Internal Migration and Development in Vietnam[1]

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This article is a step toward understanding the nature of the interrelationship between population movement and development as Vietnam continues to move toward intensive market reforms. Underutilized tabulations from the 1989 census and national statistical data on characteristics of provinces were explored to gain insights into the roles of development in interprovincial migration within a context of institutional intervention. The overall results of OLS regression indicate that more developed provinces attracted higher volumes of inmigrants, whereas less developed provinces produced more outmigrants, other things being equal. Most of the migrants, especially females, moved to more urbanized and industrialized areas, regardless of their origin home provinces. The government's organized population movements towards remote resettlement areas were costly from the view of the migrants. The study results suggest the importance of interpreting population movement in Vietnam within the broader context of its current transition to a market economy. Government key-policy deliberations must include careful attention to how migration relates to long-term national development.

Although migration studies in Southeast Asia have been expanding extensively both in scope and number, very little is known about Vietnam. Population mobility is of increasing importance in Vietnam not only because it is the major cause of interregional variations in population growth, but also because of its influential role in social and economic change in the affected areas. The government of Vietnam has long sought to direct patterns of migration through explicit policies of population and labor reallocation, aiming to achieve a harmony between spatial distributions of manpower and natural resources.

Presently, many policymakers in Vietnam hold that the government's policies are the only effective means to regulate migration and its consequences (Pham, 1993; *Nhan Dan Newspaper*, 1993). This is frequently based on

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doctrinal assumptions and rarely on empirical observation. Although the government's explicit policy intervention and the long distance involved in many types of moves in Vietnam (as a result of its geographical shape and length) can affect the volume and patterns of interprovincial migration, individual preferences can still be made within these limits. Overemphasis on policy would not explain the reasons why government policies failed to deter individual migration or why people often prefer those places of destination which they consider the best for themselves, even though these are not the ones specified by policy. Although migration and development are interrelated both as cause and effect, the present study focuses on migration as a response to uneven development and to policy intervention rather than on the consequences of migration for national development and policy measures.

This study, using data from the 1989 census, is the first to attempt to assess how, given the extensive policy intervention, people move in response to market opportunities in Vietnam. It provides a background for understanding the nature of the relationship between population movement and development as Vietnam continues to move toward intensive market reforms. The analysis aims to establish a baseline pattern against which data from other sources can be compared as they become available in the late 1990s. Especially important is that migration patterns from the 1989 census be available for comparison with those obtained from the next census (1999) in order to assess changes in population mobility in response to the socioeconomic transformation of the country during the 1990s.

APPROACHES TO MIGRATION AND DEVELOPMENT: THE ASIAN EXPERIENCES

Economic development has provided a major framework of migration for explaining labor migration (Massey *et al.*, 1993:433). Within this perspective, the income/wage differentials between origin and destination are generally seen as the main motive for migration. The framework assumes that economic rationality leads people to choose to migrate to where they can be most productive, given their abilities. They want to maximize the returns of migration by relocating to a place that they expect offers higher positive net return (Sjaastad, 1962; Harris and Todaro, 1970; Todaro, 1976). The economic framework has, however, been criticized for neglecting noneconomic factors and the gender dimension in migration decisions (DaVanzo, 1981; Chant, 1992). It also underestimates the importance of household strategies in migration decisions. In many cases, the locus of the migration decision lies with the household rather than with individual members (Trager, 1988). The constraints on migration may be associated more with noneconomic factors while the motives for migration are more associated with economic factors.

Recently, discussions of migration have been framed in terms of locational amenities (Greenwood and Hunt, 1989). Operating within a micro-macro linked framework, these locational amenities have often been studied in conjunction with the migrant characteristics. Prevailing conditions in land shortage, education opportunities, health care, and recreational facilities can all enter into decisions to migrate or not to migrate. Such location-specific amenities, however, operate through the specific attributes of the households and individuals in affecting their migration intention or actual behavior.

In general, the main theoretical frameworks summarized briefly here implicitly make the assumption that migration is voluntary in nature. This assumption can be challenged since migration often has its institutional base. Inconsistencies between institutional goals and individual needs and aspirations are most apparently observed in the area of population redistribution in relation to resources, both natural and capital.

In Asia, migration has been often shaped and influenced by government policies. Populations have been regarded by the governments both as resources to be used to achieve certain goals and as the sources of problems that interfere with development and need, therefore, to be dealt with. Several countries have taken direct measures to discourage urbanward migration. The degree of control of migration, however, varies from country to country. While China has attempted to strictly control urban growth and the movement of people to its cities, Indonesia adopted a more flexible system based on dissuasion rather than prohibition. The opening of frontier territory to both rural and urban inmigrants has been very popular in Asia. The success of such policies is, however, dubious. The FELDA land settlement schemes carried out in Malaysia in the last two decades have slowed migration out of rural areas but could not reverse it (Baydar *et al.*, 1990). In Thailand, where the government has tried to promote regional growth centers as a way to reduce migration into the Bangkok metropolis, the city continued to attract vast numbers of migrants (Goldstein and Goldstein, 1986). Like Thailand, the government in the Philippines has been most concerned with the problem of overurbanization, especially in the Manila metropolis. Yet, the urban bias in investment strategies makes the big cities most attractive and encourages rural outmigration. Indirect measures were instituted to draw migrants to secondary urban centers outside Manila and to newly established industrial estates in various parts of the country in an endeavor to ameliorate regional disparities. However, these efforts tended to trigger more mass movements as a result of increasing contacts between more- and less-developed areas (Perez, 1985). Strict and direct administrative control has had strong impacts on population movement in China. Although government policies aimed at migration control to the cities are still officially enforced, both permanent and temporary migration have increased substantially as a response to diversified economic opportunities (Goldstein

and Goldstein, 1994). Moreover, China's small-town development policies, by providing some urban amenities and jobs in rural enterprises, have attracted many migrants but still failed to deter millions of people from migrating to major urban places (Goldstein, 1985).

