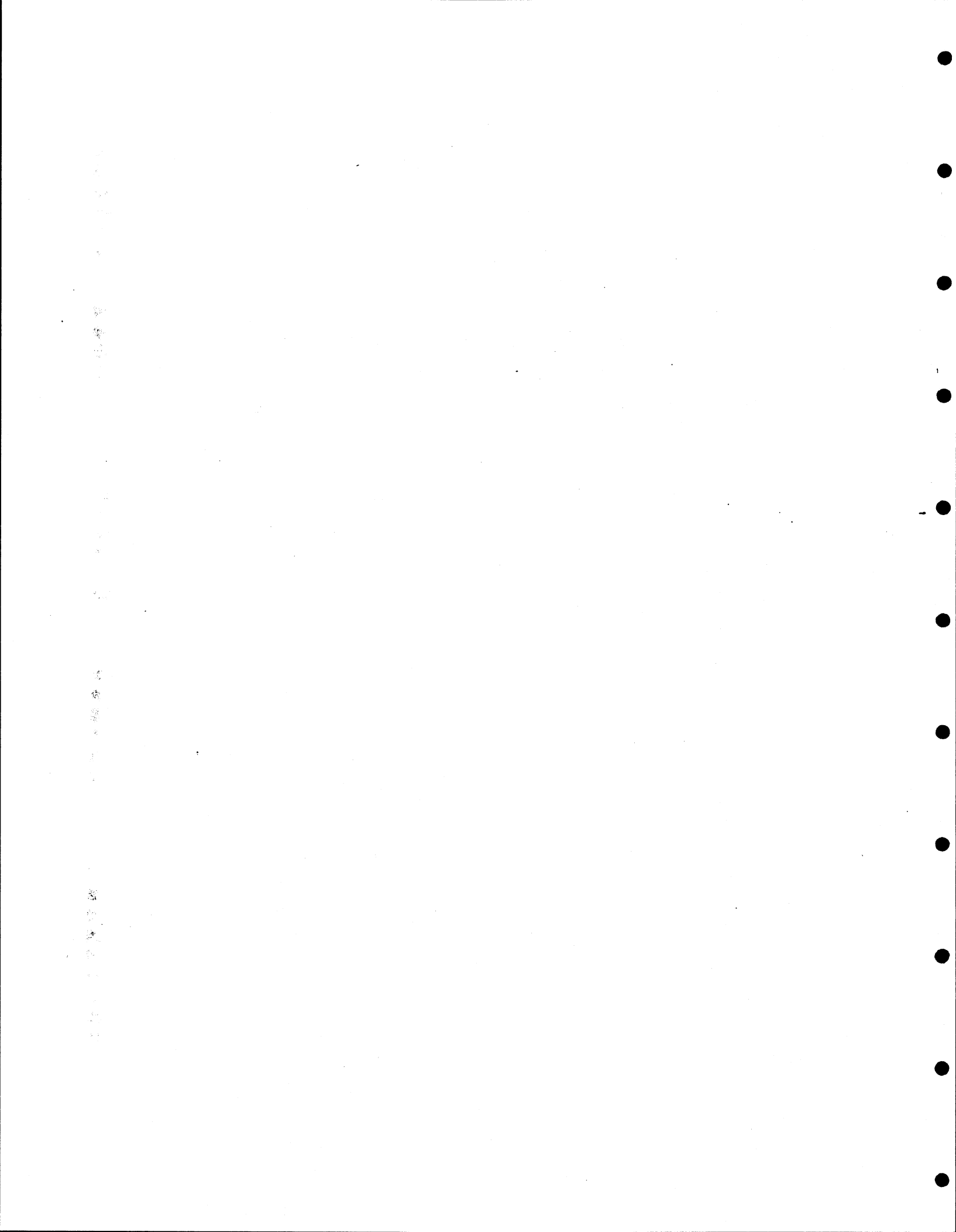
by

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SUMMARY

Vietnam announced its program of restructuring known as *Doi Moi* in 1986 and accelerated the pace of reforms in 1989. This study seeks to better understand the dynamics of reform by examining subnational data to identify regional variation in growth and development and to determine the magnitude of the disparity across regions. Statistics on migration also are reviewed to discern whether uneven growth is stimulating labor flows. In addition, this study addresses the question of the extent and effect of deterioration in rural health and education.

The study draws heavily from three major cross-sectional data sources: 1) the 1989 Vietnam Population Census, 2) the Vietnam General Statistical Office published data for 1992 and 1993, and 3) the 1992/93 Vietnam Living Standards Survey. Data from these sources are most plentiful at the national, regional, and provincial levels.

Substantial regional variation is found in indicators of economic size and development. Disparity as measured by the ratio of highest to lowest regional value was 21:1, 30:1, and 19:1 for per capita gross domestic product, fiscal revenue, and local government investment, respectively. Urban areas and the Southeast and Mekong Delta regions clearly are in more advantageous economic positions as compared to rural areas and the other five geographic regions. The larger role played by the nonstate (collective and private) sector and greater linkages with the rest of the world through trade and foreign investment contribute tot he higher stages of economic development found in the urban areas and Southeast and Mekong Delta regions. The fiscal system does bring about a degree of equalization; however, per capita fiscal expenditures in Hanoi are still six times the level in Hai Hung province in the Red River Delta. For gross domestic product there is evidence that subnational variation is increasing in the reform period.

Data document migrations flows in the second half of the 1980's from rural to urban areas and from the north to the south, in particular to the new economic areas established by the government for resettlement in the Southeast and Central Highlands regions. Migrants are predominantly young and male. The higher incidence of poverty in rural areas and the North Central and Northern Uplands regions may serve as a push factor driving future migration flows. With the exception of the Mekong Delta region, farm size is extremely unfavorable, providing another motivation for rural residents to migrate. Labor absorption is coming primarily in the private sector, mostly through the formation of new household-run businesses. Higher wage levels in urban areas and the south and a more advanced private sector in the south are major pull factors for migration.

The level and quality of health and education services provided to the rural population lags behind that provided to urban residents. The Northern Uplands and Central Highlands regions stand out with the least favorable status indicators for both health and education. A deterioration in the delivery of services is found for the late 1980's and early 1990's owing in large measure to major budget cutbacks. While there are signs of limited recovery and improvement in both the health and education sectors (enrollment rates are up and malnutrition rates are declining), inadequate government funding is placing an increasing burden on the private sector. The introduction of user fees is making health and education services less accessible to the poor.

PREFACE

The International Programs Center conducts economic and demographic studies, some of which are issued as Staff Papers. A complete list of these papers is included at the end of this report. The use of data not generated by the U.S. Bureau of the Census precludes performing the same statistical reviews the Bureau does on its own data.

The author would like to thank Andrea Miles who created the numerous maps, graphics, and tables for this report. Judith Banister provided helpful comments on a draft of this report.

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I. INTRODUCTION

Vietnam announced its program of restructuring known as *Doi Moi* in 1986 and accelerated the pace of reforms in 1989. A series of reforms, most notably decollectivization of agriculture, price decontrol, trade and investment liberalization, and financial reform, are shifting Vietnam from a centrally planned economy to a transition economy with an increasing role for the free market. Reforms have already contributed to a strong economy growing at near double digit rates in recent years. Reforms and external events, such as the collapse of the Soviet Union, however, also have led to widening income differentials across regions, increased unemployment and labor flows, and declines in important social indicators.

This study seeks to better understand the dynamics of reform and the effects of uneven economic growth and development in Vietnam by going beyond the anecdotal evidence. Specifically, this study examines subnational data to identify regional variation in growth and development and to determine the magnitude of the disparity across regions. Statistics on migration also are reviewed to discern whether uneven growth is stimulating labor flows. In addition, this study addresses the question of the extent and effect of deterioration in rural health and education. Anecdotal information regarding this phenomenon has appeared in the press, but there has been little systematic examination of available data to assess both the effect and persistence of the deterioration trend. .

In examining these issues, the objective is to gain an understanding of the degree of subnational variation, identify which areas are the most vulnerable, and, to the extent possible, discern trends in regional disparity. In achieving these objectives, the study makes extensive use of the coefficient of variation, a summary measure of dispersion widely used in economics and finance. It is formed by taking the ratio of the standard deviation (measure of absolute dispersion) to the mean. The advantage of this measure is that it standardizes for the scale of the variable concerned, so that comparisons of the degree of dispersion across variables with widely differing typical values are possible. All averages and coefficient of variation estimates presented are unweighted unless otherwise noted.

For Vietnam's four levels of government administration, center, province, district, and commune, data are most plentiful at the national and provincial levels. Statistics also are frequently presented for seven geographical economic regions shown in Table 1 and Map 1. The study draws heavily from three major cross-sectional data sources: 1) the 1989 Vietnam Population Census, 2) the Vietnam General Statistical Office PLAUM[1] containing data for 1992 and the Statistical Yearbook for 1993, and 3) the 1992/93 Vietnam Living Standards Survey. Published results of the 1989 Population Census are disaggregated to the province level. PLAUM contains the only data available at the district

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[1] PLAUM (Program for List of Administrative Unit and Mapping) is a mapping system containing a database of statistical information at the national, provincial, district, and commune levels, produced by the General Statistical Office, Computer Center with assistance from UNFPA.

Table 1. Vietnam's Geographic Regions

Region	Provinces
1) Northern Uplands	Lao Cai, Yen Bai, Ha Giang, Tuyen Quang, Cao Bang, Lang Son, Bac Thai, Vinh Phu, Son La, Hoa Binh, Ha Bac, Quang Ninh, Lai Chau
2) Red River Delta	Ha Tay, Ha Noi, Hai Phong, Hai Hung, Thai Binh, Ninh Binh, Nam Ha
3) North Central	Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien-Hue
4) Central Coast	Quang Nam - Da Nang, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa, Ninh Thuan, Binh Thuan
5) Central Highlands	Gia Lai, Dac Lac, Lam Dong, Kon Tum
6) Southeast	Song Be, Tay Ninh, TP Ho Chi Minh, Dong Nai, Ba Ria - Vung Tau
7) Mekong Delta	Long An, Tien Giang, Ben Tre, Vinh Long, Tra Vinh, Dong Thap, An Giang, Kien Giang, Can Tho, Soc Trang, Minh Hai

Source: World Bank, 1995, Vietnam Poverty Assessment and Strategy.

Map 1. Vietnam by Seven Geographical Economic Regions
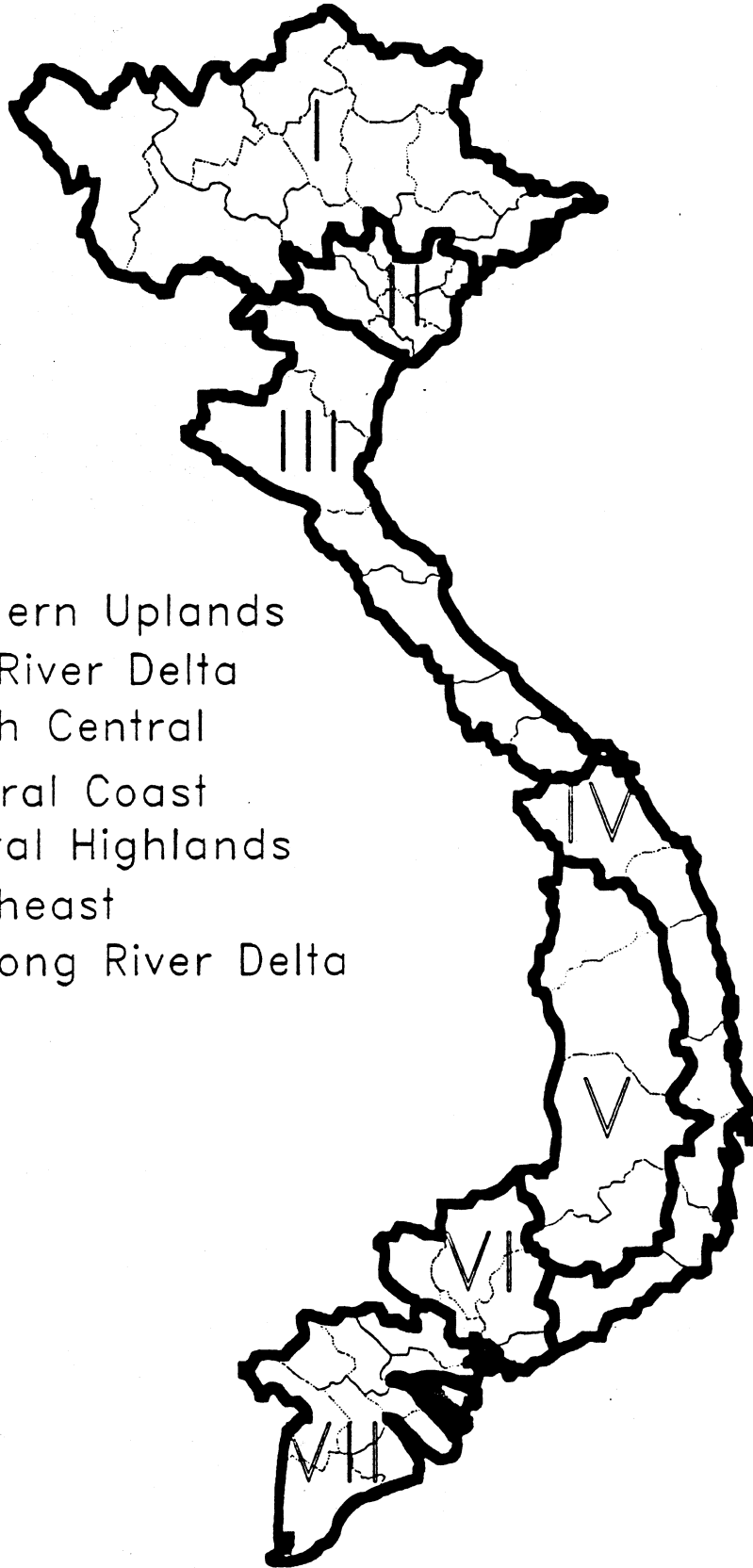
I — Northern Uplands
II — Red River Delta
III — North Central
IV — Central Coast
V — Central Highlands
VI — Southeast
VII — Mekong River Delta

and commune levels, but these data are limited to land area.[2] Statistical yearbooks provide national, regional, and provincial breakdowns for statistics. The Vietnam Living Standards Survey is representative of the national level and urban and rural areas in each of the seven geographic regions. The sample size of the Vietnam Living Standards Survey, 4,800 households, was too small to attempt representativeness at a lower level. In addition, results from other smaller surveys and information gleaned from current press accounts are incorporated.

The nature of the available statistics largely limits the examination of variation in growth and development, migration, and rural health and education to the provincial and regional levels. These levels are expected to reflect much of the variation that exists; therefore, this data limitation should have minimal adverse impact.[3] Examining trends in demographic and socio-economic variables is complicated at times by a lack of comparability in variable definition and periodic changes in administrative boundaries. Care was taken to check for consistency of definition and to adjust for boundary changes. New provinces formed in the mid-1980's and most recently in 1992 are shown in Table 2. Where caution needs to be used in interpreting the data, this is noted.

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[2] Vietnam is divided into approximately 500 districts and 10,000 communes.

[3] Nationwide, district or commune level variation is most likely greater than province level variation because provincial statistics represent an average of the districts and communes within the province. However, it is highly unlikely that one would find substantial variation within a province and little or no variation across provinces in a country at Vietnam's stage of development. For rural households in China, a country with many similarities to Vietnam, research has shown that the level of inequality increases as the geographic region expands (Rozelle 1994).

Table 2. Formation of New Provinces

Province in 1985	Province in 1989	Province in 1992
Binh Tri Thien	Quang Binh, Quang Tri, Thua Thien-Hue	
Nghia Binh	Quang Ngai, Binh Dinh	
Phu Khanh	Phu Yen, Khanh Hoa	
	Ha Tuyen	Ha Giang, Tuyen Quang
	Hoang Lien Son	Yen Bai, Lao Cai
	Ha Son Binh	Hoa Binh, Ha Tay
	Ha Nam Ninh	Nam Ha, Ninh Binh
	Nghe Tinh	Ha Tinh, Nghe An
	Thuan Hai	Ninh Thuan, Binh Thuan
	Gia Lai - Kon Tum	Gia Lai, Kon Tum
	Cuu Long	Vinh Long, Tra Vinh
	Hau Giang	Can Tho, Soc Trang
	Vung Tau - Con Dao special area	Ba Ria - Vung Tau (combined with 3 Dong Nai province districts)

II. GROWTH AND DEVELOPMENT

Summary

Substantial regional variation is found in indicators of economic size and development. Disparity as measured by the ratio of highest to lowest regional value was 21:1, 30:1, and 19:1 for per capita gross domestic product, fiscal revenue, and local government investment, respectively. Urban areas and the Southeast and Mekong Delta regions clearly are in more advantageous economic positions as compared to rural areas and the other five geographic regions. The larger role played by the nonstate (collective and private) sector and greater linkages with the rest of the world through trade and foreign investment contribute to the higher stages of economic development found in the urban areas and Southeast and Mekong Delta regions. The fiscal system does bring about a degree of equalization; however, per capita fiscal expenditures in Hanoi are still six times the level in Hai Hung province in the Red River Delta. For gross domestic product there is evidence that subnational variation is increasing in the reform period.

In the 1990's, Vietnam is experiencing rapid growth with 8.6 and 8.1 percent increases in real gross domestic product (GDP) in 1992 and 1993, respectively; however, there also is evidence of increasing regional disparities. The World Bank (1994) reports that in the early 1990's two of the poorest regions, Northern Uplands and North Central, were growing at about 3 percent annually, while the relatively prosperous Southeast was expanding at the rate of 15 percent per year.

In 1993, per capita GDP increased by 5.8 percent in real terms over 1992.[4]

- At the same time, the ratio of highest to lowest per capita GDP across provinces increased from 16:1 in 1992 to 21:1 in 1993.

- In addition, the coefficient of variation of provincial per capita GDP increased from 0.85 in 1992 to 0.94 in 1993.

In both years, Son La province in the Northern Uplands exhibited the lowest level of economic development while Ba Ria - Vung Tau, a major petroleum producing area in the Southeast, had the highest level of per capita output. (See Map 2.)

If there is a positive correlation between growth rates and past income levels, then regions presently with the highest levels of economic output could expect the highest growth rates and highest future economic output. This situation would inevitably lead to widening regional disparities. With only two years of data presently available, it is premature to draw any conclusions as to whether this situation prevails in Vietnam.

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[4] In 1993, the real GDP growth rate was 8.1 percent and the population growth rate was 2.3 percent, translating into a 5.8 percent per capita real GDP growth rate.

Map 2.   Provincial Variation in Per Capita GDP, 1993

Dong Per Capita

- 150,000 to 300,000
- 301,000 to 450,000
- 451,000 to 600,000
- 601,000 to 900,000
- 901,000 to 3,177,000
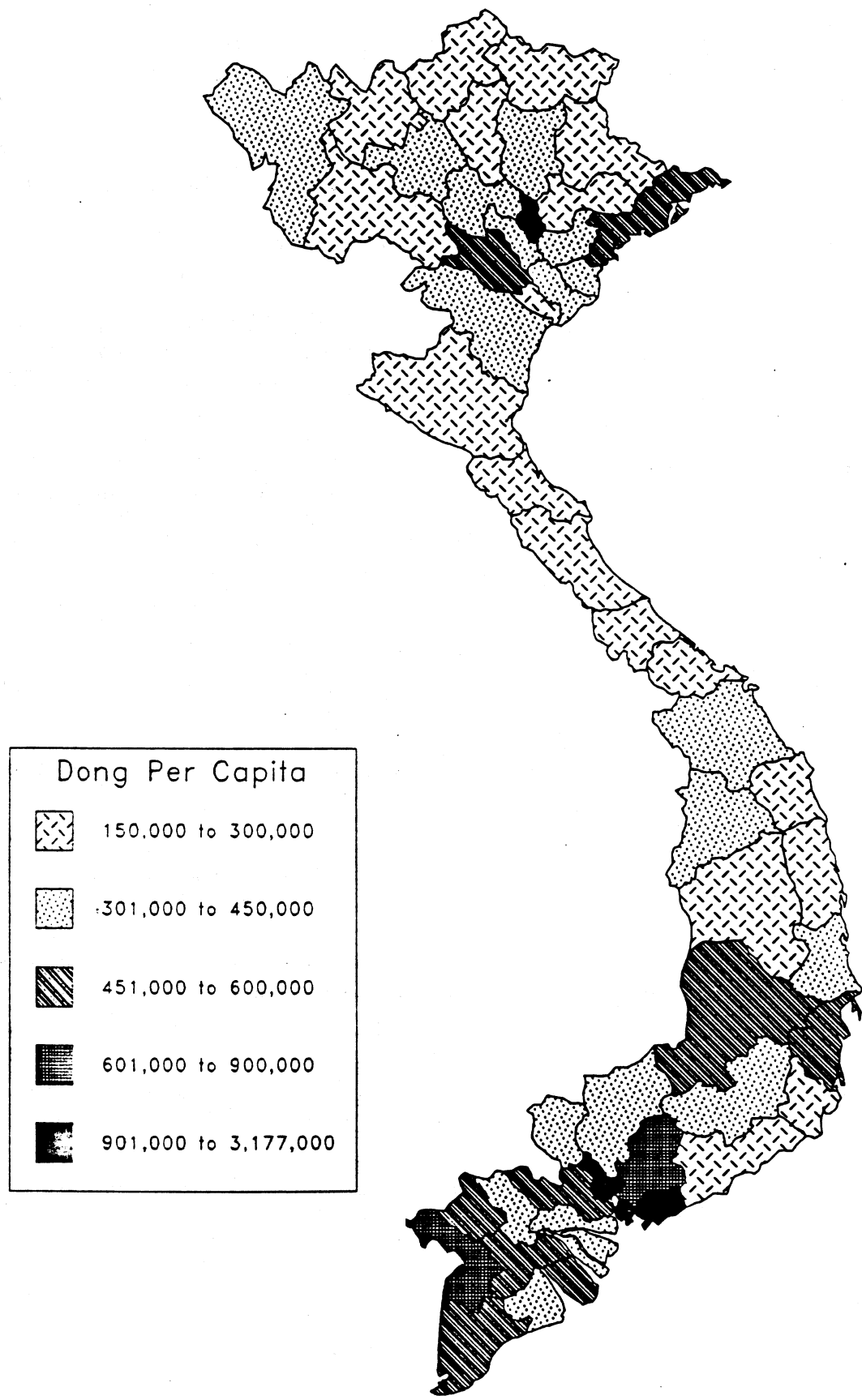
Source: World Bank, 1995, Vietnam Poverty Assessment and Strategy.

Another indicator of future growth potential is the fiscal revenue generating capacity of a region.[5] In terms of revenue generating capacity, the disparity across Vietnam's provinces is even greater than the disparity in GDP.[6]

- In 1992, per capita revenue ranged from 25,000 dong in Ha Giang province in the Northern Uplands to 760,000 dong in Ho Chi Minh, a ratio of 30:1.[7] (See Map 3.)

- Mean per capita revenue was 126,000 dong and the coefficient of variation was 1.15.

- In 1994, 12 provinces had total fiscal revenues of over 500 billion dong with the highest being 7,700 billion dong.[8] On the other hand, 17 provinces had fiscal revenues of less than 100 billion dong, of which 7 had revenues of less than 50 billion dong (Quan Doi Nhan Dan 6 Sep 94, p. 3).

The major source of fiscal revenue in Vietnam is state enterprise taxes (profits, turnover, and depreciation).[9] The concentration of state enterprises in the major cities of Hanoi, Haiphong, and Ho Chi Minh contributes to the wide dispersion in fiscal revenue measured across the nation as a whole. Further disparity can be attributed to the minerals tax which is largely concentrated in areas such as Ba Ria - Vung Tau (oil). Revenue from the agricultural tax, on the other hand, is more widely dispersed but accounts for only about 7 percent of total revenue.

Vietnam's fiscal system is designed to achieve a degree of equalization as indicated by less dispersion on the expenditure side than on the revenue side.

- Per capita fiscal expenditures ranged from 60,000 dong in Hai Hung province in the Red River Delta to 335,000 dong in Hanoi, a ratio only one fifth of the dispersion in revenues. (See Map 4.)

- Mean per capita fiscal expenditures in 1992 was 125,000 dong and the coefficient of variation was 0.47.

A comparison of Maps 2 and 3 indicates that wealthier areas (as measured by per capita GDP) also tend to raise greater fiscal revenue. In fact, the two variables are

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[5] Fiscal revenue generating capacity reflects the amount of tax revenue that can be raised within an administrative area and is determined by the set of tax rates levied by all levels of taxing authorities and the tax base.

[6] Statistics on fiscal revenue and expenditures include only the center, province, and district levels of government. Commune level government fiscal statistics are not included.

[7] The dong - U.S. dollar exchange rate was 11,190 in mid-1992.

[8] The dong - U.S. dollar exchange rate was 10,981 in mid-1994.

[9] State enterprises accounted for 60 percent of total government revenue in 1992 (World Bank 1993).

Map 3. Provincial Variation in Per Capita Fiscal Revenue, 1992

Dong Per Capita

▨	25,000 to 74,000
░	75,000 to 124,000
▤	125,000 to 174,000
■	175,000 to 760,000
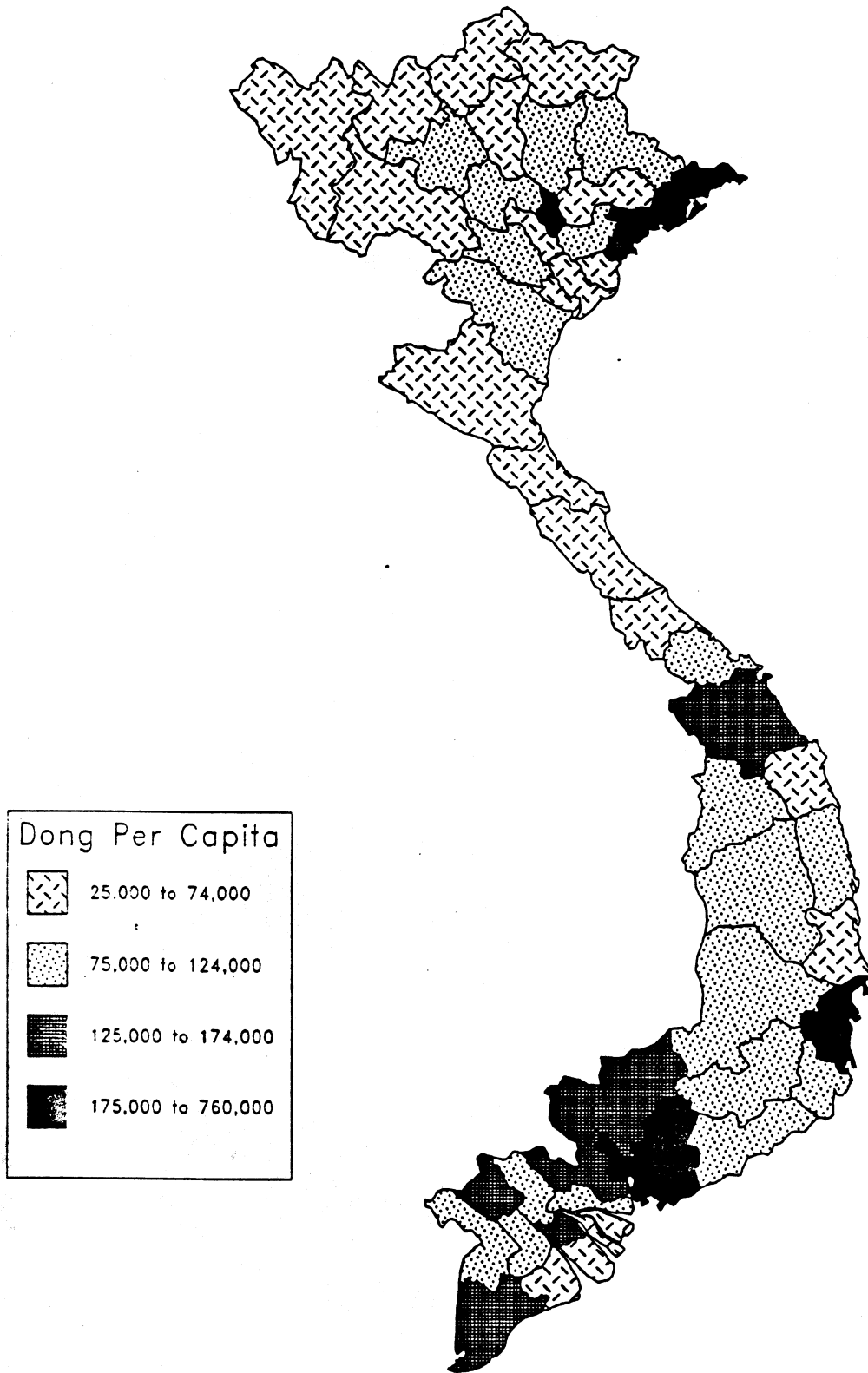
Source: World Bank, 1995, Vietnam Poverty Assessment and Strategy.

