Indigenous Peoples, Poverty and Development

Ch. 8 Vietnam

A Widening Poverty Gap for Ethnic Minorities

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1. Introduction

Vietnam is a tropical country in Southeast Asia, bordered by China to the north, Lao PDR to the northwest, and Cambodia to the southwest. The population in Vietnam is approximately 85 million in 2007, ranking it among the countries with the highest population densities in the world. Income per capita is estimated at US\$ 836 in 2007; the value-added shares of GDP for agriculture, industry and services in 2006 are respectively 20 percent, 42 percent, and 38 percent (World Bank 2008a.)

Vietnam has 54 ethnic groups. Almost all their languages belong to the five language families of Southeast Asia and they can be considered as sharing "the same historical and cultural horizon of the past which spread from south of the Yangtze River to the Islands of Southeast Asia" (Dang et al. 2000.) Some of these groups have been in Vietnam since the earliest times (for example, the Viet, the Tay-Thai groups), while some arrived as recently as around the 17th to 19th centuries (for example, the Hanhi, the Lahu, the Lolo groups) and some came to Vietnam throughout different periods, but mostly in the last millennium (for example, the Hoa, the Nung, the Vankieu groups) (Dang et al., 2000.) The Kinh or Viet (ethnic Vietnamese) is the largest group, accounting for 86 percent of the population. The next largest groups are the Tay, the Thai, the Muong, the Khmer (ethnic Cambodian), the Hoa (ethnic Chinese), and the Hmong, which together represent 10 percent of the population, and the remaining ethnic groups make up 4 percent of the population (GSO 2001a).

While terms such as "*indigenous people*" have been used to refer to ethnic groups of smaller size than the majority group in certain countries (see, for example, United Nations Development Group 2008), the preferred terminology in this chapter is "*ethnic minority groups*". This term is considered to be the closest translation for the Vietnamese term "*dân tộc thiểu số*" that is widely used in both official documents and popular speech.[1] This chapter defines the ethnic majority group as consisting of the Kinh and Hoa ethnic groups and ethnic minority groups as the remaining ethnic groups.[2]

Despite government assistance efforts, these groups still lag behind in living standards (Swinkels and Turk 2006, World Bank 2008b). Worse still, concerns were voiced that ethnic minority groups are subject to stereotypes that portray them as negatively as backward, superstitious, and conservative (Asian Development Bank 2002, Jamieson et al. 1998). The World Bank, in its Country Social Analysis report (World Bank 2009), identifies six areas where ethnic minorities have a disadvantage compared with ethnic majorities

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[1] The term "*dân tộc thiểu số*" is usually shortened to "*dân tộc*" in everyday spoken Vietnamese. This practice of categorizing ethnic groups into minority or majority groups rather than indigenous or non-indigenous people can perhaps be traced back to the origin of most major ethnic groups in Vietnam, which were considered to come as branches of the common "*Bách Việt*" (multi- ethnic Viet) race from 5000 B.C. to around A.D. 700-800 (Tran 2001). In addition, the closest terms to "indigenous people" are "*người bản địa*" or "*người bản xứ*" in Vietnamese and these terms in current usage usually refer to people that have already been living in a certain place before anyone else arrives, for example, the Indian natives in America.

[2] By definition, except for the Kinh group, all ethnic groups can be considered ethnic minority groups because of their small size. However, the Hoa ethnic group is not usually considered an ethnic minority in Vietnam because of their high cultural assimilation with the majority ethnic Kinh group, and they are also one of the wealthiest ethnic groups in Vietnam. This approach is also used in earlier studies such as van de Walle and Gunewardena (2001).

- Ethnic minorities have less access to education, higher dropout rates, and later school enrolment. There is lack of ethnic minority teachers and bilingual education for ethnic minorities. School fees also represent a burden for ethnic minorities.
- Ethnic minorities have less mobility, with Kinh migrant households enjoying better benefits from government programs and their social networks. Kinh migration even has had negative effects on local minorities in certain places.
- Ethnic minorities have less access to formal financial services.
- Ethnic minorities have less productive land, while they are more dependent on swidden agriculture and have less off-farm employment.
- Ethnic minorities have lower market access and poorer returns from markets. While this varies among ethnic groups, ethnic minorities engage in trading activities less than the Kinh group.
- Ethnic minorities are subject to stereotyping and misconceptions, not just among Kinh households but even among ethnic minorities themselves, which can much hinder participation by ethnic minorities in their own development.

However, while these results are well-illustrated through a mix of research methods including literature reviews, focus group discussions, and household surveys, they may not be nationally representative because this report focuses on three provinces in Vietnam with the highest ethnic minority poverty (World Bank 2008b).

This chapter further investigates the welfare of ethnic groups, using several nationally representative surveys. For policies to be efficiently implemented, this chapter aims to identify the areas with the largest disparities between the ethnic groups. This chapter begins by reviewing the demographics of ethnic groups in Vietnam and major government programs for ethnic minority groups. The subsequent sections provide a mostly quantitative analysis of the welfare outcomes between Vietnamese ethnic groups in poverty, education, labor market participation, earnings, child labor, health, nutrition and social protection.[3] The final section summarizes the main findings and offers policy recommendations.

2. Background on Country's Economic History

Starting with the "*doi moi*" (renovation) process in 1986, Vietnam's economy has made remarkable progress in recent years. Figure 1 shows that it took Vietnam just four years after 1986 to catch up with and grow faster than most countries in the world. Between 1986 and 2007, the average growth rate per capita for Vietnam is 5.2 percent, which is almost double the rate of 2.7 percent for low and middle-income countries and more than two and a half times higher than the rate of 2.0 percent for high-income countries. While these steady growth rates have considerably increased living standards in Vietnam and have been found to benefit the poor more in the 1990s (Glewwe and Dang, forthcoming), a question can be raised on whether the benefits are shared equally between ethnic groups.

3. Government Policies and Programs for Ethnic Minorities

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[3] For a more detailed coverage of these issues (not just for ethnic groups) for Vietnam in the 1990s see, for example, Glewwe, Agrawal and Dollar (2004); for the welfare impacts of land reforms see Ravallion and van de Walle (2008).

The Government of Vietnam (GOV) has paid much attention to the welfare of ethnic minority groups. There is a ministerial-level government body, the Committee for Ethnic Minority and Mountainous Area Affairs (CEMA), which is in charge of management functions for ethnic minorities and mountainous areas. In geographically strategic areas or areas with an ethnic minority population of 5000 or more, CEMA has its own representative agency down to the district-level (GOV 2004a).

Programs that specially target ethnic minority groups are numerous and diverse. These programs are diverse and cover a wide range of issues including poverty reduction, resettlement and sedentarization, forest land allocation, education, health and communication. They benefit those minority groups through several channels such as: i) their ethnic identity, ii) their (usually mountainous or remote) residence areas, iii) their (usually poor) economic status, and iv) general social programs for households with war martyrs, war invalids or recognized as having contributed to the government.

Programs that target ethnic minority groups through ethnic identity include such activities as cash subsidies on land reclamation, house construction, and drinking water improvement (GOV 2004b), cash grants on food, production tools and seedlings (GOV 1995), and interest-free loans for poor households (GOV 2007a). Programs that target ethnic minority groups through their residence areas include such activities as improving commune and village infrastructure, developing communal centers, planning residential areas, providing agricultural extension services, and training commune level cadres (GOV 1998a and 2007b). Programs that target ethnic minority groups through their poor economic status include activities such as reducing poverty rates and creating jobs (GOV 1998b and 2001).[4] And programs that target ethnic minority groups through their contribution to the wars or the government can be provided either especially for ethnic minority groups (see for example, GOV 2005a) or generally in a variety of legal documents that include preferential treatment clauses for those with such contribution.

This is a rough categorization since there are often no such clear-cut targeting in government programs. Major programs such as Program 135 (GOV 1998a and 2007b) target all the poor communes in ethnic, mountainous and remote areas, and legal documents such as the 2005 Education Law (NA 2005) stipulates the beneficiaries under all the four different channels discussed above. More remarkably, the Government of Vietnam also gives preferential treatment such as price and transportation subsidies to businesses that operate in mountainous and ethnic areas (GOV 1998c and 2002). Teachers working in these areas can be entitled to 70% salary increments (GOV 2006a), and government officials assigned to these areas can be promoted one year earlier (GOV 2006b).

However, concerns have been expressed that these numerous programs may be overlapping, and may not be very efficiently and adequately supervised in their implementation (Asian Development Bank 2002, GOV 2005b, World Bank 2008b). In addition, while these programs clearly contribute to the welfare of ethnic minority groups, to our knowledge, their costs and benefits have not been evaluated.

4. Data and Methodology

Data for analysis are nationally representative and include two rounds of the Vietnam Living Standards surveys (VLSSs) (World Bank 2000, 2001) and two rounds of the

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[4] A detailed review of these programs is provided by Phuong and Baulch (2007).

Vietnam Household Living Standards Surveys (VHLSSs) (GSO 2001b, 2004, 2006) between 1992 and 2006,[5] and the 2002 Vietnam Demographic and Health Survey (VDHS) (CPFC and ORC Macro 2003). However, to keep a reasonable sample size and time span for analysis, the main data are from the 1997-1998 VLSS and 2006 VHLSS. Other sources of data include a smaller but nationally representative survey on testing scores[6] and the World Development Indicators Online database (World Bank 2008).

Both descriptive statistics and multivariate regression methods are used. As shown later, ethnic minority groups usually reside in more remote areas. Thus to reduce the heterogeneity caused by differences in ethnic residence areas, most of the regressions control for this heterogeneity at the commune level either through commune fixed-effects or random-effects models. The choice of fixed-effects or random-effects models is mainly determined by currently available computing software and sample sizes.[7] For random-effects models, commune-level variables are also used to further reduce this heterogeneity, and these variables include commune poverty status (i.e. the share of poor households in the commune), commune topography (i.e. whether the commune is in a lowland or midland area versus mountainous areas), and the distance from the commune to the nearest town. However, since there are a number of households missing observations for these commune-level variables, while estimation results using these variables are also shown, the main models for interpretation are the models without these variables.

The following sections offer a quantitative analysis of the welfare for different ethnic groups in Vietnam.