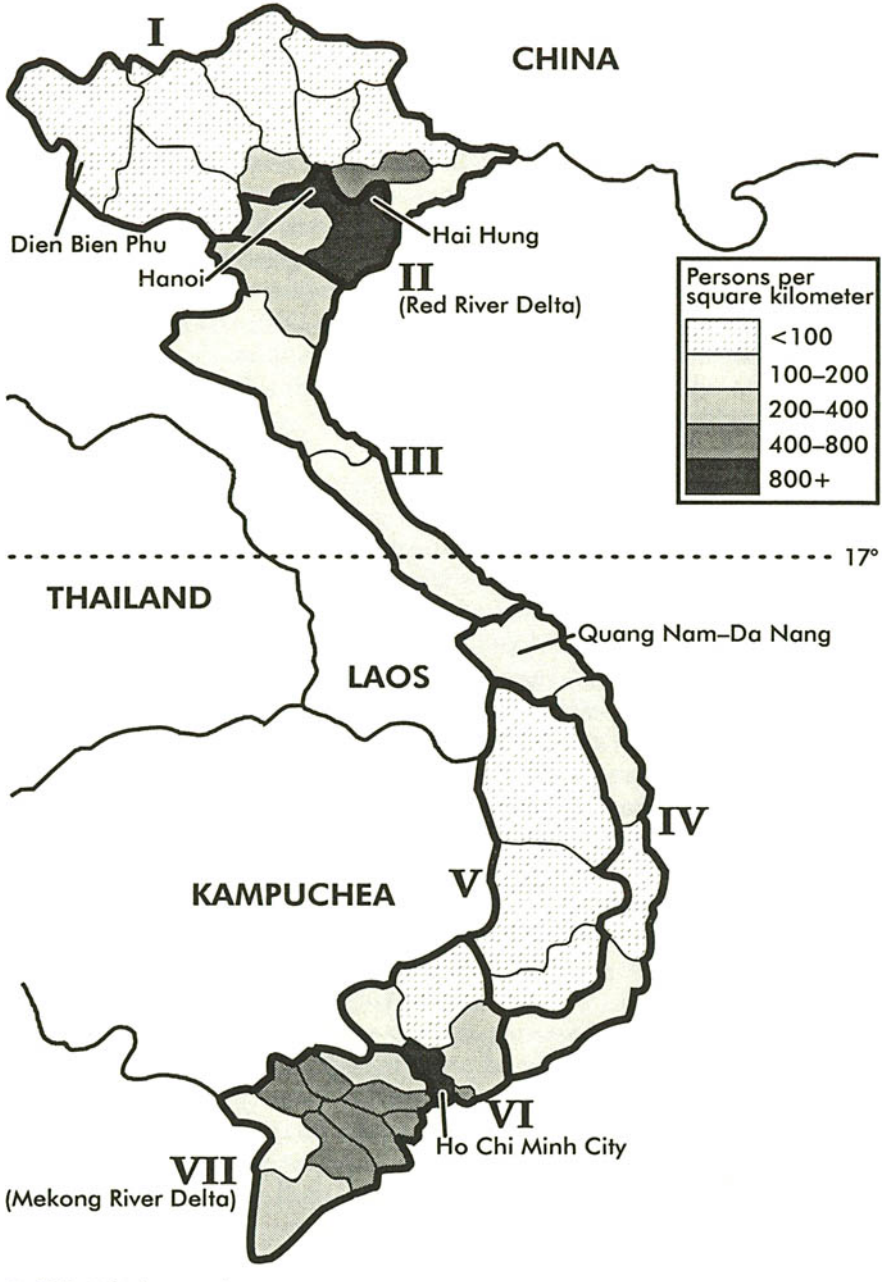
The comparative experiences of Vietnam's neighboring countries in shaping migration suggest strongly that rigid state interventions rarely work to bring about desired outcomes for the wider society. In general, efforts to slow the pace of population movement to urban places through rural development and resettlement programs have been unsuccessful in Asia (Oberai, 1988). Where successful, resettlement policies have been carried out at very high costs (*e.g.*, Malaysia, Sri Lanka), which explains why fewer and fewer countries have been able to adopt this strategy on a national basis. As Oberai (1988) argues, the policy instruments available to governments will continue to have little impact on migration until basic factors responsible for regional and sectorial differences are modified.

MIGRATION IN THE VIETNAMESE CONTEXT

Migration is by no means a new phenomenon to the Vietnamese people. Three-fifths of the territory of present Vietnam was established mainly by the migration over long historical periods of the Viet population from the Red River Delta to the Tonkin Sea and to the southern parts. Successive feudal kingdom states encouraged migration by issuing incentives, such as exemptions from duty services and taxes and by granting ownership of newly-opened lands for migrants (Luu, 1991). Clearly, the prime objectives of the feudal lords in historical Vietnam were territorial defense and expansion. Compared to the North, which has thousands of years of history, the Viet people started settlement in South Vietnam as recently as three centuries ago when migrants from the north moved further south to open the newly discovered lands. When the first Vietnamese settlements were made in the Mekong Delta, its large areas were virtually unoccupied (Fryer, 1979:433). These first migrants mainly belonged to lower classes, who left their native places with the hope of finding a better life in the southern lands (Do, 1991:76).

Migration is also one of the most significant features of Vietnamese history because the country has experienced endless foreign wars. Population mobility occurred more frequently during the French colonial period (1859–1954). Basically, it took three forms: rural to urban migration of landless people, wage laborers' movement between subsistent rural villages and the plantation/mining zones operated by the French, and peasants' cyclical movement between rural areas during transplanting and harvesting seasons in search of temporary employment. The last category seems to have accounted for the largest volume of movement. Thompson (1968:149) estimated that by the mid-1930s at least

Figure 1. **Vietnam: Provincial, Regional Boundaries and Population Density by Province as of 1989**



See Table 2 for key to regions.

TABLE 1
VIETNAM: RURAL AND URBAN POPULATION, 1976–1991
(POPULATION IN THOUSANDS)

	Population			
Year	Total	Rural	Urban	Urban (%)
1976	49,160	39,033	10,127	20.6
1977	50,413	40,305	10,108	20.1
1978	51,421	41,291	10,130	19.7
1979	52,462	42,368	10,094	19.5
1980	53,722	43,421	10,301	19.1
1981	54,927	44,704	10,223	18.6
1982	56,170	45,554	10,616	18.9
1983	57,373	46,392	10,981	19.1
1984	58,653	47,450	11,203	19.1
1985	59,872	48,377	11,495	19.2
1986	61,109	49,292	11,817	19.3
1987	62,452	50,149	12,303	19.7
1988	63,727	51,045	12,682	19.9
1989	64,412	51,465	12,947	20.1
1990	65,687	52,024	13,663	20.8
1991	66,551	52,176	14,375	21.6

Sources: Tran (1990); Banister (1993); GSO (1992).

two-thirds of peasants in northern Vietnam moved around to be employed as paid laborers for part of the year. In her view, seasonal migrations were the rule in overpopulated provinces in the Red River Delta of Vietnam. Migration in the French period had a more permanent effect. The French exerted perhaps more efforts at recruiting rural laborers to mining and plantations in upland frontier areas. Nevertheless, the French pursued this type of labor migration for economic reasons rather than to relieve population pressures.