Map 4. Provincial Variation in Per Capita Fiscal Expenditures, 1992

Dong Per Capita

- 60,000 to 119,000
- 120,000 to 179,000
- 180,000 to 239,000
- 240,000 to 335,000
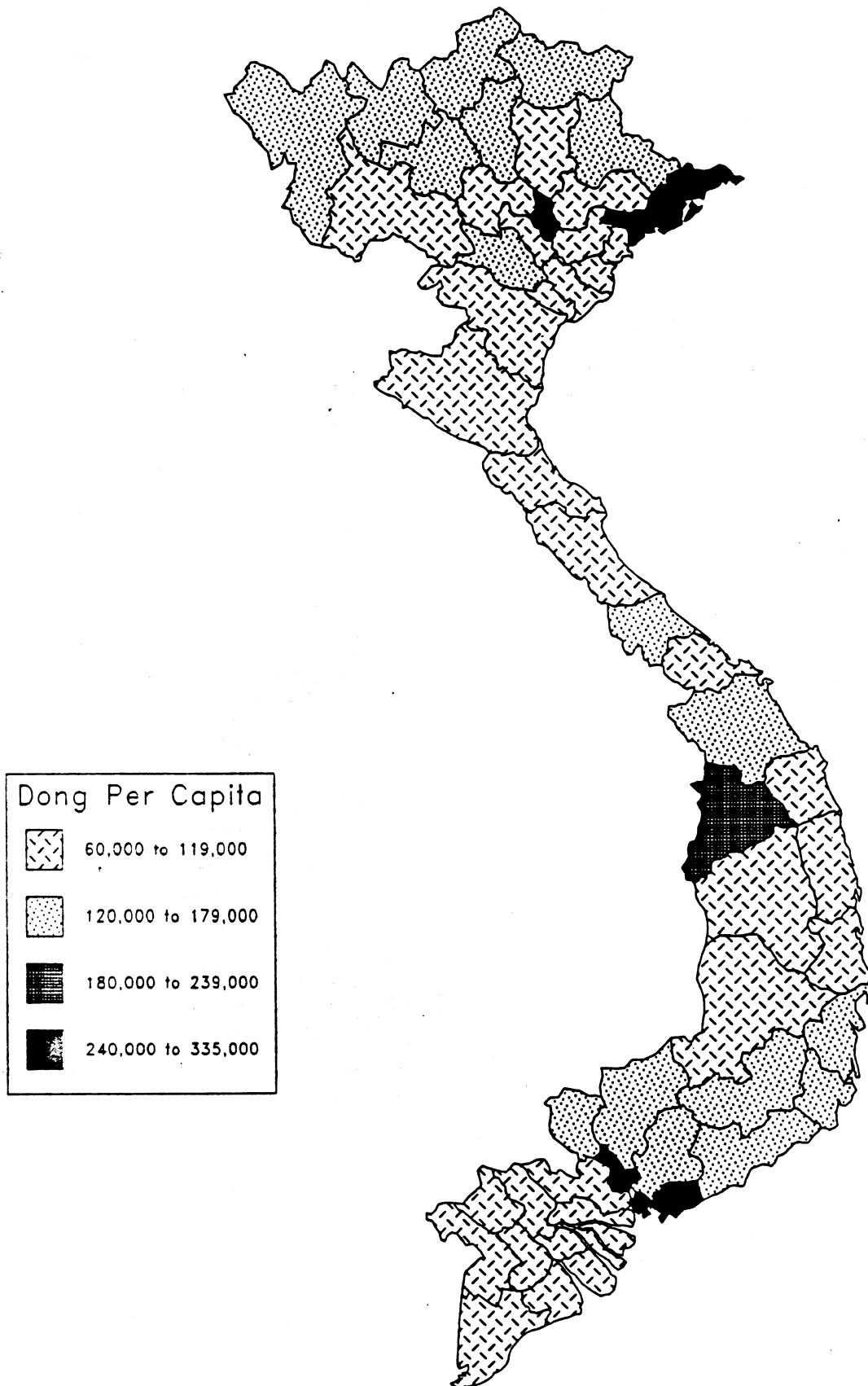
Source World Bank, 1995, _Vietnam Poverty Assessment and Strategy._

statistically correlated--a 1 percent rise in per capita GDP leads to a 1.2 percent increase in per capita fiscal revenue (Bird et al. 1995). On the expenditure side there is still a positive correlation but not as great as for revenue -- as per capita GDP rises by 1 percent, per capita expenditures increase by 0.4 percent. Differences in per capita revenues and expenditures across provinces in Vietnam are considered large in international comparison and are comparable to those found in China (Wong 1995).[10]

One important factor determining economic growth is infrastructure. In Vietnam regions are starting from very unequal bases, owing to differing legacies, such as the extent of war damage, and resource endowments. Investment in infrastructure, depending on how it is allocated, can help to close the gap or contribute to widening disparities. A relevant question is whether investment in infrastructure, whether it be for transport, energy, agriculture, industry or social services, is higher in poorer areas or higher in areas already at higher income levels. Unfortunately, a comprehensive set of data on state (government) and nonstate capital investment at the subnational level is not available. Subnational data are published, however, on some components of total investment and are examined below.

Local governments in Vietnam undertake investment in both the manufacturing sector, such as transport, agriculture, and industry, and in the service sector, such as housing, social insurance, and education.[11] The overall allocation of local government investment funds is two-thirds to manufacturing sectors and one-third to service sectors (Vietnam General Statistical Office 1994).

- In 1992, local government investment ranged from 7,500 dong per capita in Hai Hung province in the Red River Delta to 140,000 dong per capita in Phu Yen province in the Central Coast, a ratio of 19:1. (See Map 5.)

- Mean per capita local government investment in 1992 was 43,000 dong and the coefficient of variation was 0.57.

Nonstate investment includes investment by communes, cooperatives, private businesses, and households. Households are the source of the overwhelming majority of nonstate investment, accounting for 87 percent of total (Table 3). Household investment levels appear to rival local government investment levels. The top category of investment is housing, accounting for 64 percent of total, and is undertaken primarily by households. The Red River Delta region had the highest level of per capita investment for households at nearly 200,000 dong in 1992 and the highest share of total investment going to housing, 70 percent. Commune investment is highest in the Red River Delta (nearly 15,000 dong per capita) and it is thought that a major share of this investment goes for agriculture.

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[10] For China, if Tibet is excluded, the richest province had per capita revenues that were fifteen times those of the poorest province, and, if Tibet is included, the ratio exceeds 50:1 in 1991. The ratio for per capita expenditures in 1991 was 6:1, matching that found in Vietnam.

[11] Local government investment figures include investment projects managed by the province and district levels only. Commune level government investment is excluded. In 1992, local governments accounted for 34 percent of total state investment and the central government 66 percent.

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Map 5. Provincial Variation in Per Capita Local Government Investment, 1992
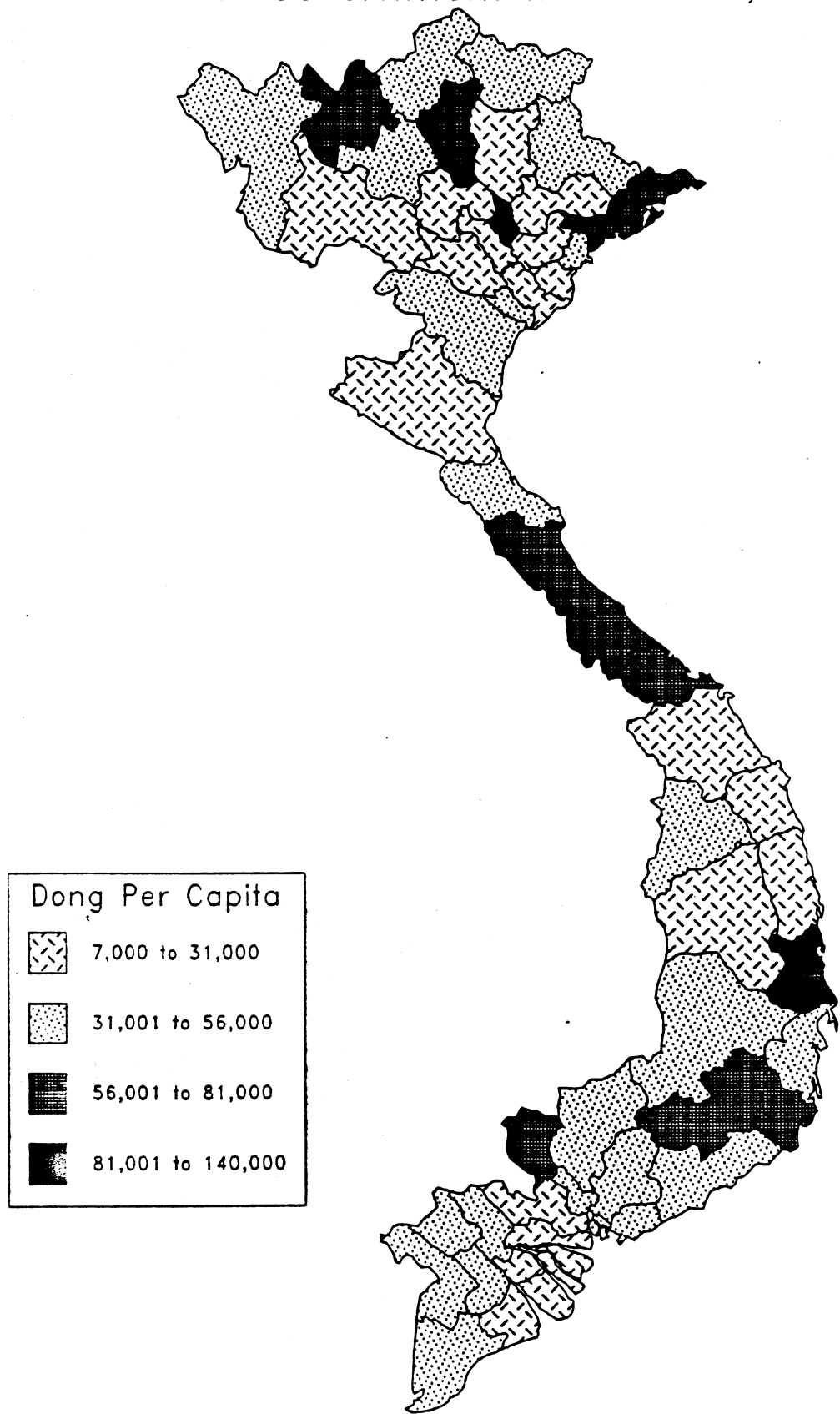
Dong Per Capita

- 7,000 to 31,000
- 31,001 to 56,000
- 56,001 to 81,000
- 81,001 to 140,000

Source: Vietnam General Statistical Office, 1994, _Vietnam Statistical Yearbook 1993_, Hanoi.

Table 3. Per Capita Nonstate Investment by Region and Source, 1992
(dong)

Region	Commune Investment	Cooperative Investment	Private Business Investment	Household Investment	Total Nonstate Investment
Northern Uplands	6,058	7,486	836	113,797	128,177
Red River Delta	14,692	16,600	1,494	198,824	231,610
North Central	8,636	11,403	797	135,426	156,262
Central Coast	4,912	9,997	2,441	132,765	150,115
Central Highlands	9,772	4,850	2,068	153,031	169,721
Southeast	9,209	3,022	29,709	125,164	167,104
Mekong River Delta	5,295	26	2,483	113,441	121,245
National	8,382	7,758	3,653	138,530	158,323

Source: Vietnam General Statistical Office, 1994, <u>Vietnam Statistical Yearbook 1993</u>, Hanoi: Statistical Publishing House.

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Cooperatives were never fully established in the south, hence they account for only a small portion of nonstate investment in southern regions. By way of contrast, the greater reservoir of entrepreneurial experience in the south is reflected in the high level of private business investment in the Southeast region, about 30,000 dong per capita (Table 3).

- Per capita nonstate investment in 1992 ranged from 121,000 in the Mekong Delta to 232,000 dong in the Red River Delta, a ratio of 2:1.

- Population weighted mean per capita nonstate investment was 158,323 dong and the coefficient of variation was 0.40.

The allocation of central government investment across provinces or regions is not available. Because the central government accounted for 60-70 percent of total government fixed asset investment in the early 1990's, it is difficult to obtain a complete picture of the distribution of investment without central government investment statistics. Province level data also are not available for foreign investment. However, some general figures on foreign investment have been published. Up to 1994, a total of 850 foreign investment projects had been approved with a total capitalization of US$ 9 billion (Quinlan 1994). However, only about US$ 2 billion had actually been implemented. Through the end of 1993, Ho Chi Minh city was the recipient of 36 percent of total foreign investment, but the north, with its lower wages and rents, is beginning to attract investors. Over the 1988-91 period, northern provinces accounted for 25 percent of projects and 20 percent of invested capital, but in the 1992-93 period these shares had increased to 33 and 44 percent, respectively (Quinlan 1994). While Ho Chi Minh, Vung Tau, and Hanoi account for a large share of foreign investment projects, 45 out of the 53 provinces have at least one such project. The net inflow of direct foreign investment into Vietnam was US$ 300 million in 1993, about 1 percent of total foreign investment in East Asia (World Bank 1994a).[12]

Other factors that may affect subnational growth rates in Vietnam include the size of the state sector and the level of industrialization. Typically as an economy develops, the importance of agriculture in employment and output value declines while the industrial and service sectors expand. Thus, the level of industrialization within a province can serve as an indicator of the stage of development.

- In 1992, agriculture's share of the combined agricultural and industrial output value ranged from a low of 3 percent in Ba Ria - Vung Tau to a high of 95 percent in Ha Giang province in the Northern Uplands, a ratio of 32:1. (See Map 6.)

- The mean share of agricultural output in total agricultural and industrial output in 1992 was 65 percent and the coefficient of variation was 0.32.

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[12] By way of comparison, in 1992, China received a net inflow of US$ 11.2 billion in direct foreign investment, Malaysia US$ 4.1 billion, Thailand US$ 2.1 billion, and Indonesia US$ 1.8 billion (World Bank 1994a).

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Map 6.   Provincial Variation in Agriculture's Share of Gross Industrial and Agricultural Output Value, 1992

Percent

- ■ 0 to 25
- ▨ 26 to 50
- ░ 51 to 75
- ▨ 76 to 100
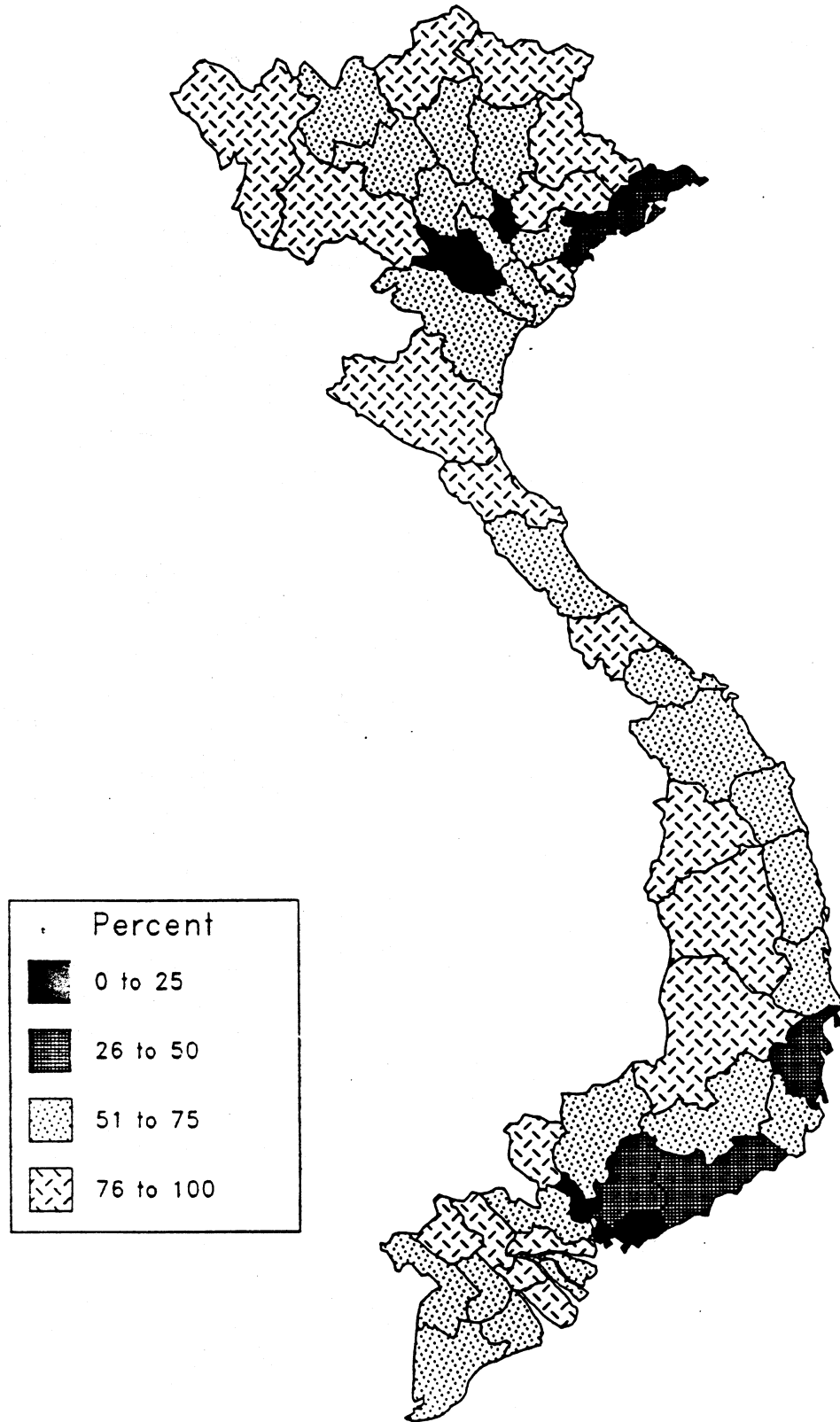
Source: PLAUM.

In terms of value of output, agriculture's share is dominant throughout most of Vietnam. The major urban centers and a few adjacent provinces are exceptions.

The state sector, with its reputation for inefficiency and subsidized operation, can have a detrimental effect on growth rates. The private sector, in contrast, is viewed as dynamic. Therefore, the larger the relative size of the nonstate sector in a province's economy, the greater the potential for higher growth rates. Areas dominated by the state sector must deal with inefficiencies and provide subsidies. The relative size, as measured by gross output, of nonstate (private and collective) enterprises in the industrial sector is examined across provinces as an indication of the potential for future growth rates.

- Within the industrial sector, the nonstate share of gross output in 1992 ranged from 1.5 percent in Hoa Binh province in the Northern Uplands to 84 percent in both Phu Yen province in the Central Coast and Soc Trang province in the Mekong Delta, a ratio of 56:1. (See Map 7.)

- The mean share of industrial output from the nonstate sector was 42 percent with a coefficient of variation of 0.50.

The state sector is clearly more dominant in the north and successful reform of state-owned enterprises will be more critical for the growth potential of regions in the north. Even within the private sector, there appear to be regional differences. A recent survey shows that private enterprises in Ho Chi Minh are larger in scale, with three times the capital and five times the employment level of their counterparts in Hanoi (Bangkok Post (Inside Indochina supplement) 6 June 1995, p. 2). The south offers better infrastructure and entrepreneurial experience to support production in private labor-intensive industries, such as agroprocessing, construction, textiles, and garments. On the other hand, the private sector is growing faster in the north because it was formerly more strictly controlled there and is starting from a smaller base.

One area of reform has been the liberalization of foreign trade. Government officials expect increased exposure to world prices to bring about greater economic efficiency within Vietnam. Opening up also brings opportunities for foreign investment and joint production. As a part of trade reform, trade management is being decentralized. In 1992, Vietnam's exports totaled $2.6 billion, of which 39 percent were locally managed, up from 15 percent in 1985, and imports totaled $2.5 billion, of which 40 percent were locally managed, up from 7 percent in 1985.

- Son La, Ha Bac, and Hoa Binh provinces, all in the Northern Uplands, reported no locally managed trade in 1992.

- With the exception of Hanoi city, trade is concentrated in the South. (See Map 8.)

- Ho Chi Minh city led all provinces with the largest volume of locally managed trade at $918 million. Ho Chi Minh accounted for 40 percent of the country's locally managed exports and 50 percent of its locally managed imports.

Map 7. Provincial Variation in Nonstate Share of Gross Industrial Output, 1992

Percent

	0 to 25
	26 to 50
	51 to 75
	76 to 100

Source: PLAUM.

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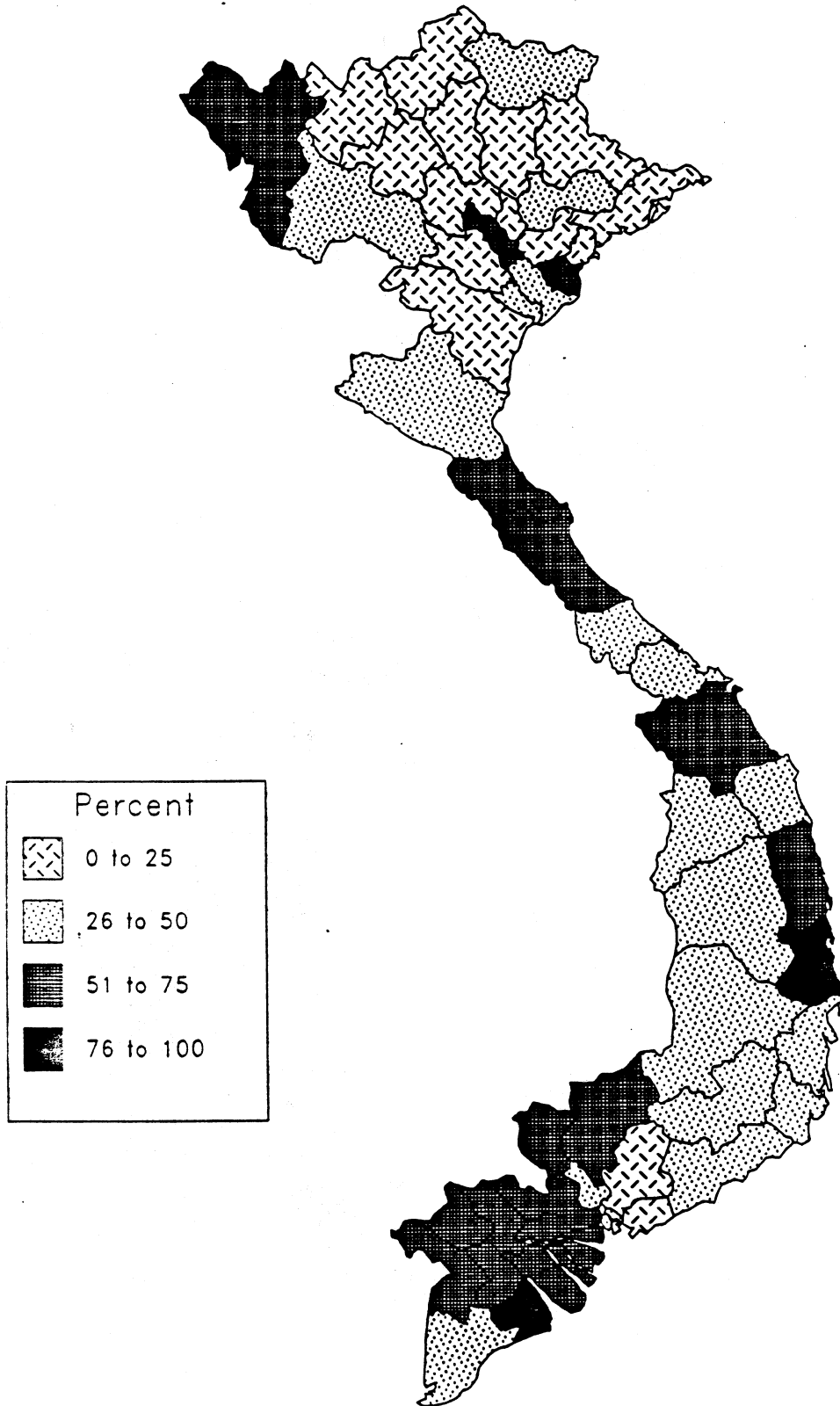
Map 8. Provincial Variation in Total Locally Managed Trade, 1992

Million US$

- [✕] 0 to 10
- [∴] 11 to 40
- [▦] 41 to 120
- [■] 120 to 918
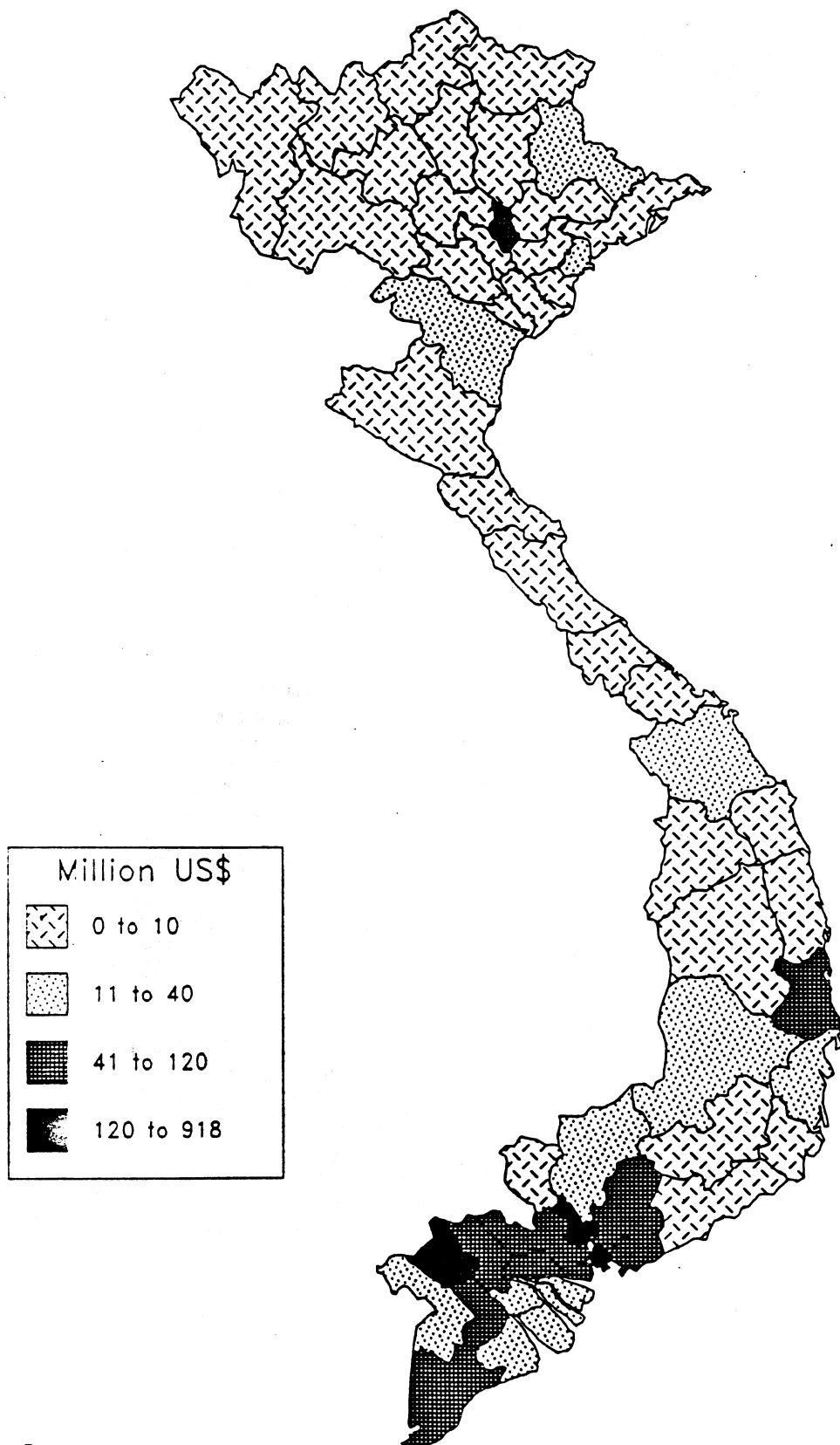
Source: PLAUM.

III. MIGRATION

Summary

Data document migration flows in the second half of the 1980's from rural to urban areas and from the north to the south, in particular to the new economic areas established by the government for resettlement in the Southeast and Central Highlands regions. Migrants are predominantly young and male. The higher incidence of poverty in rural areas and the North Central and Northern Uplands regions may serve as a push factor driving future migration flows. With the exception of the Mekong Delta region, farm size is extremely unfavorable, providing another motivation for rural residents to migrate. Labor absorption is coming primarily in the private sector, mostly through the formation of new household-run businesses. Higher wage levels in urban areas and the south and a more advanced private sector in the south are major pull factors for migration.

This section turns to the question of whether the uneven income distribution and regional variation in the stage of development are leading to migration flows. Data on internal and international migration in Vietnam, as in many countries, are very limited. Therefore, this section examines both available data on migration and potential push and pull factors that may be driving migration in the present and the future.

