

Poverty Dynamics: Evidence from Rural Vietnam

Tran Quang Van

Lecturer, University of Economics and Law, HCMC, Vietnam
PhD. Candidate, University of Gottingen, Germany
Email: quangvantran@gmail.com

The DEPOCEN WORKING PAPER SERIES disseminates research findings and promotes scholar exchanges in all branches of economic studies, with a special emphasis on Vietnam. The views and interpretations expressed in the paper are those of the author(s) and do not necessarily represent the views and policies of the DEPOCEN or its Management Board. The DEPOCEN does not guarantee the accuracy of findings, interpretations, and data associated with the paper, and accepts no responsibility whatsoever for any consequences of their use. The author(s) remains the copyright owner.

DEPOCEN WORKING PAPERS are available online at <http://www.depocenwp.org>

Poverty Dynamics: Evidence from Rural Vietnam

Trần Quang Văn

Lecturer, University of Economics and Law, HCMC, Vietnam

PhD. Candidate, University of Gottingen, Germany

Email: quangvantran@gmail.com

Abstract

This paper implements the conceptual framework of Carter and Barrett (2001, 2006) that identifies the link between assets and household well-being transitions. I employ household panel data from Vietnam collected in two years 2007 and 2008 as foreign investment boomed and inflation rose. Poverty dynamics are modeled using changes in consumption expenditure and poverty transition models. The transition effect is captured by a set of variables such as household assets (including household and individual characteristics, household dynamics and its social assets) and shocks. The result shows that changes in household assets and shocks affect poverty transition.

1. Introduction

The dynamics of poverty is of great concern in social economic policy (Bane and Ellwood, 1986; Lipton and Ravallion, 1995). Examining socio-economic characteristics of individuals and households that move into and out of poverty helps designing sound poverty-alleviating policies. The effect of shocks and risks on poverty dynamics is also of considerable interest in current researches. In developing countries, there are many people engage in agricultural production, which depends much on weather condition. In addition, many people's income level is just above the poverty line, they also have low stock of assets so they are vulnerable to shocks and risks. A key question is to identify the characteristics and vulnerability that contribute towards the persistence of poverty and the extent to which shocks and risks impact on poverty dynamics.

Vietnam has been one of the countries being successful in attacking poverty, the rate of poverty falls dramatically from 58.1 per cent in 1993 to 14.5 percent in 2008 (GSO 1993-2009). The economy has experience a relatively strong GDP growth during the last two decades, which is accompanied by real consumption and a significant decline in poverty. The reduction in poverty is however pronounced for some groups than others: urban households, the majority ethnic group (Vietnamese or Kinh), and white-collar workers experienced a shaper falls in poverty than other groups (Glewwe *et al*, 2002, Litchfield and Justino, 2004).

Examining the correlation between shocks and poverty dynamics is not easy because households themselves are complex units, being composed of multiple members receiving income from multiple sources (Justino *et al*, 2008). They are also dynamic units, and any shock-induced household changes (such as changes in economic activities or in income) may coincide with other household events, such as births and other changes. Households also smooth their consumption when they face shocks. Hence, shock does not necessarily cause a change in household income or consumption. In addition, shock is a sensitive concept; an event can seriously affect some households but not the others. These aspects make it difficult to link shocks in general to household movement out of and into poverty.

The objective of this paper is to identify the impact of shocks and household characteristics on changes in poverty using household survey data. The paper attempts to find answers to the following research questions:

- i) What are the determinants of moving out of and into poverty of rural households?
- ii) How do the shocks affect poverty status of rural households?

In search of answers to such questions, the paper proposes the following hypotheses:

- i) Household poverty status has relation with education attainment and economic activity.
- ii) Shocks are one of the drivers of poverty dynamics.
- iii) Poverty traps are obstacles of moving out of poverty.

To answer the research questions, the study provides a descriptive analysis of poverty trend and the flows of falling into or escaping from poverty using household survey data, using a multinomial logistic regression empirically assess the determinants of poverty in rural Vietnam.

2. Theories of Poverty Dynamics

This section reviews literature on poverty dynamics. It firstly discusses theories explaining poverty and its transition and then summaries empirical researches on movement out of and into poverty.

2.1. Theories of Changes in Poverty

Poverty is a complex issue so it requires many interrelated theories of family composition, earnings, assets accumulation, and transfer programmes. A sound poverty theory would need to be based upon the family, instead of upon individuals (Duncan, 1984). This section discusses poverty and its linkage with assets, market access, infrastructure service and shocks.

2.1.1. Household Asset and Poverty

This section discusses poverty transitions on the basis of household's assets, and also distinguishes structural poverty and chronic poverty.

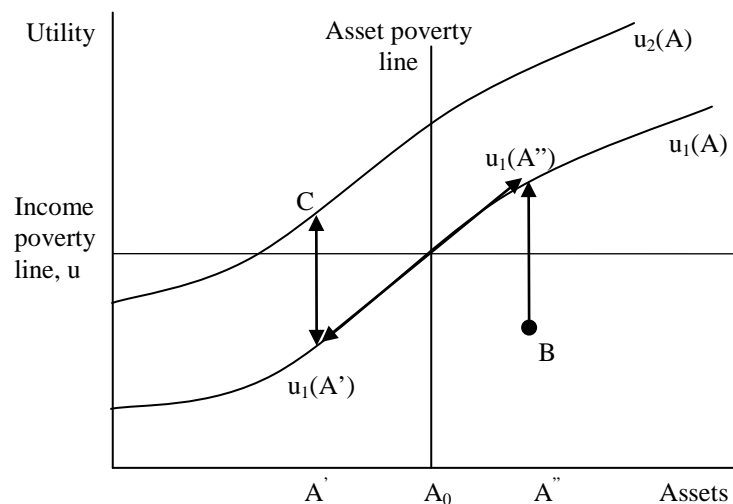
Asset Poverty Line and Poverty Transitions

The theory of relationship between asset level and poverty transition discusses how household move out of or into poverty on the basis of assets. Assets include land, labor, physical, human, and social capital, grain stock, etc. households deploy these assets to generate income (Carter and Barrett, 2001). The income in turn is used to generate wellbeing, mainly through consumption.

In Figure 1, the vertical axis measures well-being (or utility), which can be measured by income or expenditure. The money poverty line measured in this dimension is denoted u . The horizontal axis measures assets that generate a household's livelihood. These assets are multi-dimensional, tangible and intangible. For illustrative purposes, we assume that assets are one-dimensional (Haughton and Khandker, 2009).

The relationship between assets and well-being is illustrated by the livelihood function graphed in Figure 1. The asset poverty line is the level of assets (denoted A_0 in Figure 1) that predicts a level of well-being equal to the poverty line, u . The livelihood function is assumed to be unchanged overtime. Then in any time period, a household is stochastically poor if it holds assets worth at least A_0 but its income falls stochastically below u . Conversely, the household is structurally poor if its stock of asset is less than A_0 and its income level falls below u (Carter and Barrett, 2006).