Following Vietnam's victory over French colonial forces at Dien Bien Phu in 1954, Vietnam was divided into two halves, North and South at the 17° parallel according to the Geneva agreement (Figure 1). North Vietnam adopted a socialist form of government and the South followed a capitalist mode of development. During the twenty years of the Vietnamese war (1954–1975), substantial regional differentials characterized the movement of the population under the war conditions that severely interrupted the social life. Notably, people in the North were evacuated to the countryside to avoid the bombing, considerably decreasing the population resident in the cities. In the South, many rural people chose to move to the urban centers, especially to big cities, in order to avoid the conflict in the countryside and to take advantage of the safer and better life in the cities. To a considerable extent, the urban concentration of population in the South during the war also resulted from the southern regime's policy aiming at isolating the communist army by limiting

contact of the rural population with opposing forces. The two opposite processes resulted in a sharp decline in urban population in the North and an inflated urban population in southern provinces. Barbieri, Allman, Pham San, and Nguyen Thang (1995:640) report that the level of urbanization in the South, that is, the proportion of the population living in urban places, rose from 20 percent to 40 percent between 1960 and 1975.

After the end of the Vietnamese War in 1975, the country's urban population, while remaining stable numerically at 10 million (Table 1), declined relatively. In part, this reflects the faster growth of the rural population whose fertility was much higher. Mainly, however, it results from the massive repatriation of the southern people to their native villages and the establishment of the so-called "New Economic Zones" which aimed to limit the level of population growth in urban centers and densely settled provinces in the Red River Delta. By the early 1980s, the repatriating process was almost completed (GSO, 1991:36). At the same time, following the Chinese model, Vietnamese leaders decided to reclassify several district towns and industrial centers into rural areas. The effect of these artificial changes was to decrease the percentage of urban population in many provinces; the proportion of the country's population in urban places would have been greater had the deurbanization policy not been carried out (Banister, 1993). After declining through 1981 as a percentage of the total population, the urban proportion began a gradual but steady increase. Between 1981 and 1991, the urban population grew at a much faster rate (40.6%) than the rural population (16.7%), reflecting net migration into urban areas rather than higher urban birth rates. However, because the rural population's rate of natural increase has been much higher than that of the urban population, the percentage of urban population remained relatively low. By the time of the 1989 census, the urban population had risen to over 20 percent, and it continued to increase in the subsequent years.

Since its reunification, Vietnam's most visible population policy has been concerned with population redistribution and rural resettlement. The goal of this policy has been to counter the great disparities between manpower and natural resources, to reduce population pressure in the densely populated provinces and urban centers, to limit the level of population growth in urban areas, and to strengthen national defense and security (GSO, 1991:43).[2] The highly centralized character of Vietnam's planned economy before 1986 provided the government with a strong instrument for directly influencing migration flows and regulating them in ways considered socially desirable.

[2]The 1989 census reported a total population of 64.4 million, with sex ratio of 95 males per 100 females. The population of Vietnam is concentrated in the fertile Red River Delta in the North and the Mekong Delta in the South. The uplands and coastal areas are less densely settled (*see* Figure 1 and Table 2, column 1). The two major deltas and southeast region comprise 24.3% of the national area but contain 56.2% of the population. In contrast, the northern uplands and central highlands occupy 46.5% of the territory but have only 19.8% of the total population (GSO, 1991).

However, severe constraints of financial resources and war damages did not allow Vietnam to follow the Chinese model in setting up an extensive network of small towns and cities throughout the country as alternative urban destinations for rural surplus labor wanting to leave villages.

In the 1980s, the government's population and labor relocation policy, designed to directly affect population movements, focused on rural-rural and urban-rural migration rather than encouraging rural-urban migration. While not all provinces were under resettlement programs, direct intervention mainly included government-organized programs involving population movement from selected provinces in the two populous Red and Mekong River Deltas to less densely settled regions, chiefly to the new economic zones in the Central Highlands. Migrants were often provided with free transportation, housing, and basic necessities for settlement in their destinations at the beginning (Pham, 1986). Although the government has continued its policy of population and labor reallocation to less densely settled areas, the pace has slackened and the efforts have not been successful because of financial and practical problems (Banister, 1993). Lack of adequate infrastructures, poor social services, and low incomes resulted in the frustration among a number of these migrants. This, in turn, created a 'push' for some migrants to leave the resettlement areas. As many as half the migrants to the new economic zones have been reported to have moved again or returned to origin soon after they arrived (Desbarats, 1987; UNICEF, 1994).

Even though Vietnam's level of development is low, socioeconomic differences among regions are noticeable (*see* Table 2). They exist in public services, education, health care, per capita income, economic growth, sources and level of capital as well as other market factors. Despite the socialist goal of equalization of living standards throughout the country, the government has not been able to extend social services equally to all regions. Moreover, relatively heavy investments for industrial development have been emphasized at the expense of agriculture, which remains a considerably less important and less prestigious sector. Incomes in the agricultural sector have lagged far behind those in other sectors of the economy, creating a strong 'push' effect for outmigration from rural areas. The government bias in promoting heavy industrialization also prevents the narrowing of the gap between urban and rural infrastructures and facilities. This appears to strengthen the 'pull' effect of the towns and metropolitan cities, tending to increase rural-to-urban migration (GSO, 1991). The last column of Table 2 indicates net migration rates for each geographical region during the 1984–1989 period (for more detailed data on migration flows among regions, *see* Appendix). Most of the regions were more or less losing migrants in this five-year period. Interestingly, exceptions are the Southeast and the Central Highlands whose rate shows a very strong net gain from migration. Two main forces may, in parallel, underlie the migration process in Vietnam – the Central Highlands gained migrants from other regions to the