5. Demographics

On average, ethnic minority groups have a similar gender ratio to that of ethnic majority groups, but they are younger and more likely to be married and living in larger households (Table 1). Ethnic minority groups live predominantly in rural areas, although more of them are living in urban areas in 2006 compared to 1998. However, in 2006, while around 71 percent of ethnic minority groups live in the mainly mountainous North East, North West and Central Highlands, around 64 percent of the ethnic majority groups live in the mainly lowland South East and the two deltas: Red River and Mekong River. Overall, these mountainous and lowland regions account for 21 and 58 percent of the total population (VHLSS 2006).[8]

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[5] In this chapter, sometimes the author's calculations from the 2006 VHLSS are cited in the text and not shown in a table. Such cases are noted by (VHLSS 2006), and full tables are available from the author upon request.

[6] This survey collects data on reading and mathematics scores for young students and adults in about 1,350 households across Vietnam, which are a subsample of the 2006 VHLSS. See Dang and Glewwe (2008) for more details on this survey.

[7] While it is straightforward to compute linear fixed-effects models, it is not the case with non-linear fixed-effects models such as probit models with fixed-effects (see, for example, StataCorp, 2009). And sample sizes would be reduced in fixed-effects models since communes with only one ethnic group would be left out in these models.

[8] There are currently 64 provinces in Vietnam. According to GSO classification (GSO 2007), these 8 regions house the following cities and provinces: 1) Red River Delta: Ha Noi, Hai Phong, Vinh Phuc, Ha Tay, Bac Ninh, Hai Duong, Hung Yen, Ha Nam, Nam Dinh, Thai Binh, Ninh Binh, 2) North East: Ha Giang, Cao Bang, Lao Cai, Bac Kan, Lang Son, Tuyen Quang, Yen Bai, Thai Nguyen, Phu Tho, Bac Giang, Quang Ninh, 3) North West: Lai Chau, Dien Bien, Son La, Hoa Binh, 4) North Central: Thanh Hoa, Nghe An, Ha

6. Income and Poverty
Income
   Ethnic minority groups are overrepresented in the lower tail of the consumption distribution and underrepresented in the upper tail of the consumption distribution. As much as 72 percent of the population of ethnic minority groups fall into the poorest three consumption deciles, and 88 percent of ethnic minority groups fall in the lower half (50 percent) of the population consumption distribution (VHLSS 2006).

   Did this situation improve or worsen over time? Figures 2 and 3 compare the expenditure distributions of ethnic minority groups with those of the ethnic majority groups in 1998 and 2006. Over this time span, the consumption distributions for ethnic minority and majority groups in Vietnam shifted to the right, indicating an overall increase in living standards for all the groups. However, a closer visual inspection suggests that the two distributions seem to be further apart in this same period. Indeed, while consumption levels doubled for all ethnic groups from 1998 to 2006, the gap in average consumption levels between ethnic minority group and the ethnic majority group actually widened from D 1,500,000 to D 3,100,000[9] in the same period. Thus, these graphs indicate that although all ethnic groups appear to enjoy similar economic growth rates in Vietnam in recent years, ethnic minority groups are actually falling behind in terms of relative consumption levels.

   In fact, ethnic minority people seem to continue to fall behind ethnic majority groups. In the period 1992-1998, Glewwe, Gragnolati and Zaman (2002) find that ethnic minority people have a lower probability of escaping poverty than ethnic majority people.

   Then what caused this disparity in living standards between ethnic groups? This disparity has been decomposed using earlier rounds of the VLSSs into differences due to endowments and the returns to these endowments. Van de Walle and Gunewardana (2001) and Baulch et al. (2004, 2007) find that a major share of this gap is due to the returns to endowments for Vietnam in the 1990s. Baulch et al. (2007) also find that ethnic minority groups that assimilated most with the ethnic majority (Kinh) society enjoy improved living standards, while the less assimilated groups have been left behind.[10]

Poverty
   As a result of the recent economic growth, poverty rates have been steadily decreasing over time in Vietnam. Poverty numbers—both general poverty and extreme (food) poverty—are shown in Table 2 for the different ethnic groups and the whole population. (See also Box 1.) The general poverty rates have decreased from around 58 percent in 1993 to 16 percent in 2006; the corresponding figures in the same period for the extreme

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Tinh, Quang Binh, Quang Tri, Thua Thien- Hue, 5) South Central Coast: Da Nang, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa, 6) Central Highlands: Kon Tum, Gia Lai, Dak Lak, Dak Nong, Lam Dong, 7) South East: Ho Chi Minh city, Ninh Thuan, Binh Phuoc, Tay Ninh, Binh Duong, Dong Nai, Binh Thuan, Ba Ria- Vung Tau and 8) Mekong River Delta: Long An, Dong Thap, An Giang, Tien Giang, Vinh Long, Ben Tre, Kien Giang, Can Tho, Hau Giang, Tra Vinh, Soc Trang, Bac Lieu, Ca Mau.
[9] The exchange rates in 1998 and 2006 were around US$ 1 for D 14,000 and D 16,000 respectively (IMF, 2006 and 2007).
[10] In a similar vein, Nguyen et al. (2007) also find that the gap in living standards between urban and rural areas in Vietnam in 1992-1993 is mostly due to differences in endowments, but the gap in 1997-1998 is mainly caused by differences in the returns to endowments.

poverty rates are 25 percent and 6 percent. Thus, from 1993 to 2006, every year sees an average reduction rate of 3.2 percent and 1.5 percent in general and extreme poverty in Vietnam.

However, not all ethnic groups enjoy the same decreases in poverty rates. Table 2 also shows that ethnic minority groups lag behind the ethnic majority groups in their struggle against poverty. While the general poverty rate for the ethnic majority group went down by 71 percent [(54-10)/54 = .71] from 1993 to 2006, the general poverty rate for ethnic minority groups declined by only 42 percent in the same period. Similarly, the extreme poverty rates decreased by 85 percent for the ethnic majority group but decreased by only 48 percent for ethnic minority groups from 1993 to 2006. Consequently, poverty rates for ethnic minority groups over those of ethnic majority groups actually diverged over time, and the ratios of poverty rates for ethnic minority groups over those of the ethnic majority groups are estimated to increase by around three times or more from 1993 to 2006 (last column).[11]

The determinants of household poverty status are examined in two models in Table 3, which have the same explanatory variables except that Model 2 further control for the commune topography and the distance to the nearest town. Estimation results are very similar across the two models. Factors that increase the probability that a household is poor include ethnicity, numbers of young or old household members, and the household's residence area (compared to the South East region—the reference region); factors that decrease the probability that a household is poor include the number of working age members, the household head's age and years of schooling completed, and whether the household lives in urban areas. And according to Model 2, households living in communes that are more isolated and that are located in mountainous areas are more likely to be poor. However, as discussed above, the main model for interpretation is Model 1 since there are quite a number of missing observations for the commune-level variables.

Table 3 also shows the marginal effects for each independent variable which are calculated at the mean of these variables, keeping other characteristics constant. Households belonging to ethnic minority groups are 14 percent more likely to be poor than household in ethnic majority groups, controlling for other factors. The usual positive impact of working age members on household living standards is clearly seen: while one more member in the age group 0 to 6 (or 60 and higher) increases the probability of household being poor by 6 percent (or 2 percent), one more member in the age group 25 to 59 reduces this probability by 1 percent.

Households living in urban areas are 4 percent less likely to be poor (but this urban-rural divide seems to be mainly caused by the distance to the nearest town or the commune topography according to Model 2). Households living in all regions except for the Mekong Delta are more likely to fall into poverty status than households living in the South East region—where Ho Chi Minh city, the economic capital of the country, is placed. Compared to the South East region, households living in the North East, North

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[11] During this same period, both the depth and severity of poverty—as measured by the poverty gap index and the Foster-Greer-Thorbecke (FGT) index respectively—are reduced at a faster rate for the ethnic majority group than those of ethnic majority groups (70 percent versus 40 percent). In 2006, ethnic minority groups' poverty gap index and the FGT index are 7 to 8 times higher than those for the ethnic majority groups (VHLSS 2006).

West and North Central regions are 12 percent to 27 percent more likely to be poor. Notably, ethnic minority groups are heavily concentrated in these three regions: while these regions house 64 percent of the ethnic minority population, they make up only around 29 percent of the total population (VHLSS 2006).

The role of the household head is important in poverty reduction. One additional years of schooling for the head would decrease the probability of households being poor by 2 percent. Compared to household heads working in more than one sectors, those who work in the agriculture sector only are 2 percent less likely to live in a poor household, those working in the service sector only are 5 percent less likely to be poor. However, to the extent that household heads can choose their occupation, household heads' occupation should be considered as a correlate rather than a determinant of household poverty status. But this shows that poverty can be reduced through restructuring the economy perhaps toward service-oriented industries.

The probabilities of the household falling into poverty given the household head's characteristics are calculated in Table 4. A household where the head has zero years of schooling has a 52 percent chance of being poor, but has only 2 percent chance of being poor if the head has 12 years of schooling, and almost 0 percent chance of being poor if the head has 16 years of schooling (equivalent to a university degree). A household where the head works in agriculture has a 19 percent chance of being poor, but has only 2 percent chance of being poor if the head works in service. However, given the same household head's years of schooling or work sector, ethnic minority households are much more likely to fall into poverty than ethnic majority households. The probabilities range from 9 percent to 52 percent higher for heads with 12 and 0 years of schooling respectively.

7. Employment

Together with the strong performance in recent years, Vietnam's economy has undergone a restructuring as shown in Table 5. This includes the downsizing of the agricultural sector and the increase in the wage work sector: the share of employment in agriculture decreased from 44 percent in 1996 to 34 percent in 2006, while the share of wage work increased from 12 percent to 23 percent in this same period. While there was a decrease in the combined agriculture and service sector, there was a slight increase in the service sector and the combined wage work and service sector from 1998 to 2006. At the same time, the share of self-employed workers decreased from 81 percent to 67 percent, and the share of the private sector increased almost three times from 7 percent to 20 percent. There can be several reasons for this restructuring of the economy. The first reason is that economic growth rate per capita for Vietnam averaged 5.2 percent in this period, ranking the country among the fastest growing economies in the world (Figure 1). The second reason can be due to trade liberalization. Edmonds and Pavnick (2006) shows that trade liberalization helped reallocate labor between the households and the market in the period 1992-1998. It is possible that the same mechanism was at work in the subsequent period.

Although there was a similar change in the occupation redistribution ethnic minority people—ethnic minority groups in fact have higher growth rates in the wage work sector and private sector—ethnic minority groups still appear to lag behind ethnic majority groups in all modern sectors. In 2006, while agriculture accounts for only 30 percent of

ethnic majority employment, it makes up 55 percent of ethnic minority employment. The wage work sector for ethnic minority people is around 8 percent, less than one-third of that of ethnic majority people, and the service sector is around 2 percent, less than one-seventh of that of ethnic majority groups. A disproportionate share of ethnic minority people are self-employed (85 percent) and this share is around 20 percent higher than that of ethnic majority people. Similarly, the shares of ethnic minority people working in the private sector or the public sector are less than half of those of ethnic majority people.