From the 1989 population census results we can learn something about migration flows in the second half of the 1980's. The 1989 population census asked respondents where they were living 5 years earlier (April 1, 1984), and the major findings are summarized below.

- Of the population 5 years of age and over in 1989, 95 percent were living in the same district as they were 5 years earlier (in 1984).

- Of the 5 percent of the 1989 census population that had moved across a district line since 1984, almost all (98 percent) had moved within Vietnam - internal migrants - and only 2 percent had moved to Vietnam from abroad.

- Only 0.1 percent of the 1989 resident population of Vietnam citizens had been living abroad in 1984. Most of those migrating from abroad settled in Hanoi, Nghe Tinh, and Ho Chi Minh. Of those migrating from abroad, 82 percent were males.

- Overall, males represented 57 percent of internal and international migrants recorded in the census.[13]

- Migrants were predominantly young. One out of every 10 males in the age group 25-29 was a migrant during the 1984-1989 period. Migrants aged 15-34 comprised 60 percent of total migrants.

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[13] Note that emigrants are not included in the Vietnam population census.

- Migration between neighboring provinces was substantial, but there was a general pattern of migration flows from the north to the south. (See Map 9, where positive values represent positive net in-migration and negative values represent more out-migrants than in-migrants.)

- Cao Bang and Lang Son provinces in the Northern Uplands had the highest rates of net out-migration. (See Map 9.)

- Dac Lac and Lam Dong in the Central Highlands and Vung Tau - Con Dau (now Ba Ria -Vung Tau, in the Southeast), containing new economic areas for resettlement, had the highest rates of net in-migration at 199, 144, and 125 per thousand, respectively. (See Map 9.)

- Another major migration flow consisted of residents from several Red River Delta and Central Coast provinces moving to Central Highlands and Southeast provinces. (See Map 9.)

- Hanoi was more successful than Ho Chi Minh in restricting in-migration through administrative measures.

- Females outnumber males migrating to Ho Chi Minh city.

The more recent Living Standards Survey asked respondents aged 15 years and older their birth place and where they lived before their most recent migration. Migration was defined as moving from one residential place to another (other commune, district, province, or country),[14] with no time limit imposed on when the migration occurred but restricting the count to those who stayed at least 12 months. Joining the army or being moved while a member of the armed services was not considered as migration. Because no time limit was placed on when the latest migration occurred, it is difficult to pinpoint trends in the rate and flow of migration. Major findings on most recent migration from this survey are summarized below.

- With the exception of the Central Highlands and Southeast regions, the majority of migration occurred within the same region (Table 4).

- The North Central and Red River Delta regions had the largest shares of migrants coming from abroad (Table 4).

- Males represented 56 percent of all migrants.

- Of female migrants, 62 percent gave family reasons as the motivation for their most recent migration.

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[14] This definition of migration is much less restrictive than the census definition. Someone who changed residences within a district would be called a migrant in the Living Standards Survey but not in the census.

Map 9. Interprovincial Net Migration, 1984 to 1989
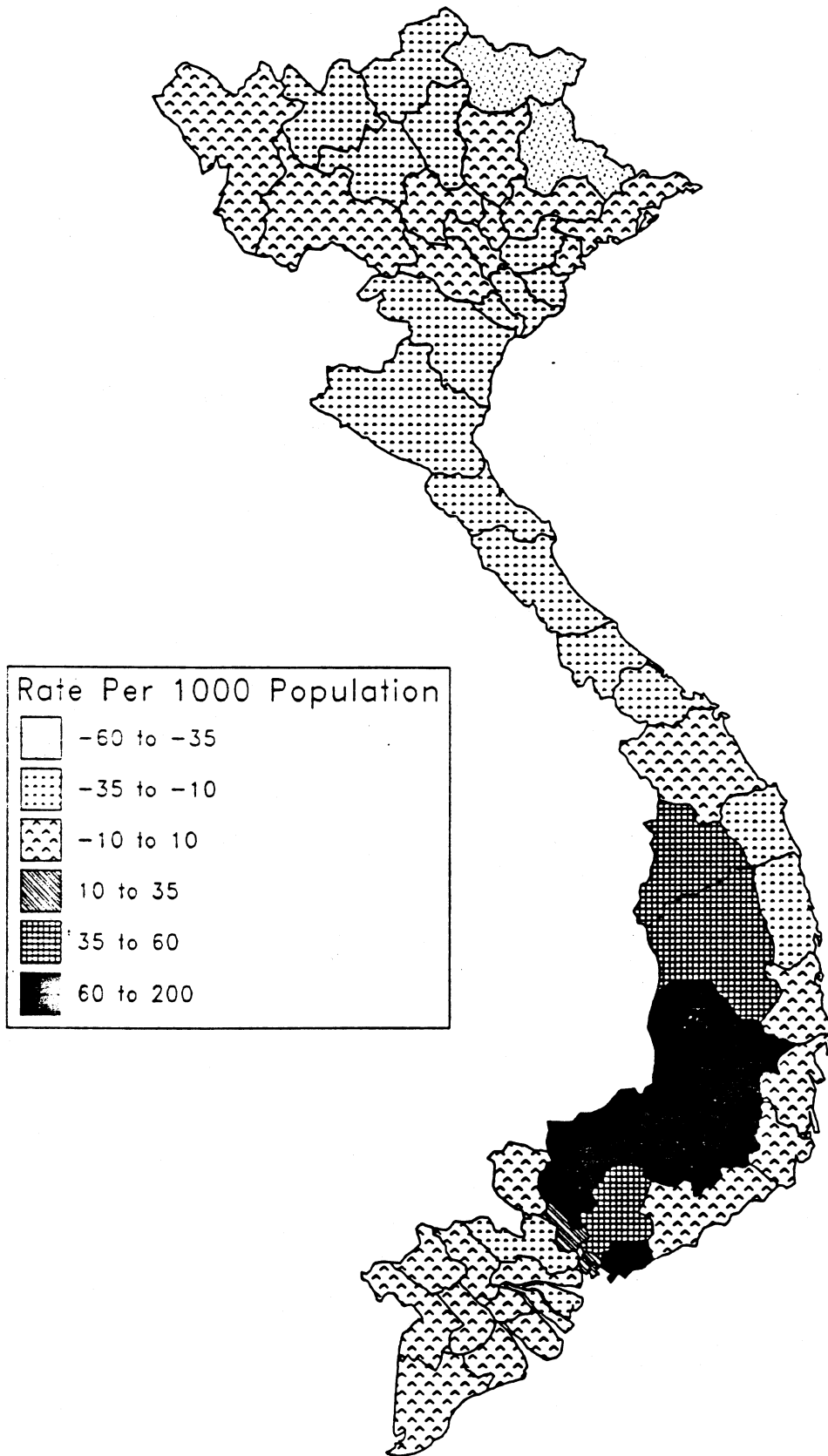
Rate Per 1000 Population

- ☐ −60 to −35
- ▦ −35 to −10
- ▨ −10 to 10
- ▨ 10 to 35
- ▦ 35 to 60
- ■ 60 to 200

Table 4. Origin of Migrants by Current Region of Residence
(percent)

	Northern Uplands	Red River Delta	North Central	Central Coast	Central Highlands	Southeast	Mekong Delta
Migrated from within the region	63.9	51.4	55.1	63.4	30.1	46.9	71.1
Migrated from outside the region but within the country	34.0	42.4	37.9	34.4	69.3	49.9	24.7
Migrated from outside the country	2.2	6.2	7.0	2.1	0.6	3.2	4.2

Source: Vietnam State Planning Commission and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993, Hanoi.

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- Of male migrants, 37 percent cited disaster and war and 34 percent cited family reasons as the motivation for their most recent migration.

- Migrants are more likely to be in wealthier households than poorer ones.

Only 21 percent of migrants in the Vietnam Living Standards Survey cited economic reasons for migrating. As administrative barriers to permanent migration are removed, poverty is likely to become an increasingly important push factor for migration. There already is anecdotal evidence of poverty motivating seasonal labor flows.

The Vietnam Living Standards Survey found a high prevalence of poverty, with just over half of the population falling below the poverty line of 1,090,000 dong per person per year. The poverty line was defined as the cost of a food bundle supplying 2,100 calories per person per day plus an allowance for the consumption of essential nonfood items. One-quarter of the population cannot even meet their daily basic calorie requirement. Poverty is fairly widespread although it is more concentrated in rural areas (57 percent of the population) as opposed to urban areas (27 percent of the population). The North Central and Northern Uplands regions have poverty rates above the national average at 71 and 59 percent, respectively (Map 10). This distribution of poverty could foster north-to-south and rural-to-urban migration flows.

In determining whether an individual is above or below the poverty line, income (cash and in-kind) from only one year is used. Because agricultural income can exhibit high annual variation owing to fluctuations in the weather, it is useful to investigate whether indicators of wealth are consistent with the regional picture of poverty based on income. The Vietnam Living Standards Survey collected information on the ownership of color televisions. The regional pattern of ownership of this consumer durable is generally consistent with the distribution of poverty as measured by income (Maps 11 and 10). For example, ownership of color televisions is lowest in the North Central region, followed by the Northern Uplands (Map 11).

Unemployment has increased in recent years owing to the loss of Soviet aid and subsidized trade; the return of laborers from Eastern Europe, the former Soviet Union, and Iraq; the demobilization of soldiers; and the restructuring of state-owned enterprises. For example, the Red River Delta had numerous small workshops producing low quality goods for the former Soviet Union. The collapse of the Soviet Union and the ending of subsidies from Vietnam's government have forced many of these workshops to close and have led to an increase in unemployment. One estimate places the urban unemployed at 2.2 million, approximately 10 percent of the urban population, and for rural areas half the work force is considered to be unemployed or underemployed (Saigon Giai Phong 5 Jan 95, p. 2).

Population pressures on the land are tremendous resulting in a farm size that in some areas is too small to provide even a subsistence living. In the Red River Delta the average household farms less than a third of a hectare and in the Mekong Delta, where population density is relatively low, households manage about 1.5 hectares (Ngo 1993). The low land to labor ratio motivates farmers to search for off farm employment to supplement their agricultural earnings. The two regions where households have the

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Map 10. Regional Poverty Rate, 1992/93
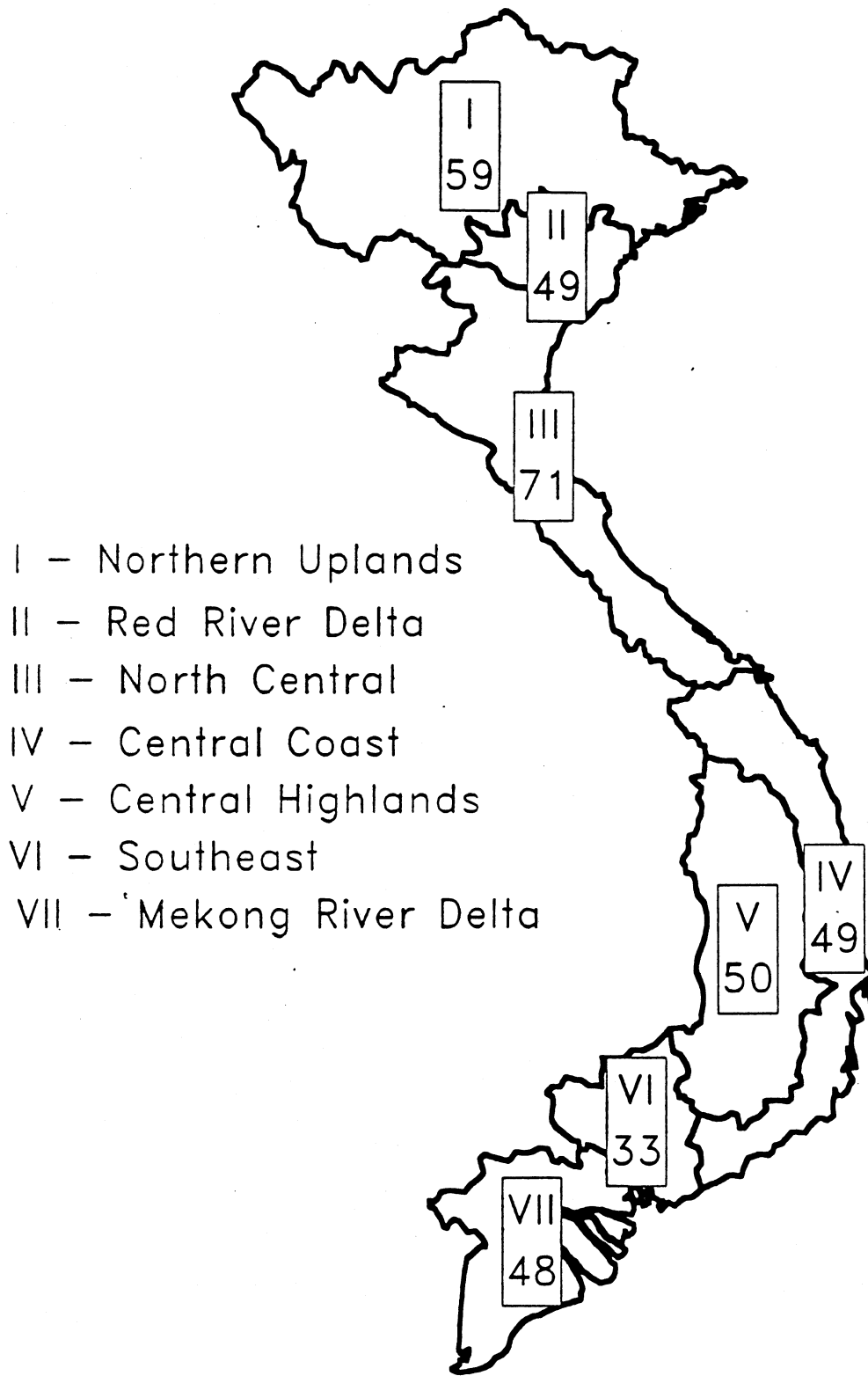
I
59

II
49

III
71

I – Northern Uplands
II – Red River Delta
III – North Central
IV – Central Coast
V – Central Highlands
VI – Southeast
VII – Mekong River Delta

IV
49

V
50

VI
33

VII
48

Map 11.   Color Televisions Per 100 Households by Region, 1992
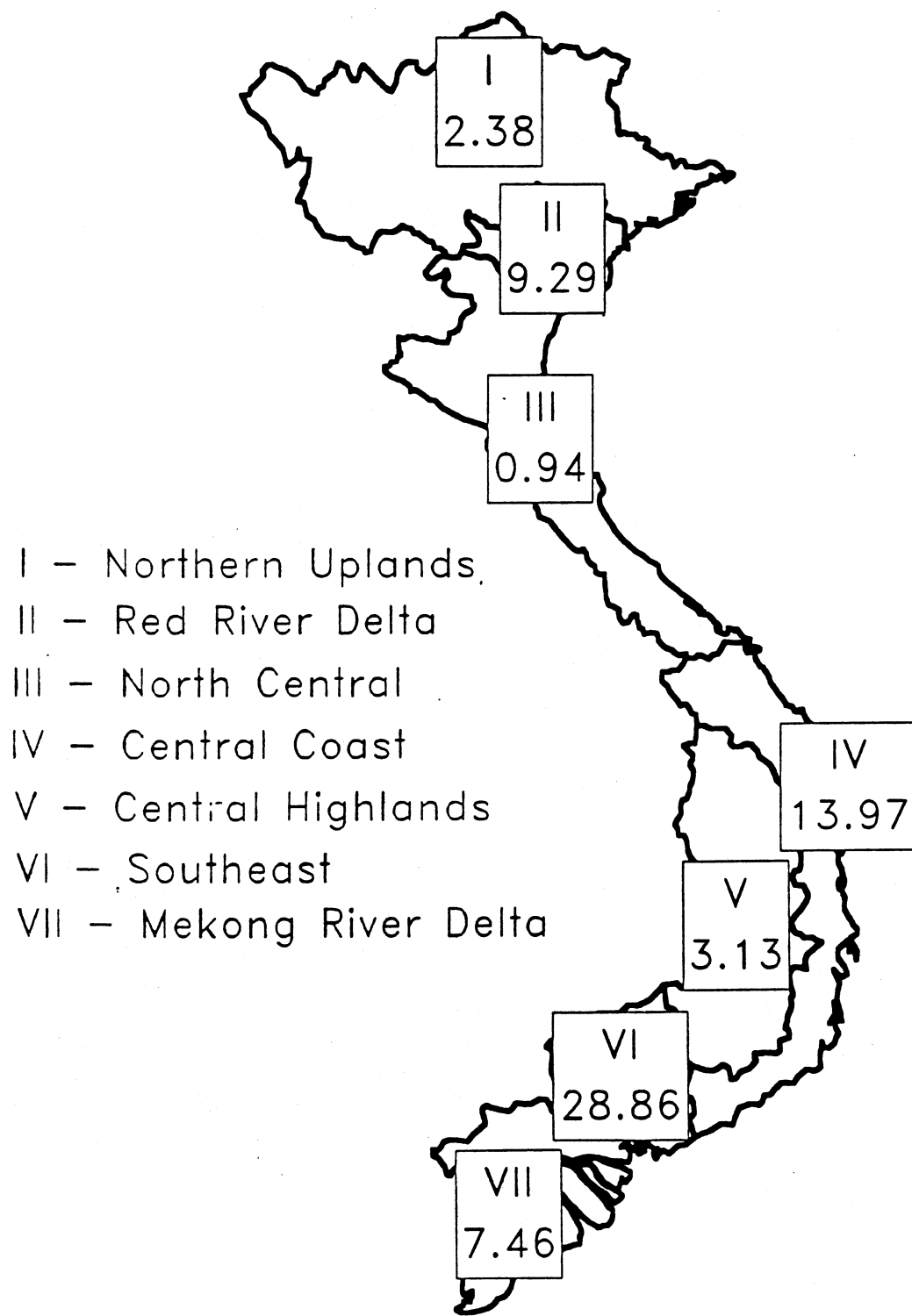
I
2.38

II
9.29

III
0.94

I — Northern Uplands
II — Red River Delta
III — North Central
IV — Central Coast
V — Central Highlands
VI — Southeast
VII — Mekong River Delta

IV
13.97

V
3.13

VI
28.86

VII
7.46

Source: Vietnam State, Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey, 1992—1993, Hanoi.

highest share of income from agriculture also have the lowest per capita total income (Table 5). The search for higher income may motivate people to leave areas where arable land is scarce and where agriculture currently is the major sector of employment. Unfortunately province level data are available only for food sown area rather than total sown area. It is possible that in some areas where industrial crops dominate, the arable land picture is not as dire as portrayed by the food crop sown area. The distortion caused by using food crop sown area should be minimal, however, because 88 percent of the area sown to annual crops was occupied by food crops in 1992.

- In 1992, food crop sown area per rural resident ranged from a low of 0.07 hectares in Song Be province in the Southeast to 0.32 hectares in Long An province in the Mekong Delta, a ratio of 4.6:1.[15] (See Map 12.)

- The mean sown area was 0.14 hectares per rural individual and the coefficient of variation was 0.42.

With the exception of the Mekong Delta region, land pressures are fairly severe throughout Vietnam.

- The share of labor employed in the agricultural sector ranges from 10 percent in Ho Chi Minh to 88 percent in Dong Thap province in the Mekong Delta region in 1992. (See Map 13.)

- The average provincial share of labor employed in agriculture is 58 percent and the coefficient of variation is 0.28.

Agriculture is the major sector of employment in most nonurban areas. Of course, it is not necessary for farmers to migrate in order to diversify employment and income sources. In the short run, however, opportunities for nonagricultural employment may appear greater in certain areas.

The private sector, consisting of household and individual businesses and private enterprises, has taken off since the late 1980's. The vast majority of new businesses are household-run businesses, which employ primarily household members and hire few laborers. In 1989, Vietnam reportedly had a total of 1,284 private enterprises, of which 1,149 were in the Southeast and 60 were in the Red River Delta (Truong and Gates 1992). Ho Chi Minh city accounts for the largest number of private enterprises and Dong Nai province, also in the Southeast region, has the second largest number of private enterprises in the south. Hanoi and Haiphong in the Red River Delta have the largest concentration of private enterprises in the north (Truong and Gates 1992).

Findings from a sample survey of 1,000 small nonstate enterprises (household, private, and cooperative) located in Ho Chi Minh, Hanoi, Haiphong, and in rural areas of Ha Son Binh, Vinh Phu, and Quang Ninh provinces in the north and Long An and Cuu Long

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[15] Sown area is equal to the cultivated area times the multiple cropping index.

Table 5. Per Capita Income by Source of Income and Region, 1992/93
(thousand dong)

Source of Income	Northern Uplands	Red River Delta	North Central	Central Coast	Central Highlands	Southeast	Mekong Delta	Total
Agriculture and forestry	505.4 (63.11)	437.6 (39.93)	358.4 (46.97)	180.7 (21.17)	550.0 (64.56)	213.2 (11.27)	515.1 (40.70)	401.1 (36.30)
Off farm self employment	158.3 (19.76)	400.2 (36.52)	260.5 (34.14)	390.7 (45.77)	122.4 (14.37)	958.8 (50.67)	424.4 (33.53)	407.1 (36.84)
Wages	89.3 (11.15)	181.8 (16.59)	93.3 (12.22)	239.2 (28.03)	170.0 (19.95)	619.4 (32.73)	290.0 (22.91)	240.6 (21.77)
Pension, subsidies, and scholarship	44.8 (5.59)	67.5 (6.16)	46.9 (6.15)	28.4 (3.33)	9.2 (1.07)	19.5 (1.03)	13.5 (1.07)	36.4 (3.29)
Other	3.1 (0.38)	8.7 (0.80)	3.9 (0.51)	14.4 (1.69)	0.4 (0.05)	81.4 (4.30)	22.7 (1.79)	19.8 (1.79)
Total	800.9 (100.00)	1095.8 (100.00)	762.9 (100.00)	853.4 (100.00)	851.9 (100.00)	1892.3 (100.00)	1265.7 (100.00)	1105.1 (100.00)

Note: Figures in parenthesis are percent of total income.

Source: Vietnam State Planning Committee and General Statistical Office, 1994, <u>Vietnam Living Standards Survey 1992-1993</u>, pp. 217 and 219.

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Map 12.   Provincial Variation in Food Crop Sown Area Per Rural Population, 1992
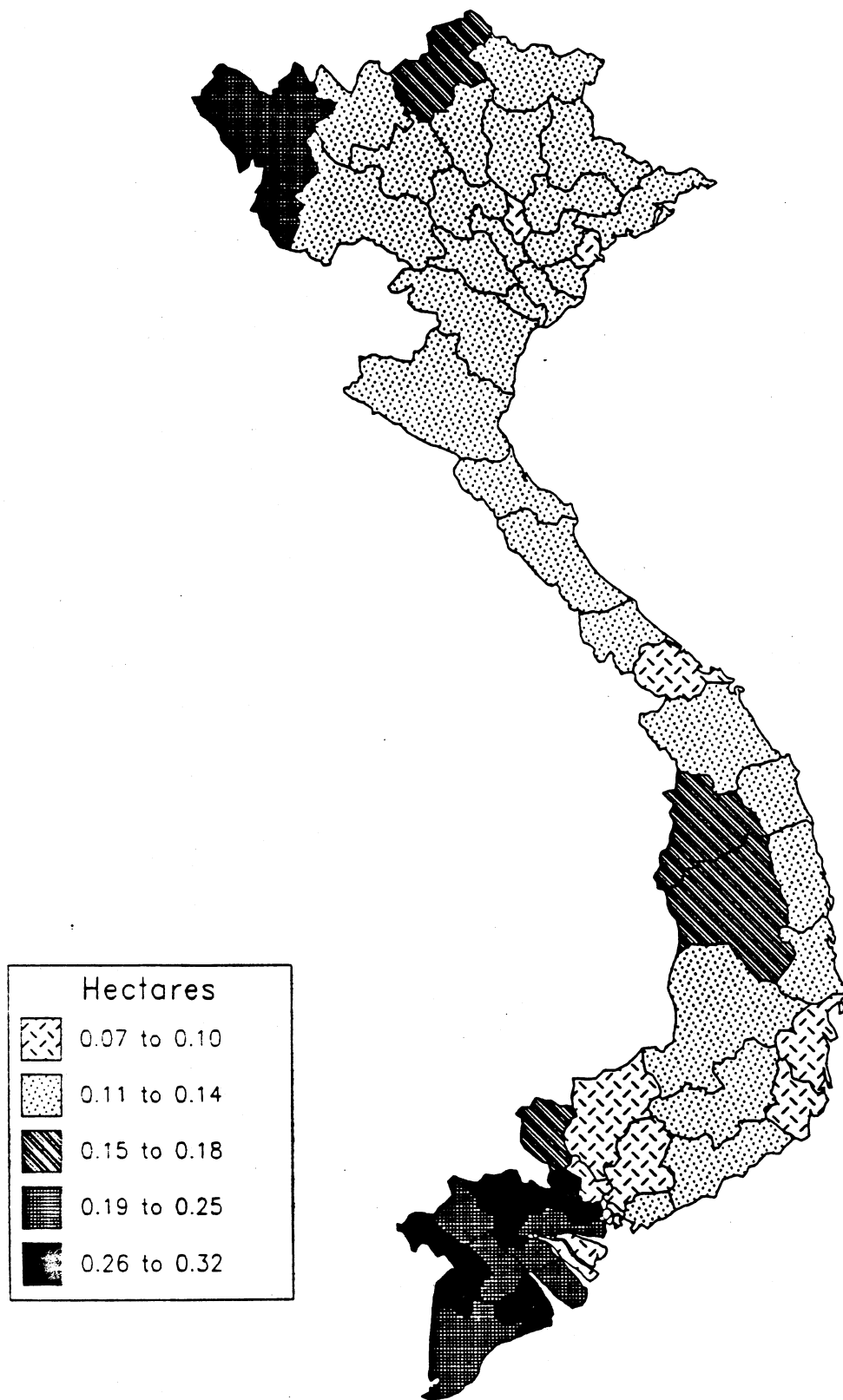
Hectares

- 0.07 to 0.10
- 0.11 to 0.14
- 0.15 to 0.18
- 0.19 to 0.25
- 0.26 to 0.32

Source: Vietnam General Statistical Office, 1994, <u>Vietnam Statistical Yearbook 1993</u>, Hanoi.

Map 13. Provincial Variation in Share of Labor Force Engaged in Agriculture, 1992

Percent

- 0 to 25
- 26 to 50
- 51 to 75
- 76 to 100
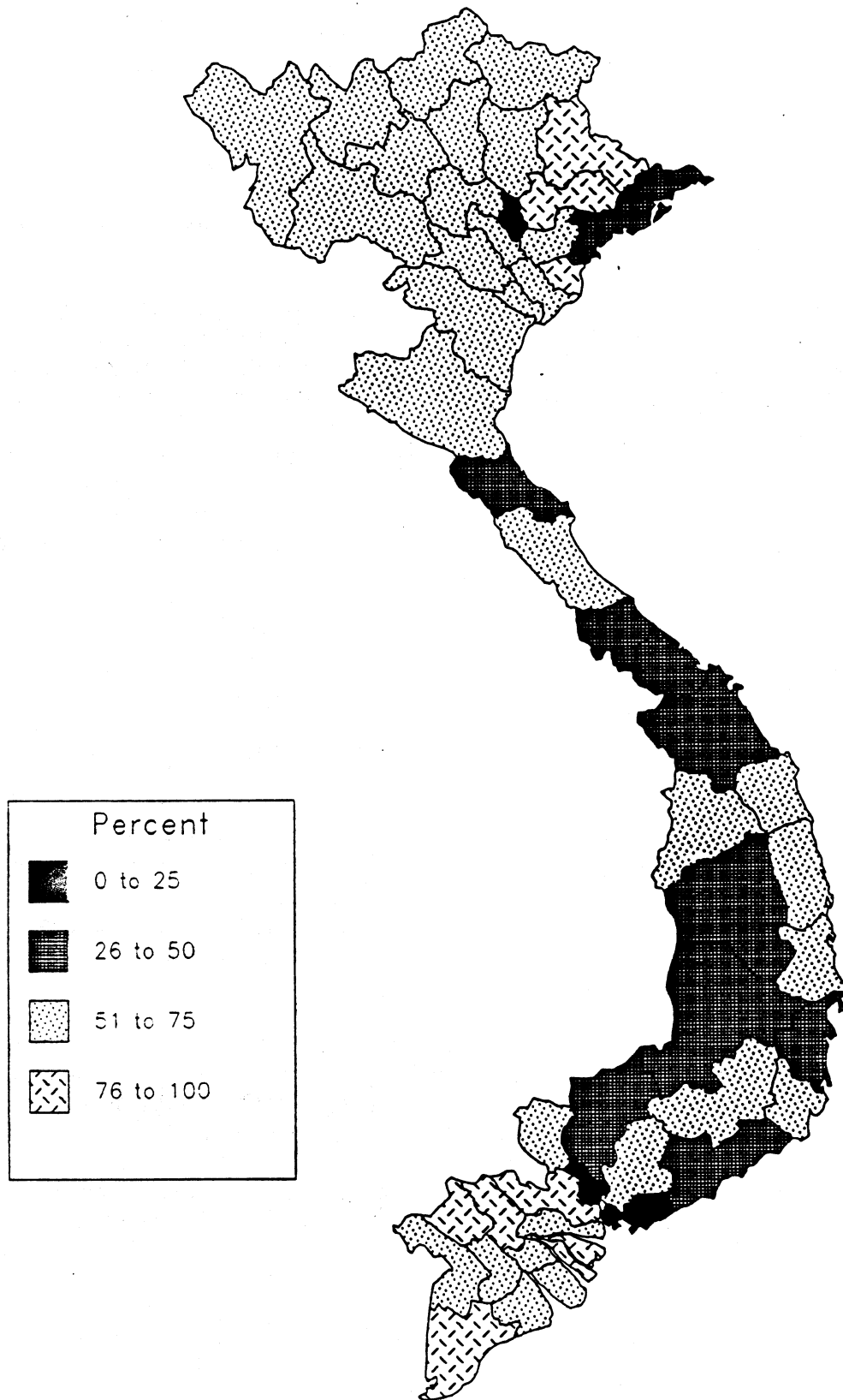
Source PLAUM

provinces in the south for 1990 are presented below along with comparisons to state enterprises (Ronnas 1992):

- Labor absorption is coming primarily through self-employment and employment in household businesses.