TABLE 2

VIETNAM: REGIONAL DIFFERENTIALS IN POPULATION AND SOCIOECONOMIC DEVELOPMENT

	Population Density[a]	Annual Income per Capita[b]	Annual Food Production per Capita[c]	Unemployed Rate[d] (%)	Households with Electricitye (%)	Households with Tap Water[f] (%)	Illiteracy Rate[g] (%)	Relative Ranking in Development[h]	Net Migration Rate[i]
Northern Uplands (I)	103	801	770	14.2	37.0	0.1	14.1	6	-1.2
Red River Delta (II)	784	1,096	922	7.5	98.1	18.1	8.6	2	-0.8
Northern Central (III)	167	763	650	13.4	61.8	0.1	9.0	7	-2.0
Central Coast (IV)	148	853	633	10.6	54.7	16.3	15.3	4	-1.0
Central Highlands (V)	45	852	897	6.2	31.3	0.8	36.0	5	16.1
Southeast (VI)	333	1,892	1,041	5.8	71.8	30.0	9.6	1	3.7
Mekong Delta (VII)	359	1,266	1,332	6.7	67.0	5.3	18.0	3	-0.4
Vietnam	195	1,105	909	9.8	60.2	10.7	13.4	—	0.0

Sources: [a]GSO (1989)
[b]SPC (1994)
[c]SPC (1994)
[d]SPC (1994)
[e]Nguyen (1995)
[f]SPC (1994)
[g]SPC (1994)
[i]Avery and Dang (1994)

Notes: Indicators provided from 1993 Vietnam Living Standard Survey were used since survey was the first source of comprehensive information on regional differences in Vietnam. All indicators were measured in 1992 except population density in 1989 and net migration rate for 1984–1989, and electrification in 1994.

Units of measurement: [a]persons/km2; [b]thousand VND; [c]thousand VND; [h]relative ranking in level of development; [i]percentage.

government resettlement areas, while the Southeast, ranked as the most developed region, largely attracted migrants to its provinces and Ho Chi Minh City.

The uneven development has been deepened by the country's transition toward a market economy, as a result of *Doi Moi* carried out since 1986.[3] The market reforms have accentuated the diverse opportunities among the regions and provinces, but the government policy intervention may make it difficult for the market forces to operate fully in relocation of labor. Despite this, the interregional differentials in development and growth have led to different demands for labor and for labor mobility to take place across provincial boundaries and regions in response to the new demands.

Three macro-structural changes are relevant to the labor market and have unintended implications for population movement in Vietnam. These changes have made spatial mobility more spontaneous and voluntary in nature. The first major change is the process of decollectivization (*phi tap the hoa*), through introduction of the household contract system (*khoan ho*) in the countryside – referred to as a similar version of the household responsibility system in China. Under the new system, collective land was reallocated to individual families. Productivity has been increased while labor surplus becomes exacerbated in rural areas. The implementation of the 1993 Land Law has promoted a clear legal system for transferring land titles and has given people greater incentives to respond to market opportunities off the farm. The second change affecting migration is the abolition of the subsidy system in the economy. People no longer have to depend on the government subsidy and rationing to obtain their subsistence. The household registration system, despite its continuation, no longer limits acquisition of essential goods and residence in the cities. Finally, the removal of restrictions on private sectors of trade and transportation, which was announced in early 1987, has resulted in a growing private system of interprovincial transportation and communications.

The changes in macro policies toward privatization have affected many facets of the Vietnamese society, but perhaps none is more obvious than spatial mobility. The increased dispersal of market forces allows the incorporation of even remote areas and their populations into an economic system that is no longer locally confined, but regionally and nationally interlinked. As people become more aware of the changing opportunities, they try to translate their

[3]The *Doi Moi* program was adopted by the Vietnam communist party in the Sixth National Congress in December 1986. It has opened the way to new forms of ownership, including acceptance of the private sector and markets, decentralization of management, as well as the openness of Vietnam's economic relations with the nonsocialist world (Turley, 1993:2). At the grass-roots level, the initiation of economic renovations began several years earlier. The year 1986 is only the time-point when the government officially approved what was virtually going on in the civil society. This bottom-up perspective is probably a typical feature of most socialist nations at the onset of their reforms.

aspirations into actual migration behavior. Rural population migrates to seek better life in other rural places and in urban locations. The results of this study covering the period 1984–1989, encompassing the initiation of *Doi Moi*, are expected to reflect these transitional conditions.

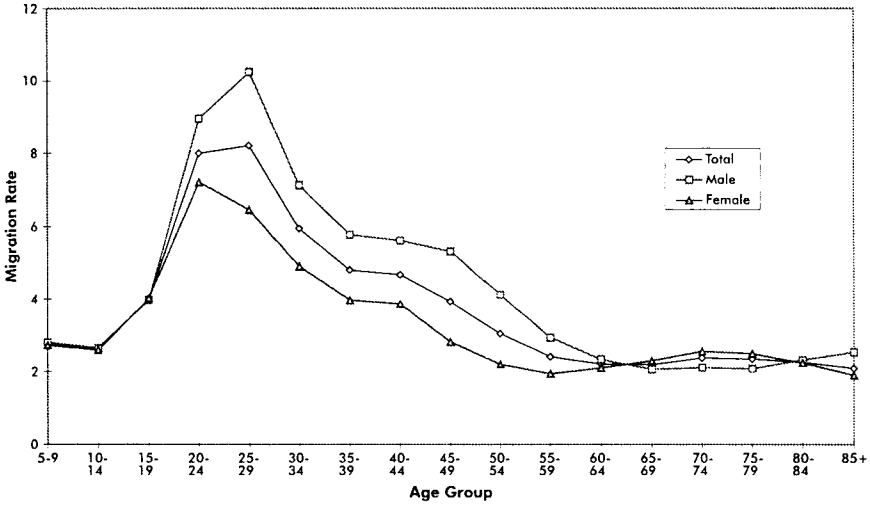
What, then, can be said about the patterns and determinants of migration in Vietnam? Essentially, our thesis is that while the government intervention has been a key factor in explaining interprovincial movement, differential development among provinces and regions plays an important part as well. We examine the overall migration patterns with focus on both inmigration and outmigration and on the characteristics of destination and origin provinces, respectively. Differential development may attract migrants to a specific province or motivate them to choose one over another once they have decided to leave their home province. Within such a framework, we begin by considering some of the factors at the provincial (aggregate) level that may have induced or hindered population movements between provinces in Vietnam.