The determinants of earnings are examined in Table 6. Controlling for other factors, the average ethnic minority worker earns 15 percent less than the average ethnic majority worker, while the average female worker earns 21 percent less than the average male worker. (One more year of schooling will bring a 4 percent increase in earnings while the corresponding figure for one more year of experience is 3 percent.) Workers employed in the private sector, public sectors or foreign-invested sector earn from 108 percent to 134 percent more than workers employed in the agricultural sector. While the rate of returns to education for ethnic majority workers is around 2 percent higher than ethnic minority workers, their rate of returns to the number of hours worked is around 6 percent less than ethnic minority workers. However, given that ethnic majority people have on average 2.5 more years of schooling than ethnic minority people (as shown later in Table 10), the former can suggest either lower quality of education or less access to better employment or more discrimination towards ethnic minority workers in the market or any combination of these factors.[12] Perhaps the latter can be partly explained by the law of diminishing returns because ethnic minority people work 2 hours fewer per week than ethnic majority people (VHLSS 2006).

In fact, the earnings differential in Table 6 between the ethnic minority group and majority groups can be decomposed into two parts, one due to the differential in endowment and the other due to the differential in returns to endowments or wage structure. The latter part is also known to be caused by unobserved factors such as ethnic differentials in the quality of schooling, individual ability, culture or labor market discrimination. These differentials are considered in 2006 and in 1998 as well in Table 7 using three methods of decomposition: Oaxaca-Blinder, Cotton, and Oaxaca and Ransom.[13]

According to Table 7, differences in endowments explain from 66 percent to 74 percent of the earnings differential between the ethnic groups, while differences in the wage structure explain from 26 percent to 34 percent of the earning differential. The range of the earnings differential due to endowments decreased (or the range of the earnings

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[12] These results are qualitatively similar in the basic Mincerian earnings function where log of earnings is regressed on only ethnicity, gender, years of schooling and work experience.

[13] The Oaxaca-Blinder decomposition method (Oaxaca 1973; Blinder 1973) decomposes the ethnic differentials assuming either the ethnic minority or majority wage structure will prevail in the absence of discrimination. Thus, depending on which assumption that is used, this method will provide a range of estimates. The Cotton decomposition method (1988) uses the employed population shares of different ethnic groups to weight the coefficients in Table 34 to obtain the non-discriminatory wage structure. Thus, by construction, the wage structure using the Cotton method will be somewhere between the range of estimates using the Oaxaca-Blinder method (and is closer to the ethnic majority wage structure the larger the employed population share the ethnic majority group have). The Oaxaca and Ransom (1989, 1994) method calculates the non-discriminatory wage structure by combining the Cotton wage structure with a common wage structure derived by an OLS regression using a pooled sample of both ethnic minority and majority groups.

differentials due to the wage structure increased) from 1998, reflecting a wider gap in the unobserved factors between ethnic groups. One such increasing factor can be increasing rates of returns to education for ethnic majority groups as shown in Table 6.

The contribution of each of the explanatory variables in Table 6 to the earnings differential between ethnic groups is further considered in Table 8, with absolute amount shown in the first two columns and relative amount (percentage) shown in the last two columns; and a positive coefficient indicates impacts in favor of ethnic majority groups and a negative coefficient indicates impacts in favor of ethnic minority groups.

Table 8 shows that the higher share of ethnic majority people working in the private sector can explain up to 26 percent of the ethnic earnings differential. And the higher mean years of schooling completed by ethnic majority groups can explain 14 percent of the ethnic earnings differential. Ethnic majority people also have higher returns to education as discussed above, and these higher return rates alone account for 13 percent of the ethnic earnings differential. However, the returns to the hours worked are higher for ethnic minority people than ethnic majority people, thus help reducing the ethnic earnings differential by 44 percent. It should also be noted that the constant term (the last column in Table 8 explains the most—as much as 55 percent—of the earnings differential due to different returns to endowments. This implies that regardless of all factors considered such as gender, education, working experience or work sectors, there are unobserved factors that are in favor of ethnic majority earnings. As discussed earlier in Table 6, such factors can include labor market discrimination against ethnic minority groups or differentials in the quality of schooling.

Child Labor

For children age 6-18, around 14 percent of ethnic minority children go to school and work at the same time, while the corresponding figure for ethnic majority children is more than three times lower at 4 percent (VHLSS 2006). The disparity in child labor between ethnic groups is illustrated in Figure 4, which plots the incidence of child labor for a wider age range 6 to 25. A wedge can be seen between ethnic minority children and ethnic majority children, with the incidence of child labor for the former always higher than that for the latter. This wedge is largest at more than 25 percent around age 15, the legal working age in Vietnam.

The probability of child work is further considered in Table 9, which shows that controlling for other factors, ethnic minority children are 3 percent more likely to work than ethnic majority children. Among the working children, ethnic minority children are 16 percent more likely to work and go to school at the same time, and 26 percent more likely to work for wage.[14] However, the fact that ethnic minority children are more likely to work at home rather than for wage does not necessarily reflect their better welfare levels. On the contrary, it can also indicate that the labor market is not well-developed and wage work is not readily accessible for ethnic minority children (even if they wanted to work for wage.)

Not surprisingly, both the household head's educational level and household consumption level have a negative impact on the probability that children work or work

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[14] Estimation results using commune characteristics are very similar but not shown here to save space.

for wage. Larger household sizes are correlated with lower probabilities that children can spend all their time attending school.[15]

Clearly, child work should be reduced as much as possible. Child work can have undesirable effects on children's well-being in several ways such as loss of schooling and reduced health. In an earlier study for Vietnam that uses the VLSSs 1992-1993 and 1997-1998, O'Donnell, Rosati and van Doorslaer (2005) find that work undertaken during childhood can have a lasting negative impact on children's health up to five years later. Using the same survey data, Beegle, Dehejia and Gatti (2009) found that child labor has significant negative impacts on school participation and educational attainment, but is associated with an increased likelihood of wage work. However the authors also acknowledged that they could not estimate the impact of child labor on future earnings in the absence of more precise wage and labor productivity data.

8. Education

Illiteracy rates have been steadily decreasing in Vietnam, although at a faster rates for ethnic majority groups. From 1993 to 2006, illiteracy rates were reduced by half from 24 percent to 12 percent for ethnic majority groups, but were reduced from 50 percent to 29 percent for ethnic minority groups (VHLSS 2006). It is worrisome that the illiteracy rate for ethnic minority groups in Vietnam in 2006 was even higher than that for ethnic majority groups in 1993. However, the gap in literacy rates between ethnic groups seems to be narrowing over time.

The general educational achievement for different ethnic groups is shown in Table 10. Ethnic minority groups can almost catch up with ethnic majority groups in the share of people age 15 and over who are still in school. However, these numbers can be misleading due to several reasons. First, ethnic minority people can start school later than their ethnic majority peers. Second, ethnic minority groups can repeat or drop out of classes more often. Third, the quality of education may not be the same between the different ethnic groups. These issues will be discussed in more detail.

For people who are out of school, Table 10 shows the highest educational achievement that they obtain. In general, educational achievement for ethnic majority groups is similar to that of the total population and appears to follow a roughly bell-shaped distribution. In this distribution, the share of people with a completed primary degree is highest at 26 percent, followed by the share of people with a completed lower secondary degree (25 percent), followed by the share of people with incomplete primary education (20 percent), and the share of people with a completed upper secondary degree (14 percent). The share of people with a tertiary degree is somewhat similar to the share of people with a vocational education, at 5 percent.

However, the distribution of educational achievement for ethnic minority groups is strongly skewed (right-skewed) towards higher school levels. In this distribution, the share of people with a completed primary degree is highest at 26 percent, followed by the share of people with an incomplete primary education (25 percent), the share of people with no

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[15] Macro-economic factors such as the economy being more open to international trade can also help reduce child labor. Using data from the VLSSs 1992-1993 and 1997-1998, Edmonds and Pavcnik (2005) find that trade liberalization, in particular higher rice prices, are associated with declines in child labor for households that are net rice producers.

education (24 percent), and the share of people with a completed lower secondary degree (17 percent). Around 8 percent of ethnic minority people have a completed upper secondary degree, and less than 1 percent of them have a tertiary degree; these numbers are respectively around one half and one fifth those of the ethnic majority groups.

The pattern of lower educational achievement for ethnic minority groups is confirmed in Figure 5, which looks at the mean years of schooling attained for different birth cohorts from 1945 to 1985. (The year 1985 is chosen as the last year to allow for the fact that the majority of people may not finish schooling until 20 years old or so.) There is a consistent gap of around 3 years of schooling between the ethnic groups across the different birth cohorts. It should be noted that this gap widens around the period 1966-1975, which coincides with the Vietnam war. However, the gap seems to be narrow for recent birth cohorts. In particular, women in birth cohorts further away from the war have higher educational achievement. Further analysis shows that the differences range from 0.5 to more than 1 years of schooling for women in different birth cohorts, when controlling for other factors (Dang and Patrinos 2008).

Age-grade distortion, which is defined as the percentage of students who are more than one year behind the age that is appropriate for their grade, is considered in Table 11. For example, the age-grade distortion for grade 3 in all Vietnam is 19 percent, indicating that 19 percent of students studying in grade 3 are older than age 8, which is the appropriate age for this grade level. Age-grade distortion is a particularly serious problem for ethnic minority people, with a rate higher than 30 percent at all primary grades except for grade 1. Table 11 shows that there is a large disparity in the age-grade distortion rates between ethnic minority groups and ethnic majority groups. This disparity ranges from around 3 percent for the first grade to more than 20 percent for the second grades and higher.

While age-grade distortion is a useful indicator of educational achievement, its large scope of definition can include several different problems such as late enrolment, class repetition, and school discontinuation (that is, dropping out of school and then reenrolling). Thus the factors determining school enrolment for young people age 7-14 are considered in more detail in two models in Table 12. The second model adds to the list of explanatory variables in the first model the numbers of household members of different age groups and commune characteristics. While results are rather similar across the two models, the main model for interpretation is Model 1 because of the sharp reduction in the number of observations and the endogeneity of family size in Model 2. In addition, the coefficients on the numbers of household members and commune characteristics are statistically insignificant, suggesting that these variables can be left out.