- The labor force in the nonstate sector is younger than the state sector labor force.

- In the nonstate sector, laborers are younger in Ho Chi Minh than in Hanoi and Haiphong.

- Consistent with the pattern for the entire population of higher educational attainment levels in the north than in the south, 29 percent of the labor force in nonstate enterprises in Ho Chi Minh city had not completed 7 years of formal education as compared to only 8 percent in Haiphong and 11 percent in Hanoi.

- The education level of state enterprise employees is much higher than those in the nonstate sector.

- For rural enterprises, the education level is higher in enterprises in the southern provinces than in the northern provinces.

- There is little evidence of excess demand for skilled workers.

- In both rural and urban areas, jobs in the private sector are predominantly found through recommendations by friends, relatives, and personal contacts. In contrast, state enterprises are allocated laborers by local authorities.

- In urban areas, it is fairly common for new workers in the private sector to be required to contribute cash or materials to the enterprise at the time of hiring. The contribution is treated as an investment and is redeemable upon termination of employment. This practice was not found to be as common in rural nonstate enterprises as in urban areas. A lack of credit markets forces enterprises to rely on employee contributions which can serve as an employment barrier to laborers from the lowest income strata.

- Wage levels in the nonstate sector are higher in the south. Across urban areas, the differential is quite high. Average wage levels in Ho Chi Minh are almost twice that found in Hanoi and Haiphong. A major explanation for the wage differential is the better endowment of machinery and equipment in the south.

- The rural-urban wage differential is not as large as the north-south differential for rural and urban nonstate enterprises combined. Within the same region, urban wages exceed rural wages by 35-40 percent.

- Nonstate enterprises do not offer as comprehensive or generous benefits as state enterprises, which may be a partial explanation for the reluctance of state workers to leave their jobs for higher paying jobs in the private sector.

- If existing nonstate enterprises expand, wage jobs will be generated and employment opportunities for young workers will increase. On the other hand, if growth is achieved primarily through the formation of new enterprises, these will tend to be household-based enterprises and offer fewer employment opportunities for the young. An expansion of existing enterprises may encourage young workers to migrate to areas with higher growth rates.

Another study of the private sector found that employees of private enterprises receive, on average, higher wages than workers in local state-owned enterprises producing similar items (Truong and Gates 1992). In Ho Chi Minh city, private enterprises pay two to three times the wages offered by state-owned enterprises (Truong and Gates 1992).

Statistics on the labor force engaged in private sector trade, food services, and other services are available for 1993 at the provincial level.

- The share of labor employed in this sector ranged from 0.7 percent in Song Be province in the Southeast region to 7.0 percent in Ho Chi Minh. (See Map 14.)

- Mean employment share was 3 percent and the coefficient of variation was 0.33.

- The private sector appears to be more advanced in the south as compared to the north (Map 14).

Map 14. Provincial Variation in Share of Labor Force Engaged in Private Sector Trade, Food Services, and Other Services, 1993
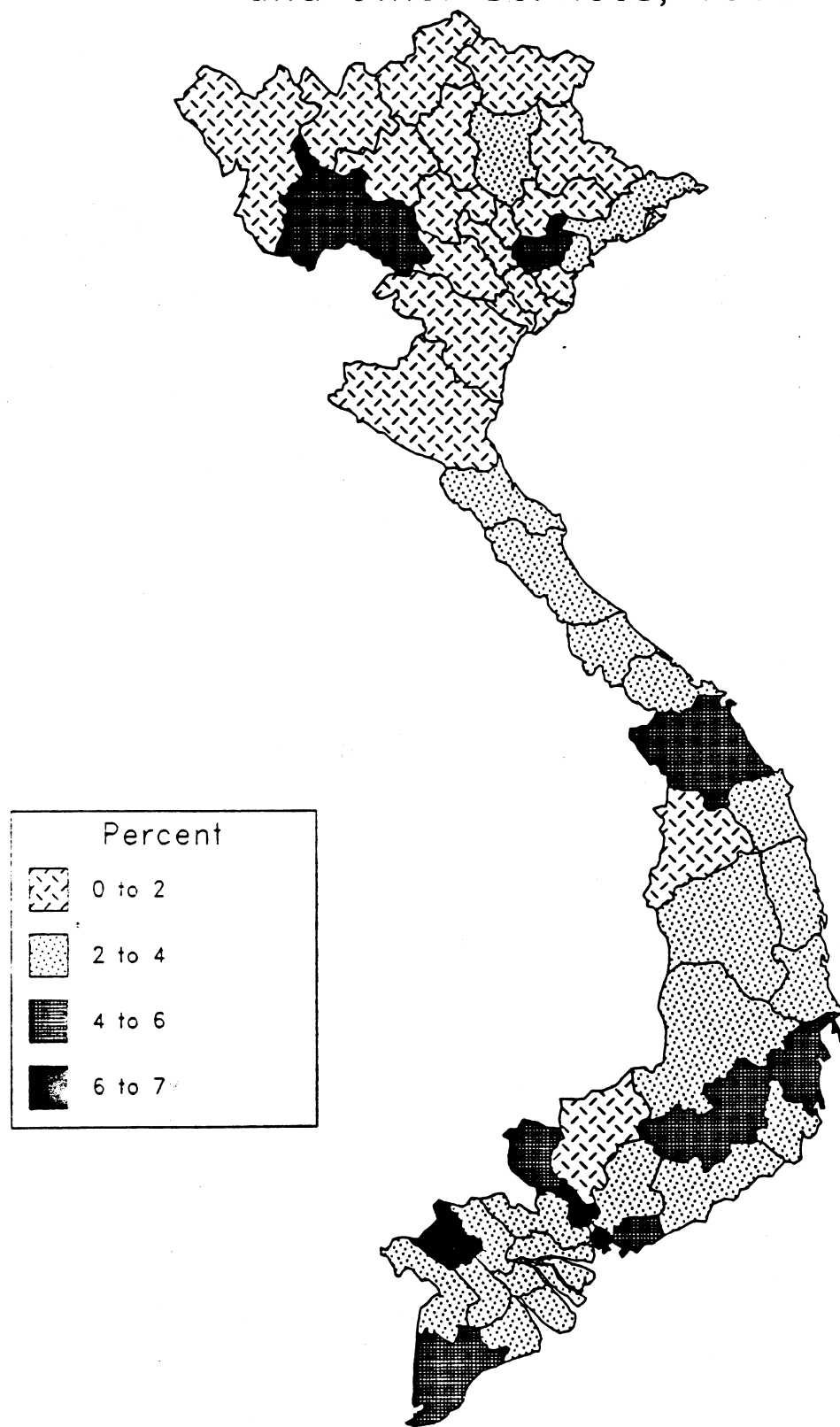
Percent

- 0 to 2
- 2 to 4
- 4 to 6
- 6 to 7

IV. RURAL HEALTH AND EDUCATION

Summary

The level and quality of health and education services provided to the rural population lags behind that provided to urban residents. The Northern Uplands and Central Highlands regions stand out with the least favorable status indicators for both health and education. A deterioration in the delivery of services is found for the late 1980's and early 1990's owing in large measure to major budget cutbacks. While there are signs of limited recovery and improvement in both the health and education sectors (enrollment rates are up and malnutrition rates are declining), inadequate government funding is placing an increasing burden on the private sector. The introduction of user fees is making health and education services less accessible to the poor.

In spite of its low level of per capita income, recently estimated at US$ 220 (Rorris and Evans 1994),[16] Vietnam has achieved impressive standards in education and health as reflected by a national literacy rate of 88 percent (Rorris and Evans 1994) and infant mortality rate of 36 deaths per 1,000 live births (The Economist 1995). Recent studies by the World Bank and other international organizations, however, point to other social indicators that are not as impressive and have raised concerns that past achievements in the education and health sectors are threatened. Furthermore, national indicators for the social sector mask wide regional variation.

This section examines a number of social indicators reflecting the subnational status of education and health in rural areas at present and in the recent past in order to identify trends in regional disparity. In addition, factors contributing to a deterioration in status and increasing regional variation are discussed. We proceed first with the rural health sector.

Health Sector

Starting in the 1950's, North Vietnam put in place a multitiered health care delivery system, extending from national hospitals to a vast network of primary health facilities that reached down to the commune level (see Figure 1). The government also established health programs to deliver preventive health care, with goals such as controlling malaria and diarrheal diseases and immunizing against diseases.

Following reunification in 1975, the government attempted to improve the health infrastructure of the south and bring it up to the level of the north. This task proved very costly and was made more difficult by the emigration of skilled health workers from the south.

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[16] In terms of purchasing power parity, per capita GDP was estimated at US$ 1,010 in 1992 (UNDP 1995).

Figure 1. Organization of Public Health Establishments in Vietnam

```
┌─────────────────────────────────────────┐
│                                         │
│            Central Hospitals            │
│                                         │
└─────────────────────────────────────────┘
                    │
┌─────────────────────────────────────────┐
│                                         │
│       Provincial General Hospitals      │
│                                         │
└─────────────────────────────────────────┘
                    │
┌─────────────────────────────────────────┐
│                                         │
│        District General Hospitals       │
│                                         │
└─────────────────────────────────────────┘
                    │
┌─────────────────────────────────────────┐
│                                         │
│         Intercommunal Polyclinics       │
│                                         │
└─────────────────────────────────────────┘
                    │
┌─────────────────────────────────────────┐
│                                         │
│          Commune Health Centers         │
│                                         │
└─────────────────────────────────────────┘
```
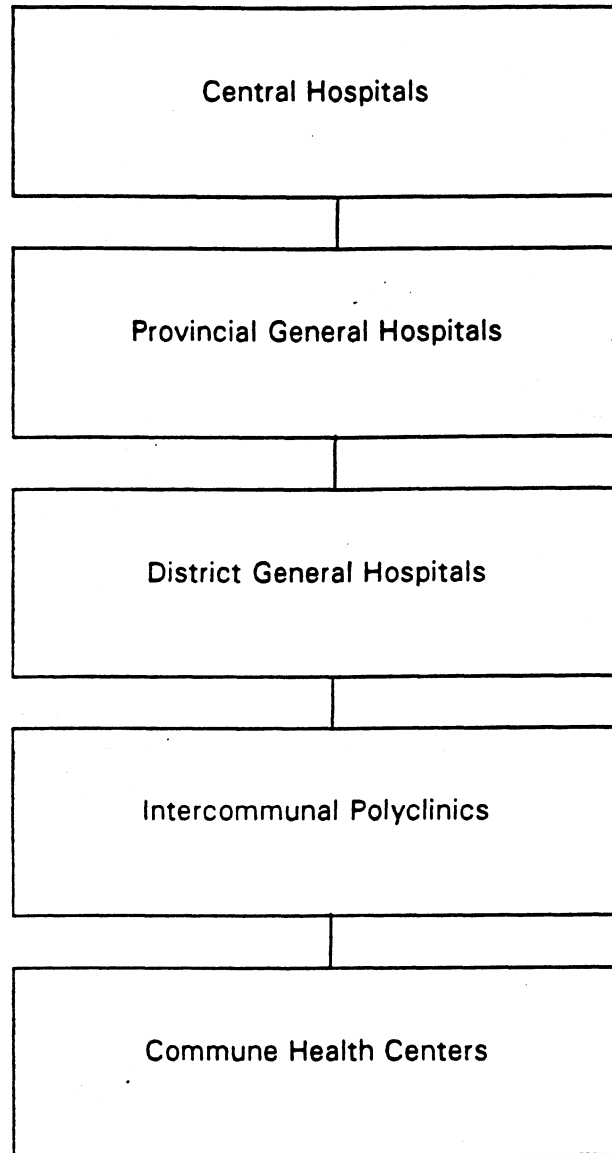
Commune health centers, presently numbering over 10,000, are responsible for providing primary health care, preventive services, and limited inpatient care. These centers typically serve a population of 2,000 to 10,000, and are staffed by two assistant doctors, one of whom is trained in pediatrics and obstetrics/gynecology, and one pharmacist.[17] Commune health centers refer complicated cases to the next higher level, intercommunal polyclinics.

Intercommunal polyclinics are commune health centers that have been upgraded with selected laboratory and surgical equipment and are staffed by four to five specialist doctors. In the early 1990's, there were approximately 700 intercommunal polyclinics with an average of less than two intercommunal polyclinics in each district. The government has announced a goal of one intercommunal polyclinic for every four to five commune health centers, thereby reducing the population served from the present 92,000 per clinic to about 34,000. Achieving this goal would require a near tripling of the number of intercommunal polyclinics.

In each district there is a district general hospital with 50-100 beds, including a laboratory capable of handling epidemiology and malariology. In principle, district hospitals serve as referral institutions for intercommunal polyclinics in the district. However, the majority of patients receiving care at the district hospitals are residents of the district seat, most seeking care on a self referral basis. Typically, maternal and child health (MCH) care and family planning facilities are attached to the district general hospital.

In each province there is at least one general hospital with 300-500 beds. These hospitals contain a full range of departments, including internal medicine, obstetrics and gynecology, surgery, pediatrics, infectious diseases, traditional medicine, and emergency care. Provincial hospitals are intended to be only referral centers, serving the district hospitals. However, the situation is similar to that of district hospitals; most patients are nearby residents and few have been referred from distant districts and communes. There are 20 national hospitals, with 500-1,000 beds each, run directly by the Ministry of Health.

Vietnam's widespread health care delivery system played an important role in lowering the infant mortality rate from United Nations estimates of 156 deaths per 1,000 live births in 1960 to 83 in 1979 and to 36 in 1992 (World Bank 1992; The Economist 1995). The levels and rates of decline in infant mortality are not uniform nationwide, however.

- Rural areas have an infant mortality rate that is 38 percent higher than urban areas (World Bank 1992).

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[17] Assistant doctors typically receive 2.5 to 3 years of training at a secondary medical school and commune level pharmacists 3-9 months training from district level pharmacists.

• Provincial infant mortality rates derived from the 1989 census ranged from a low of 26 in Haiphong to a high of 78 in Gia Lai - Kon Tum, a ratio of 3:1.[18] (See Map 15.)

Data indicate the infant mortality rate fell unevenly across regions and provinces during the 1980's.

• Every province showed an improvement in infant mortality rates since the previous census in 1979; however, variation across provinces increased slightly.

• In 1979, Gia Lai - Kon Tum also had the distinction of having the highest infant mortality rate at 115 and Ha Bac province had the lowest at 46, a ratio of 2.5:1.

• The coefficient of variation increased from 0.18 in 1979 to 0.23 in 1989.

Several provinces in the Mekong Delta experienced the biggest declines in infant mortality rates, while provinces in the Northern Upland region showed the least improvement.

Vietnam's reported level of infant mortality and its dispersion across provinces is not unusual among developing countries. The unweighted average infant mortality rate across provinces in China as reported for 1990 was 35 with a standard deviation of 21.5 and a coefficient of variation of 0.61 (West 1995). For Vietnam, the unweighted average across provinces in 1989 was 46 with a standard deviation of 11 and a coefficient of variation of 0.23, exhibiting less dispersion than China. Vietnam's infant mortality rate is comparable to that of a lower-middle-income country, such as the Philippines, rather than to other countries as poor as Vietnam (Table 6). Vietnam has even achieved a more favorable infant mortality rate than Indonesia, a country with three times the income level (Table 6).

While Vietnam has apparently achieved an impressive infant mortality rate relative to its income level, other health indicators are troublesome. In particular, Vietnam has a high proportion of underweight and stunted children, 45 and 56 percent, respectively, based on information for 1987-89 (World Bank 1992). As measured by this indicator, Vietnam's health status compares unfavorably with many other Asian countries (Table 6). After showing signs of improvement in the mid-1980's, indicators of malnourishment rose by the end of the decade (Table 7). The trend may be reversing itself yet again; the United Nations Development Program (1995) reports a decline in the share of children under age five that are underweight to 42 percent in 1990.

• In general, the highest rates of malnutrition are found in the Red River Delta, North Central, Central Coast, and Central Highlands regions, while the Mekong Delta and cities of Ho Chi Minh and Hanoi have the lowest rates (World Bank 1992).

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[18] It should be noted that the infant mortality rate may be underreported in some or all places, which would affect the actual variation across provinces.

Map 15. Provincial Variation in Infant Mortality Rates, 1989
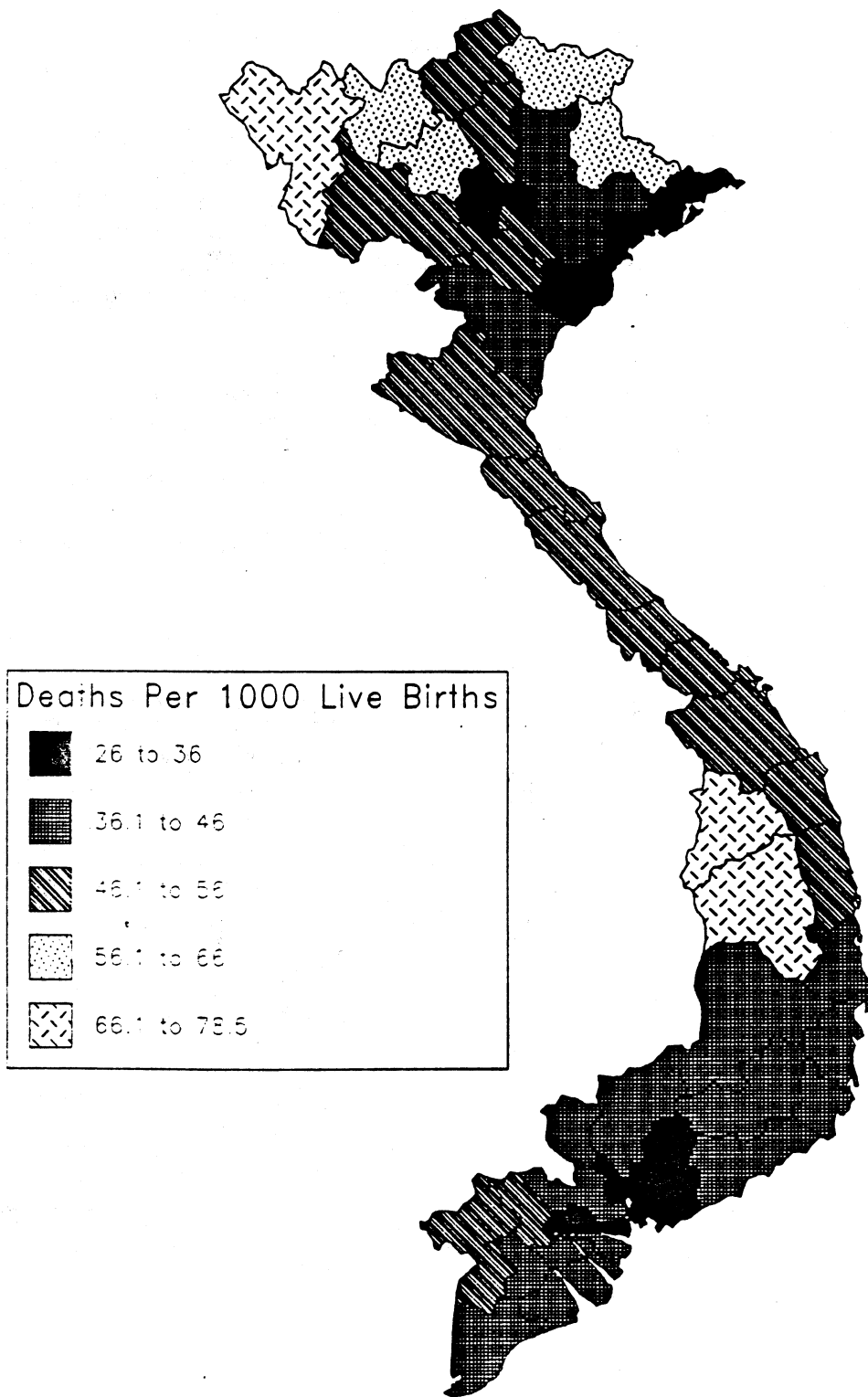
Deaths Per 1000 Live Births

- 26 to 36
- 36.1 to 46
- 46.1 to 56
- 56.1 to 66
- 66.1 to 79.5

Source. Vietnam Central Census Steering Committee, 1991, <u>Vietnam Population Census — 1989 Completed Census Results</u>, Hanoi.

Vietnam and China place great importance on delivering preventive health care to the entire population. Both countries established a multitiered network of facilities and provided various levels of training to health personnel to serve the population. Overall, it appears that China has been slightly more successful in achieving this goal. Vietnam lags behind China in terms of medical providers and hospital beds; however, the density of primary health delivery centers is slightly higher in Vietnam (Table 8).

Over time, the composition of Vietnam's medical personnel has shifted (Figure 2). Doctors increased at a rapid average annual rate of 5 percent from 1986 to 1993 (Vietnam General Statistical Office 1994). Over the same period, the growth in assistant doctors has been only 0.4 percent, less than the population growth rate. There has been a steep downward trend in the number of nurses, declining by 1993 to only 64 percent of the 1986 level. The decline in midwives was less sharp, with the number dropping to 79 percent of the 1986 level by 1993.

There are economic crosscurrents in the market for medical services. Medical personnel in the public sector have seen their wages decline in real terms and many have abandoned the field. On the other hand, the government legalized private practice in 1989 and allowed private fees to be set by the forces of supply and demand. At the same time, the government allowed public health facilities, except for commune health centers, to begin charging fees. These changes may attract new doctors to private practice and the

Table 6. International Comparison of Health Indicators for Young Children

Country	Per capita GNP 1992	Low birthweight babies (percent) 1990	Infant mortality rate (per 1000 live births) 1992	Prevalence of malnutrition under age 5 1987-92
Vietnam	220	10	36	51.0
Bangladesh	220	50	91	66.5
India	310	33	79	63.0
China	470	9	31	21.3
Indonesia	670	14	66	39.9
Philippines	770	15	40	33.5
Thailand	1840	13	26	13.0

Note: The accuracy of health indicator estimates may vary by source.

Source: World Bank, 1994b, World Development Report 1994; Rorris and Evans, 1994.

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upper tiers of health facilities. If so, there is a serious risk that health care will become less available to the poor and that the delivery of preventive health care, which can most efficiently be handled by midwives, elementary level nurses, and assistant doctors, will decline.

The distribution of health personnel and hospital beds is not uniform across provinces. Doctors are more concentrated in the three major cities primarily because national hospitals are located there. In general, the per capita availability of medical personnel is higher in the north than in parts of the south, such as the Mekong Delta, although the inequality is relatively small. Table 9 presents summary statistics on provincial health care personnel and beds.

A large number of medical personnel, beds, and clinics per capita does not necessarily translate into high access to health care. In the Northern Uplands provinces, doctors and assistant doctors per 1,000 population are among the highest in the country. But given the lower population density, residents in these areas do not necessarily have greater access to public health services. Residents in the Northern Uplands and Central Highlands regions must travel the greatest distance to reach a polyclinic, averaging over 50 kilometers in a number of provinces in these regions (Map 16). The number of polyclinics expanded in the 1980's, reducing the unweighted average distance by one-third; however, residents in Son La still must travel an average of 67 kilometers (Table 10).

While the distance to a more advanced health center, such as a polyclinic, can be prohibitive to residents in some provinces, access to a health consultant is quite good. The Living Standards Survey found that residents of all seven regions were within an average of two kilometers or less of a doctor's office, pharmacy, health clinic, or temple where medicine or medical advice could be obtained (Table 11). The distance to a family planning center was substantially greater, averaging five kilometers (Table 11).

Several studies point to limited contact with and utilization of primary health services in rural areas. Consequently, the delivery of preventive health services is far from universal. A survey undertaken in 1991 by the Ministry of Health found outpatient contact rates of 0.3 to 0.5 per capita (World Bank 1992). In other words, people sought

Table 7. Malnourishment Among Children Under 5 Years of Age
(percentage)

	1982-85	1986-87	1987-89
Low weight for age	52.2	41.8	45.0
Low height for age	59.7	49.1	56.5

Source: World Bank, 1992, Vietnam Population, Health and Nutrition Sector Review

Table 8. Vietnam and China Health Facilities and Providers, 1993

	Vietnam	China
Hospital beds per 1000 population	2.22	2.40
Doctors per 1000 population*	0.91	1.58
Commune health centers per million population	167	135
Nurses per 1000 population	0.54	0.89
Midwives per 1000 population	0.16	0.35

Note: * Includes doctors and assistant doctors.

Sources: China Ministry of Public Health, 1994, Chinese Health Statistical Digest 1993; Vietnam General Statistical Office, 1994, Vietnam Statistical Yearbook 1993.

outpatient services an average of once every 2 to 3 years. Another survey in Lang Son province found 75 percent of the women reported no contacts with their commune health center in 1990 (World Bank 1992). A women's health survey conducted by the Swedish International Development Agency (SIDA) in 1989 in Vinh Phu and Ha Tuyen provinces found more than two-thirds of the surveyed women had to travel more than 1 hour for antenatal care. A Ministry of Health survey found nearly 30 percent of women interviewed in seven provinces had not obtained antenatal care and 65 percent had not been immunized against tetanus before their delivery. In Lang Son province in the Northern Uplands, 71 percent of women reported not seeking antenatal care and 94 percent had not received a tetanus shot. In spite of Ministry of Health official statistics claiming over 80 percent of deliveries take place in health facilities under the supervision of trained health professionals, the SIDA survey found that half of all deliveries had taken place at home.[19]

The Vietnam Living Standards Survey found 30 percent of all children had not received any vaccinations while less than half had received the full set of vaccines for childhood diseases. This survey confirmed results of an earlier, smaller survey in Lang Son and Lam Dong provinces where only about half of the children had been adequately immunized.

- The preventive health delivery situation was worst in the Central Highlands, Mekong Delta, and Northern Uplands regions (Table 12).

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[19] Results from these surveys also raise questions about the accuracy of the reported low infant mortality rate and relatively small share of low birthweight babies.