DATA, MEASUREMENT AND METHODS

Data on interprovincial migration are obtained from the 1989 census publications (GSO, 1991:Tables 2.1, 2.2). The 1989 census was the second nationwide census but the first to collect data on migration. The absence of any nationwide survey data on migration in Vietnam until recently makes the census information unique. The census used a five-year question to define migrants, comparing where persons were living at the time of the census (April 1, 1989) with where they resided five years earlier (April 1, 1984). According to the census, during the period 1984–1989 over 2,400,000 persons or 4.4 percent of the population aged five and over had moved into a different area (district/province). Of this total, about 1,500,000 persons (three-fifths of all migrants) crossed provincial boundaries, of whom nearly 1,083,000 moved between regions. Males dominated females in the population movement (Figure 2). Undoubtedly, these observations underestimate the true extent of mobility in Vietnam since the numbers of returning, circular and temporary migrants are not taken into account.

The present analysis is confined to interprovincial migration since only interprovincial flows are available from tabulations published by the census. Overall, there were 37 provinces and three major cities (Hanoi, Hai Phong, Ho Chi Minh) which were treated as provinces in the 1989 census. The bulk of interprovincial migration predominantly involves long distances and permanent changes in residence and is, therefore, more reflective of policy and development factors; much of the mobility within provinces occurs over short distances and consists largely of marriage migration rather than responses to socioeconomic development. In Vietnam, where regional and sectorial differ-

Figure 2. Vietnam: Migration Rate by Age and Sex, 1984–1989



ences are salient, focusing on interprovincial migration can, therefore, more precisely capture the dynamic relationship between migration and development. In doing so, however, the role of government policy interventions in migration needs also to be taken into account.

Our analysis focuses on gross migration, examining both inmigration and outmigration flows, not net migration. Compared to the latter, the former are much greater in level and more clearly related to patterns of economic growth and social integration (Zelinsky, 1971). Each observation represents the number of migrants involved in each of the interprovincial flows reported by the census tables. Technically, this is similar to an individual-level analysis using micro data while the computational efficiency is far greater. Use of interprovincial migration flows, both inmigration and outmigration, as the dependent variable results in a significant increase in the number observations with the same degrees of freedom.[4] Another advantage using this approach is that, compared to a large number of studies dealing with characteristics of either the place of origin or the place of destination, this study is able to take into account characteristics of both sending and receiving locations in the analysis. Since N refers to the number of provinces, a total of $N(N\text{-}1)$ interprovincial migration flows is acquired theoretically. Given 40 provinces, the overall number of observations is 1,560 for each of the gender-stratified samples.

[4]The use of census data makes our model population-based rather than sample-based which also relieves us of many of the concerns surrounding sample statistics, including the use of confidence intervals to account for sampling error. While we do provide standard errors with our regression coefficients, we suggest their value may be limited for purposes of interpretation.

Data compiled from several official statistical yearbooks provide the basis for constructing the independent variables for this study (GSO, 1985, 1992). Due to the limited availability of data, our analysis relies on province-level data rather than individual micro data.[5] We are fully aware that models based on aggregate measures are only indirectly linked to individual migration decision-making. In the Durkheimian tradition, however, we believe that human migration occurred in and is influenced by a social context. Individual data, though important, cannot by themselves provide adequate answers to the complexities underlying migration processes. Indeed, studies using macro measures yield results supplementing those obtained from individual micro data. They would better help to explain where people move or why they move rather than who moves. Ideally, a linked micro-macro model should be used to explain more adequately the migration decisionmaking process in Vietnam but this will have to wait access to better data sources.

A list of variables used in the regression analysis, their operational definitions, together with the hypothesized signs of their estimated coefficients are presented in Table 3. All these independent variables were measured in 1984 and characterized at provincial level. At the present stage of analysis, we hypothesize that males and females responded in the same way to the underlying forces gauged by the independent variables of interest.

Given the great dissimilarity in population distribution in Vietnam, population density was used to reflect the increase in population pressure on the absorptive capacity of arable land. To a certain extent, this measure proxies the level of competition in farm employment opportunities. Individuals living in areas with a high man-land ratio would confront poorer life chances. This is an especially critical problem in rural Vietnam where arable land is very limited compared to population growth (Fryer, 1979; Le and Rambo, 1993).[6] The relationship between population density and migration is therefore hypothesized to be positive in that provinces with high/low population density experienced more out/in migration.

To represent the level of economic development, two measures were constructed for each province: the percentage of the provincial population living

[5]Although age together with gender is a basic variable in migration selectivity, the absence in the census tabulations of migrants by age for the separate provinces did not allow us to use age in the multivariate analysis.

[6]In this study, ratio of population to arable land is used instead of population size in order to reflect the situation in Vietnam where the inhabitants concentrate mostly in two major fertile deltas. Besides, the inclusion of population size in the migration function can also raise simultaneous-bias because the populations in origin and destination are themselves determined by previous migration (Mueser, 1989). Areas that had experienced higher inmigration in the past would experience higher than expected inmigration at present and have larger populations at present. In turn, areas with larger populations may also have more outmigration. These factors would largely bias estimates of the migration function.

TABLE 3
VARIABLE DEFINITIONS AND EXPECTED SIGNS OF ESTIMATED COEFFICIENTS

Variable	Definition	Expected Sign of Coefficient: Origin	Expected Sign of Coefficient: Destination
	Dependent Variable		
Migration Flow[a] (Transformed)	Box-Cox transformed total number of people who resided in province *i* 1984 but in province *j* in 1989		
	Independent Variables		
Populational Density[b]	Total population per square kilometer of arable land in 1984	+	–
Urbanization[b]	% urban population in 1984	–	+
Industrial Structure[b]	Number of industrial enterprises per thousand urban population in 1984	–	+
Living Standard[b]	Per capita rice income for rural population in 1984 (kg/prs)	–	+
Education Facilities[c]	Number of schools per thousand population in 1984	–	+
Recreation Facilities[c]	Number of cultural shows per thousand population in 1984	–	+
Health Services[c]	Number of hospital beds per thousand population in 1984	–	+
Distance[d]	Distance between provincial capitals by highways (in km)	–	–
Policy[e]	Two dummy variables:		
	Sending-policy province	–	N/A
	Receiving-policy province (reference category = nonintervened province)	N/A	+

Sources: [a]Completed census results, vol. 1 (CCSC, 1991)
[b]Vietnam statistical yearbook 1984 (GSO, 1986)
[c]Statistical data of Vietnam: 1986–1991 (GSO, 1992)
[d]The New International Atlas (Rand McNally, 1980)
[e]Detailed analysis of sample results (GSO, 1991; Pham, 1986)

Note: N/A = Not Applicable since provinces with sending policies are not concurrently areas of destination for policy intervention.

in urban areas and the province's industrial structure measured by ratio of industrial enterprises to urban population. The importance of industrial development reflects its contribution to the creation of nonfarm employment opportunities. Although the scale of industrial enterprises in Vietnam is small, their role in development is essential. Industry provides not only work for educated and skilled people but also jobs for unskilled rural laborers, at least on a short-term basis. It is our hypothesis that provinces with higher urbanized and industrialized levels generated less outmigration but attracted more migrants, other things being equal.