Figure 1. Single period income and asset poverty line



Source: Carter and Barrett (2001)

A household moving from above the income poverty line could be said to have made a stochastic transition back to its expected status if its assets still mapped into an expected

standard of living below the poverty line. In Figure 1, this transition is illustrated as the movement from point C back to the point $u_I(A')$. Alternatively, a household that moves from $u_I(A'')$ to $u_I(A')$ would have made a structural transition below the poverty line due to a loss of asset from A'' to A' (Carter and Barrett, 2006). Asset may loss due to shocks such as war, natural disaster, illness or death of wage earner, livestock death, and a rise in input price or fall in output price, etc.

Similarly, as household expenditure moves from below to above the poverty line, it is said to make a structural transition if its assets initially below the poverty line, at $u_I(A')$, but in the subsequent period assets yield expected expenditures above the poverty line. This shift can be a result of asset accumulation that moved the household to point $u_I(A'')$, or thanks to higher returns on given assets, which shifted the livelihood function from $u_I(A)$ to $u_2(A)$, bumping expected and observed expenditures from $u_I(A')$ to point C in Figure 1. Finally, in Figure 1, the stochastic transition out of poverty can be expressed as a movement from point B to $u_I(A)$ (Carter and Barrett, 2006).

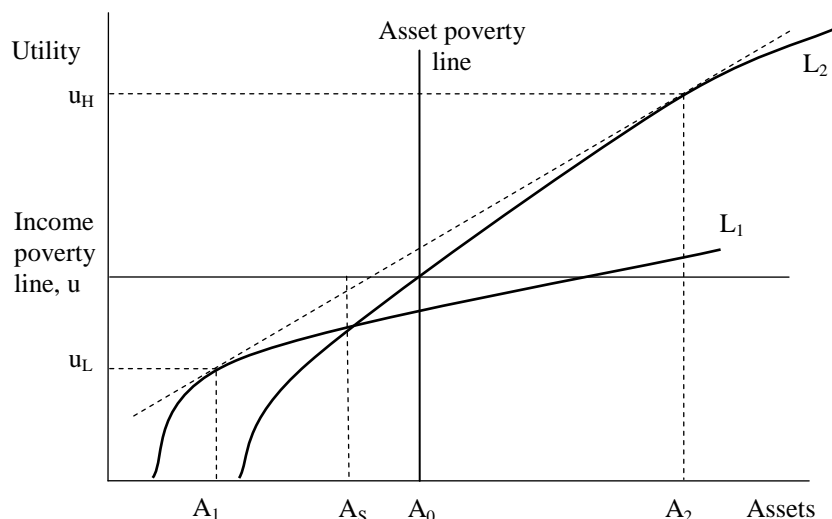
Poverty Traps and the Dynamic Asset Poverty Threshold

Consider a household can allocate its productive wealth to two different productive activities, L_1 and L_2 . Both activities face decreasing returns to wealth. The graph is drawn for a given set of characteristics (time preference, technical efficiency and skill, etc.) The value A_L denotes the steady state for a household restricted to livelihood activity L_1 , yielding well-being level u_L . The value A_H denotes the same thing for L_2 , yielding the higher level of income, u_H . For illustrative purposes, Figure 3 places the asset poverty line, A_0 , between A_L and A_H .

How a household chose its optimal use of assets. Figure 2 shows that the optimal livelihood choice for households is activity L_1 , if their asset stocks up to A_S , and L_2 for households with assets in excess of A_S . Although both activities face decrease returns, there are locally increasing returns in the neighbourhood of A_S , the threshold at which households optimally switch from L_1 to L_2 . This transition can be seen when households adopt higher return crops, participate in skilled labour market, etc.

Poor households might utilise activity L_1 , the question is if they can accumulate asset level that exceeds A_S and catch up with wealthier households. Consider a household with assets between A_L and A_S . It wants to move forward by following critical saving strategy but it cannot reduce their consumption further. It wants to borrow sufficient funds so that it could reach return asset level, but it is lack of access to capital market. Poor households can save by cutting food consumption, which reduces energy to work, withdrawing children from school, and so forth, makes accumulation unattractive. If the poor household opts not to undertake extraordinary savings, it then settles into a poverty trap. Then the household would be expected to reach an equilibrium asset holding at the low level, A_L .

Figure 2. Asset poverty with multiple livelihood options

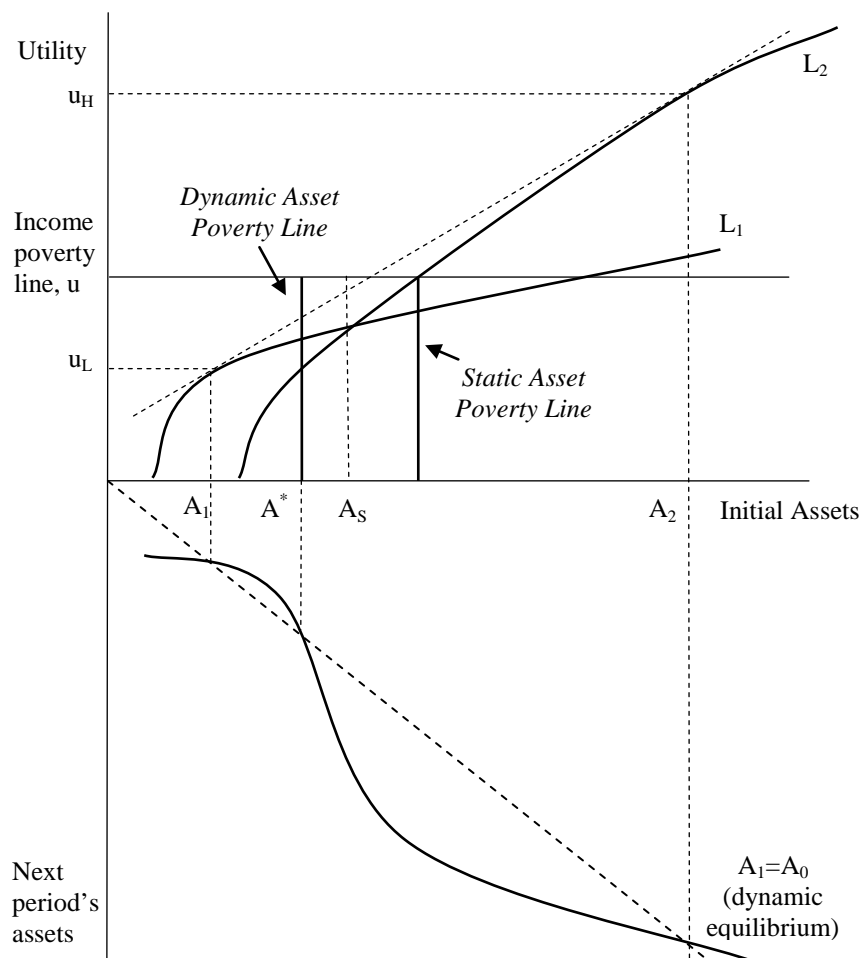


Source: Carter and Barrett (2006)

If a household is not too far from the asset level where increasing returns occur, then it is likely to pursue accumulation strategy. If this distance increases, the household is less likely to find it feasible to accumulate (Galor and Zeira, 1993). Zimmerman and Carter (2003) identify a ‘Micawber threshold’, the critical asset threshold below which it is no longer rational or feasible to pursue the accumulation strategy. If it exists, the Micawber threshold thus constitutes a dynamic asset poverty threshold, similar to the static asset poverty line. Households with assets level above that threshold would be expected to move out of poverty over time, while those below would not (Carter and Barrett, 2006).