Factors that increase the probability of school enrolment are an individual's age (although age-squared has a negative impact), the household head's education, the household expenditure level, and residence areas. The positive impact of age may be caused by late enrolment for some people, as can be seen in the high percentage of age-grade distortion in Table 11. Controlling for other factors, one more year of schooling for the household increases the probability of school enrolment by 0.2 percent, and people living in all geographic regions except for the Mekong Delta are 1-2 percent more likely to enroll in school than people living in the South East region. Keeping other factors fixed at the mean, ethnic minority people are 0.6 percent less likely to enroll in school than ethnic majority people.

The finding that household expenditure level increases the probability of school enrolment concurs with an earlier study for Vietnam by Glewwe and Jacoby (2004). Using panel data from the VLSSs 1992-1993, and 1997-1998, Glewwe and Jacoby (2004) find that child enrolment increased faster in households that gained greater increases in wealth and grade attainment increased by 0.25 for these households.

The probabilities of being enrolled in school for those aged 7 to 14 are calculated in Table 13. Keeping other characteristics fixed at the means, the probability that a child age 7 to 14 enrolling in school is 88 percent in a household where the head has 0 years of schooling. But this probability increases to 97 percent or 100 percent if the head has 6 or 12 years of schooling respectively. At the same time, the probability that a child is enrolled in school is 92 percent for a poor household, and 98 percent for a non-poor household. Thus, the impact of a household head with 12 years of schooling on school enrolment rates is very similar to (although slightly higher than) that of a non-poor household. Depending on the relevant cost-benefit scenarios, this would clearly suggest alternatives in improving school enrolment to policy makers.

Quality of Education

Table 14 investigates the determinants of reading and mathematics on standardized test scores for individuals with 3 to 12 years of schooling. Due to the design of this survey data, [16] Models 1 and 2 consider those with 3 to 7 years of schooling aged 9-15, Models 3 and 4 consider those with 8 to 12 years of schooling aged 14-20, and finally Models 5 and 6 consider those with 3 to 12 years of schooling aged 9-20.

Factors that significantly affect test scores include an individual's years of schooling, age (and age-squared), ethnicity, household consumption, and household heads' education. Estimation results are qualitatively rather similarly across the models. However, the magnitude of the coefficients on Models 5 and 6 is usually smaller than those in other models, perhaps due to either a larger sample size or a wider age range or both.

Controlling for other characteristics, while one more years of education for the household head can raise test scores by less than 0.1 standard deviations, one more years of schooling for the individual can raise test scores from 0.1 to 0.3 standard deviations. A 270 percent increase in the per capita expenditure can increase test scores by 0.2 to 0.3 standard deviations. Ethnic minority individuals score from 0.2 to 0.5 standard deviations lower than ethnic majority individuals.[17] This suggests that even if ethnic minority individuals have the same years of schooling as their ethnic majority peers, the quality of their education is lower. This concurs with an earlier World Bank study on Grade 5 students in Vietnam, which finds that students who always spoke Vietnamese outside school or belonged to the ethnic majority Kinh group were likely to have higher test scores than students who never speak Vietnamese outside school or belong to the ethnic minority groups (World Bank 2004).

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[16] See Dang and Glewwe (2008) for more details on this survey and the test scores.

[17] When commune characteristics are added to Models 5 and 6, the coefficients on the ethnic variables are still negative but are significant only at the 10% level for reading scores and insignificant for math scores. However, estimation samples are reduced by around 30% in these models, and the commune variables either statistically insignificant or marginally significant at the 10% level.

There can be several reasons for lower education quality for ethnic minority groups. First, as discussed earlier, ethnic minority groups have a lower consumption level than ethnic majority groups, thus ethnic minority students may not have the same learning materials or opportunities (for example, books or computers) as ethnic majority students. Second, ethnic minority students are more likely to drop out of school and have higher age-grade distortion rates (Table 11). Third, the general educational achievement levels for ethnic minority groups are lower than those of ethnic majority groups, implying that ethnic minority parents may not be able to help with their children's studies as much as ethnic majority parents do. Fourth, as shown later in Table 21, ethnic minority students have to travel longer distances to get to school, which can reduce their time and energy for studies.

An important difference in learning opportunities between the ethnic groups is extra classes or private tutoring, which is a popular phenomenon in Vietnam and can have a strong impact on student learning outcomes (Dang 2007 and 2008). It can be calculated from the 2006 VHLSS that ethnic majority students are from 33 percent to 43 percent more likely to attend extra classes than ethnic minority students.

9. Health

There is a large improvement in health for the total population from 1998 to 2006, with the share of the total population who are sick or injured in the past four weeks decreased from 41 percent in 1998 to around 23 percent in 2006 (VHLSS 2006).

However, Table 15 shows that the both the infant mortality rate and under-five mortality rate for ethnic minority groups are higher than those for ethnic majority groups. The infant mortality rate for ethnic minority groups is 30 per 1000 live births, but the corresponding figure for ethnic majority groups is 23 per 1000 live births (but note the large standard error of the estimate for ethnic minority groups). And the under-five mortality rate for ethnic minority groups is much higher at 41 per 1000 live births, while the corresponding figure for ethnic majority groups is 28 per 1000 live births. These differences suggest that ethnic minority groups have yet to enjoy the same health conditions level that ethnic majority groups have. But these differences also appear to be strongly correlated with (the remoteness of) the residence area for ethnic minority groups. Table 15 also shows that the mortality rates in rural areas are more than twice higher than in urban areas in Vietnam.

The vaccination rates for children age 12-23 months are shown in Table 16. A child is considered to be fully vaccinated if the child has received a Bacillus Calmette-Guerin (BCG) vaccination against tuberculosis, three doses of diphtheria, pertussis and tetanus (DPT) vaccine, at least three doses of polio vaccine, and one dose of measles vaccine (WHO, 2005.) The age range is limited to children age 12-23 months because a child should have received these vaccinations at these ages. Children in Vietnam are most likely to be vaccinated against BCG (93 percent), followed by measles (83 percent), polio (76 percent) and DPT (72 percent). The same trend holds for children belonging to different ethnic groups and living in urban and rural areas (but the vaccination rates for measles and polio are almost equal for urban area.) The vaccination rate for Vietnam stands at 67 percent; however, the rate for ethnic minority children is much lower at 38 percent, almost half that of 73 percent for ethnic majority children.

However, most of this gap in health care can be attributed to other factors such as the differences in living standards or residence areas. It was estimated that, controlling for other factors, poor ethnic minority children age 11-23 months living in rural areas are 15 percent less likely to be fully vaccinated than their ethnic majority peers (Thang et al. 2007).

Table 17 shows that health care appears to have improved for ethnic minority groups in recent years. From 1998 to 2006, health care has improved for the whole population, but at a faster rate for ethnic minority groups compared to ethnic majority groups. The share of the total population without any medical insurance decreased by almost half from 86 percent in 1998 to 46 percent in 2006, but the share of ethnic minority groups fell by more than 4 times from 91 percent to 21 percent in this same period. In particular, in 2006 the share of ethnic minority groups with free medical insurance is 44 percent, more than 5 times higher than that of ethnic majority groups. (Unfortunately, there were no disaggregated data on free medical insurance in the 1998 VLSS, thus we cannot examine any difference in this category between the ethnic groups in this year).

This is perhaps due to a number of preferential government policies during this period targeted at ethnic minority groups, notably among them Program 139 established in 2002. After two years of implementation, 4.15 million poor people were issued free health care certificates under this program (Phuong and Baulch 2007). As discussed in the section above, since ethnic minority groups represent a larger share of the poor in Vietnam, they understandably account for a proportionately larger share of people who are granted free health care certificates. However, having a free healthcare certificate does not necessarily mean better quality health care for ethnic minority groups. It has been noted that the treatment readily accessible to poor ethnic minority people at the commune health centers are deficient and constrained by expenditure ceilings (Phuong and Baulch 2007). Furthermore, as shown later in Table 21, ethnic minority groups live in communities with much less access to health facilities than ethnic majority groups.

In absolute terms, ethnic minority groups also have lower health care expenditure. An average ethnic minority outpatient spend only D 493,000, and an average ethnic minority inpatient spend only D 3,038,000, which are 18 percent and 34 percent those for the average ethnic majority patients (VHLSS 2006).

Is it possible that this lower healthcare expenditure is due to a higher proportion of health insurance usage among ethnic minority people? The answer appears to be no. While a recent study using earlier rounds of the VLSS shows that health insurance can reduce health expenditure by as much as 35 percent (Sepehri, Sarma and Simpson 2006), even if this is taken into account, ethnic minority people still have much lower health expenditure than ethnic majority people.

Since the number of visits to hospital can be considered a count variable, Table 18 estimate the number of visits to hospital for ethnic groups using the fixed-effects Poisson model. Controlling for age, gender, log of per capita expenditure, marital status and years of schooling, ethnic minority people are 16 percent (100 – 84) less likely to visit hospital when they are ill compared to ethnic majority people. However, there is no statistical difference between the incidences of inpatient treatment for the different ethnic groups. Not surprisingly, Table 18 also shows that richer and more educated households visit hospital more often, both as outpatients and inpatients.

As shown in Table 19, knowledge about AIDS is rather good in Vietnam for women who are ever-married and in the age group 15 to 49, with 95 percent of these women ever hearing about AIDS. However, out of those who ever heard about AIDS, only 78 percent have the correct perception about AIDS (that is, a healthy person can contract AIDS), and 93 percent knows of a way to avoid AIDS.

There is a difference in knowledge about AIDS for different ethnic groups. Compared to women belonging to ethnic majority groups, women belonging to ethnic minority groups are 12 percent less likely to ever hear about AIDS, 18 percent less likely to have the correct perception about AIDS, and 8 percent less likely to know ways to avoid AIDS. This difference is much larger than the urban-rural divide in knowledge about AIDS, which only ranges from 2 percent to 8 percent. This implies that there is still room for improvement in promoting awareness of AIDS among ethnic minority women.

10. Household/ Community Services and Social Protection

Overall, ethnic minority people have higher access to social programs such as preferential credit, free health care, tuition exemption or reduction and agricultural promotion activities (VHLSS 2006). However, they appear to have lower access to community services.