The difficulties in measuring income in less developed settings have been widely reported (World Bank, 1990). No data are available on income or wages at the provincial level in Vietnam; even the actual per capita income of the country as a whole is not known for certain. In this analysis, we use per capita rice production as a proxy for living standard since information for constructing this variable is available. As about 80 percent of the population worked in the agricultural economy, this measure serves as a reasonable proxy for living standard. It is expected that migrants tended to opt for provinces with higher living standard while those places which were already better off economically would have lower outmigration.

Education facilities and per capita hospital beds were included in this analysis to test the effects of locational amenities since these 'nontraded goods' also encourage migration (Greenwood, 1985). Acknowledging education and health as indispensable components of development, over the last decades the government of Vietnam has endeavored to provide extensive mass education and public health care for all. Health and educational activities have been managed and financed at the local level. These conditions appeared to be stable over time until the market reforms associated with *Doi Moi.* The abolition of the central subsidy system had its strong effects on the areas of education and health care. The gap between regions and sectors became large, and their comparative status in these spheres has shifted widely. This study uses the number of schools per thousand population and per capita hospital beds as indicators of education and health development. We hypothesize that the level of development of opportunities for education and for health services is inversely related to migration; more will leave the poorer locations and migrate to areas with better facilities.

The examination of recreation facilities can provide insight into the comparative attractiveness of destinations to the young population. Given that cultural life has been especially poor in rural Vietnam, the lack of recreation facilities may be an important cause for the outmigration among rural youths. We use the number of cultural shows (movies, dramas, music and dances, etc.) as an indicator reflecting the entertainment attractiveness, that is, the role of 'bright lights,' in stimulating migration. Jointly used with the other economic and social indicators, it allows indirect evaluation of various aspects underlying migration decisions.

As in many studies, distance was included as a proxy for costs of migration in our analysis. The long geographical shape and length of Vietnam can affect the volume and patterns of the interprovincial migration process. We constructed this continuous variable on the basis of direct gauge of the physical distances between provincial capitals by highways as displayed on the administrative map of Vietnam (Rand McNally Company, 1980). Consistent with the finding of most studies that the effect of distance on migration has been

negative (Long, Tucker and Urton, 1988), interprovincial migration is hypothesized to decrease with increasing geographical distances.

Finally, as institutional constraints represented by government interventions may have varied by province, it is necessary to determine differences in migration experiences between those provinces under the government policy interventions and those not. Of a total of 40 provinces/major cities, 15 were under the resettlement programs, of which 6 provinces were defined as receiving areas and 9 as sending areas (Pham, 1986). In an effort to obtain a general accounting of the government's direct intervention policy in migration, we included two dummy variables in the model to distinguish between sending and receiving areas affected by the resettlement policy. Our expectation is that compared with nonintervened provinces, provinces under sending interventions had a larger number of outmigrants while those under receiving interventions gained more inmigrants.

THE MODEL SPECIFICATION

We have tried to keep our model simple with the objective of estimating the development effects on migration with as little bias as possible. Our aim is to construct and test a migration model that fits best to the limited data available. The model examines the linear relationship between the migration flows, on the one hand, and a set of variables measuring conditions in the origin and the destination on the other hand. Different from other studies, our model allows for differences between origin and destination effects. We avoid using symmetrical models that specify the ratios of destination and origin characteristics because asymmetrical models generally provide a higher explanatory power (McHugh, 1988).

The migration literature has suggested that migration flows, as measured by variables such as ours, may lack linearity and require some form of transformation (Goss and Chang, 1983). Exponential and logarithmic transformations are popular, though no priority rationale exists to guide the choice of transformation. We have chosen to be more systematic in this process, however, and have employed the Box-Cox transformation to select the most efficient transformation of our dependent variable in the estimated model as follows:[7]

$$M_{ij}^{*} = \beta_0 + \beta_1 X_{1i} + \ldots \beta_k X_{ki} + \varepsilon_j \qquad (1)$$

[7]The alternative log-linear functional formulation, in which all the variables are transformed into the logarithm form, has several limitations. The anti-log value of the dependent variable in the log-linear form often underestimates the actual number of migrants. (For detailed discussion, *see* Flowerdew and Aitkin, 1982). Those readers interested in the use of Box-Cox transformation may contact the authors for more details; they are also referred to Goss and Chang (1983).

where M_{ij}^* is the transformed migration flows; M_{1i}, M_{2i} . . . M_{ki} are the independent variables and e_j is the error term considered to be homoskedastic and normally distributed. It also represents unmeasured factors affecting interprovincial migration.

Equation (1) is essentially a macro migration function because it attempts to explain observed variation in migration flows in relation to a set of provincial level variables. This approach is necessitated by the fact that the census data available to us refer only to aggregates. Although use of these data may cause aggregate biases, we believe that certain patterns and determinants of the migration process in Vietnam can be observed. Our model is also justified from the perspective of policy analysis because policymakers are probably more interested in actual gross flows at the provincial level rather than in individual migrants. In an effort to desegregate the data, our model was tested separately for each sex-stratified sample to allow estimated coefficients for male and female migrants to differ.

RESULTS

Before turning to the substantive results of the model, we first describe summarized statistics of the variables included in the regression analysis in order to provide a better understanding of their basic construction (Table 4). Note that, except for the dependent variable, the displayed statistics apply to both male and female migrants since the independent variables measure the overall provincial characteristics.

For example, on average, there were about 480 migrants involved in each interprovincial movement flow, but the migration volumes varied considerably for males (539) and females (416) as well as among provinces. As a result of the Box-Cox transformation process, we obtained considerably lower values in the mean as well as the range for the dependent variable. The figures also exhibit a large variation in population density among provinces in Vietnam. The mean percentage of urban population corresponds closely to that of the national population as a whole (approximately 19% in 1984). While the average income per capita in paddy rice appeared to be reasonable (327 kg per head), the wide range among different provinces (60–970 kg) suggests that considerable push and pull forces may be operating. Notably, mean distance provides a first estimate of 600 kilometers for the average interprovincial distance by highways, indicating the long physical distance that interprovincial movements in Vietnam could involve.