The existence of the Micawber threshold has important policy implications. We now consider if such the threshold exists. We denote $A^* < A_S$ as the critical dynamic asset poverty threshold. Households with assets in excess of A^* will chose to save and accumulate until they reach point A_S where it becomes optimal to switch to livelihood strategy L_2 and to grow to a steady state level of capital, A_2 . Households below this threshold will not find it feasible to reach A_S and they will revert to a steady state level of capital, A_1 . Figure 3 shows implication for asset dynamics. The top panel depicts the two distinct livelihood strategies of Figure 2, L_1 and L_2 . The bottom panel shows the asset dynamics, which is the source of household well-being. The critical threshold is A^* , the unstable dynamic asset equilibrium, the threshold at which accumulation dynamics bifurcate. A household with initial wealth just above A^* will naturally accumulate assets, at some point pass A_S and switch from L_1 to L_2 , and ultimately settle at a long-term equilibrium asset stock of A_2 , yielding steady state utility u_H above the income poverty line. A household with initial wealth just below A^* will naturally shed assets down to A_1 , never switch to the more remunerative livelihood strategy, and settle ultimately at an equilibrium welfare level of u_L , below the income poverty line (Carter and Barrett, 2006).

Figure 3. The dynamic asset poverty line



Source: Carter and Barrett (2006)

The asset-based approach can distinguish between distinctive sorts of poverty transitions. Individuals may appear to be transiently poor, moving from the poor to the non-poor state over time due to either of two different experiences. Some may have been initially poor because of bad luck. Their transition to the non-poor state simply reflects a return to an expected non-poor standard of living (a stochastic poverty transition). For others, the transition may have been structural, due to the accumulation of new assets, or enhanced returns to the assets that they already possessed.

Similarly, transiently poor individuals moving from being non-poor to poor, can represent a mix of experiences. For some, it could represent a return to an expected standard of living, after a brief non-poor period gained from a good luck. It could also be a temporary transition caused by bad luck. For others, it could be a structural move caused by the loss of assets (due to illness, natural disaster or theft), or by a lower returns to their assets.

2.1.2. Intergenerational Transmission of Assets

To continue the discussion of asset and poverty linkage, this section expresses the transmission of assets among generations. Intergenerational transfers mostly take place within the family, which is often but not always from parents to their children to enable them to grow, learn, socialise and eventually become adult members of society. The transmission is often in the form of investment in human capital including investment in schooling, health and nutrition. When children marry and form another household, they transfer assets enabling them to a new productive social unit. Finally, as parents age and die, they transfer their remaining assets to children (Quisumbing, 2007).

In developing economies, parents have limited resources such as time, budget and the relationship among factors that influence child development. Investment in children human capital depends on parents' income. In some case, parents want to transfer more asset than they inherit, they can borrow from formal and informal financial institutions, but they have less access to this market so the assets transferred depends mainly on income. In addition, parents have to spend more time on working to earn living so they have less time taking care of their children. The allocation of time, budget on investment in children human capital also depends on household and its head characteristics and of other household members (Quisumbing, 2007). Therefore, children of poor households might not have good human capital accumulated in early life and their inheritance of land or capital is not sufficient, it is difficult for them to escape from poverty (Loury, 1981), even they are inherited assets, they cannot employ the assets to generate income (Carter and May 1999).

2.1.3. Market Access and Poverty

Location and Market Access

Literature explains market the linkage between location and market access by two mechanisms. First, gravity models (Redding and Venables, 2005) and the New Literature on Economic Geography show that communities located close to markets have more advantages. They have availability of specialized labor markets and intermediate inputs, facilitate technology spillovers, and face lower transportation costs (Krugman, 1991). Second, distance to markets also affects poverty via labor market demand and supply. Partridge and Rickman (2008) develop a model explaining the relationship between poverty and labour income and find that greater distance from agglomeration economies has a negative impact in profits, depressing employment and lowering wage.

Natural Resource and Market Access

Poverty is also explained on the basic of deference in geography condition (Bloom and Sachs, 1998; Gallup and Sachs, 1998). Natural resources such as soils, forests, water and wildlife are

fundamental input to rural economies, therefore any shock due to climate-dependent infectious diseases may affect seriously on household income livelihood and assets. Some areas suffer more storms, floods or droughts than others, thus life there is harder than elsewhere. Geography also matters market access which affects production activities and profitability of households and thus their income. Geography plainly matters to patterns of poverty and poverty dynamics (Barret, 2003).

Labor Market and Poverty

Linkage between labour market and poverty is of concern of voluminous literature. Doeringer and Piore (1971) classify labour market into two sectors with little mobility between them. Jobs in *primary* market are of high wages, good working conditions, employment stability, chances of advancement, equity and due process in the administration of work rules. In contrast, jobs in *secondary* market tend to have low wages and fringe benefits, poor working conditions, high labour turnover, little chance of advancement, and often arbitrary and capricious supervision. People having low level of human capital tend to work in secondary sector, so they have lower income and therefore they are more likely to be poor.

Workers in the secondary sector tend to be caught in a trap, even if these employees had skills and ability, they would still find it difficult to escape from the secondary into the primary sector due to the nature of their current employment. This would lead to increasing poverty as these they fell behind ones in the primary labour market (Tomlinson and Walke, 2010).

In developing economies, units in informal sectors have less access to credit market than the formal ones because they have fewer assets, are unregistered and therefore have no legal standing/identity. So formal units find easier to finance their investment, they develop faster, thus wage in this sector increase faster. The non-poor often have higher skill and work for formal units while the poor have low level of human capital, they tend to work in informal sector, thus their income rises slower (Marjit *et al*, 2007).

Moreover, some theories mention the issue of discrimination in labour market. Employers, coworkers, or customers have a taste for employees of particular race or gender, in which candidates of female, minority, and low-socioeconomic-status might have difficulty to find jobs and escape poverty (Phelps, 1972).

Financial Market Access

Most low income clients face difficulty in accessing the formal financial sector due to poor physical and financial infrastructure. The clients dispersion in rural areas and typically small loan amounts lead to relatively high financial transaction costs both for banks and borrowers, and increase the perception of high risks, which banks usually associate with small clients. Moreover, most of the low-income clients do not have any previous relationship (such as

savings or payment services) with banks so that they cannot be screened properly. As a result, asymmetric information problems are often seen greater for small clients (Mayo *et al*, 1998), and thus induce the banks to ration credit. Due to these factors, the costs of reaching micro clients are high for financial institutions, which charge higher interest rates than the market rates in the formal banking sector (Mayo *et al*, 1998).