Figure 2. Vietnam, Availability of Health Personnel

Population per health worker

Year
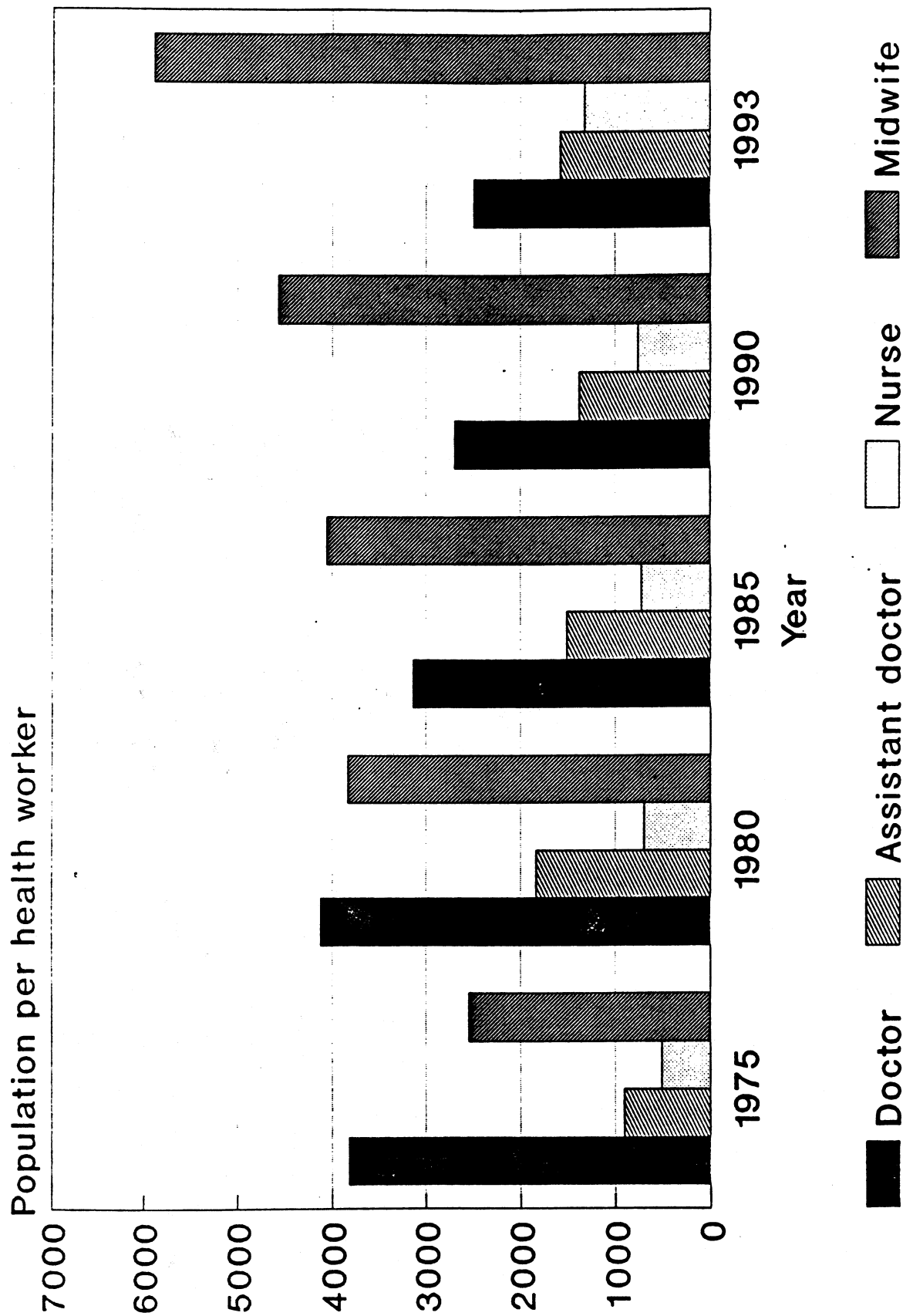
Sources: World Bank, 1992, Vietnam Population, Health and Nutrition Sector
Review ; Vietnam General Statistical Office, 1994.

Legend:
- Doctor
- Assistant doctor
- Nurse
- Midwife

Table 9. Provincial Health Care Facilities and Personnel, 1993

Indicator	Maximum	Minimum	Average	Standard deviation	Coefficient of variation
Doctors per 1000 population	0.59 Ho Chi Minh	0.16 Tra Vinh	0.30	0.10	0.33
Assistant doctors per 1000 population	1.08 Hoa Binh	0.20 Hanoi	0.61	0.18	0.30
Nurses per 1000 population	1.16 Kon Tum	0.30 Vinh Long	0.54	0.19	0.35
Midwives per 1000 population	0.35 Ha Tinh	0.04 Ha Giang	0.16	0.07	0.44
Hospital beds per 1000 population	4.17 Kon Tum	0.94 Ba Ria-Vung Tau	2.22	0.74	0.33

Source: Vietnam General Statistical Office, 1994, Vietnam Statistical Yearbook 1993, Hanoi.

Map 16. Provincial Variation in Average Distance to Intercommunal Polyclinic, 1989

Distance to Polyclinics
(kilometers)

- 4 to 10
- 10 to 25
- 25 to 50
- 50 to 70
- N/A
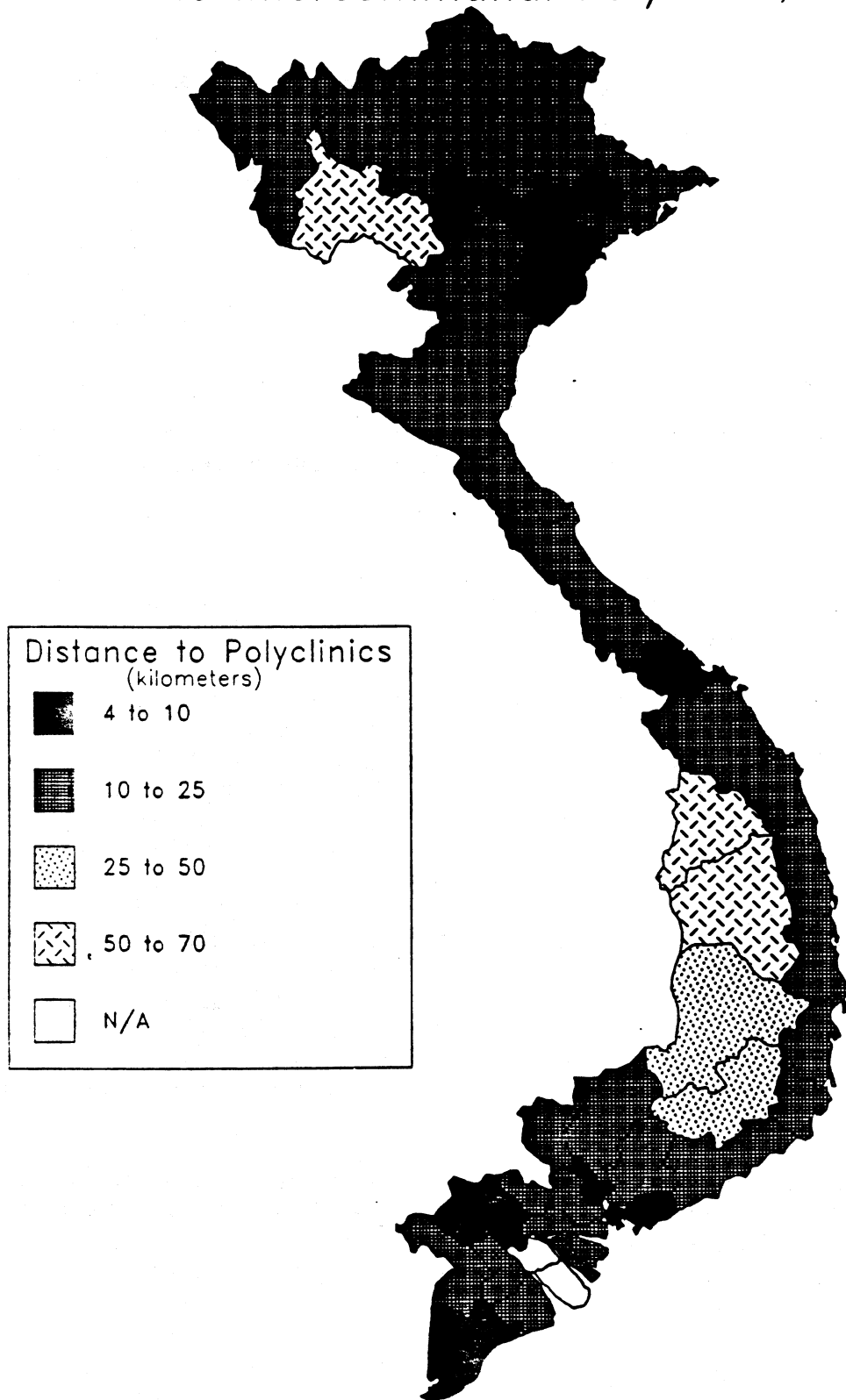
Source: World Bank, 1992, Vietnam: Population, Health and Nutrition Sector Review.

Table 10. Provincial Average Distance to Nearest Polyclinic, 1979 and 1989 (kilometers)

	1979	1989
Maximum	90.39 (Gia Lai - Kon Tum)	67.27 (Son La)
Minimum	2.72 (Ho Chi Minh)	4.03 (Ho Chi Minh)
Unweighted average	24.25	16.24
Standard deviation	22.15	13.72

Source: World Bank, 1992, Vietnam Population, Health and Nutrition Sector Review

- The Central Highlands also stands out with the lowest rate of women receiving prenatal care, the lowest use of contraceptives, and the highest rate of underweight newborns (Table 12).

By the end of the 1980's, there were other definite signs of reversal of the progress made in the health sector. There was a major resurgence of malaria in mountainous regions of the north and in areas bordering Cambodia. In 1994 alone there were 700,000 cases of malaria (Cable R 020918Z Jun 95). This resurgence was attributed to a scaling back of disease control programs. Accounts of a general deterioration in medical and surgical equipment also are common (World Bank 1992).

As a result of the economic crisis of 1989 and the macro stabilization policy that followed, government investment in the health sector in 1991 fell to 80 percent of the 1985 level in real terms. In 1992, the government substantially increased current expenditures for health to a level representing 1.1 percent of GDP, up from 0.2 percent in 1985 (World Bank 1992). The government allocated 11 percent of the total current expenditure budget to health or 10,400 dong per capita in 1992 (Table 13). Health expenditures were projected to increase by nearly 10 percent in the 1993 budget (Table 13).

One probable reason for the subnational variation in health status indicators and the provision of health care is the disparity in combined government funding for health across provinces (Map 17). Because the central government allocates funds for health to provinces on a per capita basis, the variation is coming from provincial and local government funding levels.

- 1992 per capita current expenditures on health ranged from 4,000 dong in Soc Trang in the Mekong Delta to 40,000 dong in Ho Chi Minh, a ratio of 10:1.

- The coefficient of variation for 1992 per capita health expenditures was 0.56.

Table 11. Distance to Health Facilities by Region, 1992/93

	Northern Uplands	Red River Delta	North Central	Central Coast	Central Highlands	Southeast	Mekong Delta
Median distance from home to health center (kilometers)	1.1	1.00	1.00	2.00	1.00	2.00	2.00
Average distance from home to family planning center (kilometers)	4.59	1.67	5.22	5.46	9.88	10.14	8.89

Note: Health center includes hospitals, doctor's offices, pharmacies, health clinics, and temples.

Source: Vietnam State Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993, Hanoi.

Table 12. Regional Health Indicators, 1992/93
(percent)

	Northern Uplands	Red River Delta	North Central	Central Coast	Central Highlands	Southeast	Mekong Delta
Received prenatal consultation[a]	52.4	65.1	66.6	57.7	25.6	70.2	57.2
Newborns weighing under 2500 grams[b]	5.1	10.4	12.8	13.3	19.2	9.8	8.5
Use contraceptives[c]	63.0	75.1	58.8	58.1	27.0	56.8	61.2
Children receiving no vaccines[d]	31.9	23.4	24.0	24.4	57.9	27.9	35.8
Children receiving 4 kinds of vaccines[d]	37.5	59.2	45.6	58.2	25.3	55.2	36.8

Notes: [a] responses of random sample of 2986 women about most recent birth
   [b] responses of 1687 women about last child born
   [c] responses of random sample of 3139 women aged 15 to 49 years
   [d] responses for 5258 children born since 1983

Source: Vietnam State Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993, Hanoi.

Table 13. Per Capita Government Expenditures in Provinces Classified According to Income Levels, 1993 (dong)

Expenditure	High income province (per capita GDP > 450,000 dong)	Middle income provinces (per capita GDP = 300,000-450,000 dong)	Low income provinces (per capita GDP < 300,000 dong)	All provinces
1991 (Actual)				
Total expenditure	93,300	57,400	61,200	74,100
Capital expenditure	22,400	10,000	12,200	15,900
Current expenditure	70,900	47,400	49,000	58,200
Education	13,400	11,300	10,900	12,200
Health	8,800	4,600	11,900	6,500
1992 (Actual)				
Total expenditure	160,900	88,500	100,500	123,100
Capital expenditure	34,600	14,900	20,800	25,000
Current expenditure	126,300	73,600	79,700	98,100
Education	22,000	17,300	17,400	19,400
Health	13,700	7,800	7,800	10,400
1993 (Budget estimates)				
Total expenditure	178,600	95,700	104,700	126,600
Capital expenditure	39,400	16,800	22,200	26,000
Current expenditure	139,200	78,900	82,500	100,600
Education	26,500	21,800	23,300	23,000
Health	14,700	9,300	4,400	11,300

1. The high income provinces are: Ba Ria-Vung Tau, Ho Chi Minh city, Ha Noi, Dong Nai, Kien Giang, Quang Ninh, Khanh Hoa, Hai Phong, Hoa Binh, Vinh Long, Tra Vinh, Long An, An Giang, Can Tho, Minh Hai and Dac Lac.
2. The middle income provinces are: Tien Giang, Yen Bai, Soc Trang, Bac Thai, Tay Ninh, Ben Tre, Song Be, Lam Dong, Dong Thap, Quang Nam, Hai Hung, Vinh Phu, Thanh Hoa, Nam Ha, Thai Binh, Kon Tum, Lai Chau, Phu Yen and Ha Tay.
3. The low income provinces are: Long Son, Ninh Binh, Tuyen Quang, Ha Bac, Ninh Thuan, Gia Lai, Thua Thien Hue, Quang Binh, Binh Dinh, Binh Thuan, Cao Bang, Quang Tri, Nghe An, Quang Ngai, Ha Tinh, Ha Giang, Lao Cai, and Son La.

Source: Ministry of Finance and State Planning Commission, Government of Viet Nam, in Bird, et al. 1995, p. 13.

Map 17. Provincial Variation in Per Capita Current Expenditures on Health, 1992

Thousand Dong

- 4 to 10
- 11 to 15
- 16 to 20
- 21 to 40
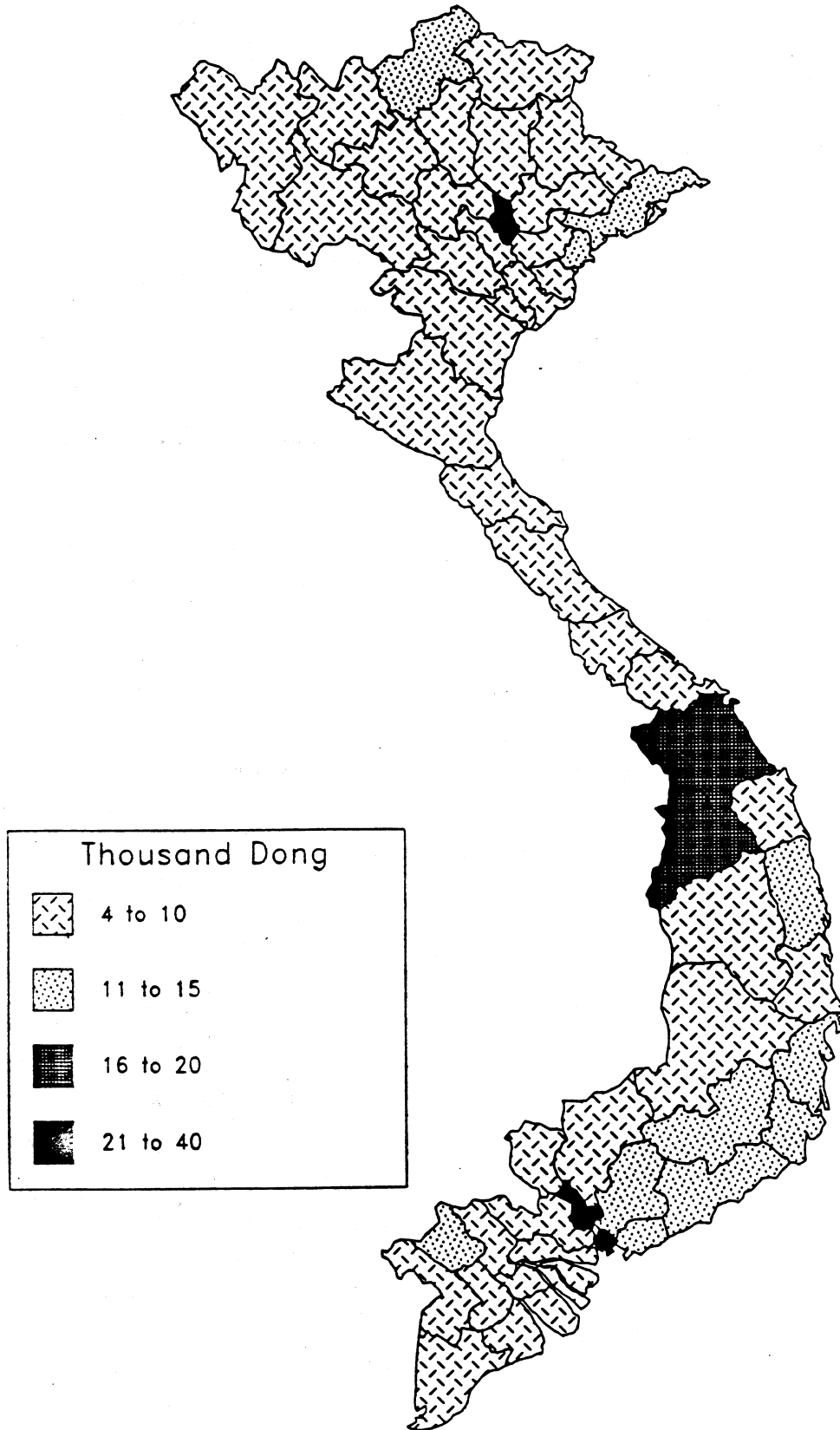
Source: World Bank, 1995, Vietnam Poverty Assessment and Strategy.

The importance each province placed on the health sector, as measured by the health share of the budget, did not exhibit as great a disparity.

*   In 1992 Hoa Binh, Hanoi, Thua Thien-Hue, and Ba Ria - Vung Tau allocated only 6 percent of their current expenditure budgets to health while Quang Nan - Da Nang allocated the largest share at 16 percent, a ratio of 2.7:1.

*   The coefficient of variation for the health budget share in 1992 was 0.20.

The government has recognized the shortcomings of its health care delivery system and has introduced a number of special programs to increase the delivery of particular health services. For example, central funds have been earmarked for immunization and the establishment of intercommunal polyclinics. In 1994, 312 intercommunal polyclinics were built using central funding and 342 are scheduled to be constructed in 1995 (Cable R 020918Z Jun 95). However, funding for some of these programs is proving to be inadequate, and as a result, the programs frequently prove to be ineffective (Bird et al. 1995).

One area that is receiving more attention and funding in the 1990's is family planning. The government has long desired to reduce the population growth rate. Total fertility rates (TFR) are declining; however, TFR's remain high in the Central Highlands, Central Coast, North Central, and Northern Uplands regions (Map 18). The TFR derived from the Vietnam Living Standards Survey was 3.3 in 1992/93 while the 1994 Vietnam Inter-censal Demographic Survey reports a 1993 TFR of 3.1.

Women in Vietnam report that they desire, on average, a smaller number of children than they are having overall. This suggests some unmet need for family planning or ineffective birth control use. Though the 1988 Demographic and Health Survey found a high contraceptive prevalence rate--54 percent of married women aged 15-49 years reporting the use of contraceptives--the same survey also revealed that desired total fertility rates were much lower than actual. The desire for lower total births held for rural and urban and north and south alike. The contraceptive use rate jumped to 65 percent by 1994. 'The preferred number of children continues to decline and is still lower than the present TFR.

Malnutrition is blamed on poor infrastructure for food transportation, storage, and distribution rather than on insufficient production. In recent years, as rice production reached record levels, it was more efficient to export the regional surplus than to transfer it to deficit regions. The record levels of rice exports in recent years have occasionally caused the domestic rice price to rise, further exacerbating the malnutrition problem. Food surpluses abound in the Mekong Delta while the mountains and highlands are considered unproductive areas (Map 19). However, with improved agricultural services and increased investment in agricultural infrastructure, many argue that the Red River Delta and parts of the highlands, coastal areas, and northern uplands have the potential to increase output. Investment in badly deteriorated drainage and irrigation works in the Red River Delta, for example, could have a positive effect on yields. Higher paddy rice yields in neighboring Guangxi province in China (5 tons per hectare) support the potential for higher paddy rice yields in Vietnam (3.2 tons).

Map 18. Total Fertility Rate by Region, 1992/93
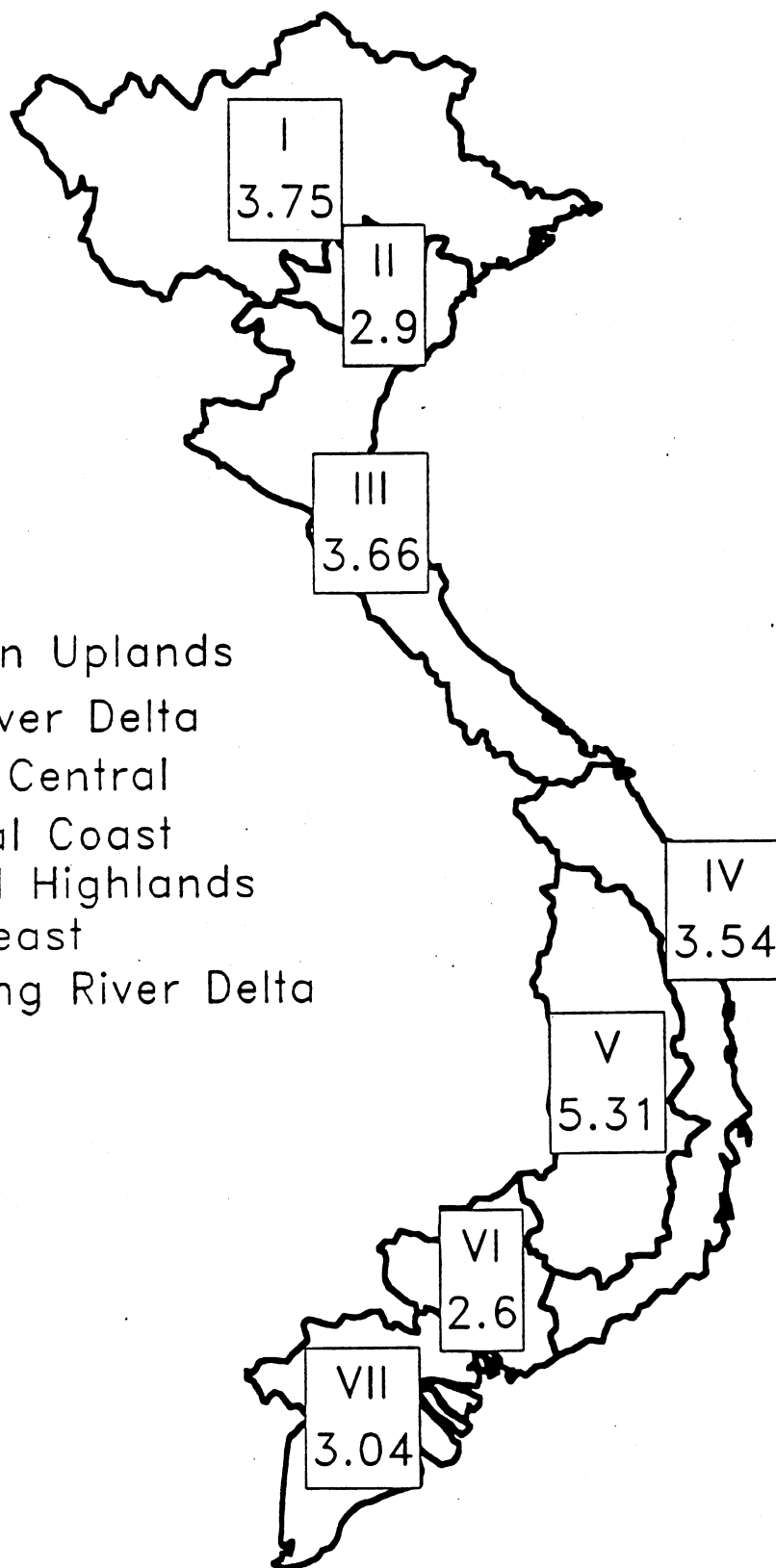
I
3.75

II
2.9

III
3.66

I — Northern Uplands
II — Red River Delta
III — North Central
IV — Central Coast
V — Central Highlands
VI — Southeast
VII — Mekong River Delta

IV
3.54

V
5.31

VI
2.6

VII
3.04

Map 19. Provincial Variation in Per Capita Gross Output of Food, 1993
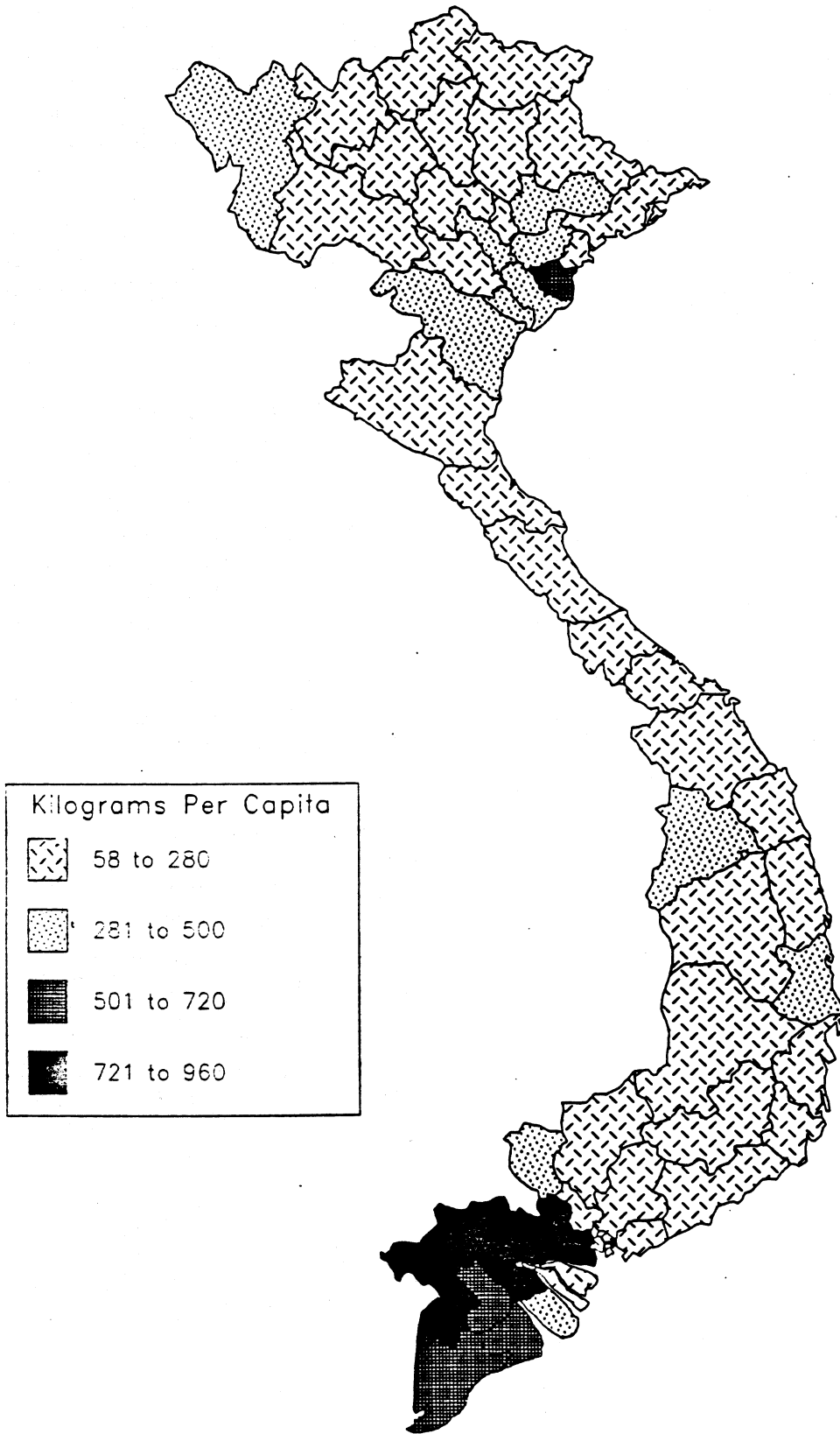
Kilograms Per Capita

58 to 280

281 to 500

501 to 720

721 to 960

Source: Vietnam General Statistical Office, 1994, Vietnam Statistical Yearbook 1993, Hanoi.

The introduction of user fees for health care in hospitals and clinics at all levels, except commune health centers, and the elimination of subsidies for medicine and drugs may serve to restrict further access to health care for the poor. As the government shifts an increasing portion of the financing burden to hospitals and clinics, these units in turn pass the burden on to patients. A Ministry of Health survey in seven provinces in 1990 found that private health expenditure accounts for two-thirds of total and the government accounts for one-third. In general, fees for services appear to be modest. In the early 1990's, the basic consultation fee was 300 dong at district hospitals, 500 dong at provincial hospitals, and 1,000 dong at central hospitals (World Bank 1992). In addition, hospitals may charge supplementary fees. A maternity, for example, costs 5,000 dong, consisting of a 3,000 dong basic fee and 2,000 dong supplementary fee (World Bank 1992). Linked with the new family planning program, the maternity fee for third and higher order births is double (World Bank 1992).

Service fees, however, represent a small portion of the total costs borne by patients. Of far greater importance is the cost of medicines, which account for 97 percent of total health care expenditures in rural areas (Vietnam State Planning Committee and General Statistical Office 1994). At commune health centers, the vast majority of patients end up paying, even if only for drugs and supplies. In 1991, rural patients.paid an average of 4,194 dong per visit at commune health centers and 5,078 dong at polyclinics (World Bank 1992). These public health facilities were still cheaper, however, than traditional healers (9,090 dong) or private physicians (8,056 dong) (World Bank 1992).