Table 5 provides results of ordinary least square regression (OLS) of interprovincial migration on our independent variables. Our model is tested separately for each gender group to reveal the particular influences of the independent variables on female and male migrants. Overall, the relatively high R^2 of 0.45 (as compared to 0.15 in the untransformed model) indicates a

TABLE 4
SUMMARY STATISTICS FOR VARIABLES USED IN THE REGRESSION MODELS

Variable	Mean	Minimum	Maximum
	Dependent Variable		
Male Migration Flow	539	0	16,461
Female Migration Flow	416	0	17,434
Male Migration Flow (Transformed)	245	-42	7,352
Female Migration Flow (Transformed)	188	-42	7,896
	Independent Variables		
Population Density	217	65	1,546
Urbanization	19.2	9.7	89.5
Industrial Structure	4.1	0.9	8.2
Living Standard	327	60	970
Education Facilities	2.8	1.5	4.6
Recreation Facilities	9.5	3.4	27.6
Health Services	2.8	1.5	4.6
Distance	604	20	2,100
Sending-Policy Province[a]	0.5	0.0	1.0
Receiving-Policy Province[a]	0.6	0.0	1.0

Note: *See* Table 1 for definition of variables.
[a]Categorical variables.

superior goodness of fit of the transformed model. We also assume that the similarity of the R^2s in both the male and female regressions reflects the robust nature of our basic migration model. Generally, most of the variables operate consistently with theoretical expectations.

Population density shows significant, but fairly modest, effects at destination areas. Possibly this may reflect the migration to major cities and urban centers whose populations are densely settled. Compared with our hypothesis, the unexpected direction of population density suggests the possible existence of multicollinearity among the provincial aggregate measures. We believe that this problem will be overcome with the use of individual micro data in the future.

The effect of urbanization was highly significant. Both inmigration and outmigration occurred with increasing level of urbanization. This pattern is explainable to the extent that urban dwellers are likely more educated and hence obtain more information on alternative opportunities in other places. They tend, therefore, to move further to more urbanized provinces or to major urban centers/cities.

The concentration of manufacturing industry had very strong pull effects. Noteworthy, the magnitude of the coefficients measuring industrialization in destinations is greater in favor of females. This points to the fact that women dominated in the migration flows to industrialized areas in Vietnam where many manufacturing and service-oriented jobs were greatest for females.

Living standard seems to have served to retain population more than to attract migrants; it tended to hold people in their home provinces rather than draw inmigrants from other provinces. These retentive effects were, however, stronger for females than for males, reflective of the greater mobility of males. The same direction of the effects for both origin and destination provinces may reflect the role of 'intervening obstacles' and 'personal factors' in their interaction with push and pull forces (Lee, 1966).

Education, recreation facilities, and health services showed relatively modest effects. By including them in the model, we have presumably captured the role of these amenities in interprovincial migration at the threshold of the market reforms in Vietnam. While recreation was involved more as a push in the origins than a pull at destination, education and health services showed more attracting effects in the destinations. The results are consistent with our hypotheses.

As expected, distance was negatively associated with spatial mobility. Given severe lack of means of transportation and communications in Vietnam in the studied period, the robust effect of distance on interprovincial migration is quite reasonable. Examining the ratio of coefficients to standard deviations suggests that the impacts of distance on migration dominated other variables in explanatory power, regardless of sex of the migrants.

Policy interventions seem to accelerate migration in Vietnam. Those provinces which were targeted by policy as receiving areas experienced a much higher level of inmigration compared to those which were not under policy interventions. Interestingly, provinces/cities under sending interventions also gained rather than lost migrants as we hypothetically expected. This indicates that, despite the government policy efforts to stimulate outmigration from sending provinces/cities, people still moved in. These areas still attracted large numbers of immigrants so that on balance they gained from migration.

We decided to test for first-order interaction terms between policy interventions and distance. The expected interaction effects imply that the effects of distance may also depend on provincial status in the government resettlement program. The rationale is that being in the government's policy-targeted provinces, either under sending or receiving interventions, may reduce the negative effects of physical distance because the migrants' economic costs of transportation, food, allowances, and temporary housing are subsidized. In Vietnam, these experiences have been mostly observed for the long-distance population movements from the North to the new economic zones in the South.

As shown in Table 5, the effects of the two interaction terms were statistically significant. The negative coefficients indicate that being in resettlement provinces enhanced the negative effect of distance as compared to being in nonresettlement provinces. The effects were relatively stronger for sending provinces, reflecting people's more or less reluctance to migrate to remote areas.

TABLE 5
REGRESSION RESULTS EXPLAINING INTERPROVINCIAL MIGRATION IN VIETNAM: 1984–1989

	Origin Province		Destination Province	
	Male	Female	Male	Female
Population Density	-0.016	-0.009	0.013**	0.024***
	(0.011)	(0.040)	(0.011)	(0.040)
Urbanization	0.016***	0.015***	0.015***	0.012*
	(0.005)	(0.004)	(0.005)	(0.004)
Industrial Structure	-0.426**	-0.345**	0.089***	0.882***
	(0.152)	(0.147)	(0.152)	(0.147)
Living Standard	-0.552***	-0.263	-0.683***	-1.056***
	(0.161)	(0.149)	(0.161)	(0.149)
Education Facilities	-0.001*	-0.001	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Recreation Facilities	-0.046***	-0.039***	0.017*	-0.013
	(0.011)	(0.009)	(0.011)	(0.009)
Health Services	-0.001	-0.001	0.002***	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Distance	-0.127***	-0.117***	-0.127***	-0.117***
	(0.007)	(0.006)	(0.007)	(0.006)
Policy				
Sending[a]	0.563***	0.632***	N/A	N/A
	(0.101)	(0.094)		
Receiving[a]	N/A	N/A	0.807***	0.757***
			(0.106)	(0.098)
Interactions				
Sending distance	-0.048***	0.044***	N/A	N/A
	(0.011)	(0.010)		
Receiving distance			-0.027*	-0.027**
	N/A	N/A	(0.013)	(0.012)
Intercept	-4.924***	-4.678***	-4.924***	-4.678***
R^2	0.458	0.451	0.458	0.451

[a]Categorical variable (*see* definitions in Table 3). N/A = Not Applicable since provinces with sending policies are not concurrently areas of destination for policy intervention and those with receiving policies are not areas of origin under policy.