In another aspect, a conventional bank practice that protects the lender against possible borrower default is the requirement of loan collateral such as real estate. Banks use loan collateral in order to screen potential clients (as a substitute for lack of customer information) and to enforce and foreclose loan contracts in the event of loan default (Bester, 1985). The preferred form of conventional bank collateral is mortgage on real property, which, however, requires clear land titles and mortgage registration. However, most of low income households do not own assets that qualify as collateral (such as land titles). Hence, without secure loan collateral, it is expected that there will be a contraction in the supply of bank credit and this will result in reduced access of small and rural clients to finance (Binswanger and McIntire, 1987).

In addition, demand for credit in rural area is heterogeneous. Rural households do farm business, so they have different investment needs, and may apply for seasonal and/or investment loans to meet specific financing requirements. Length of loans may be different among different types of businesses and therefore the clients may require a specific repayment schedule in accordance with their income flows. Risks such as weather and diseases, which cannot be forecasted exactly may affect the expected revenue flows and therefore affect the repayment. It should be noted that the same factors might have different effect on different types of businesses.

For these reasons, search and verification costs in micro lending are relatively high. This hinders the development of this market and makes providing credit and other financial services to rural households expensive, especially in relation to the size of the transactions involved.

2.1.4. Infrastructure and Poverty

There has been much debate about whether infrastructure service provision benefits the poor. Some evidence suggests that certain types of infrastructure service provision, e.g. roads and transport, have a potential contribution to agricultural output, and that infrastructure improvements (in electricity supply, transport and telecommunications) in small towns contribute significantly to industrial growth and employment. At a community or individual level benefits can accrue to the poor if labour-intensive methods of construction are used rather than capital-intensive methods (Sida, 1996). Provision of clean water and sanitation can reduce poverty through health improvements, for example, by improving water and sanitation,

which decreases incidence of illness, and associated lack of productivity. In addition, the way in which infrastructure is financed influences the distribution of income in society (Sida, 1996). Moreover, infrastructure provision such as better transportation and water services can be very effective in raising incomes of some people (Fox, 1994).

In contrary, there is considerable evidence that infrastructure development is correlated with economic growth and less evidence to support a positive impact on poverty. In general, non-poor households rather than poor households seem to benefit more from public infrastructure investments (World Bank, 1994). In Bangladesh, for example, non-poor groups receive over 80 percent of public expenditure on infrastructure (Sida, 1996). Infrastructure provision in some cases makes workers lose their jobs, e.g. where a new source of electricity leads to the introduction of labour-saving technology (Fox, 1994). Moreover, infrastructure development may have negative impacts on some specific groups, due to displacement, environmental pollution and health risks and loss of livelihood, for example. Generally, the urban poor are increasingly situated at the periphery of cities where access to city facilities and job opportunities is restricted (Masika and Baden, 1997).

2.1.5. Structural Poverty Theories

There are also theories explaining the impact of social structure, demography and macroeconomic changes on poverty. The poor generally have lower level of human and physical capital so they have lack sufficient access to market opportunities, which prevents them from escaping poverty (Duncan, 1984).

Regarding demography and family structure, Burgess and Propper (1998) develop a model of poverty dynamics with changes in household composition. They find that an individual's decision of participating labour force are made within a household context, which may lead to migration, and thus changes household composition and poverty entry and exit. Gottschalk and Danziger (1993), Cancian and Reed (2001), Blank and Card (1993), and Hoynes *et al* (2006) also investigate the relationship between demography and family structure and changes in poverty. Hoynes *et al* find female headed households are more likely to be in poverty.

In addition to demographics, macroeconomic factors such as growth (Gottschalk and Danziger 1985, Blank and Card 1993), business cycle (Hoynes 2000, Danziger and Gottschalk 1985), and inequality (Gottschalk 1997, Gottschalk and Danziger 1993, Danziger and Gottschalk 2004) are also mentioned in literature of poverty dynamics. Researchers find that inequality appears to correlate with trends in poverty and other macroeconomic factors are less important.

In addition, culture aspect of poverty developed by Lewis (1968 cited in Cellini *et al*, 2008) states that the poor have less psychological motivation of taking advantage of opportunities to

get out of poverty (Duncan, 1984). They have plenty of opportunities but lack of initiative and diligence necessary to take advantage of them (Schiller, 1976). Moreover, an individual's behaviour is influenced by others of the community (Wilson, 1991), they are poor because they live in a community of the poor. However, some researches find no support of cultural poverty theory (Duncan, 1984).

2.1.6. Shocks and Poverty Transition

Some households may fall into poverty because of a severe shock or series of shocks. Natural disasters, illness or death, and civil strife may not only cause the temporary displacement or loss but also wipe out in a moment what households have laboured for years to accumulate through disciplined savings and investment (Barret, 2003). Brief disturbances can have persistent effects (Hoddinott and Kinsey, 2001). For those who have lower starting point, have low level of human and physical capital are more likely to suffer severe shocks, which prevent them from getting out of poverty (Dercon, 1998; Barrett and Carter, 2001) or pull them back to poverty. Easterly (2001) reports that "between 1990 and 1998, poor countries accounted for 94 percent of the world's 568 major natural disasters and 97 percent of disaster related deaths." Worldwide, the poor are several times more likely to suffer injury or illness than are the rich (Prasad *et al*, 1999). Shocks can have effect right after they happen or later that prevent household from recovering at different rates. These effects suggest nonlinear relationship between assets stocks and income growth (Barret, 2003).

Economic theory holds that households prefer smooth to volatile consumption. Given access to well functioning credit or insurance markets, these preferences generate stable consumption paths, even when shocks occur. If credit and insurance markets are imperfect, household consumption may be susceptible to shocks (Deaton, 1992; Besley, 1995; Dercon and Krishnan, 2000; Fafchamps and Lund, 2003; Kazianga and Udry, 2006; Christiaensen *et al*, 2007). These theoretical insights provide a framework to empirically explore how shocks and households' coping capacity affect their consumption levels.

2.2. Empirical Studies

This section expresses method and results of empirical studies of poverty dynamics. It first presents studies around the world and then researches about poverty in Vietnam.

2.2.1. Evidence around the World

The literature on poverty dynamics is limited but growing, particularly in developing and transition economies. Baulch and Hoddinott (2000), McKay and Lawson (2002), Dercon and Shapiro (2007), McKernan and Ratcliffe (2002) collect a number of studies which provided abundant evidence on the extent and the nature of poverty as well as determinants of poverty dynamics. These studies use mostly longitudinal panel data to analyze poverty dynamics in

terms of chronic and transient poverty.