Utility access and household assets are considered for ethnic groups and urban-rural areas in Table 20. For all life utilities including potable water, electricity, sanitary conditions, Internet connection, housing, and garbage collection, ethnic minority people have lower access than ethnic majority people. The same situation is true for people living in rural areas compared to people living in urban areas. The gap in utility access can range from 4 percent to as much as 50 percent in favor of ethnic majority groups, and from 5 percent to 39 percent in favor of people in urban areas. For example, only 57 percent of ethnic minority people have potable water, while 90 percent of ethnic majority people have potable water. The corresponding numbers for people living in rural and urban areas are respectively 82 percent and 96 percent.

A similar pattern can be seen with household assets including radio, television set, video recorder/ stereo system, refrigerator, washing machine, motorbike, bicycle, air-conditioner, desk telephone, mobile telephone and computer, where ethnic minority people have less than ethnic majority people and people living in rural areas have less than people living in urban areas. Again, the gap can range from 4 percent to 30 percent in favor of ethnic majority people and from 5 percent to 46 percent in favor of people living in urban areas. The two exceptions are home ownership and bicycle ownership. Ethnic minority people are 2 percent more likely to own a home and people in rural areas 3 percent more likely to own a home than people in urban areas. People in rural areas are 9 percent more likely to own a bicycle than people living in urban areas.

However, these exceptions do not necessarily imply that ethnic minority people or people in rural areas are better off in these respects. Table 20 also shows that ethnic minority people and people in rural areas are more likely to have housing of lower quality, and less likely to own a motorbike, which is fast becoming a popular means of transports in Vietnam nowadays. Table 20 also shows that ethnic minority groups are the most

disadvantaged groups in the country. Except for home ownership, ethnic minority people have lower utility access and less household assets than people in rural areas.[18]

Access to community facilities for communes with only ethnic minority groups, mixed ethnic groups, and only ethnic majority are depicted in Table 21. Generally, ethnic minority communes are least served by or farthest away from the available community facilities, followed by mixed ethnicity communes, and ethnic majority communes. For example, 31 percent of ethnic minority communes have a radio station, while the corresponding figure is 75 percent for mixed ethnicity communes and 93 percent for ethnic majority communes. While the provincial hospital is 86 kilometers away for ethnic minority communes, it is around half nearer at 46 kilometers for mixed ethnicity communes, and around two-third nearer at 30 kilometers for ethnic majority communes. And the average distance to a paved road is around 1 kilometer for ethnic minority commune and mixed ethnicity communes, which is 5 to 6 times larger than that for ethnic majority communes. However, there are also some exceptions such as the distances to primary schools or commune health centers are almost equal for the different communes.

11. Conclusions

Despite much progress in living standards, health, and education in recent years, ethnic minority groups still lag behind ethnic majority groups in Vietnam. In 2006, the general poverty rate for ethnic minority groups is 52 percent, more than five times that of ethnic majority groups; the extreme poverty rates for ethnic minority groups is 29 percent, more than nine times that of ethnic majority groups. Ethnic minority people have lower quality health care than ethnic majority groups, and they are 16 percent less likely to visit hospital when they are ill. Ethnic minority infant and under-five mortality rates are higher those of ethnic majority groups, and ethnic minority women are less like to know or have the correct perception about AIDS. The illiteracy rates for ethnic minority groups are 29 percent, more than twice that of ethnic majority people; the mean years of schooling attained is 5.6 for ethnic minority groups, 2.5 years less than that of ethnic majority groups.

While there has been a restructuring for the Vietnamese economy in recent years, more than half (55 percent) of ethnic minority groups still work in agriculture; the corresponding number for ethnic majority groups is less than one third (30 percent). About two thirds of the earnings differentials between ethnic groups can be attributed to differences in endowments, and one third due to differences to the returns to endowments. Ethnic minority children are more likely to drop out of school and work than ethnic majority children.

Despite various government assistance programs that are specially targeted at ethnic minority groups, ethnic minority people still suffer from lower utility access and household assets than ethnic majority people. Ethnic minority groups' utility access and household assets are also lower than those for people living in rural areas, placing them as the most disadvantaged groups in the country.

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[18] In Table 20, Internet connection rates are only calculated for households with computers. Thus among households with computers Internet connection rate for ethnic minority groups appears to be close to that for ethnic majority groups, but among all households, Internet connection rate would be much lower for ethnic minority groups.

Policies to level the disparities between ethnic minority groups can be roughly divided into either a short-term approach or a longer term approach. Short-term policies arguably would take less efforts to implement and can be targeted at urgent issues, while long-term policies may take longer and more resources to come into effect. Clearly, the criteria to categorize policies are highly context-specific and can be subjective, but we believe that this division may help to focus ideas and stimulate more discussion.

In that respect, short-term policies can include such measures as

i) building more roads for ethnic minority communes. Table 21 shows that ethnic minority groups are much farther way from commune facilities than ethnic majority groups. Thus one way to reduce this distance and to immediately improve the welfare of ethnic minority groups is to provide them with easier access to the economic, political and cultural centers such as schools, hospitals, markets, post offices and town centers. One recent study also shows that building roads has significant and robust impacts on primary school completion rates in Vietnam and poorer communes tend to benefit more (Mu and van de Walle 2007).

However, it also argued that building roads is not always the best solution because it can bring negative impacts on the environment as well as ethnic minority communities' lifestyle. Obviously, there is some tradeoff that needs to be carefully considered with this policy.

ii) increasing knowledge about AIDS among ethnic minority women and vaccination for ethnic minority children. Perhaps few will disagree that vaccination for children is a rather cost-effective measure against diseases. In addition, since the vaccination rate (for all four diseases) for ethnic minority children is so low, their welfare can be significantly improved with more vaccination.

However, improving the well-being for ethnic minority groups would require more and sustained efforts in the long term. Several main policies can be considered such as

i) emphasizing the importance of improving educational outcomes for ethnic minority groups in all development plans or government campaigns. This chapter has shown that educational achievements take an important part in reducing poverty, increasing cognitive skills and earnings, increasing the use of contraceptive methods among married women, reducing child labor. Furthermore, education also has strong intergenerational impacts on increasing educational accomplishments for future generations. There seems to be no overemphasizing the role of education in improving welfare and reducing the disparities between ethnic groups, and this is true not just for Vietnam but for other countries as well (see also other chapters in this book and Hall and Patrinos 2006).

ii) diversifying employment opportunities for ethnic minority groups. While their occupation is becoming more diversified, ethnic minority groups are still mostly occupied in agriculture. While it may not be easy to map out good strategies to change the occupation for these groups, it is important that the government include the economic development of ethnic minority groups among the top priorities in development plans. For example, tax incentives or preferential loans can be given to enterprises employing more ethnic minority people. Or special job training centers can be established in ethnic minority communes.

iii) applying lessons with social safety net or transfer programs from other countries to Vietnam. For example, welfare-improving programs specially targeted at poor and

disadvantaged groups called Conditional Cash Transfer program have been extensively used in a number of countries (see, for example, Das, Do and Ozler 2005.) Vietnam can perhaps experiment with such programs to increase school attendance rates and reduce child labor for disadvantaged groups, including but not limited to, ethnic minority groups.

iv) using more quantitative methods to better evaluate the different government programs for ethnic minority groups. The Government can make use of technical assistance from international organizations and/ or involve the local researchers more in designing these programs.

v) better monitoring the welfare for ethnic minority groups through implementing, perhaps special, nationally representative surveys that can provide detailed analysis for each ethnic group.

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Box 1. Which poverty lines are used in Vietnam?

Correct measurement of poverty is an important issue faced by almost all countries in the world and can also be a source of much debate. Although having high-quality household surveys which are nationally representative, Vietnam is no exception case.

There can be at least three main approaches to measuring poverty in Vietnam. The first approach is the calorie-intake approach, which considers the poverty line as the cost of a food and non-food consumption basket allowing a healthy lifestyle, with the food component providing a daily intake of 2,100 calories per person per day (World Bank 2007). Thus individuals are considered poor if their daily per capita expenditure cannot afford this basket, and extremely poor (or food poor) if their daily per capita expenditure is not enough to purchase this amount of calorie were they to spend all their expenditure on food. Under this approach, the yearly food poverty lines and poverty lines for Vietnam are approximately D 1, 915,000 and D 2,560,000 in 2006 (Glewwe 2008). This approach usually relies on household surveys with expenditure data and is also the approach to calculate poverty rates used by this chapter.

The second approach, used by the Ministry of Labour, Invalids, and Social Affairs (MOLISA), also sets specific poverty lines, by which individuals are considered poor in 2006 if their annual incomes are below D 3,120,000 for urban areas and D 2,400,000 for rural areas (GOV 2005c). However, in practice, local MOLISA officials determine which households fall under these poverty lines through a mix of methods including village discussion, surveys, and local officials' personal knowledge. Thus these poverty lines can vary across administrative units and involve perhaps the most subjective judgment. For example, local officials can set a higher poverty line if they have resources available to help larger number of people in their community (World Bank 2006). Under this approach, (assuming that the number of households identified as poor in the VHLSS 2006 is nationally representative,) the poverty rate is 15.4% for Vietnam as a whole, 32% for ethnic minority groups and 10.9% for ethnic majority groups.

The third approach is to use an international poverty line measured in Purchasing Power Parity (PPP) dollars that can be converted to the local currency through comparable international price surveys. This international poverty line is currently proposed to be $1.25 a day or $456.3 a year in PPP dollars (Ravallion, Chen and Sangraula 2008)), which is equivalent to D 2,700,950 (using the individual consumption expenditure by household PPP/ local currency exchange rate of $5919.89 (World Bank 2008c).) Under this approach, it can be calculated from the VHLSS 2006 that the poverty rate is 18.3% for Vietnam as a whole, 55.5% for ethnic minority groups and 12.5% for ethnic majority groups.

While the first approach is found to correctly measure poverty only at the national level due to the usual limited sample sizes in household surveys, the second approach perhaps works best at the commune level due to its subjective judgment component (Nguyen and Rama 2007). And the third approach appears to work best for cross-country comparison. The MOLISA is currently doing research on how to combine the first and second approaches to better measure poverty in Vietnam.

Table 1. Basic demographics, Vietnam 1998-2006 (percent)

	Ethnic minority		Ethnic majority		Total pop.	
	1998	*2006*	*1998*	*2006*	*1998*	*2006*
Male	49.2	49.7	48.3	48.9	48.5	49.0
Average age	25.2	27.0	28.7	32.1	28.2	31.4
Married (for those aged 15 and ove	63.2	65.0	59.1	60.5	59.7	61.1
Household size	6.1	5.8	5.4	4.7	5.5	4.9
Urban	1.6	7.4	25.9	29.8	22.5	26.7
Households	699	1384	5300	7805	5999	9189
N	3832	7064	24791	32007	28623	39071

Sources: VLSS 1998 & VHLSS 2006.