Since the introduction of reforms in the health sector, private pharmacies are flourishing and over one-quarter of Vietnam's 27,000 doctors are operating in private practice. Private hospitals are even being allowed provided they have an investment of at least US$ 20 million (Cable R 020918Z Jun 95).

Measures designed to ease the burden of the reformed health care system on the poor do not appear to be very effective. The handicapped, families of health personnel, and individuals with a certificate issued by their village People's committee attesting to their indigence are entitled to free care. A Ministry of Health survey of users, however, found little relationship between an individual's income and the average price paid for a visit to a commune health center or polyclinic (Table 14). The Living Standards Survey found that the poorest households spent the largest portion of their total budget on health care, 8 percent. Expenditures on health care rise with income levels in all regions (Table 15). Regionally, households in the north spent a smaller share than did households in the south. The Central Highlands allocated 12 percent of expenditures to health care, the highest share among regions.

Education Sector

In Vietnam basic general education begins at age 6 and consists of 5 years of primary school and 3 years of lower secondary school (formerly 4 years). Lower secondary education can be followed by 3 years of education in an upper secondary school or a variety of specialized secondary or vocational education options. The Ministry

Table 14. Payments and Waivers for Health Care by Income Quartile, 1991

	Bottom Quartile	Second Quartile	Third Quartile	Top Quartile
Average monthly household income per capita (dong)	14,870	27,222	41,460	94,790
Average payment per visit to commune health center (dong)	4,130	3,685	4,290	4,657
Average payment per visit to intercommunal polyclinic (dong)	7,168	7,383	7,024	10,622
Individuals obtaining waiver from user fee at commune health center (percent)	19.0	19.7	22.1	13.3
Individuals obtaining waiver from user fee at intercommunal polyclinic (percent)	16.8	17.5	15.7	11.7

Source: World Bank, 1992, Vietnam: Population, Health and Nutrition Sector Review, p.113.

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Table 15. Household Per Capita Annual Health Expenditures, By Region and Expenditure Quintile, 1992/93 (thousand dong)

Region	Expenditure Quintile						Per capita total consumption expenditure
	1	2	3	4	5	Total	
Northern Uplands	17.40	30.77	44.77	65.39	131.93	42.40	916.7
Red River Delta	27.91	41.24	57.06	72.63	113.21	57.90	1124.4
North Central	31.00	41.05	52.28	73.25	125.55	48.94	873.6
Central Coast	41.13	80.81	90.13	120.97	186.96	110.28	1274.8
Central Highlands	44.83	44.70	88.97	115.90	360.20	132.38	1100.0
Southeast	41.11	63.31	66.34	75.97	132.06	97.29	1880.2
Mekong Delta	32.64	69.71	113.31	129.85	204.11	124.40	1382.7
Total	29.32	49.23	72.56	96.85	164.84	82.56	1227.3

Note: Expenditure Quintile 1: includes households which have per capita consumption from 99.69 thousand VND to 651.28 thousand VND
Expenditure Quintile 2: from 651.32 thousand VND to 867.17 thousand VND
Expenditure Quintile 3: from 867.60 thousand VND to 1125.02 thousand VND
Expenditure Quintile 4: from 1125.20 thousand VND to 1625.91 thousand VND
Expenditure Quintile 5: from 1626.01 thousand VND to 14002.25 thousand VND

Source: Vietnam State Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993.

of Education and Training oversees the provision of education services and has offices at the national, provincial, and district levels. Secondary education is administered at the provincial level and primary education at the district or commune level.

During the 1980's, the number of children enrolled at the preprimary and secondary school levels declined and increases in enrollments at the primary school level did not keep pace with increases in the primary school age population. The number of creches (nursery schools) dropped sharply from 40,851 in 1985/86 to only 13,119 in 1990/91 (Rorris and Evans 1994). The increase in enrollments for the 6-10 year old cohort between 1980 and 1992 averaged only 1.1 percent per year as compared to a 1.4 percent annual increase in the population in this age group (Rorris and Evans 1994). The repetition rate for grades 1-5 rose in 1987-88 as compared to 1981-86 as well as the dropout rate for primary school (Pham 1991). A sharp decline in enrollment at the secondary school level also occurred in the late 1980's (World Bank 1993).

The situation prevailing in the late 1980's is captured in Figure 3. Among the predominantly rural provinces, school enrollment rates peak at age 10, with just over 80 percent enrolled. In rural areas, many parents apparently wait until children are older than the prescribed 6 years of age before allowing them to attend school -- nearly half of all 6 year olds were not enrolled in school. This decision to delay the start of school may be influenced by the distance the child must travel to attend school. Enrollment drops off rapidly in the early teens. By age 15 less than 40 percent are enrolled in school.

- In 1989, for 7 year olds school enrollment rates ranged from 30 percent in Lai Chau in the Northern Uplands to 94 percent in Hanoi, a ratio of 3:1. (See Map 20.)

- The highest enrollment rates, over 90 percent, were found in the three city provinces (Map 20).

- Mean 1989 provincial enrollment rate for 7 year olds is 75 percent and the coefficient of variation is 0.21.

In Lai Chau, Son La, and Gai Lai - Kon Tum less than 50 percent of all 7 year olds were enrolled in school in 1989. In Lai Chau enrollment peaked at age 11, with a 42 percent rate. In Son La enrollment also peaked at age 11, with a slightly higher rate of 49 percent. In Gai Lai - Kon Tum enrollment peaked at 57 percent for 12 year olds.

Results from the Living Standards Survey indicate the situation may have improved by 1992/93. In the Central Highlands 67 percent of 6-10 year olds were enrolled in school and 71 percent of all 11-14 year olds (Table 16). In the Northern Uplands, rates were even higher with 80 percent of 6-10 year olds enrolled in school. In the early 1990's, primary school enrollments appear to be keeping pace with the population growth of 6-10 year olds (Rorris and Evans 1994). However, enrollment rates will need to continue increasing if the government is to achieve its goal of universalized primary education by the year 2000.

Figure 3. Average School Enrollment Rates for Rural Provinces by Age, 1989
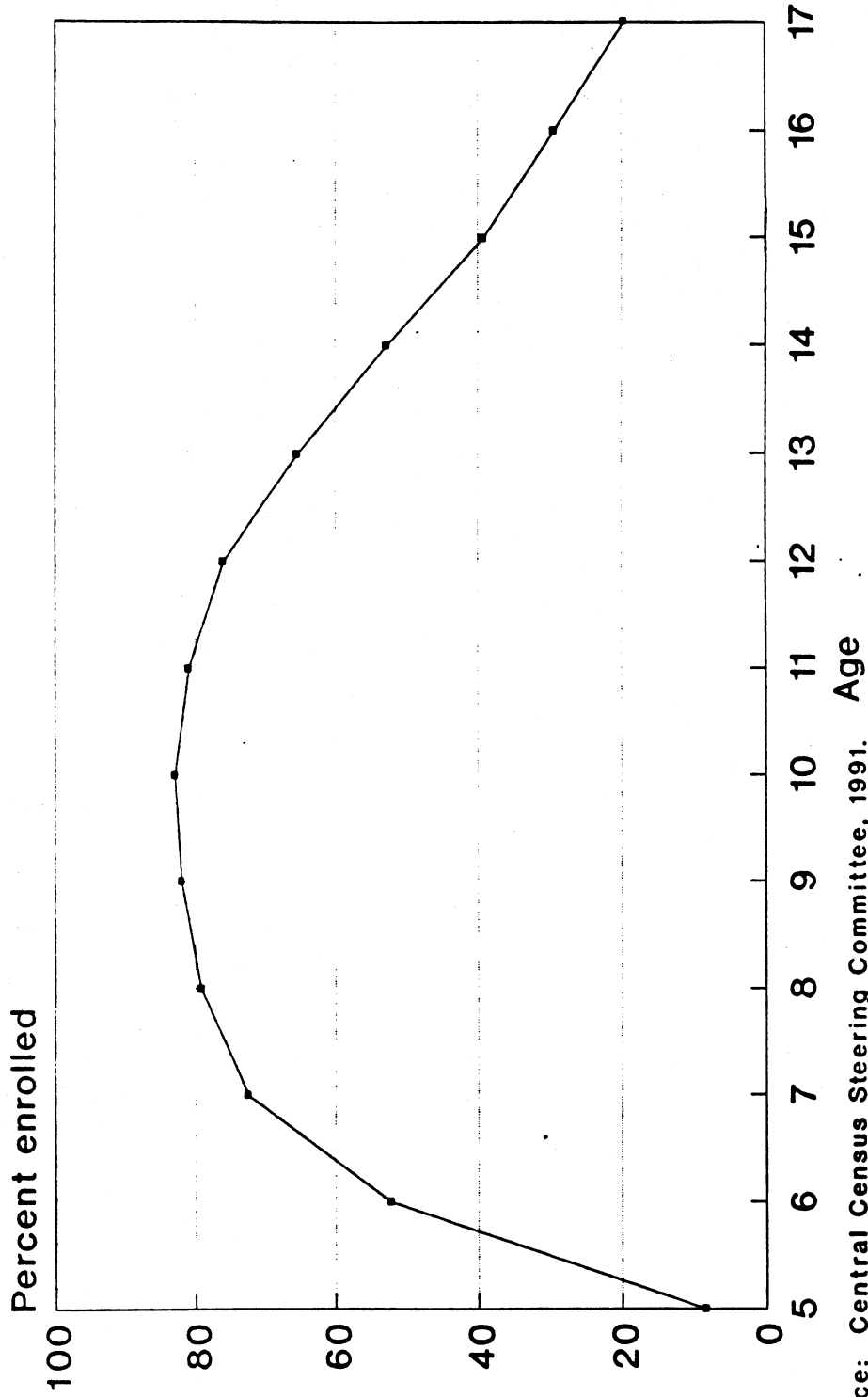
Percent enrolled

Age

Map 20. Provincial Variation in Enrollment Rates for 7 Year Olds by Province, 1989
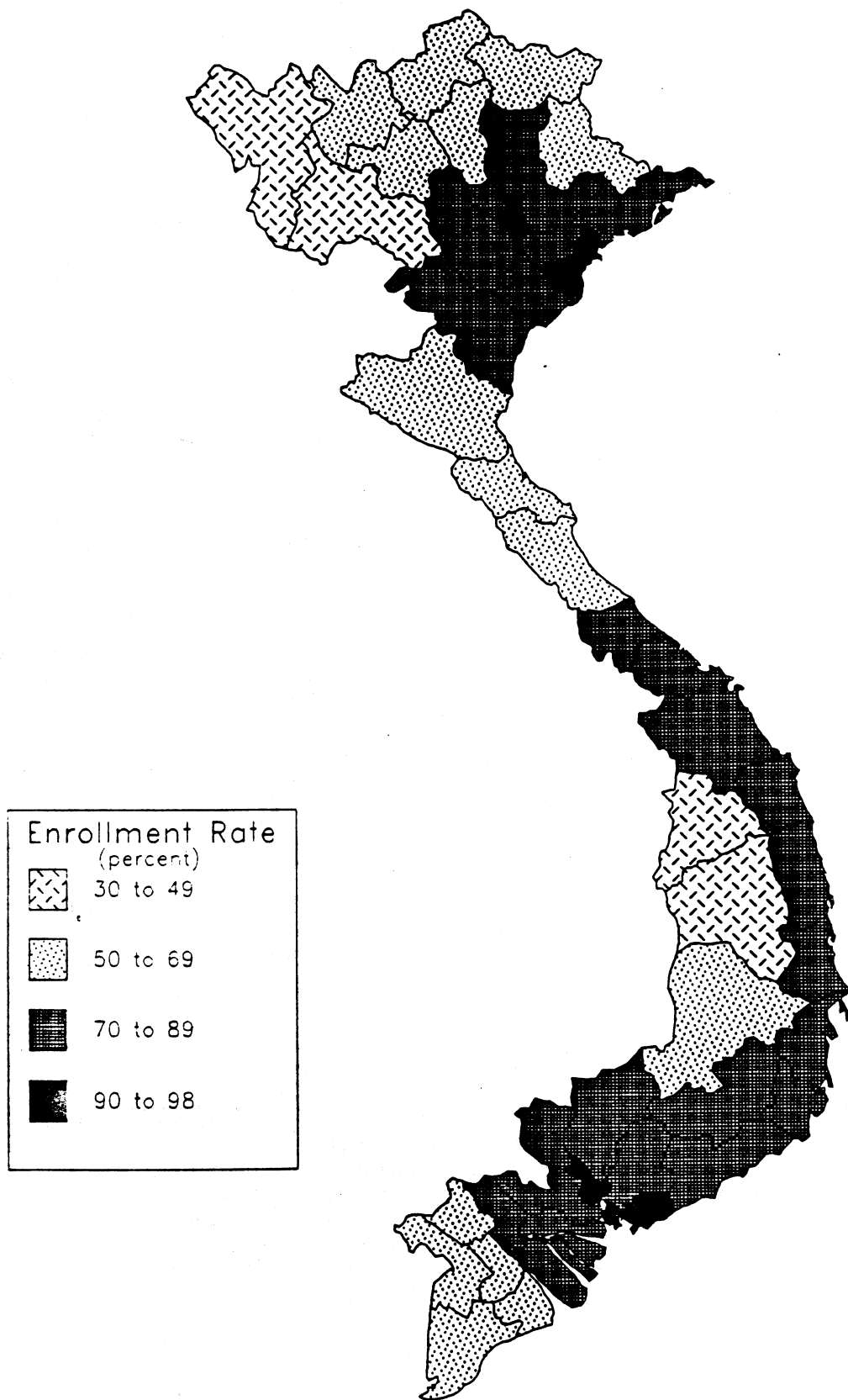
Enrollment Rate
(percent)

- 30 to 49
- 50 to 69
- 70 to 89
- 90 to 98

Table 16. Enrollment Rates by Region and Age Group, 1992/93 (percent)

Region	Age group (school level)		
	6-10 (primary school)	11-14 (lower secondary)	15-17 (upper secondary voc./tech.)
Northern Uplands			
Gross	102.62	41.67	12.82
Age-Specific	80.12	65.83	21.98
Net	75.35	29.72	9.52
Red River Delta			
Gross	112.05	62.38	30.72
Age-Specific	92.71	75.71	30.38
Net	85.12	51.67	19.11
North Central			
Gross	112.23	49.09	11.28
Age-Specific	90.39	76.00	18.97
Net	79.69	39.64	7.18
Central Coast			
Gross	117.75	61.00	20.74
Age-Specific	85.07	72.00	35.02
Net	76.62	42.67	15.21
Central Highlands			
Gross	102.40	28.57	1.92
Age-Specific	67.20	71.43	13.46
Net	59.20	21.43	1.92
Southeast			
Gross	118.43	59.63	19.63
Age-Specific	89.19	71.11	31.05
Net	85.26	44.81	15.53
Mekong Delta			
Gross	108.85	33.01	9.41
Age-Specific	77.01	60.52	20.61
Net	72.79	22.33	5.85

Note: Gross enrollment rate is defined as the ratio of children enrolled in each level regardless of their age and the number of children in target age groups.
Age-specific enrollment rate is defined as the ratio of children in target age group that are enrolled in any level, and the number of children in target age groups.
Net enrollment rate is defined as the ratio of children in target age groups that are enrolled in target level, and the number of children in target age groups.

Source: Vietnam State Planning Committee and General Statistical Office, 1994.

Gender differences exist in education attendance and attainment. Results from the 1989 population census show that among the population aged 10 and above, 16.6 percent of females had not participated in general education as compared with only 7.5 percent of males (Rorris and Evans 1994). There also are disparities across ethnic groups. Ethnic minorities comprise 13.1 percent of the total population, but represent only 4.2 percent of students enrolled in basic education (Rorris and Evans 1994). A number of factors contribute to this outcome. First, the average family size for ethnic minorities is larger than the national norm, resulting in a higher education burden for the household. Second, many ethnic minorities live in mountainous areas where the population density is low and access to schooling is difficult and costly. A recent UNFPA study (Rorris and Evans 1994) concludes that poverty is the major obstacle to greater minority and female participation rather than culture or remoteness. In an attempt to address this problem, the government has established 36 primary and lower secondary boarding schools at the province level and 131 primary boarding schools at the district level primarily to serve children from ethnic minorities. The government provides tuition, food, and transport; and children are selected on the basis of merit and family commitment to education. However, the number of such boarding schools appears to be inadequate to meet the need.

The average number of years to complete primary school (5 grades) was 8.1 years in 1993/94 (Rorris and Evans 1994). For primary school students the repetition rate was 7.9 percent in 1991/92 and the dropout rate 9.4 percent in 1992/93 (Rorris and Evans 1994). In areas with large concentrations of minorities, using Vietnamese as the language of instruction limits access to education and increases retention and repetition rates. High gross enrollment rates reflect the high repetition and retention rates.[20] The problem is most serious in the Southeast and Central Coast regions where gross enrollment rates for primary school are 118 (Table 16).

In spite of recent problems in school enrollment, the expansion of education in previous decades, particularly in the north, has contributed to a very high literacy rate. In the 1989 population census, 88 percent of the population aged 15 and over were found to be literate.[21]

- Literacy rates ranged from a low of 49 in Lai Chau in the Northern Uplands to 94 percent in Vung Tau - Con Da in the Southeast, a ratio of 2:1. (See Map 21.)

- Mean provincial literacy rate is 84 and the coefficient of variation is 0.11.

The lowest literacy rates are to be found in the Northern Uplands and Central Highlands regions (Map 21). For example, in Lai Chau province 51 percent of the population are illiterate, of whom 63 percent are women.

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[20] The gross enrollment rate for primary school equals the total number of pupils attending primary school. no matter what their age, divided by the primary school age cohort (6-10).

[21] The definition of literacy used is the ability to read and write and understand simple sentences.

Map 21. Provincial Variation in Literacy Rate, 1989

Literacy Rate
(percent)

⬚	49 to 70
⬚	71 to 80
⬛	81 to 90
⬛	91 to 94

Source: Vietnam Central Census Steering Committee, 1991, <u>Vietnam Population Census — 1989</u>
<u>Completed Census Results</u>, Hanoi.

At the regional level, in 1992/93, a slightly different picture of literacy emerges.[22] The Living Standards Survey found the literacy rate of the population aged 10 years and older was lowest in the Central Highlands at 64 percent, followed by 82 percent in the Mekong Delta. The Central Coast and Northern Uplands regions were similar with 85 and 86 percent literacy rates, respectively (Map 22).

Rural areas clearly lag behind urban areas in educational attainment. In remote, rural provinces, such as Lai Chau and Gia Lai - Kon Tum, educational attainment among adults averages less than 3 years as compared to over 5 years in the cities and urbanized provinces (Rorris and Evans 1994). Educational attainment levels tend to be higher in the north as compared to the south. A higher share of the population aged 11 and above completed lower secondary school in the north, while the south, in particular the Central Highlands and Mekong Delta, had the highest proportion not even completing primary school (Table 17).

The level of education attained and its variation is closely linked to government investment in education. The share of the budget for current expenditures allocated to education increased only marginally from 1.3 percent of GDP in 1986 to 1.5 percent in 1992. Overall, the share devoted to the social services sector doubled from 3.2 percent of GDP to 6.4 percent; however, most of this increase was taken up by pensions to war veterans and social relief programs. The share devoted to education is low by Asian standards. Public spending on education in India averaged 3 percent of GDP while in China, Indonesia, and Thailand it exceeded 3 percent (Table 18). Central funding for basic education has always been very limited in Vietnam. Formerly, education funding was provided primarily by the agricultural cooperatives. The introduction of family-based farming in the north weakened the agricultural cooperative's ability to continue supporting schools, and local communities are finding it increasingly difficult to mobilize voluntary labor for school maintenance and construction.

There is substantial regional variation in government expenditures on education (Map 23).[23]

• Per capita government spending on current expenditures for education in 1992 ranged from a low of 8,000 dong in Soc Trang province in the Mekong Delta to 37,000 dong in Ho Chi Minh City, a ratio of 4.6:1. (See Map 23.)

• Average per capita government spending on current expenditures for education across provinces was 19,550 dong with a standard deviation of 5,520 dong and coefficient of variation of 0.28.

The importance placed on education in the government budget, as measured by the share of the budget allocated to education, exhibits less variation than the absolute level of expenditures.

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[22] The definition of literacy used in the Vietnam Living Standards Survey is the ability to read and write.

[23] Government expenditure on education includes central, province, and district levels.

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Map 22. Literacy Rate of Population 10 Years and Older by Region, 1992/93 (percent)
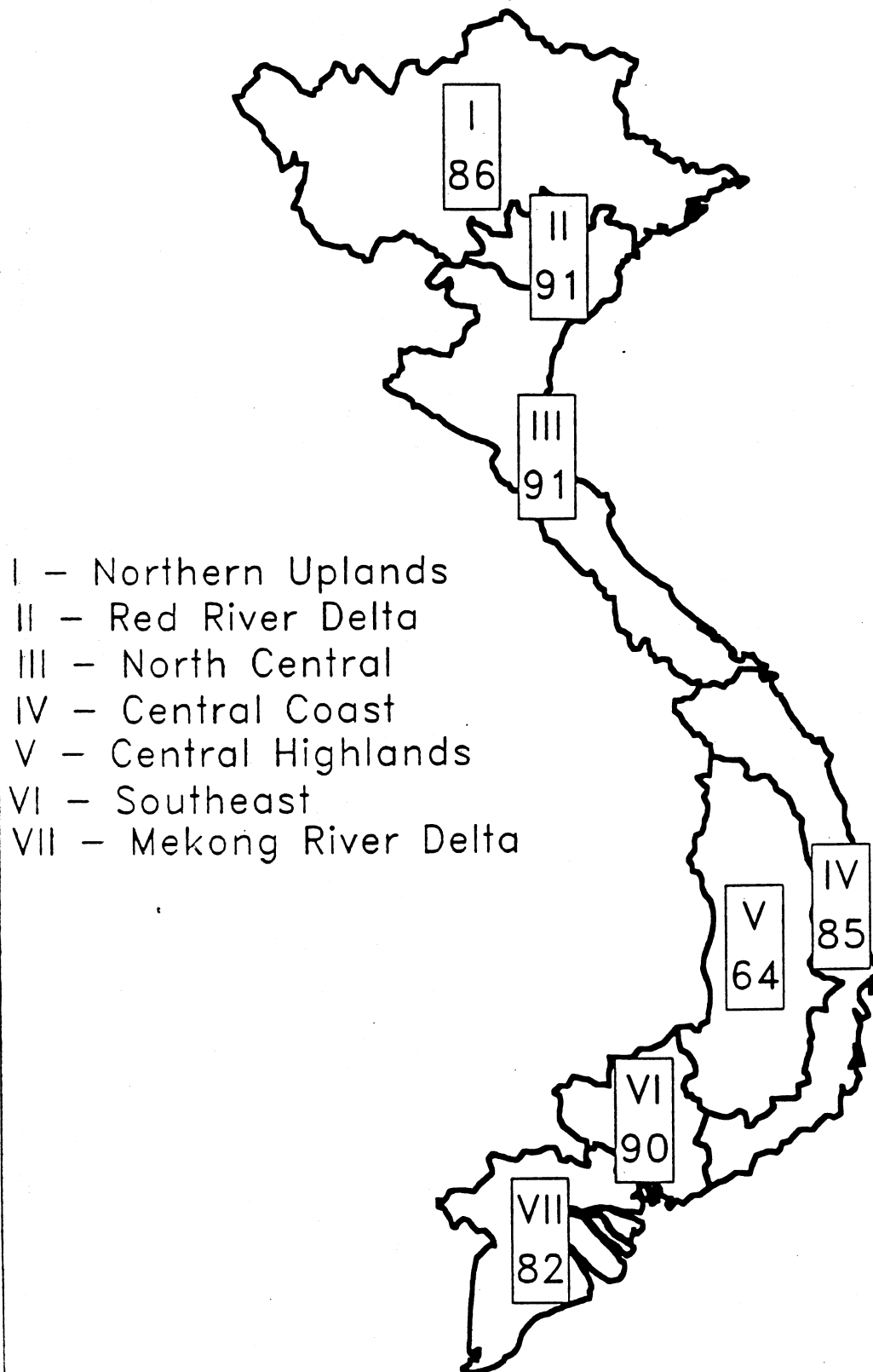
I — Northern Uplands
II — Red River Delta
III — North Central
IV — Central Coast
V — Central Highlands
VI — Southeast
VII — Mekong River Delta

I
86

II
91

III
91

IV
85

V
64

VI
90

VII
82

Table 17. For Population Aged 11 and Above, Highest Diploma Obtained by Region, 1992/93 (percent)

Region	None	Primary school	Lower secondary school	Upper secondary school	Vocational technical school	University and higher
Northern Uplands	34.65	28.68	22.90	5.27	7.59	1.00
Red River Delta	21.11	26.43	34.28	7.86	8.25	2.07
North Central	27.76	30.79	24.44	7.82	8.10	1.09
Central Coast	41.94	30.77	15.41	5.87	3.81	2.20
Central Highlands	58.76	28.66	9.07	1.65	1.65	0.21
Southeast	32.77	38.71	17.16	6.52	2.44	2.40
Mekong Delta	51.21	32.15	10.35	3.02	2.33	0.94

Source: Vietnam State Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993.

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Table 18. Government Spending on Education in Selected Asian Countries, mid-1980's

Country	Public Spending on Education percent of GDP
Vietnam	1.3
Bangladesh	1.5
China	3.3
India	3.0
Indonesia	3.7
Malaysia	6.0
Philippines	1.8
Thailand	3.6

Sources: Tan and Mingat, 1989, "Educational Development in Asia: A Comparative Study Focusing on Cost and Financing Issues"; Bird et al. 1995.

Map 23. Provincial Variation in Per Capita Government Current Expenditures on Education, 1992

Thousand dong

8 to 14.0	
14.1 to 20.0	
20.1 to 26.0	
26.1 to 32.0	
32.1 to 37.0	
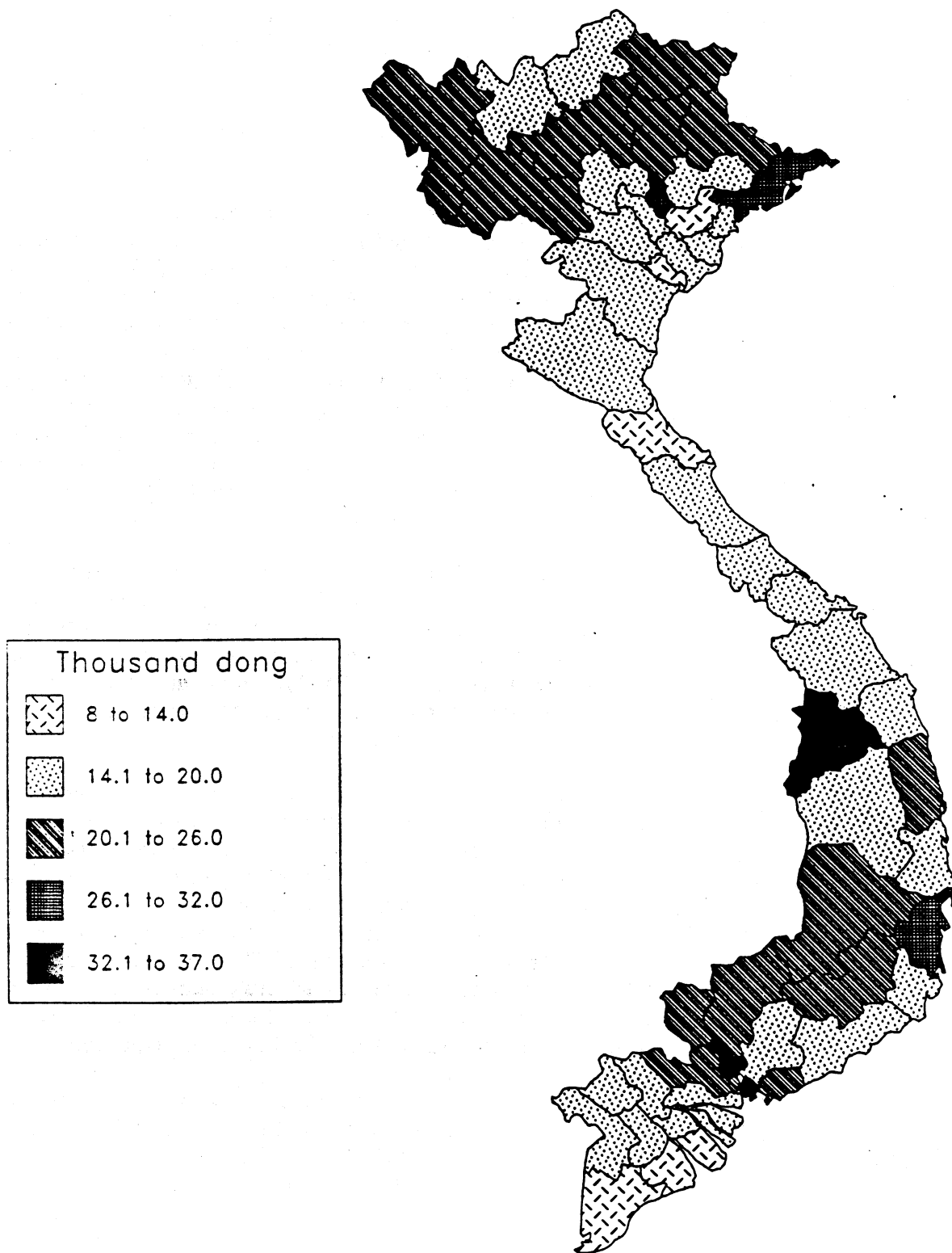
• In 1992 education accounted for only 13 percent of the total current budget in Hanoi and Ba Ria - Vung Tau, both urbanized areas, but 32 percent in Thai Binh province in the Red River Delta.