Several studies on poverty dynamics use a logit or probit model to estimate the probability of escaping or falling in to poverty over time (Dercon and Shapiro, 2007) including Woerlard and Klasen (2005), Baulch and McCulloch (2002), Bhide and Mehta (2003), Bigsten *et al* (2003), Cappellari and Jenkin (2002). However, with the logit and probit model the dependent variable takes two values, zero or one. It means that to determine the factors affecting the movement out of and into poverty by using probit model we need to rely on several assumptions. For example, Bhide and Mehta (2003) use a probit model and the two wave panel data for India to assess the factors affecting household poverty status in the second wave assume that household was poor in the first wave. This assumption, whatever its validity, does not allow to examine the movement in and out of poverty over the period under consideration. Therefore, we need another model, which will be more appropriate in tracking the dynamics of poverty. Bhide and Mehta (2003) suggest that multinomial logit model is a good substitution. Such model permits identifying more than two categories in studying poverty dynamics (McCulloch and Baulch, 1999). Several studies have been followed this approach, including Armida and Arief (2003), Lawson, McKay and Okidi (2006), Kedir and McKay (2003). These studies have been able to capture movements out of and into poverty in the countries under consideration.

Poverty dynamics can be explained by changes in labour market. Bane and Ellwood (1986), Ruggles and Williams (1987), Duncan and Rodgers (1988) and Iceland (1997) find that changes in labour supply and earnings are associated with poverty entries and exits. Ruggles and Williams find that a job gain or loss by the head, spouse, or other household member leads to poverty entry. Duncan and Rodgers find the labour supply of individuals, such as work hours of the male head, employment of the male head and having less/more a parent, coincides with children's transition into or out poverty. Iceland (1997) uses a multivariate framework to examine "the effect of four structural characteristics on individual poverty exits: (1) economic restructuring, (2) skills mismatches, (3) racial residential segregation, and (4) welfare benefit levels. Results show that these factors play a role in explaining African-Americans' economic disadvantages, but they have a weaker and often contrary impact on whites' poverty exit".

Poverty dynamics can be associated with various household characteristics that vary from household to household and are fundamental in determining how households respond to socio-economic changes (Litchfield and Justino, 2004).

Eller's (1996) and Naifeh (1988) use Survey of Income and Program Participation (SIPP) data and find that blacks, Hispanics, female-headed households and children are groups most likely to enter poverty. Both the two authors and Stevens (1999) find poverty exit rates are higher for whites than blacks.

Rank and Hirschl (1999a and 1999b) use the Panel Study of Income Dynamics (PSID) to estimate the proportion of the population that will have experienced poverty by a particular age, rather than estimating entry rates for a particular year. Using a life table based approach, they find that 27.1 percent of adults will have experienced poverty by age 30, 41.8 percent will have experienced poverty by age 50, and 51.4 percent will have experienced poverty by age 65. Consistent with the findings of Eller (1996) and Naifeh (1998), Rank and Hirschl find that blacks are more likely to experience poverty than whites and vice versa, the possibility of whites move out of poverty is higher than that of blacks.

Several studies have also examined exits from poverty by type of household head, such as female-headed or married-couple household, and in general find that households headed by females are disproportionately less likely to exit poverty (Eller, 1996; Naifeh, 1988; Stevens, 1994). For those who are 65 and over or living in central cities have less possibility of getting out of poverty (Naifeh, 1988), while those with better education levels have higher exit rates (Iceland, 1997; Stevens, 1999).

Stevens (1994) examines poverty dynamics during 1970 to 1987 and finds that during this period, households headed by females is less mobility from poverty than male-headed ones. She also investigates whether the decreased mobility for female-headed households can be explained by changes in the characteristics of these households or by differences in the events leading into or out of poverty, but finds no solid evidence of either.

Bane and Ellwood examine female-headed households separately from male-headed ones and find that changes in household structure are quite important, though not more important than earnings. They find 26.4 percent of female-headed households with children exit poverty when they shift to a male-headed household and 51.4 percent exit because head or others' earnings rose.

Woorlard and Klasen (2005) apply multivariate analysis method using panel household data of 1993 and 1998 in South Africa and find that household characteristics such as household size and location, household head characteristics such as education attainment, assets ownership and labour market participation of household members have significant effect on poverty transition.

2.2.2. Evidence from Vietnam

There are a number of researches on poverty dynamics in Vietnam using the standard approach of multinomial logistic regression to panel datasets, in order to examine the drivers in and out of poverty. Glewwe *et al* (2002), Justino and Litchfield (2003), Litchfield and Justino (2004) and Nimi *et al* (2003) all use various modifications of this standard model to analyse why some poor households are able to escape from poverty and others are not, and why some households fall into poverty.

Most studies employ panel datasets of Vietnam Household Living Standard Survey (VLSS) which has been done for seven rounds of 1993, 1998, 2002, 2004, 2006, 2008, 2010, of which the first two waves are most employed. The authors applied various modification of standard multinomial logistic regression to analyze the movement into and out of poverty in Vietnam such as Glewwe, Gragnolati and Zaman (2002), Justino and Litchfield (2003), Litchfield and Justino (2004), Niimi *et al* (2003). Glewwe et al (2002) use two different regression models to examine factors driving the change in poverty between two years 1993 and 1998. While the first model applies the decomposition method introduced by Ronald Oaxaca to decompose the change in mean per capita consumption into change in household characteristics and change in the returns to these characteristics, the second method uses multinomial logit regression to analyze the features that affect to the poverty status of a household. Using both descriptive analysis and econometric regression, they classify factors that significantly contribute to escaping poverty are households head's occupation in white-collar, sales or production compare to those mainly involved in agriculture.

The results show the common drivers of poverty dynamics in Vietnam during 1993-98 are: i) location as classified into seven regions, ii) ethnicity as classified into Vietnamese (the Kinh) and other minority groups, iii) education of household head, iv) household head's type of employment, v) household demographic characteristics, and vi) access to infrastructure.

This finding is confirmed by Litchfield and Justino (2004) when they examined factors affecting the rural poverty dynamics using the same panel data of VLSS92/93 and 97/98. By using transition matrices, they pointed that "households in which the head works in the agriculture sector have the higher probability of being poor in both years". The poverty rate of households' head working in agriculture in both years was 37.45 percent compare to 11.15 percent and 15.04 percent for those who working in white collar job and sales. Moreover, both two independent studies find out that education level of household head and spouse is positively affected to the probability of escaping poverty. Glewwe *et al* (2002) calculated that "household head having an additional year of formal education raises the relative probability of escaping poverty by about 11 percent". Whereas, ethnic minority households are likely remain in poverty while their probabilities of escaping poverty is 63 percent lower than that of Kinh households.

In line of applying multinomial regression techniques using panel data VLSS 1993 and 98 Justino and Litchfield (2003) also seek to explain movement out of and into poverty of households in rural area in terms of household characteristics that directly related to the two important economic reforms namely agriculture markets and export markets liberalization. While the study of Niimi *et al* (2003) that empirically explore the transmission mechanisms between trade liberalization and household poverty dynamics did not clearly explaining anything about the full extent of Vietnam's poverty dynamics related to trade reform, the

study of Justino and Litchfield (2003) suggests that by creating more opportunities for poor households in the main export sectors such as seafood, food processing, footwear, textiles and garments we will have more chance to reduce poverty in Vietnam. Besides, it also admits that some households which were living in the remote areas with low level of education or belonging to ethnic minority group and particularly, whose income mainly come from the agriculture sector were not prevented from falling into poverty in the process of economic reforms.