Table 2. Poverty headcount (percent), 1993-2006

Income group	Ethnic minority			Ethnic majority			Total pop.			Ratio of pov. rates for all
	Rural	*Urban*	*All*	*Rural*	*Urban*	*All*	*Rural*	*Urban*	*All*	
1993										
Not Poor	12.9	51.5	13.6	37.6	75.6	46.2	33.6	75.1	41.9	0.3
Poor	87.7	48.5	86.4	62.4	24.4	53.9	66.4	24.9	58.1	1.6
Extreme Poor	53.3	12.9	52.0	24.5	7.8	20.8	29.1	7.9	24.9	2.5
1998										
Not Poor	23.8	91.8	24.8	61.2	90.8	68.9	54.5	90.8	62.6	0.4
Poor	76.2	8.1*	75.2	38.8	9.2	31.1	45.5	9.2	37.4	2.4
Extreme Poor	42.4	0.0*	41.8	13.4	2.5	10.6	18.6	2.5	15.0	4.0
2002										
Not Poor	27.9	65.9	30.7	70.9	94.5	72.9	64.4	93.3	71.1	0.4
Poor	72.1	34.1	69.3	29.1	5.5	23.1	35.6	6.7	28.9	3.0
Extreme Poor	43.2	21.3	41.6	8.3	1.1	6.5	13.6	1.9	10.9	6.4
2004										
Not Poor	37.3	70.5	39.3	82.1	97.2	86.5	75.0	96.4	80.5	0.5
Poor	62.7	29.5	60.7	17.9	2.8	13.5	25.0	3.6	19.5	4.5
Extreme Poor	35.5	14.3	34.2	4.8	0.4	3.5	9.7	0.8	7.4	9.8
2006										
Not Poor	46.0	68.9	47.7	86.6	97.2	89.7	79.6	96.1	84.0	0.5
Poor	54.0	31.1	52.3	13.5	2.8	10.3	20.4	3.9	16.0	5.1
Extreme Poor	30.0	19.3	29.2	4.3	0.5	3.2	8.7	1.2	6.7	9.2

Notes: * less than 20 observations.

Source: VLSSs 1993, 1998 & VHLSSs 2002, 2004, 2006.

Table 3. Determinants of household poverty (Random-effect Probits), 2006

	Model 1			Model 2
	Coef.	Mean	Mar. Effect	Coef.
Ethnic minority	0.846***	0.162	0.135***	0.725***
# residents 0 to 6 years	0.609***	0.377	0.061***	0.603***
# residents 0 to 6 years squared	-0.005	0.562	-0.001	-0.003
# residents 7 to 24 years	0.198***	1.705	0.020***	0.205***
# residents 7 to 24 years squared	0.005	4.486	0.001	-0.001
# residents 25 to 59	-0.110**	1.890	-0.011**	-0.159***
# residents 60+ years	0.175***	0.322	0.018***	0.140***
Head's age	-0.006*	46.646	-0.001*	-0.004
Female household head	-0.004	0.211	-0.000	-0.014
Head's yrs of schooling	-0.153***	7.375	-0.015***	-0.143***
Disabled head	0.273	0.024	0.034	0.208
Head's work sector				
Wage-work only	-0.142	0.147	-0.013	-0.050
Agriculture only	-0.185**	0.346	-0.018**	-0.197***
Service only	-0.854***	0.131	-0.053***	-0.735***
Red River Delta	0.633***	0.205	0.087***	0.849***
North East	0.770***	0.151	0.119***	0.780***
North West	0.991***	0.052	0.192***	1.141***
North Central	1.289***	0.112	0.268***	1.461***
South Central Coast	0.437**	0.095	0.059*	0.701***
Central Highlands	0.577***	0.068	0.086**	0.599***
Mekong River Delta	0.154	0.196	0.017	0.400**
Urban	-0.487***	0.228	-0.040***	-4.583
Distance to nearest town				0.010***
Lowland area				-0.238**
Midland area				-0.048
Constant	-1.070***			-1.209***
Mean of Dependent Variable	0.165			0.200
Log Likelihood	-2403			-2026
ρ	0.364			0.320
N	7984			5726

Note: Dependent variable is a dummy variable for whether household is poor.
* p<0.1, ** p<0.05, *** p<0.01
Sources: VHLSS 2006

Table 4. Calculated Probabilities of Household Being Poor, 2006 (pe

	Ethnic minority	Ethnic majority	Total pop.	
HH Head's Years of Schooling				
0	76.8	24.4	52.2	
6	44.8	9.3	15.7	
12	10.3	1.6	2.2	
16	1.6*	0.1	0.2	
HH head work sector				
Agri. only	52.8	8.8	18.6	
Service only	15.1	1.2	1.7	

Notes: Computed from Table 6.
* less than 20 observations.

Table 5. Employment sector for people age 15 and over, 1998-2006 (percent)

	Ethnic minority		Ethnic majority		All	
	1998	2006	1998	2006	1998	2006
Work sector						
Wage work only	3.0	7.6	13.2	25.3	11.8	22.9
Agriculture only	67.3	55.2	40.2	30.2	44.0	33.6
Services only	1.4	2.3	13.8	15.2	12.1	13.4
Wage work & Agriculture	18.4	25.0	15.0	16.6	15.5	17.8
Wage work & Services	0.6	0.3*	1.6	1.7	1.4	1.5
Agriculture & Services	8.3	8.3	14.3	10.0	13.5	9.7
Wage work, Agriculture, and Servic	1.1	1.3	1.8	1.0	1.7	1.0
Total	100	100	100	100	100	100
Work type						
Self-employed	92.3	84.7	79.4	63.8	81.2	66.6
Work for other households or in private sector	2.3	10.0	8.2	21.8	7.4	20.2
State-owned or collective sector	2.2	5.0	8.9	12.2	8.0	11.2
Foreign-invested sector	0.3	0.3*	1.3	2.2	1.1	1.9
Other sector	2.9	n.a.	2.0	n.a.	2.1	n.a.
Total	100	100	100	100	100	100
Number of observations	2063		13663		15726	

Note: * fewer than 20 observations

Sources: VLSS 1998 & VHLSS 2006

Table 6. Extended earnings function for people age 15 and over (Fixed-effects), 2006

	Ethnic minority			Ethnic majority			Total population
	Men	Women	All	Men	Women	All	
Ethnic minority							-0.149***
Female			-0.134***			-0.218***	-0.208***
Married	-0.015	-0.201**	-0.106*	0.046	0.006	0.034	0.012
Years of schooling	0.031***	0.028	0.027***	0.044***	0.057***	0.045***	0.044***
Experience	0.025*	0.031**	0.028***	0.036***	0.028***	0.032***	0.032***
Experience-squared	-0.000*	-0.000**	-0.000***	-0.001***	-0.000***	-0.001***	-0.001***
Log(Hours worked)	0.865***	0.703***	0.833***	0.819***	0.726***	0.782***	0.785***
Work for other households or in private sector	1.039***	0.809***	0.982***	1.044***	1.091***	1.077***	1.081***
State-owned or collective sector	1.131***	1.963***	1.394***	1.107***	1.377***	1.227***	1.258***
Foreign-invested sector	1.155**	1.671***	1.468***	1.353***	1.359***	1.323***	1.342***
Constant	0.661	1.596**	0.884**	1.076***	1.465***	1.362***	1.321***
ρ	0.525***	0.608***	0.550***	0.522***	0.551***	0.478***	0.480***
R-squared	0.524	0.654	0.584	0.594	0.664	0.625	0.649
N	786	436	1222	4768	3105	7873	9095

Note: dependent variable is ln(earnings) for persons with positive earnings; * p<0.1, ** p<0.05, *** p<0.01

Source: VHLSS 2006

Table 7. Earnings differentials for people age 15 and over, Vietnam, 1998-2006

	Percentage of earnings differential due to differences in			
	Endowments		Wage structure	
	1998	2006	1998	2006
At ethnic mino	35.6	66.3	64.4	33.7
At ethnic majo	94.6	69.9	5.4	30.1
Cotton	86.2	69.4	13.8	30.6
Oaxaca-Ransc	90.9	73.6	9.1	26.4

Sources: VLSS 1998 & VHLSS 2006

Table 8. Contribution of independent variables to earnings differential between ethnic minority and ethnic majority for people age 15 and over, Vietnam, 2006

	Decomposition		Contribution as	
	Endowments	Pay structure	Endowments	Pay structure
Female	-0.008	-0.030	-0.9	-3.4
Married	-0.001	0.101	-0.1	11.5
Years of schooling	0.125	0.116	14.3	13.2
Experience	-0.049	0.098	-5.6	11.2
Experience-squared	0.038	-0.110	4.3	-12.6
Log(Hours worked)	0.096	-0.381	11.0	-43.5
Work for other households or in private sector	0.225	0.030	25.7	3.4
State-owned or collective sector	0.128	-0.032	14.6	-3.7
Foreign-invested sector	0.054	-0.002	6.2	-0.2
Constant		0.478		54.6
Subtotal	0.608	0.268	69.4	30.6
Total	0.876		100	

Sources: VHLSS 2006

Table 9. Probability of Child Age 6-18 Working (Random-effects Sequential Probit), 2006

	First stage: P(child works)	Marginal effects	Second stage: P(employed child only works and do not go to school)	Marginal effects	Third stage: P(employed child receives wage)	Marginal effects
Ethnic minority	0.353***	0.029***	-0.510***	-0.166***	-0.674***	-0.256***
Male	0.145***	0.010***	-0.011	-0.003	0.100	0.040
Age	0.405***	0.027***	0.347***	0.109***	0.185***	0.073***
Female household head	-0.171**	-0.010***	0.357**	0.101***	0.544***	0.214***
Household head age	-0.013***	-0.001***	-0.008	-0.003	-0.021***	-0.008***
HH head's years of schooling	-0.094***	-0.006***	-0.108***	-0.034***	-0.053**	-0.021**
Boy siblings aged 0-5	0.007	0.000	-0.081	-0.025	-0.117	-0.046
Girl siblings aged 0-5	-0.067	-0.004	-0.060	-0.019	0.067	0.027
Ln(household expenditures)	-0.741***	-0.049***	-0.712***	-0.222***	-0.434***	-0.172***
Household size	0.151***	0.010***	0.186***	0.058***	0.024	0.010
Red River Delta	-0.214*	-0.012**	-0.662***	-0.236***	-0.216	-0.084
North East	0.120	0.009	-1.260***	-0.452***	-1.033***	-0.351***
North West	-0.050	-0.003	-0.848***	-0.308***	-2.445***	-0.545***
North Central	-0.116	-0.007	-0.984***	-0.361***	-0.452	-0.171*
South Central Coast	-0.332**	-0.017***	-0.620**	-0.222**	-0.212	-0.082
Central Highlands	0.137	0.010	-0.728***	-0.262***	-0.672**	-0.244***
Mekong River Delta	0.140	0.010	0.437**	0.124**	0.065	0.026
Constant	0.643		2.818**		2.770**	
Log likelihood	-3362.132		-938.011		-730.104	
ρ	0.472***		0.525***		0.539***	
N	10795		2024		1280	