• The mean budget share was 21 percent and the coefficient of variation was 0.19 in 1992.

In order to supplement public funding for education, the government permitted the establishment of semipublic and private schools starting in 1989. For these schools, the government provides the facilities and equipment and defines the curriculum. Teachers' salaries, maintenance, and other operating expenses are raised by the individual schools through fee charges. In 1992/93 fees were approximately 30,000 dong per student per year in semipublic primary schools. In the 1992/93 school year, nearly 5 percent of primary students and 15 percent of lower and upper secondary students were attending semipublic schools. The government has established a goal for 15 percent of all students to be educated in these schools. By 1994 there were 181 semipublic schools. While the emergence of quasi-private schools should allow the government to concentrate its limited funds on fewer students, public funds will remain far from sufficient and the community and parents will have to provide a major portion of the support.

The cost of education is rising in the 1990's, primarily owing to increases in salaries, the largest component of the education budget. In spite of a major salary reform package implemented in April 1993 for teachers, their salaries remain low. A typical teacher's salary is 190,000 dong monthly, roughly half the minimum wage for a factory worker in a joint venture company (Rorris and Evans 1994). Providing education in remote, mountainous regions is even more costly because teachers working in these areas are paid bonuses of 15 to 40 percent of the normal salary.

Education in public schools is nominally free, but as in other Asian countries, parents incur substantial costs. In Ha Tay province in the Red River Delta, the community and parents contribute approximately 40 percent of the total cost of primary education (Rorris and Evans 1994). Parents have to pay a maintenance fee to schools, provide gifts to the child's teacher several times a year, and pay for textbooks. In addition, secondary public schools discriminate between repeating students and nonrepeaters, requiring repeaters to pay twice the level of fees (Rorris and Evans 1994). This policy discourages secondary education for those who have to drop out temporarily because of economic difficulties and often end up repeating a grade when they return. In Ha Tay province textbook fees for a primary school student typically are 25,000 to 40,000 dong per year.

The Vietnam Living Standards Survey found average household expenditures for education on a per student basis were lowest in the Northern Uplands at 25,000 dong and highest in the Southeast region at 160,000 dong (Table 19). Expenditures at the lower secondary level are two to three times the primary school level (Table 19), presenting a prohibitive barrier to further education for many families.

In addition to the direct costs mentioned above, residents of the community make other contributions to education. They must provide voluntary labor for the construction

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and maintenance of schools and pay an education tax (10,500 dong in 1992/93 in Hay Tay province). Local communities also raise education funds through lotteries.

On a per student basis the cost of education varies from 240,000 dong in Ho Chi Minh city and the Southeast region to 140,000 dong in the Mekong Delta and Central provinces (Rorris and Evans 1994). These costs are borne by the government and parents. The lower unit cost in the Mekong Delta and Central provinces is primarily a reflection of the lower level or quality of education services provided and not greater efficiency. In extremely poor areas where there are no schools, children may be taught at home by another older child or an adult. In Ha Tay province only 20 percent of the schools have electricity.

Table 19. Household Annual Educational Expenditure per Student by Grade Level and Region, 1992/93 (thousand dong)

Region	Primary school	Lower secondary	Upper Secondary	Other
Northern Uplands	25.04	63.62	155.75	405.95
Red River Delta	48.41	97.18	218.26	430.47
North Central	36.84	95.29	225.60	710.15
Central Coast	87.62	226.11	428.82	472.56
Central Highlands	79.60	168.90	234.50	n.a.
Southeast	159.90	314.75	539.75	971.10
Mekong Delta	101.80	269.64	534.05	1448.46
Total	73.40	175.03	355.06	687.52

Notes: n.a. not available
        Other includes technical and post secondary schooling.
Source: Vietnam State Planning Committee and General Statistical Office, 1994, Vietnam Living Standards Survey 1992-1993.

V. PROSPECTS

This section explores whether existing regional disparities in Vietnam are likely to persist, diminish, or increase. A multitude of factors, including the redistributive capacity of the fiscal system, the regional and sectoral allocation of investment, and financial deepening, will influence future trends in the disparity of growth and development at subnational levels. The discussion of these factors and their longer run consequences for subnational variation draws heavily on the experience of China.

Vietnam's fiscal system is undergoing reform, with a draft budget law currently under consideration. According to the draft, the revised system would replace the central unified budget with the assignment of separate revenues to each level of government and specify the portions of shared revenues to the center and province. The proposed budget law would abolish the district level of government and formalize commune budgets. If the new fiscal system is successful in moving away from heavy reliance on revenue from state-owned enterprises by broadening the tax base, including developing the capacity to tax the growing private sector, the dispersion in fiscal capacity across provinces should be reduced from the present level.

In addition, the reassignment of expenditure responsibilities to lower levels would increase the responsiveness of government to local needs and more efficiently utilize public funds. Up to now, the central government has been responsible for the majority of expenditures and the independent expenditure authority of local governments has been very limited.[24] While shifting expenditure responsibilities downwards is likely to increase efficiency, over decentralization of the assignment of revenues could weaken the role of the central government. China is now in the process of trying to redress the negative consequences of fiscal decentralization implemented in the 1980's. The Chinese central government has seen its share of total revenues decline, while provincial and local governments have gained power through their increased control of fiscal resources (in particular extrabudgetary revenue).

For Vietnam to establish a strong redistributive capacity under the reformed system, it will be important for the central government to continue collecting a major share of fiscal revenue. Redistribution is critical because the tax base presently is concentrated in urban areas, and in the future, even with a broadening of the tax base, fiscal capacity will still vary regionally. The new system calls for redistributive fiscal transfers to be determined by formulas based on factors such as population, natural resources, and level of economic development. Setting an equitable formula is an important component of the transfer system, but it is also critical that there be enough resources available for redistribution in order for the system to be effective in addressing equity concerns. If the redistributive capacity is weakened in Vietnam, a widening of the fiscal expenditure gap is highly likely.

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[24] In 1992, province and district level governments accounted for 35 percent of total government expenditures of 23.6 trillion dong, with the central government responsible for the remainder (Bird et al. 1995).

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Vietnam is placing high priority on upgrading the country's infrastructure. While Vietnam is directing a sizeable portion of its investment budget to the transport and energy sectors, the government is hoping to attract foreign investment and international aid to supplement these funds. Thus far, the geographic areas of concentration for upgrading the transportation infrastructure are along the coast, surrounding the three major cities, and along the Chinese border. For example, a number of local infrastructure projects are being implemented on a build-operate-transfer (BOT) basis utilizing foreign investment around Ho Chi Minh city.[25] If this pattern of investment continues, it will serve to reinforce the disparity in growth rates.

This has been the situation in China. China opened the coastal cities to foreign investment first. Although China is now offering concessions to attract foreign investment to inland cities and is urging enterprises and governments in coastal areas to establish linkages with inland areas, both domestic and foreign investment continue to be concentrated in the coastal provinces. The expectation that investment would move inland as land and labor costs in coastal areas rose has yet to be realized. In several cases, foreign investment is not moving inland but rather moving on to other places such as coastal cities in Vietnam. A major reason is that poorer regions lack the infrastructure and the matching funds necessary for investment. Poorer, remote areas in Vietnam are likely to find it difficult to compete with major cities and other favorably situated areas for domestic and foreign investment.

If more remote areas continue to be ignored and do not receive infrastructural investment, regional disparity in growth and development threatens to widen. In Vietnam, as in other countries, infrastructure is key to growth.[26] Investment needs to be directed not only to the industrial and service sectors in poorer regions but also to agriculture, the source of 29 percent of GDP and the sector of employment for 77 percent of the labor force. Reversing the deterioration of agricultural infrastructure since the demise of collective agriculture would help narrow the urban-rural gap in income and growth.

Vietnam's investment rate is low in comparison to other Asian economies and a primary reason for this is the underdevelopment of financial markets. The Living Standards Survey found an average household savings level of 1.78 million dong of which only 8 percent was in the form of deposits in a bank or credit cooperative and the largest share, 44 percent, was held in the form of gold. Vietnam's recent experience with runaway inflation is one explanation for the lack of confidence in the dong. This lack of monetization in the economy results in a very limited credit market and serves as one of the major impediments to further expansion of the private sector. Nonstate investment is forced to rely almost exclusively on self-financing. Regionally, domestic loans account for

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[25] Under a typical BOT scheme, foreign investors provide capital and participate in the construction of infrastructure projects, such as bridges, roads, and ports, and in exchange have the right to receive a share of the revenue from the operation of the completed project. After an agreed upon number of years, sufficient for the foreign investor to recoup their investment and a "reasonable" rate of return, operations are turned over to local authorities.

[26] The Vietnam Living Standards Survey documented that those living near market centers and all weather roads had higher income levels.

at most 10 percent of investment (North Central region) and foreign capital supplies a maximum of 7 percent of this investment (Southeast region) (Table 20). The Vietnam Bank for Agriculture only began offering credit to farmers in 1991, and by the following year, 20 percent of all rural households had received bank loans. At present, demand for credit far exceeds the availability of loanable funds.

China's banking system clearly is more developed; however, loans still are constrained. In China subsidized policy loans to state-owned enterprises, accounting for more than 40 percent of all loans by the four major banks in 1992, reduce the efficiency of capital utilization in the economy. Subsidies to state-owned enterprises through the banking system have always been on a much smaller scale in Vietnam. Therefore, reform of Vietnam's financial sector should not present as much of a challenge as it does in China. Financial reform should increase the flow of funds into the banking system and the availability of loans. At the same time, the development of interbank lending will improve the flow of funds from surplus regions to deficit regions. In China this has largely meant that funds flow from the inland provinces to coastal areas where higher rates of return are possible. This scenario may well be repeated in Vietnam.

The persistence of present differential growth rates as measured by GDP -- higher in urban areas and the Southeast -- will lead to a widening of the gap in the quality of life across regions and may stimulate major labor flows (both temporary and permanent). According to International Programs Center estimates, the population in the labor force age group of 15-59 will increase at a rapid rate of 2.8 percent or 1.2 million people annually from 1995 to 2000. The World Bank (1993) estimates that a real GDP growth rate of about 8 percent would generate enough jobs to absorb most new job entrants. For example, in 1993 when GDP grew by 8.1 percent, the economy created 963,000 new jobs.

This rate would not begin to address the problem of those currently unemployed or underemployed. While Vietnam faces a much smaller scale problem in restructuring the state-owned sector than does China, largely because the state sector employed only about 10 percent of the labor force in Vietnam as opposed to about 20 percent in China before restructuring commenced, the underemployment of the rural labor force is similar in the two countries. China has placed major emphasis on the development of rural enterprises to absorb surplus rural labor and to avoid massive migration to urban areas. This strategy has been far more successful in the rural areas of coastal provinces and the perimeter of urban centers. The lack of success in China's central and western regions is attested to by the enormous labor flows from these regions to provincial capitals and coastal cities. Job creation, of course, is more concentrated in those sectors and regions where the growth rate is higher. For Vietnam this means the private sector, the source of nearly half of all new jobs created in 1993, major urban centers, and the Southeast region. Whether Vietnam can avoid similar labor flows depends on successful employment generation in rural areas and effective administrative barriers to limit migration to urban centers.

Both the education and health sectors suffer from an inadequacy of funding that predates the budgetary retrenchment initiated in 1989. Government funds are limited and are not likely to be sufficient to address fully the problems of low wages for personnel in these sectors and dilapidated equipment and buildings. Public sector support for basic

Table 20. Financing Sources for Nonstate Investment by Region, 1992
(percent)

Region	State Budget	Foreign Capital	Domestic Loans	Self-financing
Northern Uplands	2	0	5	93
Red River Delta	1	0	8	91
North Central	2	1	10	86
Central Coast	3	2	5	91
Central Highlands	1	1	4	94
Southeast	2	7	6	85
Mekong River Delta	2	2	5	91
Total	2	2	6	90

Note: Numbers may not add to 100 due to rounding.

Source: Vietnam General Statistical Office, 1994, <u>Vietnam Statistical Yearbook 1993</u>, Hanoi: Statistical Publishing House.

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health and education already comes primarily from provincial and local governments rather than the center. Under the revised fiscal system, unless the center plays a dominant redistributive role, reliance on local government support will increase further. Recognizing that the public sector could no longer continue to be the sole provider and the sole source of support, the government introduced user fees for health and education services starting in 1989 and allowed the private sector to begin providing these services as well. As a result, the quantity and quality of health and education services received by the public are dependent on the economic vitality of the local economy -- both what local governments can afford to provide and what local residents can afford to pay for services. Under this scenario, it is highly likely that the disparity in education and health status indicators will increase. There is a good chance not only that regional disparity will increase but also that disparity across economic classes within the same region will rise. Presently Vietnam lacks an effective social safety net to protect the most vulnerable. A well targeted central transfer system could serve to mitigate the disparity in the future.

Scenarios that could lead to increasing subnational variation discussed in this section can be consistent with all provinces experiencing rising income levels and standards of living. Generally, this has been the case in China. Even in China's poorest provinces, infant mortality rates continue to decline, life expectancy is increasing, the illiteracy rate is falling, and education attainment levels are rising. The population in abject poverty has declined substantially over the past 15 years in China. However, the improvement is far greater in the coastal provinces. Thus, while the vast majority of the population in China has seen their incomes rise in real terms during the reform period, regional and urban-rural disparity has widened. Poor, remote areas in China experience occasional backsliding in terms of health and education status, such as declines in innoculations and outbreaks of childhood diseases. Rural residents in western China strive to have their children complete primary school and receive health treatment at a center equipped with a stethoscope, thermometer, and blood pressure cuff. On the other hand, in the coastal provinces nearly all rural children complete lower secondary school and have health centers equipped with x-ray and ultrasound machines. Vietnam could well face a similar situation in the future. The shift to a market economy means that Vietnam's government, even if it wanted to, has fewer resources and direct channels by which to alter the pattern and pace of development in poor areas.

APPENDIX TABLES

Appendix tables contain Vietnam dong - U.S. dollar exchange rates and the data displayed in Maps 1 through 23.

Table A1. Vietnam Dong - U.S. Dollar Exchange Rate, 1989-1995

Year	Exchange Rate (Dong:1 U.S. dollar)
1989	4,300
1990	4,550
1991	8,700
1992	11,190
1993	10,595
1994	10,981
1995	11,033

Note: Figures reported are for midyear.

Source: Far Eastern Economic Review, various issues.

Table A2. Provincial GDP, 1993

Province	1993 Per capita GDP (1000 dong)	1993 Population (in thousands)
Ha Giang	227	520
Tuyen Quang	274	629
Cao Bang	253	625
Lang Son	296	672
Lai Chau	311	501
Lao Cai	217	535
Yen Bai	422	638
Bac Thai	417	1,145
Son La	151	776
Hoa Binh	546	713
Quang Ninh	593	890
Vinh Phu	330	2,203
Ha Bac	274	2,263
Ha Noi	968	2,155
Hai Phong	556	1,584
Ha Tay	307	2,218
Hai Hung	351	2,658
Thai Binh	313	1,768
Nam Ha	317	2,586
Ninh Binh	284	840
Thanh Hoa	322	3,312
Nghe An	251	2,681
Ha Tinh	244	1,294
Quang Binh	265	737
Quang Tri	251	521
Thua Thien-Hue	270	973
Quang Nam - Da Nang	367	1,912
Quang Ngai	246	1,150
Binh Dinh	260	1,373
Phu Yen	310	709
Khanh Hoa	586	924
Ninh Thuan	272	449
Binh Thuan	254	859
Gia Lai	271	738
Kon Tum	312	250
Dac Lac	454	1,173
Lam Dong	397	743
T.P. Ho Chi Minh	1,322	4,322
Song Be	399	1,082
Tay Ninh	415	869
Dong Nai	635	1,763
Ba Ria - Vung Tau	3,177	657
Long An	480	1,225
Dong Thap	367	1,463
An Giang	472	1,934
Tien Giang	444	1,622
Ben Tre	412	1,309
Vinh Long	543	1,041
Tra Vinh	542	939
Can Tho	471	1,781
Soc Trang	420	1,173
Kien Giang	623	1,327
Minh Hai	465	1,719
Minimum	151	250
Maximum	3,177	4,322
Average	451.43	1319.58
Standard deviation	423.41	793.65

Table A3. Provincial Economic Indicators, 1992

Province	1992 Per capita Revenue (1000 dong)	1992 Per capita total expenditure (1000 dong)	1992 Per Capita Local Govt. Investment (1000 dong)	1992 Population (in thousands)	1992 Gross industrial output (1989 prices) (million dong)	1992 Non-State gross industrial output (1989 prices) (million dong)	1992 Total Locally Managed Trade (million US$)
Ha Giang	25	139	44.66	506	5,094,151	1,553,255	.5
Tuyen Quang	38	131	63.52	614	309,972	54,998	.2
Cao Bang	36	141	34.36	614	19,378	5,664	1.7
Lang Son	91	138	52.74	656	28,176	5,413	15.2
Lai Chau	39	169	48.76	482	12,514	8,489	1
Lao Cai	65	167	74.37	515	168,472	31,818	1.1
Yen Bai	75	152	50.73	617	9,243	3,274	2.3
Bac Thai	79	107	17.52	1119	301,282	61,169	1.4
Son La	32	116	22.15	754	112,027	50,138	0
Hoa Binh	78	133	29.04	699	288,248	28,239	0
Quang Ninh	328	255	80.32	874	471,810	89,145	6.6
Vinh Phu	93	76	27.82	2164	140,119	82,353	.8
Ha Bac	56	66	18.36	2222	411,010	93,551	0
Ha Noi	756	335	107.45	2106	56,324	37,308	63.1
Hai Phong	165	115	41.89	1542	33,132	15,423	35.7
Ha Tay	64	79	13.59	2170	114,168	37,220	.3
Hai Hung	97	60	7.47	2612	159,567	65,114	2.9
Thai Binh	62	61	17.26	1738	130,146	67,241	5.7
Nam Ha	61	64	28.25	2531	76,906	64,484	1.2
Ninh Binh	44	73	55.43	819	24,929	12,236	.9
Thanh Hoa	93	85	43.12	3233	10,730	4,764	11.5
Nghe An	47	73	11.48	2623	49,959	18,703	8.9
Ha Tinh	33	91	41.50	1265	94,701	30,596	7.4
Quang Binh	50	99	68.99	716	115,810	68,848	5.1
Quang Tri	66	122	61.39	505	51,362	29,364	5.5
Thua Thien-Hue	108	113	72.80	945	825,363	75,186	4.8
Quang Nam - Da Nang	165	128	25.46	1811	184,575	111,129	21.6
Quang Ngai	43	88	24.82	1120	168,206	114,263	1.3
Binh Dinh	83	95	23.04	1137	197,887	136,323	9.8
Phu Yen	64	116	139.91	689	235,411	170,051	50.4
Khanh Hoa	194	158	33.56	897	3,969	758	34.5
Ninh Thuan	76	134	56.16	438	412,971	244,168	.1
Binh Thuan	102	124	36.02	830	576,459	167,458	7.1
Gia Lai	84	119	30.79	708	3,018,188	141,814	5.1

Table A3. Provincial Economic Indicators, 1992 (continued)

Province	1992 Per capita Revenue (1000 dong)	1992 Per capita total expenditure (1000 dong)	1992 Per Capita Local Govt. Investment (1000 dong)	1992 Population (in thousands)	1992 Gross industrial output (1989 prices) (million dong)	1992 Non-State gross industrial output (1989 prices) (million dong)	1992 Total Locally Managed Trade (million US$)
Kon Tum	107	238	48.55	241	61,712	13,791	1.1
Dac Lac	76	110	51.87	1126	29,032	3,857	16.2
Lam Dong	95	126	62.14	729	72,497	8,313	1.1
T.P. Ho Chi Minh	760	317	45.91	4145	496,153	7,398	918
Song Be	159	133	47.51	1046	182,699	116,176	31.9
Tay Ninh	161	156	65.54	856	277,398	111,101	6.7
Dong Nai	205	132	54.79	1721	78,759	29,491	48.1
Ba Ria - Vung Tau	450	249	52.43	637	149,908	64,595	106.2
Long An	134	112	29.82	1197	43,982	31,811	46.7
Dong Thap	104	93	35.87	1433	57,970	27,060	58.7
An Giang	148	119	35.18	1896	199,773	93,438	190
Tien Giang	101	82	19.36	1591	142,086	103,983	44.7
Ben Tre	70	78	27.39	1285	137,225	74,646	18.1
Vinh Long	138	108	11.02	1025	88,037	55,383	33.5
Tra Vinh	37	69	13.96	924	329,402	195,986	13.3
Can Tho	123	100	34.50	1739	149,429	125,142	60.8
Soc Trang	39	60	26.30	1152	356,802	116,629	33.3
Kien Giang	118	106	34.26	1299	1,168,162	165,787	27.6
Minh Hai	138	114	55.32	1681	302,893	158,331	61.5
Minimum	25	60	7.47	241	5,094,151	1,553,255	0
Maximum	760	335	139.91	4145	3,969	758	918
Average	125.57	124.98	42.58	1,282.91	343,982.72	97,790.09	38.32
Standard deviation	144.63	58.21	24.20	771.80	790,850.35	209,724.64	126.25

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Table A4. Regional Investment, 1992

Region	1992 commune investment (billion dong)	1992 cooperative investment (billion dong)	1992 private business investment (billion dong)	1992 household investment (billion dong)
Northern Uplands	71.7	88.6	9.9	1,346.9
Red River Delta	198.6	224.4	20.2	2,687.7
North Central	80.2	105.9	7.4	1,257.7
Central Coast	34.0	69.2	16.9	919.0
Central Highlands	27.4	13.6	5.8	429.1
Southeast	77.4	25.4	249.7	1,052.0
Mekong River Delta	80.6	.4	37.8	1,726.8
Maximum	198.6	224.4	249.7	2,687.7
Minimum	27.4	.4	5.8	429.1
Average	81.41	75.36	49.67	1345.60
Standard deviation	52.11	71.00	82.28	661.43

Table A5. Provincial Migration, 1984-1989

Province	Out-migration			In-migration			Net migration rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ha Noi	75,942	51,674	24,268	81,041	51,570	29,471	1.8	-.1	3.5
Ho Chi Minh	51,929	31,384	20,545	126,289	62,613	63,676	19.8	17.9	21.5
Hai Phong	23,617	15,005	8,612	20,540	13,530	7,010	-2.3	-2.3	-2.2
Cao Bang	34,510	22,741	11,769	3,337	1,780	1,557	-57.8	-81.6	-36.2
Ha Tuyen	20,733	15,379	5,354	10,756	5,318	5,438	-10.5	-21.7	.2
Lang Son	34,508	26,947	7,561	6,578	3,087	3,491	-48.7	-86.2	-13.7
Lai Chau	8,939	6,567	2,372	6,096	2,979	3,117	-7.1	-18.1	3.7
Hoang Lien Son	28,787	21,704	7,083	18,566	10,375	8,191	-10.7	-24.2	2.3
Bac Thai	27,787	18,869	8,918	25,559	14,892	10,667	-2.3	-8.4	3.5
Son La	6,767	3,971	2,796	7,302	3,835	3,467	.9	-.4	2.1
Vinh Phu	30,101	17,340	12,761	28,664	22,183	6,481	-.9	6.1	-7.1
Ha Bac	47,930	30,416	17,514	33,526	25,038	8,488	-7.5	-6.0	-8.9
Quang Ninh	30,889	24,419	6,470	27,701	16,586	11,115	-4.2	-20.2	12.2
Ha Son Binh	46,040	26,429	19,611	36,129	25,326	10,803	-5.8	-1.4	-9.7
Hai Hung	81,457	42,582	38,875	36,407	27,063	9,344	-19.5	-14.6	-23.8
Thai Binh	64,840	32,134	32,706	24,089	18,681	5,408	-26.1	-18.9	-32.2
Ha Nam Ninh	121,606	61,612	59,994	43,553	33,366	10,187	-26.0	-20.2	-31.1
Thanh Hoa	66,333	35,627	30,706	26,136	19,745	6,391	-14.3	-12.0	-16.4
Nghe Tinh	96,634	49,675	46,959	31,728	24,636	7,092	-19.2	-15.5	-22.6
Binh Tri Tien	70,090	37,016	33,074	30,036	20,437	9,599	-20.7	-18.0	-23.3
Quang Nam-Da Nang	33,778	19,973	13,805	20,127	11,713	8,414	-8.2	-10.6	-6.2
Nghia Binh	65,974	36,060	29,914	15,855	9,311	6,544	-22.7	-25.6	-20.1
Phu Khanh	21,804	13,573	8,231	23,849	12,548	11,301	1.5	-1.5	4.3
Thuan Hai	23,539	12,776	10,763	26,745	13,907	12,838	2.9	2.1	3.7
Gia Lai-Kon Tum	15,249	9,223	6,026	57,400	28,835	28,565	53.6	50.7	56.4
Dac Lac	11,182	6,642	4,540	172,185	88,649	83,536	198.7	204.0	193.4
Lam Dong	10,817	5,747	5,070	91,679	47,928	43,751	144.2	152.9	135.9
Song Be	25,265	13,722	11,543	77,718	39,875	37,843	61.6	63.7	59.6
Tay Ninh	13,365	7,202	6,163	13,517	6,768	6,749	.2	-1.2	1.5
Dong Nai	48,298	26,182	22,116	155,049	80,478	74,571	59.7	61.9	57.7
Long An	21,223	10,243	10,980	10,198	4,814	5,384	-10.3	-10.8	-9.9
Dong Thap	19,247	9,265	9,982	14,984	6,844	8,140	-3.3	-3.9	-2.7
An Giang	19,189	9,453	9,736	13,322	5,862	7,460	-3.5	-4.7	-2.6
Tien Giang	23,429	11,409	12,020	13,104	6,616	6,488	-7.3	-7.2	-7.3

Table A5. Provincial Migration, 1984-1989 (continued)

Province	Out-migration			In-migration			Net migration rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Ben Tre	19,276	9,063	10,213	5,185	2,573	2,612	-12.1	-11.9	-12.3
Cuu Long	18,042	8,874	9,168	13,254	6,445	6,809	-2.8	-3.0	-2.6
Hau Giang	28,129	14,169	13,960	24,349	12,166	12,183	-1.5	-1.7	-1.3
Kien Giang	16,087	8,420	7,667	22,804	11,836	10,968	5.9	6.3	5.6
Minh Hai	22,504	12,142	10,362	15,193	7,652	7,541	-5.0	-6.5	-3.7
Vung Tau-Con Dao	3,502	2,213	1,289	18,788	9,982	8,806	125.4	132.3	118.9
Maximum	121,606.00	61,612.00	59,994.00	172,185.00	88,649.00	83,536.00	198.70	204.00	193.40
Minimum	3,502.00	2,213.00	1,289.00	3,337.00	1,780.00	1,557.00	-57.80	-86.20	-36.20
Average	35,733.45	20,446.05	15,287.40	35,733.45	20,446.05	15,287.40	7.90	5.99	9.75
Standard	26,072.49	14,074.54	12,693.67	38,620.78	20,246.58	18,994.17	48.47	52.63	45.66

Table A6. Regional Poverty Indicators

Region	1992/93 poverty rate (percent)	Incidence of rural poverty 1992/93	Incidence of urban poverty 1992/93	1992/93 color tvs per 100 households
Northern Uplands	59	63	34	2.38
Red River Delta	49	55	15	9.29
North Central	71	74	42	.94
Central Coast	49	54	36	13.97
Central Highlands	50	50	n.a.	3.13
Southeast	33	45	17	28.86
Mekong River Delta	48	52	28	7.46
Maximum	71	74	42	28.86
Minimum	33	45	15	.94
Average	51.29	56.14	24.57	9.43
Standard deviation	10.73	8.87	13.56	8.97