Unlike the above studies, Baulch and Masset (2003) use transition matrices to examine whether monetary indicators like consumption expenditure and nonmonetary indicators such as malnutrition and education tell the same story about chronic poverty in Vietnam. They conclude that there are very different in the distributions of monetary poverty among child stunting, adult malnutrition and children's school enrollments. In the other words, monetary indicators do not tell the same story as nonmonetary indicators do about chronic poverty in Vietnam. Concretely, to some extent "nonmonetary indicators are more persistent and complement monetary indicators of chronic poverty" Baulch and Masset (2003).

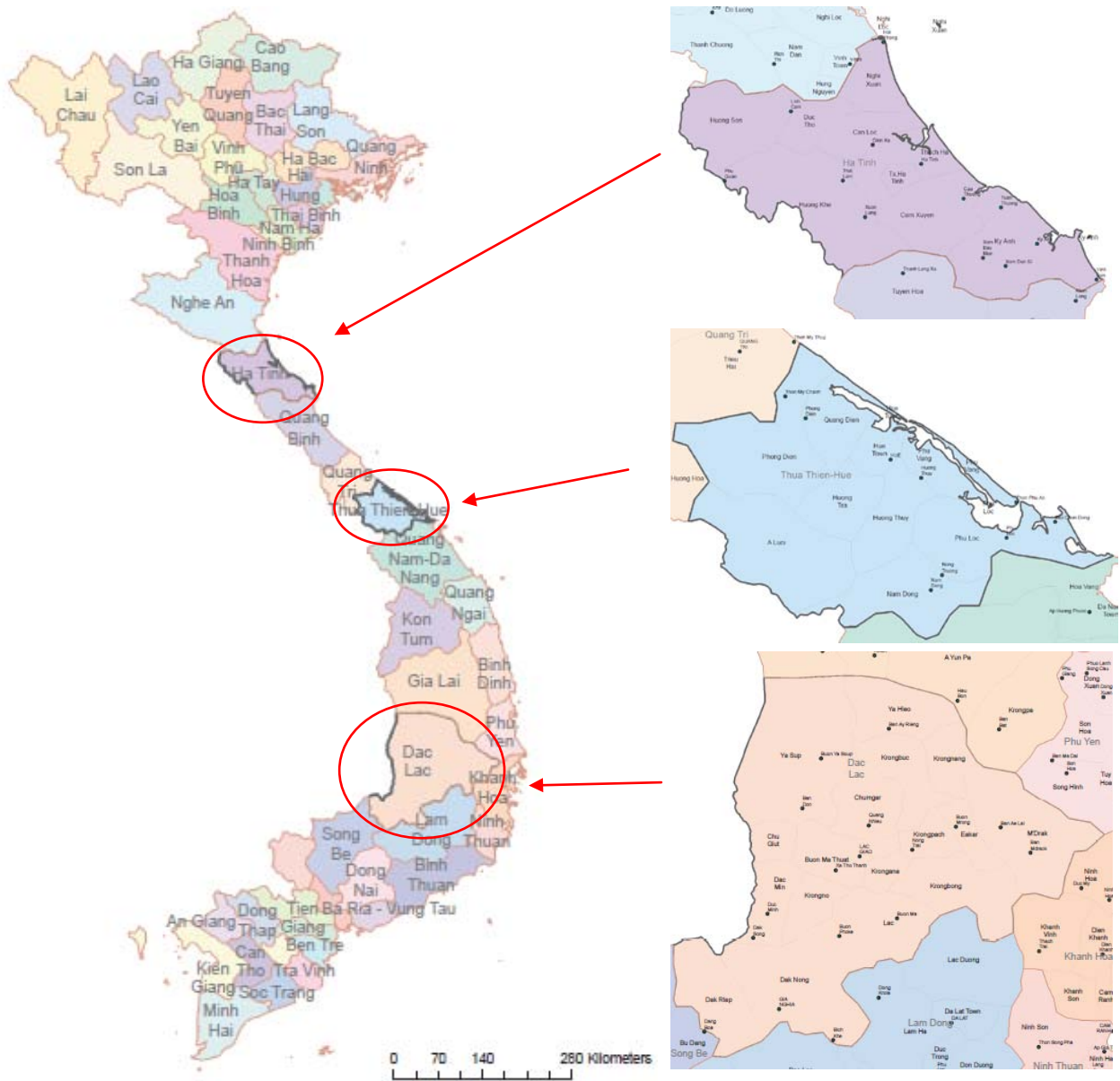
A two period's panel dataset seems to be short to capture the long run poverty mobility, particularly when measurement error occurs in the panel dataset. McKay and Lawson (2002) claim that measurement errors such as recall error, imputing missing data values associated with data collection generally can lead to high volatility for those escaping or falling into poverty in the short run while the actual poverty level may remain unchanged. They conclude that these measurement errors "might imply that shorter panel datasets are less reliable". A similar point is made by Dercon and Shapiro (2007) who analyze the effect of measurement error on the estimates of mobility. They conclude that analysis which ignore the measurement error tend to overstate the mobility of poverty, particularly when using a very few time periods in the analysis. As Baulch and Hoddinot (2000) observe: "Measurement error poses great difficulties for the empirical measurement of poverty dynamics in the short term because it inflates the variances of the 'true' welfare measure and may make households appear to enter or exit poverty when their poverty status is in reality unchanged."

3. The Data Sets

The results presented and discussed in this paper are based on analysis of household survey data from surveys done by the 'Vulnerability in Southeast Asia' project funded by German Research Foundation and done by German universities of Hannover, Gottingen, Frankfurt and Giessen (from here by *Vulnerability* survey in short). The survey took place in three provinces of Dak Lak, Ha Tinh and Thua Thien Hue in Vietnam, which covers more than 2000 households and most of them locate in rural, mountainous or coastal areas. This panel survey has been done for four waves 2007, 2008, 2010 among 2000 households in all three provinces

and 2011 in Thua Thien Hue only with 700 households. The survey contain information on household demographics, ethnicity, education, health, household dynamics, shocks and risks, climate change, economic activities, production and employment, access to financial markets, public transfer, household consumption, assets and housing condition.