Note: Sequential probit regressions with dependent variables as a 0-1 indicators (dummies) for whether child works
* for p<.1, ** for p<.05, and *** for p<.01
Sources: VHLSS 2006

Table 10. Educational achievement, people aged 15 and over, Vietnam, 2006 (percent)

	Ethnic minority			Ethnic majority			
	Male	Female	All	Male	Female	All	All Pop.
Still in school (%)	12.2	10.9	11.5	13.7	11.3	12.5	12.4
If not still in school, highest edu achievement							
None	15.3	31.2	23.5	3.0	8.0	5.6	7.8
Incomplete Primary	25.2	22.2	23.7	12.9	20.1	16.6	17.5
Complete Primary	29.1	22.2	25.5	26.3	25.7	26.0	26.0
Complete Lower Secondary	18.2	15.5	16.8	27.5	24.5	25.9	24.8
Complete Upper Secondary	8.1	7.2	7.6	17.3	13.9	15.5	14.5
University	1.2	0.6*	0.9	5.9	4.7	5.3	4.7
Vocational Education	2.9	1.1	1.9	7.2	3.2	5.1	4.7

Note: * denotes number of observations fewer than 20.
Source: VHLSS 2006

Table 11. Age-grade Distortion, Vietnam 2006

	Ethnic minority	Ethnic majority	All Pop
1st grade	4.48	1.22	1.72
2nd grade	31.64	8.74	13.09
3rd grade	36.30	15.24	19.30
4th grade	36.11	12.33	16.42
5th grade	34.57	14.30	18.11
Number of observations	1091	3500	4591
Source: VHLSS 2006			

Table 12. Determinants of Schooling Participation for people age 7-14
(Random-effects Probit), 2006

	Model 1		Model 2	
Independent Variable	Coeff.	Mar. effects	Coeff.	Mar. effects
Age	0.739***	0.015***	0.673***	0.017***
Age squared	-0.045***	-0.001***	-0.042***	-0.001***
Female	0.066	0.001	0.032	0.001
Ethnic minority	-0.258**	-0.006	-0.283*	-0.008
Head's years of schooling	0.084***	0.002***	0.089***	0.002***
Log of per capita expenditure	0.817***	0.016***	0.707***	0.018***
Red River Delta	0.760***	0.009***	0.778***	0.012***
North East	1.202***	0.011***	1.296***	0.015***
North West	0.751***	0.007***	0.763***	0.010***
North Central	0.571***	0.007***	0.611***	0.010***
South Central Coast	0.627***	0.007***	0.678***	0.009***
Central Highlands	0.689***	0.008***	0.914***	0.011***
Mekong River Delta	-0.009	-0.000	0.024	0.001
Urban	0.000	0.000	N.A.	N.A.
No of hh members age 0-6			-0.040	-0.001
No of hh members age 7-14			-0.046	-0.001
No of hh members age 15-24			-0.054	-0.001
Share of poor households in the commune			-0.000	-0.000
Distance to nearest town			-0.006	-0.000
Lowland area			-0.109	-0.003
Midland area			0.202	0.004
Constant	-7.803***		-6.378***	
			0.390***	
ρ	0.383***		-881.396	
Log Likelihood	-1099.709		4654	
Number of observations	6253		4676	

Note: * p<0.1, ** p<0.05, *** p<0.01

Source: VHLSS 2006

Table 13. Predicted probability of being enrolled in school, 7 to 14 year olds, Vietnam 2006 (percent)

	Ethnic minority	Ethnic majority	All
HH Head's Years of Schooling			
0	86.7	89.5	87.9
6	96.6	97.4	97.2
12	99.4	99.6	99.6
16	100*	100	100
Extremely poor	87.7	92.0	89.0
Poor	90.3	94.0	92.0
Not poor	95.9	97.9	97.6

Note: Calculated from Table 25 on determinants of schooling participation.

* less than 20 observations.

Table 14. Determinants of Test Scores for People with 3 to 12 Years of Schooling (Random- Effects), Vietnam, 2007

Independent variable	Model 1 Reading	Model 2 Math	Model 3 Reading	Model 4 Math	Model 5 Reading	Model 6 Math
Years of schooling	0.263***	0.224***	0.159***	0.231***	0.155***	0.143***
Age	-0.329	0.150	-0.571	-0.660*	0.092	0.077
Age squared	0.008	-0.011	0.013	0.016	-0.006**	-0.005*
Female	0.099	0.010	0.147**	-0.121*	0.092*	-0.058
Ethnic minority	-0.333*	-0.347**	-0.477**	-0.501***	-0.398***	-0.241**
Log of per capita expenditure	0.180**	0.224***	0.280***	0.321***	0.146**	0.193***
Urban	0.073	0.003	-0.043	-0.099	0.110	0.012
Head's years of schooling	0.037***	0.058***	0.031***	0.044***	0.041***	0.057***
Constant	0.092	-3.157*	1.959	1.544	-2.652***	-3.139***
Rho	0.219***	0.267***	0.112***	0.244***	0.156***	0.244***
R-squared	0.205	0.243	0.157	0.196	0.232	0.252
N	507	508	520	513	1140	1132

Note: Models 1 and 2 consider those with 3 to 7 years of schooling, age 9-15.

Models 3 and 4 consider those with 8 to 12 years of schooling, age 14-20.

Models 5 and 6 consider those with 3 to 12 years of schooling, age 9-20.

All models control for commune random-effects.

Source: 2007-2008 Survey on Tutoring and Test Scores.

Table 15. Child Mortality Rates, Vietnam 2002 (per 1000 live births)

	Ethnic minority	Ethnic majority	Urban	Rural	All pop.
Infant mortality rate	30.4	22.5	13.0	26.2	23.9
	(5.7)	(2.3)	(3.7)	(2.4)	(2.1)
Under-five mortality rate	41.1	27.7	15.6	33.0	30.0
	(6.8)	(2.5)	(4.2)	(2.8)	(2.4)

Note: Standard errors in parentheses.

Sources: VDHS 2002.

Table 16. Vaccination Rates for Children Age 12-23 Months, Vietnam 2002 (percent)

	Ethnic minority	Ethnic majority	Urban	Rural	All pop.
BCG	82.3	95.8	99.1	92.1	93.4
DPT (three doses)	48.3	77.7	89.7	68.5	72.4
Polio (three doses)	58.3	79.9	94.8	71.8	76.1
Measles	68.1	86.5	94.3	80.7	83.2
All (BCG + DPT + Polio + Measles	38.1	73.4	87.1	62.5	67.1
Number of observations	71	396	99	368	467

Note: Standard errors in parentheses.

Sources: VDHS 2002.

Table 17. Medical Insurance, 1998-2006

	1998			2006		
	Ethnic minority	*Ethnic majority*	*All pop.*	*Ethnic minority*	*Ethnic majority*	*All pop.*
Have medical insurance	8.18	16.98	15.73	33.45	41.74	40.61
Have free medical insurance				44.36	7.66	12.63
Have no medical insurance	91.82	83.02	84.27	22.19	50.60	46.75
Total	100	100	100	100	100	100
Number of observations	3817	24687	28504	7064	32007	39071
Sources: VDHS 2002.						

Table 18. Determinants of number of hospital visits for people age 18 or higher (Fixed-effects Poisson), 2006

	Outpatient medical facility		Hospital admission			
	Incidence rate ratio	*Mean*	*Incidence rate ratio*	*Mean*		
Ethnic minority	0.840**	0.134	0.859	0.142		
Age	1.014***	46.372	1.006***	46.817		
Log of per capita expenditure	1.111***	8.527	1.253***	8.539		
Married	1.027*	0.731	0.993	0.734		
Years of schooling	0.996*	6.880	0.986*	6.956		
Male	0.935***	0.410	1.054	0.411		
Log Likelihood	-18100.237		-2989.411			
Number of observations	10005		5505			
Note: * p<0.1, ** p<0.05, *** p<0.01						
Sources: VHLSS 2006						

Table 19. Knoledge about AIDS for Ever-Married Women Age 15-49, Vietnam 2002 (percent)

	Ethnic minority	*Ethnic majority*	*Urban*	*Rural*	*All pop.*	*No. of observations*
Ever heard about AIDS	85.5	97.1	98.8	94.6	95.4	5660
Perception about AIDS	62.5	80.2	84.5	76.2	77.8	5397
Know ways to avoid AIDS	85.7	93.6	93.8	92.2	92.5	5397
Note: Standard errors in parentheses.						
Sources: VDHS 2002.						