*$p < .05$ **$p < .01$ ***$p < .001$; all are two-tailed tests.
Standard errors in parentheses.

The results suggest that costs of migration should not be understood in purely economic terms. The government's organized population movements toward the remote new economic zones were costly in sociopsychological terms from the view of the migrants. The integration of low-land migrants into the communities of native ethnic groups in new economic zones remained a major obstacle. People did not simply react to the government's economic incentives to migrate; social and psychic costs, particularly family ties, and risks due to diminishing information often enhance with increasing distance. In fact, these nonmonetary costs played a greater role in people's migratory decisions. This

aspect is in line with the concept of 'social distance' discussed elsewhere (DaVanzo, 1981; Speare, Goldstein and Frey, 1975). Like the distance effects, the negative interaction effects were also relatively stronger for males. Possibly relatively limited life chances, as well as traditional family ties and obligations, might have served as barriers to women living too far from home. This indicates that the costs of moving were still greater for males than for females in Vietnam.

CONCLUSIONS

The study of migration in Vietnam is of interest not only for theoretical reasons, but also because many policymakers currently hold that the government's extensive intervention is the only effective means to regulate population distribution. This position is frequently based on doctrinal assumptions and rarely on empirical observation. This study has explored underutilized census data on migration and secondary statistics on provincial socioeconomic characteristics, as well as resettlement policies to obtain some insights on two important issues at the national scale: first, the roles of development factors in spatial mobility within a context of policy interventions; second, the extent of gender-differentiated migration in Vietnam. In doing so, the present study points to the importance of fully exploiting available data, as limited as they may be, to address critical research issues related to developing settings.

Our findings provide new insights into the migration process and the nature of the relationship between migration and development in Vietnam at the onset of the market reforms. The analysis results strongly suggest the primacy of employment and economic factors in determining interprovincial movement, although the relationship is by no means straightforward. The overall patterns show that, other things being equal, more developed provinces attracted higher volumes of inmigrants whereas less developed provinces produced more outmigrants. Among those migrants, most moved to more urbanized and industrialized areas, regardless of their home provinces being relatively more rural or urban. While this finding conforms to the conventional view of the relation between migration and development, it suggests that even under extensive government interventions, individual preference remains critical in people's migration decisions.

The government's strong interventions have undoubtedly shaped migration in Vietnam by moving people to resettlement areas. However, despite the government policy efforts to stimulate outmigration from sending provinces/cities, people still moved in. On balance these areas gained from migration. Our analysis points to the importance of interpreting migration within the broad context of development. The critical issue is how the government can incorporate developmental elements into its migration policies. The formulation of these policies requires an integrated approach that jointly

considers the interaction of market opportunities and spatial mobility. As in other societies of Southeast Asia, migration in Vietnam today not only responds to development but also contributes to the country's economic growth. Therefore, the government's key policy deliberations must include careful attention to how migration relates to long-term national development.

Our study shows that gender-selective migration favors males. To a larger extent than females, males also moved over greater distances. Most likely, they migrated ahead of females and children. Indeed, this pattern is not new but rather familiar in developing settings (Shaw, 1975; Chant, 1992). What is interesting is that women who migrated tended to move to areas with higher level industrial development where manufacturing, small business, or service-oriented jobs were greatest in number. It is hence important that gender be regarded as a basic dimension of selective migration in future studies and in policy considerations.

With the intensifying market reforms and further relaxation of restrictions on migration, population mobility is likely to become more common and voluntary in Vietnam. The government has been trying to create and expand a number of export-processing zones in order to attract foreign investment by offering low-cost labor and advantageous physical infrastructures.[8] The key industrial areas will no doubt absorb a large number of migrants from various parts of the country. Seen from this perspective, the interprovincial movement observed at the onset of *Doi Moi* through analysis of the 1989 census is just a start. In pace with the privatization and decentralization process, the 1990s is most likely to witness a much larger-scale urbanward movement.

Along with this, as in China as well as neighboring Southeast Asian countries, temporary and circular migration seems likely to occur at an increasing scale and to have much more significance in Vietnam. Unfortunately, these types of spatial mobility cannot be assessed with the 1989 census data which measured relatively long-term and permanent movements. Moreover, despite the insights noted, how much migration was attributable directly to policy interventions and how much to development factors is difficult to ascertain with our data. As suggested, their effects on interprovincial migration need not be independent.

There is a strong need to collect individual microdata which allow in-depth assessment of all forms of movement, and to link them to contextual data provided by censuses or large-scale surveys on places of origin and destination. Especially needed is information on movement to and from urban locations by size to allow more meaningful evaluation of the linkages between migration, population redistribution, and urbanization. Such research has important

[8]Currently, there are three major export-processing zones and fourteen industrial zones in Vietnam. As planned by the government in the next five-year period, 1996–2000, there will be a total of 33 industrial zones established (Nghiem, 1996).

relevance both for better understanding the relation between migration and development in a society undergoing transition from a socialist to a market economy and for formulating policies that are more likely to succeed in making large-scale population redistribution a positive factor in national development.

APPENDIX

VIETNAM: INTERREGIONAL MIGRATION FLOWS: 1984–1989 (IN THOUSAND PERSONS)

	Place of Residence in 1989							
Region/City	0	I	II	III	IV	V	VI	VII
Major Cities[a] (0)	7,248	23.2	31.5	14.8	7.3	16.2	29.1	15.4
Northern Uplands (I)	46.5	8,277	64.2	20.5	6.1	33.5	21.5	2.0
Red River Delta (II)	43.7	56.7	7,686	10.6	8.4	107.2	54.5	10.3
Northern Center (III)	17.7	7.4	10.9	7,142	25.4	86.9	61.7	8.6
Central Coast (IV)	16.7	1.0	2.8	11.0	5,628	54.8	36.1	4.2
Central Highlands (V)	5.9	0.8	3.1	5.7	10.2	1,730	5.5	0.9
Southeast (VI)	35.4	0.7	2.7	7.2	7.2	11.1	3,030	7.5
Mekong Delta (VII)	48.2	1.6	2.7	3.7	3.1	6.2	7.5	12,020

Source: 1989 census (CCSC, 1991)

[a]Hanoi, Hai Phong, Ho Chi Minh.

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