Figure 4. Sample of household survey in Vietnam 2007 - 11



Source: Vulnerability in Southeast Asia (2007)

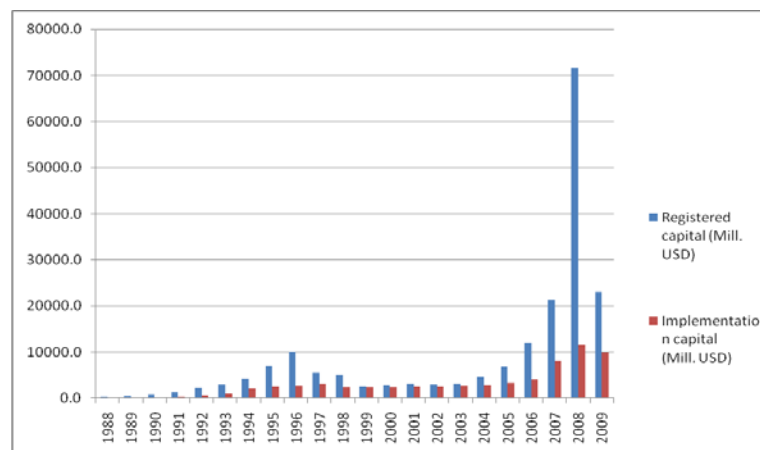
There are some household survey data sets such as Vietnam Living Standard Survey (VLSS) of 1993, 1998, 2002, 04, 06, 08 and 2010 and Population Census of 1999, 2009. These data sets are of good sampling and good data collection. For the VLSS, questions were asked of more than 4000 households in 1990s and more than 30,000 households in 2000s on income, expenditures, demographic characteristics, economic activity, health status, educational achievements, asset holdings and the availability of public services in the community such as electricity, water, roads, and more. Though having large sample size, VLSSs are semi-panel

surveys since 2002, half of households in 2002 were asked again in 2004, of which a half were asked again in 2006 and so on (Phung and Nguyen, 2007). Regarding to sample size in each province, consider in 2002 VLSS covered 30000 households in the whole country so it covered only more than 1500 households in three provinces of Ha Tinh, Thua Thien Hue and Dak Lak, and it is semi-panel so the panel data set is smaller than that of the *Vulnerability* survey. Moreover, the sample size of *Vulnerability* surveys is much smaller, however the survey concern about risks and shocks so it is better for analysis of this research.

In this paper, we refer to the 2007 data set, and the variables it contains, as representing the baseline and the 2008 data set as the control year. In 2007 and 2008 high inflation took place in the country with 32.3 percent and 36.4 percent in 2007 and 2008 respectively (PWT, 2011). The country also experience economic boom with a big amount of foreign investment. Foreign investment started to come to Vietnam since early 1990s with implementation capital reached less than USD 5 million annually and it started to boom in 2007 and 2008 with 8 million and 12 million respectively.

Vietnam is also one of the countries most vulnerable to natural disasters, such as floods and typhoons. It is ranked fourth in the world in terms of the absolute number of people exposed to floods; tenth in terms of the absolute number of people exposed to high winds from tropical cyclones, and sixteenth in terms of the absolute number of people exposed to drought (UNISDR, 2009).

Figure 5. Foreign direct investment projects licensed in Vietnam, 1988 – 2009



Source: graphed from GSO (2009) data

Vietnam suffered serious rainfall shortages in Mekong River Delta in 2002, and serious drought in Northcentral Coast and substantial shortages in Northeastern and Northwestern Uplands 2003. In 2004, the entire nation appeared to suffer from rainfall shortages, with severe deficiencies along the Southcentral Coast and the Central Highlands. This is followed by a year of abundant rainfall in 2005 with only very small patches of shortfalls. Finally, 2006 shows moderate and severe drought along the Northcentral and Southcentral Coastal regions, as well as the Northwestern Uplands and the Red River Delta. The wide variation in rainfall

within and across localities over the different survey years provides the necessary variation to identify the effects of rainfall deficiency.

In 2007 the country suffers 4 storms, of which 2 followed by floods, 4 other floods and flash floods, 462 people are killed, total economics lost is estimated to be 700 thousand US dollar. In 2008 the country suffers 6 storms, of which 2 followed by floods, 3 other floods, 474 people are killed and total economic lost is estimated to be 800 thousand US dollar CCFSC (2007, 2009). Given the massive concentration of its population along the coastline and in the large deltas, disasters take a heavy toll in lost lives and damaged livelihoods. Climate change will make these shocks worse over time. But providing insurance against natural disasters raises important implementation challenges. There is also a fundamental transformation in morbidity and mortality.

The results suggest that the immediate losses from floods and hurricanes can be substantial, with hurricanes causing most havoc (up to 52 percent consumption loss among households close to large urban centers). Households tend to cope well with droughts, largely through irrigation. Frequent exposure to disasters erodes the standard of living, but reduces the immediate effects of shocks as households become less exposed and better prepared. Households in frequently inundated areas have even been able to turn the floods into an advantage, as long as the flooding is not too severe. There is however no adaptation to hurricanes, rather the contrary, with high frequency of hurricanes exacerbating the losses from particular events. Finally, those further away from the large urban centers are not only poorer, but also tend to suffer less from disasters, likely due to the adoption of less risky (but less remunerative) portfolios and a higher likelihood of receiving disaster relief.

The sample proxies for households in three provinces, they are not truly representative of either the rural or the whole country's population (Haughton *et al*, 2001). This is a common feature of panel studies in developing countries (Deaton, 1997).

This paper bases on the panel of 2000 households. Vietnam is predominantly a rural economy: 71.8 percent of all households in Vietnam in 2007 lived in rural areas and 50.2 percent of all Vietnamese households engaged in the agriculture sector in 2007 (GSO, 2009). The all three provinces locate in coastal, mountainous, and border areas. They are like most other provinces of Vietnam, suffer from natural disasters very often. So they represent for typical rural provinces in Central and Highlands regions in Vietnam.

The analysis in this paper focuses on per capital expenditure as welfare indicator and applies general poverty line proposed by the World Bank of two dollar a day. In the *Vulnerability* data, income data is available but for rural households there is also in-kind it is not easy to estimate reliable income. Further, income is likely to fluctuate during the year because most

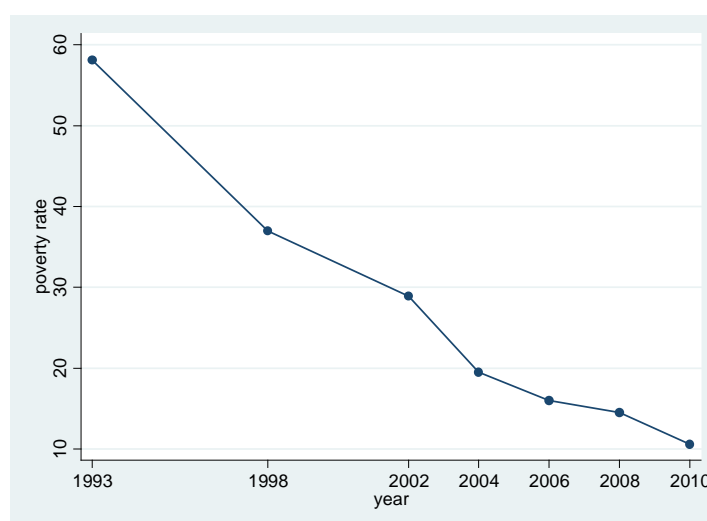
households engage in agricultural production. Hence, consumption is used as a measurement of household welfare.