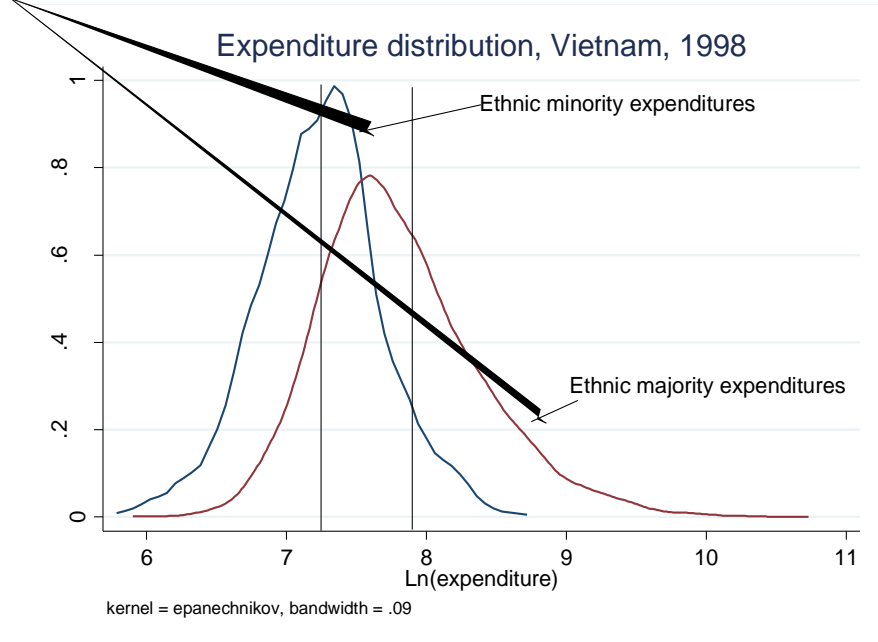| Table 20. Utility Access and Household Assets, Vietnam 2006 (percent)					
	Ethnic minority	*Ethnic majority*	*All*	*Rural*	*Urban*
Utility access					
Safe drinking water	57.0	90.3	85.8	82.0	96.3
Electricity	80.6	98.1	95.7	94.5	99.1
Sanitation facility	15.1	64.9	58.2	47.7	86.9
Internet connection*	16.6	20.5	20.5	13.4	23.0
Temporary housing	29.6	13.4	15.6	18.7	6.9
Assets					
Home ownership	98.5	96.0	96.3	97.2	93.8
Radio	12.0	15.8	15.3	14.0	18.6
TV	63.4	89.8	86.2	82.9	95.2
Video recorder/ Stereo system	32.8	53.8	50.9	45.0	67.1
Refrigerator	4.7	26.6	23.7	12.2	55.0
Washing machine	0.4	10.8	9.4	2.2	28.9
Motorbike	47.2	67.2	64.5	57.7	83.0
Bicycle	54.6	72.2	69.9	72.2	63.4
Air-conditioner	0.0	3.4	2.9	0.4	9.7
Desk telephone	6.2	36.0	31.9	19.6	65.7
Mobile telephone	2.6	21.6	19.0	10.3	43.0
Computer	0.6	9.7	8.4	3.0	23.3
Number of households	1384	7805	9189	6882	2307
Note: Internet connection is for households with computers only.					
Sources: VHLSS 2006					

Table 21. Availability/ Distance to community facilities, Vietnam 2006 (km)

	Ethnic minority	Mixed ethnic groups	Ethnic majority	All
Proportion of communes that				
Cultural house	29.6	30.5	40.9	35.2
Radio station	30.6	74.9	92.5	80.8
Distance to school				
Primary school	0.8	0.9	0.7	0.8
Lower secondary school	2.2	1.9	1.2	1.6
Upper secondary school	14.8	6.6	4.5	5.6
Distance to health facilities				
Commune health center	0.0	0.1	0.0	0.1
Polyclinic	15.5	10.9	7.6	9.6
District hospital	21.6	13.4	9.4	11.9
Provincial hospital	86.0	46.3	29.9	40.6
State pharmacy	17.4	9.3	6.6	8.4
Private pharmarcy	22.0	3.6	1.9	3.4
Distance to other community				
Paved road	1.2	1.0	0.2	0.6
Public transportation	8.4	3.1	1.9	2.8
Agricultural extension center	20.1	12.1	8.5	10.9
Daily market	18.1	3.8	1.9	3.5
Periodic market	10.1	6.1	3.0	4.6
Wholesale market	37.0	17.1	9.9	14.3
Commune's people committee	3.1	1.9	1.1	1.6
Post office	8.7	2.6	1.6	2.4
Bank/ bank branch	18.4	8.7	5.3	7.6
Town	23.0	12.9	9.0	11.5
Provincial/ City capital	88.0	48.1	31.3	42.0
Major cities	385.6	188.1	135.2	170.0

Note: Major cities include Hanoi, Hai Phong, Da Nang, Can Tho, and Hochiminh city.
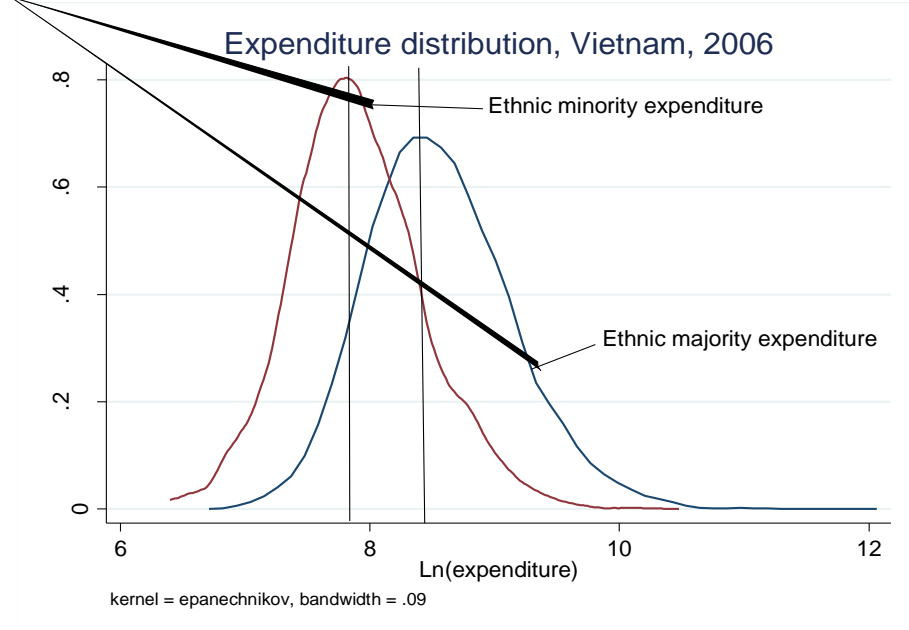
Source: VHLSS 2006

Figure 1: GDP per capita growth rate for Vietnam versus other countries, 1986-2007
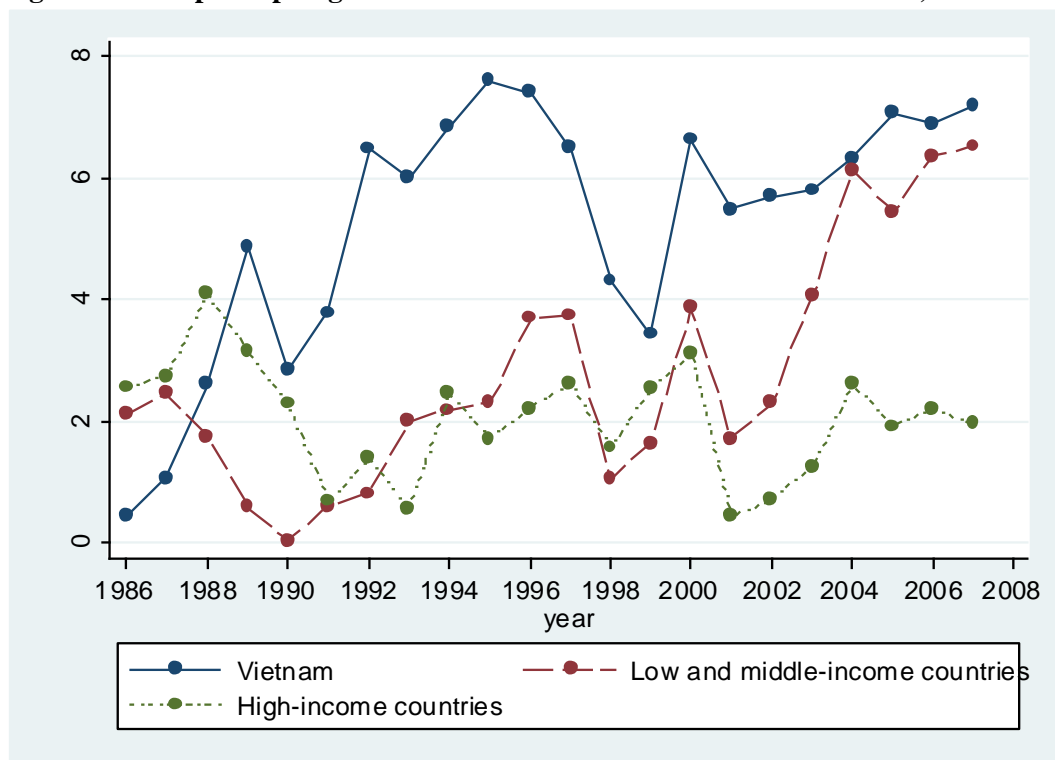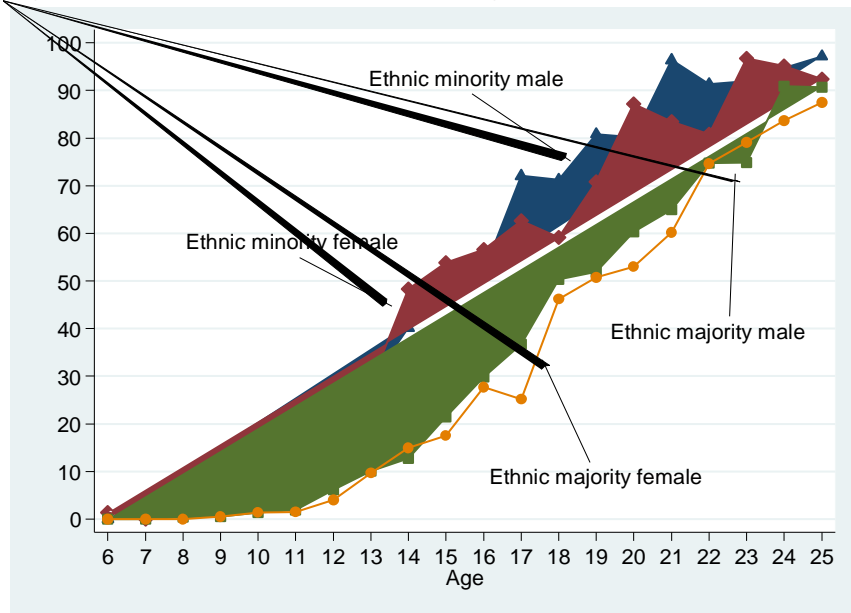
Figure 2: Income distribution for ethnic majority and ethnic minority groups, Vietnam, 1998

Expenditure distribution, Vietnam, 1998

Ethnic minority expenditures

Ethnic majority expenditures

Ln(expenditure)

kernel = epanechnikov, bandwidth = .09

Figure 3: Income distribution for ethnic majority and ethnic minority groups, Vietnam, 2006

Expenditure distribution, Vietnam, 2006

Ethnic minority expenditure

Ethnic majority expenditure

Ln(expenditure)

kernel = epanechnikov, bandwidth = .09

Figure 4: Incidence of child labor for age 6-25, Vietnam, 2006

Figure 5: Years of schooling, by year of birth, Vietnam, 2006