Note: n.a. not available

Table A7. Provincial Agriculture and Labor Indicators

Province	1992 rural per capita food crop sown area (ha)	1992 agriculture labor share	1992 share of labor in private sector trade, services	1992 agriculture share of ag-industry output value	1993 per capit gross output of food (kilograms)
An Giang	.2354	.7563	.0605	.8112	.9561
Bac Thai	.1110	.6472	.0381	.5299	.2343
Ba Ria - Vung Tau	.0933	.2457	.0422	.0343	.1361
Ben Tre	.0901	.7890	.0238	.6161	.2677
Binh Dinh	.1263	.5969	.0383	.6821	.2449
Binh Thuan	.1231	.4514	.0281	.4485	.2718
Can Tho	.2436	.7293	.0336	.6949	.6950
Cao Bang	.1244	.7163	.0133	.8541	.2771
Dac Lac	.1067	.5046	.0226	.8895	.2428
Dong Nai	.0848	.5781	.0271	.4672	.1927
Dong Thap	.2554	.8789	.0261	.7999	.9456
Gia Lai	.1547	.4058	.0227	.8589	.1863
Ha Bac	.1134	.7786	.0152	.8323	.3160
Ha Giang	.1614	.7282	.0076	.9547	.2715
Hai Hung	.1159	.6002	.0415	.6016	.4716
Hai Phong	.0986	.3679	.0267	.4747	.2597
Ha Noi	.0755	.2423	.0071	.1671	.1116
Ha Tay	.1084	.6416	.0164	.7326	.3757
Ha Tinh	.1180	.4673	.0295	.8282	.2371
Hoa Binh	.1345	.5944	.0155	.2037	.2516
Ho Chi Minh	.0760	.1008	.0700	.0615	.0582
Khanh Hoa	.0923	.3994	.0458	.3032	.1924
Kien Giang	.3149	.6288	.0404	.5712	.8443
Kon Tum	.1480	.5438	.0139	.8239	.3109
Lai Chau	.1984	.6611	.0109	.8651	.3144
Lam Dong	.1148	.5876	.0539	.5906	.1808
Lang Son	.1023	.8355	.0199	.8295	.2441
Lao Cai	.1328	.5898	.0128	.7269	.2531
Long An	.3191	.7831	.0300	.7255	.7609
Minh Hai	.2373	.7833	.0455	.5914	.6969
Nam Ha	.1166	.5481	.0153	.6962	.4827
Nghe An	.1109	.5613	.0197	.7567	.2184
Ninh Binh	.1173	.5462	.0181	.7280	.4103
Ninh Thuan	.0981	.6072	.0280	.5751	.2623
Phu Yen	.1272	.6290	.0219	.7334	.2835
Quang Binh	.1018	.5663	.0223	.6719	.1621
Quang Nam - Da Nang	.1276	.3741	.0533	.5501	.2272
Quang Ngai	.1130	.5764	.0255	.5898	.2016
Quang Ninh	.1226	.2767	.0254	.3390	.1806
Quang Tri	.1305	.4199	.0258	.7577	.1797
Soc Trang	.2559	.7478	.0301	.7538	.5984
Song Be	.0727	.5002	.0069	.7063	.1485
Son La	.1283	.5996	.0537	.9121	.2312

Province	1992 rural per capita food crop sown area (ha)	1992 agriculture labor share	1992 share of labor in private sector trade, services	1992 agriculture share of ag-industry output value	1993 per capit gross output of food (kilograms)
Tay Ninh	.1491	.5563	.045	.844	.3389
Thai Binh	.1209	.7779	.015	.818	.5977
Thanh Hoa	.1115	.5289	.015	.576	.3010
Thua Thien-Hue	.0946	.3890	.033	.536	.1496
Tien Giang	.1862	.6705	.034	.833	.7315
Tra Vinh	.2135	.6991	.029	.828	.4672
Tuyen Quang	.1093	.7004	.018	.605	.2651
Vinh Long	.1944	.7298	.021	.771	.7729
Vinh Phu	.1014	.5426	.017	.566	.2522
Yen Bai	.1078	.6001	.016	.608	.2593
Minimum	.319	.8789	.070	.034	.0582
Maximum	.073	.1008	.007	.955	.9561
Average	.140	.581	.028	.592	.349
Standard deviation	.058	.161	.014	.270	.220

Table A8. Provincial Health Personnel and Expenditures

Province	1993 Physicians per 1,000 population	1993 Assistant Physicians per 1,000 population	1993 Nurses per 1,000 population	1993 Midwives per 1,000 population	1993 Hospital beds per 1,000 population	Physicians and asst. physicians per 1,000 population	1992 Current Expenditures on Health (1000 dong)	1992 Share of Government expenditures for health
Ha Giang	.240	.963	.567	.038	2.673	1.20	11	.10
Tuyen Quang	.294	.748	.479	.134	2.776	1.04	10	.10
Cao Bang	.391	.760	.546	.312	2.334	1.15	10	.09
Lang Son	.339	.701	.603	.124	1.060	1.04	9	.08
Lai Chau	.301	1.043	.816	.112	3.093	1.34	9	.07
Lao Cai	.250	.665	.738	.159	2.641	.92	8	.07
Yen Bai	.464	.827	.744	.186	2.742	1.29	10	.09
Bac Thai	.412	.601	.537	.056	2.579	1.01	9	.10
Son La	.249	.902	.848	.097	2.941	1.15	9	.10
Hoa Binh	.245	1.079	.673	.258	2.132	1.32	7	.06
Quang Ninh	.467	.252	.484	.039	2.545	.72	14	.09
Vinh Phu	.290	.613	.443	.107	2.869	.90	6	.09
Ha Bac	.349	.405	.574	.159	1.803	.75	6	.10
Ha Noi	.359	.203	.754	.141	2.021	.56	16	.06
Hai Phong	.568	.528	.875	.192	3.087	1.10	13	.15
Ha Tay	.266	.680	.489	.189	1.828	.95	6	.08
Hai Hung	.296	.597	.500	.183	2.150	.89	7	.13
Thai Binh	.488	.529	.400	.143	3.042	1.02	5	.09
Nam Ha	.378	.335	.718	.184	2.448	.71	7	.12
Ninh Binh	.396	.743	.442	.274	2.867	1.14	5	.09
Thanh Hoa	.248	.666	.469	.137	3.137	.91	6	.09
Nghe An	.253	.601	.660	.161	2.835	.85	7	.11
Ha Tinh	.240	.805	.374	.352	3.440	1.04	5	.08
Quang Binh	.168	.654	.392	.156	1.765	.82	5	.07
Quang Tri	.371	.564	.766	.265	2.728	.93	7	.08
Thua Thien-Hue	.353	.353	.400	.225	1.968	.71	5	.06
Quang Nam - Da Nang	.459	.684	.562	.163	3.243	1.14	17	.16
Quang Ngai	.197	.465	.523	.121	2.183	.66	7	.10
Binh Dinh	.231	.406	.650	.114	2.344	.64	11	.13
Phu Yen	.206	.643	.561	.174	1.787	.85	10	.11
Khanh Hoa	.315	.628	.461	.168	1.539	.94	11	.09

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Table A8. Provincial Health Personnel and Expenditures (continued)

Province	1993 Physicians per 1,000 population	1993 Assistant Physicians per 1,000 population	1993 Nurses per 1,000 population	1993 Midwives per 1,000 population	1993 Hospital beds per 1,000 population	Physicians and asst. physicians per 1,000 population	1992 Current Expenditures on Health (1000 dong)	1992 Share of Government expenditures for health
Ninh Thuan	.196	.701	.523	.245	2.193	.90	14	.15
Binh Thuan	.242	.555	.415	.178	1.888	.80	12	.11
Gia Lai	.228	.431	.370	.110	3.596	.66	10	.10
Kon Tum	.292	.745	1.162	.140	4.167	1.04	18	.09
Dac Lac	.301	.499	.396	.084	2.859	.80	8	.08
Lam Dong	.343	.641	.459	.226	2.423	.98	12	.13
T.P. Ho Chi Minh	.594	.333	1.072	.291	2.885	.93	40	.15
Song Be	.231	.578	.447	.206	1.408	.81	9	.08
Tay Ninh	.310	.856	.433	.147	1.809	1.17	10	.09
Dong Nai	.264	.521	.463	.150	1.521	.78	11	.12
Ba Ria - Vung Tau	.218	.295	.358	.140	.944	.51	11	.06
Long An	.220	.691	.441	.166	2.099	.91	9	.10
Dong Thap	.230	.481	.299	.075	1.115	.71	7	.10
An Giang	.262	.586	.396	.169	1.608	.85	11	.11
Tien Giang	.228	.439	.315	.176	1.383	.67	7	.10
Ben Tre	.234	.615	.325	.103	1.286	.85	8	.13
Vinh Long	.179	.620	.305	.111	1.138	.80	8	.09
Tra Vinh	.160	.658	.451	.061	1.758	.82	4	.08
Can Tho	.266	.548	.630	.190	1.231	.81	9	.11
Soc Trang	.169	.588	.681	.124	1.160	.76	4	.08
Kien Giang	.262	.656	.307	.132	1.375	.92	7	.08
Minh Hai	.220	.765	.437	.104	1.338	.99	6	.08
Minimum	.160	.203	.299	.038	.944	.51	4	.06
Maximum	.594	1.079	1.162	.352	4.167	1.34	40	.16
Average	.30	.61	.54	.16	2.22	.91	9.49	.10
Standard deviation	.10	.18	.19	.07	.74	.19	5.27	.02

Table A9. Provincial Health Indicators

Province	Total fertility rate 1989	1979 Average distance to polyclinic	1989 Average distance to polyclinic	1979 Infant mortality rate	1989 Infant mortality rate
Ha Tuyen	4.90	29.52	23.33	88.0	52.8
Cao Bang	5.00	12.96	14.97	85.0	61.6
Lang Son	4.90	19.24	11.38	78.0	56.5
Lai Chau	6.80	20.09	19.36	72.0	66.1
Hoang Lien Son	5.20	30.64	13.70	67.0	56.3
Bac Thai	3.90	18.56	14.38	57.0	45.0
Son La	6.00	67.27	67.27	74.6	54.5
Quang Ninh	3.40	14.50	15.38	56.1	35.0
Vinh Phu	3.50	17.06	8.33	52.3	33.1
Ha Bac	3.50	27.09	9.03	45.6	36.3
Ha Noi	2.80	6.74	4.77	62.0	40.0
Hai Phong	2.90	7.73	7.29	52.0	26.0
Ha Son Binh	4.00	13.57	10.12	84.0	47.9
Hai Hung	2.90	16.46	5.70	71.0	38.0
Thai Binh	2.60	9.08	5.56	66.1	31.6
Ha Nam Ninh	3.30	8.20	5.37	69.5	34.9
Thanh Hoa	4.10	34.41	12.71	68.8	36.2
Nghe Tinh	4.60	84.68	14.11	90.2	53.3
Quang Binh	4.80	8.42	12.45	90.1	49.9
Quang Tri	4.80	6.65	14.88	90.1	49.0
Thua Thien-Hue	4.80	6.71	9.63	90.1	50.0
Quang Nam - Da Nang	3.80	14.18	10.30	87.2	47.1
Quang Ngai	4.60	11.97	16.31	95.5	51.5
Binh Dinh	4.25		11.73	95.5	51.5
Phu Yen	4.20	12.11	12.70	88.3	44.8
Khanh Hoa	4.70		12.24	88.3	44.8
Thuan Hai	5.10	17.44	16.76	90.4	43.9
Gia Lai-Kon Tum	6.50	90.39	63.92	115.1	78.5
Dac Lac	6.20	25.15	30.06	97.6	44.9
Lam Dong	5.00	32.81	40.18	92.4	43.7
T.P. Ho Chi Minh	2.20	2.72	4.03	66.0	30.1
Song Be	4.40		19.53	82.0	45.7
Tay Ninh	4.40	13.52	17.88	75.2	39.1

Table A9. Provincial Health Indicators (continued)

Province	Total fertility rate 1989	1979 Average distance to polyclinic	1989 Average distance to polyclinic	1979 Infant mortality rate	1989 Infant mortality rate
Dong Nai	4.80	17.36	15.52	84.5	33.8
Vung Tau-Con Dao	2.80	8.69	8.69	71.1	32.4
Long An	4.20	21.47	15.18	93.4	42.3
Dong Thap	4.00	32.30	9.32	97.0	48.9
An Giang	3.90	14.76	9.53	98.0	50.5
Tien Giang	4.00	7.29	10.31	95.4	30.0
Ben Tre	3.90		10.11	88.0	41.1
Cuu Long	4.00			81.0	. 40.5
Hau Giang	4.20	14.77	10.16	83.1	45.4
Kien Giang	5.40	25.74	16.85	90.0	53.8
Minh Hai	4.60	28.50	9.87	91.0	44.4
Minimum	2.20	2.72	4.03	45.6	26.0
Maximum	6.80	90.39	67.27	115.1	78.5
Average	4.37	21.51	15.63	81.58	45.97
Standard deviation	.98	22.23	13.81	14.57	10.64

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Table A10. Provincial Literacy and Enrollment Rates

Province	Adult literacy rate (15 and above), total	School Enrollment Rate (percent)												
		Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13	Age 14	Age 15	Age 16	Age 17
Ha Noi	.93	.0722	.7053	.9373	.9699	.9747	.9716	.9555	.9244	.8497	.7154	.5881	.4816	.2250
Ho Chi Minh	.92	.0834	.6952	.9055	.9325	.9304	.9165	.8920	.8464	.7728	.6788	.5503	.4246	.3389
Hai Phong	.93	.1047	.7243	.9313	.9647	.9709	.9649	.9466	.9004	.8064	.6396	.4925	.3861	.2115
Cao Bang	.71	.0675	.4058	.5476	.6089	.6520	.7041	.6981	.7003	.6098	.5276	.4090	.3166	.1991
Ha Tuyen	.67	.0533	.3576	.5083	.5763	.6165	.6581	.6345	.6208	.5462	.4366	.3093	.2206	.1273
Lang Son	.84	.0420	.3961	.6313	.7566	.8354	.8677	.8645	.8274	.7251	.6054	.4486	.3153	.1947
Lai Chau	.49	.0289	.2045	.3017	.3483	.3734	.4130	.4218	.4094	.3640	.3293	.2613	.2194	.1395
Hoang Lien Son	.70	.0390	.3732	.5488	.6153	.6297	.6606	.6434	.6106	.5261	.4144	.3130	.2540	.1508
Bac Thai	.92	.0646	.5918	.8557	.9227	.9496	.9514	.9340	.8939	.7799	.5933	.4277	.3162	.1693
Son La	.62	.0375	.2152	.3141	.3816	.4281	.4620	.4926	.4586	.4267	.3652	.2964	.2248	.1371
Vinh Phu	.91	.0715	.6134	.8819	.9399	.9548	.9490	.9204	.8672	.7387	.5584	.4043	.3151	.1588
Ha Bac	.90	.0333	.5716	.8655	.9337	.9471	.9455	.9127	.8422	.6786	.4738	.3064	.2361	.1160
Quang Ninh	.90	.0693	.6308	.8546	.9033	.9171	.9097	.8961	.8740	.7915	.6721	.5424	.4433	.2329
Ha Son Binh	.89	.0707	.5670	.8371	.9132	.9343	.9322	.9122	.8605	.7462	.5932	.4306	.3462	.1654
Hai Hung	.91	.0684	.6148	.8998	.9615	.9745	.9740	.9588	.9158	.8129	.5906	.4108	.3385	.1761
Thai Binh	.92	.0790	.6742	.9289	.9724	.9797	.9762	.9595	.9256	.8289	.5914	.4100	.3315	.1694
Ha Nam Ninh	.91	.0600	.5829	.8789	.9490	.9650	.9600	.9304	.8654	.7271	.5215	.3573	.2821	.1493
Thanh Hoa	.89	.1028	.4894	.7329	.8509	.9016	.9145	.9020	.8639	.7684	.6327	.4536	.3401	.2174
Nghe Tinh	.91	.0669	.3866	.6850	.8421	.9079	.9277	.9233	.8970	.8319	.7133	.5426	.4085	.2670
Quang Binh	.89	.0615	.3724	.6944	.8511	.9033	.9105	.8855	.8384	.7179	.5462	.3678	.3016	.2100
Quang Tri	.82	.0793	.5294	.7854	.8465	.8734	.8889	.8732	.8408	.7460	.6042	.4511	.3306	.2483
Thua Thien-Hue	.81	.1206	.5776	.7713	.8325	.8607	.8602	.8311	.7591	.6493	.5228	.3790	.2529	.1919
Quang Nam-Da Nan	.88	.0963	.6583	.8642	.9055	.9247	.9324	.9175	.8825	.7907	.6767	.5172	.3670	.2812
Quang Ngai	.84	.1712	.6598	.7791	.7874	.8481	.8687	.8620	.8326	.7362	.6211	.4700	.3324	.2484
Binh Dinh	.90	.2249	.7520	.8891	.9290	.9396	.9396	.9230	.8743	.7647	.6294	.4614	.3190	.2341
Phu Yen	.88	.0548	.7070	.8613	.8867	.8993	.8963	.8650	.8046	.6775	.5565	.4155	.3050	.2243
Khanh Hoa	.88	.0231	.6539	.8790	.8921	.8998	.8818	.8467	.7724	.6647	.5348	.3830	.2830	.2318
Thuan Hai	.82	.1544	.6251	.7654	.7983	.8047	.7870	.7513	.6692	.5195	.4155	.3047	.2147	.1623
Gia Lai-Kon Tum	.60	.0365	.3272	.4668	.4780	.4984	.5604	.5696	.5730	.4784	.4359	.3462	.2705	.2056
Dac Lac	.82	.1260	.5053	.6569	.7201	.7686	.7892	.7904	.7623	.6717	.5679	.4433	.3334	.2477
Lam Dong	.85	.1458	.5912	.7536	.7993	.8245	.8362	.8244	.7711	.6685	.5492	.4149	.2857	.2147

Table A10. Provincial Literacy and Enrollment Rates (continued)

Province	Adult literacy rate (15 and above), total	School Enrollment Rate												
		Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13	Age 14	Age 15	Age 16	Age 17
Song Be	.86	.1107	.5912	.7729	.8272	.8390	.8427	.8127	.7602	.6510	.5456	.4203	.3144	.2318
Tay Ninh	.87	.0920	.5796	.7895	.8601	.8784	.8715	.8353	.7582	.6396	.5272	.4035	.3124	.2387
Dong Nai	.92	.1325	.6457	.8302	.8767	.8846	.8775	.8405	.7731	.6630	.5482	.4128	.2946	.2182
Long An	.89	.0235	.5945	.8597	.5172	.9221	.9066	.8556	.7609	.6179	.4890	.3629	.2565	.2031
Dong Thap	.82	.1247	.5292	.7005	.7812	.8095	.8161	.7827	.6995	.5867	.4815	.3824	.2918	.2241
An Giang	.80	.1026	.4631	.6162	.6993	.7160	.7164	.6719	.5880	.4876	.3813	.2901	.2131	.1554
Tien Giang	.88	.0780	.6216	.8499	.9097	.9218	.9090	.8597	.7656	.6435	.5029	.3786	.2712	.2096
Ben Tre	.88	.1422	.6701	.8418	.8998	.9109	.8996	.8619	.7878	.6638	.5356	.4021	.2855	.2092
Cuu Long	.84	.1125	.5552	.7430	.8253	.8584	.8691	.8408	.7794	.6676	.5555	.4333	.3274	.2394
Hau Giang	.83	.0147	.4263	.6573	.7604	.8084	.8292	.8101	.7535	.6356	.5224	.3977	.2947	.2063
Kien Giang	.80	.1022	.4626	.6244	.7214	.7729	.7965	.7891	.7459	.6258	.5198	.3913	.2911	.1975
Minh Hai	.89	.1037	.4798	.6600	.7643	.8162	.8389	.8281	.7843	.6470	.5403	.4149	.3131	.2164
Vung Tau-Con Dao	.94	.1161	.7285	.9063	.9344	.9343	.9159	.8906	.8281	.7561	.6428	.5433	.3679	.2855
Maximum	.94	.22	.75	.94	.97	.98	.98	.96	.93	.85	.72	.59	.48	.34
Minimum	.49	.01	.20	.30	.35	.37	.41	.42	.41	.36	.33	.26	.21	.12
Average	.67	.07	.44	.60	.65	.67	.68	.66	.62	.54	.44	.33	.25	.17
Standard	.35	.05	.25	.33	.35	.36	.36	.35	.33	.29	.23	.18	.13	.09

Table A11. Provincial Expenditures on Education, 1992

Province	1992 current expenditures on education (1000 dong)	1992 share of government expenditures on education
Ha Giang	19	.17
Tuyen Quang	23	.23
Cao Bang	23	.21
Lang Son	21	.18
Lai Chau	23	.18
Lao Cai	17	.15
Yen Bai	22	.20
Bac Thai	22	.26
Son La	21	.23
Hoa Binh	20	.18
Quang Ninh	29	.19
Vinh Phu	18	.26
Ha Bac	15	.25
Ha Noi	31	.13
Hai Phong	19	.22
Ha Tay	16	.23
Hai Hung	14	.26
Thai Binh	17	.32
Nam Ha	15	.26
Ninh Binh	11	.20
Thanh Hoa	17	.25
Nghe An	16	.25
Ha Tinh	14	.23
Quang Binh	17	.24
Quang Tri	16	.18
Thua Thien-Hue	15	.19
Quang Nam - Da Nang	19	.18
Quang Ngai	17	.24
Binh Dinh	21	.25
Phu Yen	18	.21
Khanh Hoa	28	.23
Ninh Thuan	20	.21
Binh Thuan	20	.19
Gia Lai	20	.20
Kon Tum	35	.18
Dac Lac	26	.27
Lam Dong	25	.27
T.P. Ho Chi Minh	37	.14
Song Be	23	.22
Tay Ninh	21	.19
Dong Nai	20	.21
Ba Ria - Vung Tau	25	.13
Long An	21	.22

Table A11. Provincial Expenditures on Education, 1992 (continued)

Province	1992 current expenditures on education (1000 dong)	1992 share of government expenditures on education
Dong Thap	15	.21
An Giang	15	.15
Tien Giang	18	.26
Ben Tre	18	.28
Vinh Long	20	.24
Tra Vinh	10	.20
Can Tho	16	.19
Soc Trang	8	.17
Kien Giang	15	.16
Minh Hai	14	.19
Minimum	8	.13
Maximum	37	.32
Average	19.55	.21
Standard deviation	5.52	.04

Table A12. Regional Literacy and Fertility Rates

Regions	1992/93 Literacy rate (15+) (percent)	1992/93 Total fertility rate
Northern Uplands	87.6	3.75
Red River Delta	91.6	2.90
North Central	90.8	3.66
Central Coast	85.3	3.54
Central Highlands	71.7	5.31
Southeast	92.5	2.60
Mekong River Delta	84.8	3.04
Maximum	92.5	5.31
Minimum	71.7	2.60
Average	86.33	3.54
Standard deviation	6.60	.82

Table A13. Regional Investment Financing, 1992

Regions	1992 state budget investment (billion dong)	1992 foreign capital investment (billion dong)	1992 domestic loans investment (billion dong)	1992 self financing investment (billion dong)
Northern Uplands	29.2	4.7	74.4	1408.8
Red River Delta	31.1	14.6	237.4	2847.8
North Central	31.8	20.4	144.7	1254.3
Central Coast	27.6	19.6	51	940.9
Central Highlands	5.5	2.5	20.6	447.3
Southeast	24.5	102.9	86.9	1190.2
Mekong River Delta	41.4	41	88.2	1675
Maximum	41.4	102.9	237.4	2847.8
Minimum	5.5	2.5	20.6	447.3
Average	27.30	29.39	100.46	1394.90
Standard deviation	10.14	32.22	66.06	692.34

BIBLIOGRAPHY

Banister, Judith. 1993. <u>Vietnam Population Dynamics and Prospects</u>. Indochina Research Monograph. Berkeley: University of California, Institute of East Asian Studies.

<u>Bangkok Post</u> (<u>Inside Indochina</u> supplement) 6 June 1995, p. 2 in FBIS-EAS-95-108 p. 84-85.

Beresford, Melanie. 1995. "The North Vietnamese State-Owned Industrial Sector: Continuity and Change." <u>The Journal of Communist Studies and Transition Politics</u>. Vol. 11, No. 1: 56-76.

Bird, Richard M., Jennie I. Litvack and M. Govinda Rao. 1995. "Intergovernmental Fiscal Relations and Poverty Alleviation in Viet Nam." Policy Research Working Paper No. 1430, The World Bank, March 1995.

Cable. 1995. 020918Z Jun.

<u>The Economist</u>. 1995. "A Survey of Vietnam: The Road to Capitalism." July 8-14.

"Fertility and Family Planning in Vietnam: Evidence from the 1994 Inter-censal Demographic Survey" <u>Studies in Family Planning</u>, forthcoming.

Hare, Denise and Loraine A. West. 1994. "Human Capital Characteristics of Vietnam's Labor Force: Prospects for the Future." paper presented at the Association for Asian Studies meeting.

Ngo Vinh Long. 1993. "Reform and Rural Development: Impact on Class, Sectoral, and Regional Inequalities." <u>Reinventing Vietnamese Socialism</u>. Boulder: Westview Press.

Pham Minh Hac. 1991. <u>Education in Vietnam 1945-1991</u>. Ministry of Education and Training of the Socialist Republic of Vietnam, Hanoi.

PLAUM. See Vietnam General Statistical Office, Computer Center and UNFPA Vietnam.

<u>Quan Doi Nhan Dan</u> 6 Sep 94, p. 3 in FBIS-EAS-94-215.

Quinlan, Joseph P. 1994. <u>Vietnam Business Opportunities and Risks</u>. Berkeley: Pacific View Press.

Ronnas, Per. 1992. <u>Employment Generation Through Private Entrepreneurship in Vietnam</u>. Geneva: International Labour Organisation.

Rorris, Adam and Kiri Evans. 1994. <u>Towards Universalised Primary Education in Vietnam: A Study of the Cost and Cost Effectiveness of the Primary Education System</u>. Hanoi: UNICEF.

Rozelle, Scott. 1994. "Rural Industrialization and Increasing Inequality: Emerging Patterns in China's Reforming Economy." Journal of Comparative Economics, Vol. 19, pp. 362-391.

Saigon Giai Phong. 1995. Jan. 5, p. 2 in FBIS-EAS-95-027, 9 February 1995, p. 56.

Schoff, Suzanne, Joanne Csete, Judith Ladinsky, and Hoang Thuy Nguyen. 1993. "Nutritional Status of Preschool Children in Northern Vietnam." Ecology of Food and Nutrition Vol. 29, pp. 235-255.

Tan Jee-Peng and Alain Mingat. 1989. "Educational Development in Asia: A Comparative Study Focussing on Cost and Financing Issues." Asia Regional Series Report No. IDP 51. Washington, D.C.: World Bank.

Tri, Vo Nhan and Anne Booth. 1992. "Recent Economic Developments in Vietnam." Asian-Pacific Economic Literature. Vol. 6, No. 1: 16-40.

Truong David H. D. and Carolyn L. Gates. 1992. "Effects of Government Policies on the Incentive to Invest, Enterprise Behavior and Employment: the Case Study of Vietnam." World Employment Programme Research Working Paper No. 57. Geneva: International Labour Office.

Turley, William S. and Mark Selden (eds). 1993 Reinventing Vietnamese Socialism. Boulder: Westview Press.

United Nations Development Programme. 1995. Human Development Report 1995. New York: Oxford University Press.

Vietnam General Statistical Office. 1991. Viet Nam Population Census - 1989 Detailed Analysis of Sample Results. Hanoi: General Statistical Publishing House.

Vietnam General Statistical Office. 1994. Viet Nam Statistical Yearbook 1993. Hanoi: Statistical Publishing House.

Vietnam General Statistical Office, Computer Center and UNFPA Vietnam. 1993. PLAUM Program for List of Administrative Unit and Mapping, electronic file.

Vietnam State Planning Committee and General Statistical Office. 1994. Vietnam Living Standards Survey 1992-1993. Hanoi.

Vo Dai Luoc. 1993. "The Fight Against Inflation: Achievements and Problems." Reinventing Vietnamese Socialism edited by William S. Turley and Mark Selden. Boulder: Westview Press 1993.

West, Loraine A. 1995. "Provision of Public Services in Rural PRC." in Financing Local Government in the People's Republic of China. Manila: Asian Development Bank.

Wong, Christine. 1995. ed. <u>Financing Local Government in the People's Republic of China</u>. Manila: Asian Development Bank.

World Bank. 1992. <u>Vietnam Population, Health and Nutrition Sector Review</u>.

World Bank. 1993. <u>Vietnam Transition to the Market</u>. Country Operations Division, Country Department I, East Asia and Pacific Regions, September.

World Bank. 1994. <u>Vietnam Public Sector Management and Private Sector Incentives</u>. Economic Report No. 13143-VN.

World Bank. 1994. <u>World Development Report 1994</u>. New York: Oxford University Press.

World Bank. 1995. <u>Vietnam Poverty Assessment and Strategy</u>. Washington, D.C.: World Bank.

Wurfel, David. 1993. "*Doi Moi* in Comparative Perspective" <u>Reinventing Vietnamese Socialism</u> edited by William S. Turley and Mark Selden. Boulder: Westview Press.

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