4. Poverty in Vietnam

4.1. Dramatic Fall of Poverty Rate

Viet Nam's remarkable success in poverty reduction during the period of 1993-2004, as revealed by data of the four household surveys. The poverty rate based on per capita consumption has come down from 58.1% in 1993 to only 19.5% in 2004, showing a drop by almost 39 percentage points over the eleven years. The poverty rate in 2004 is only one third of that in 1993, an exceptional achievement when benchmarked against a major UN's Millennium Development Goal of halving extreme poverty over a longer period from 1990 to 2015. Most recently, Vietnam has halved poverty over a much shorter six-year period from 1998 to 2004, from a lower base rate of 37.4%. In absolute terms, some twenty four million people were lifted out of poverty over the eleven years 1993-2004, with approximately half of them escaping from poverty during the 1993-1998 five-year sub-period, and another half during 1998-2004 six-year sub-period.

Figure 6. Poverty rate 1993 – 2010, percent



Source: graphed from VASS (2010) and Index Mundi (2011) data

4.2. Disparity of Poverty Profile

Regional Disparity

Poverty in Vietnam varies substantially across regions. Result from VLSS 2008 shows that regional poverty rate vary between 3.5 per cent and 24 per cent. The Northwest, Northeast and the Central Highlands are the three poorest regions in Vietnam having the highest incidences of poverty. These three regions were also among the poorest regions in 1993.

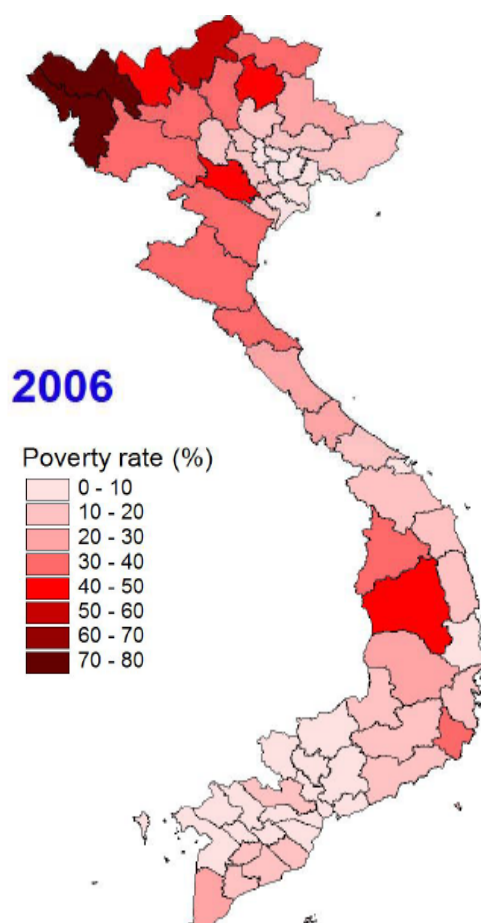
However, the Northcentral Coast region has seen the greatest reduction in poverty and the Northwest the least.

Table 1. Poverty rate by regions over years, percent

Regions	1993	1998	2002	2004	2006	2008
Vietnam	58.1	37.4	28.9	19.5	16	14.5
Red River Delta	61.4	28.6	22.4	12.1	8.8	8.1
Northeast	78.9	55.8	38.4	29.4	25	24.3
Northwest	81	73.4	68	58.6	49	45.7
Northcentral Coast	74.5	48.1	43.9	31.9	29.1	22.6
Southcentral Coast	47.2	34.5	25.2	19	12.6	13.7
Central Highlands	61.2	57.9	51.8	33.1	28.6	24.1
Southeast	40	13.5	10.6	5.4	5.8	3.5
Mekong River Delta	47.1	36.9	23.4	19.5	10.3	12.3

Source: GSO (1993 – 2009)

Figure 7. Poverty rate by province, 2006



Source: Nguyen *et al* (2008)

The persistence of poverty in the Northwest and the Central Highland regions reflects the constraints these regions face in participating in the growth process. The major constraints are a difficult physical environment, which limits agricultural development and restricts access to infrastructure and markets. The Participatory Poverty Assessments in Lao Cai province in the

Northwest region reported that many households living in the highland areas were simply too remote and deprived of land and capital to take advantage of opportunities. These households were also found to lack information on markets (World Bank 1999).

Poverty rate in three provinces of Dak Lak, Thua Thien Hue and Ha Tinh are higher than national poverty rate in both years 2006 and 2008, except Thue Thien Hue in 2008, even it has been decreasing dramatically.

Table 2. Poverty rate by provinces, percent

Provinces	Result of VLSSs		Result of <i>Vulnerability</i>	
	2006	2008	2007	2008
Vietnam	16.0	14.5		
Thua Thien Hue	16.4	13.7	15.8	14.1
Dak Lak	24.3	21.3	23.6	20.6
Ha Tinh	31.5	26.5	32.1	24.5

Source: GSO (2010) and own calculation from *Vulnerability* data

Note: The new Government poverty lines for 2006 is 200 thousand dong per capita per month for the rural area and 260 thousand dong per capita per month for the urban area. These poverty lines are up dated by 2008 prices and have values of 290 for rural, 370 for urban.

Rural-Urban Disparity

Though living standard has been improving substantially, rural people still dominate the poor in Vietnam. The rural poverty rate was 18.7 percent in 2008, a decrease from 66 percent in 1993, implying that fifteen million out of slightly over sixty million rural dwellers still live in poverty. This is in sharp contrast to the 2004 urban poverty rate of 3.3 percent, and 1993 of 25 percent. These low rates of urban poverty indicate that poverty is now largely a rural phenomenon.

Table 3. Poverty rate by rural-urban, percent

Year	1993	1998	2002	2004	2006	2008
Vietnam	58.1	37.4	28.9	19.5	16	14.5
Urban	25.1	9.0	6.7	3.6	3.9	3.3
Rural	66.4	44.9	35.6	25	20.4	18.7

Source: GSO (1993 – 2009)

Ethnic Disparity

One of the biggest policy concerns in Vietnam today is that ethnic minorities do not participate in, and benefit adequately from, the growth process, which may jeopardise the sustainability of development. There are slightly over ten million people of ethnic minority groups in Vietnam, they only account for 12.6 percent of the total population, but 39.3 percent of the poor population (Nguyen *et al*, 2006).

Though poverty reduction for ethnic minorities is sharp by 36 percentage points over the period 1993-2008, it has been much slower than the Kinh and Chinese. Consequently, the

absolute difference in poverty rate the two groups has been increasing, from 32.5 percentage points in 1993 to 41 percentage points in 2008. In 2008, the poverty rate for ethnic minorities was 50.3 percent, which is more than 5 times poverty rate for the Kinh and Chinese.

Table 4. Poverty rate by ethnic groups, percent

Year	1993	1998	2002	2004	2006	2008
Vietnam	58.1	37.4	28.9	19.5	16	14.5
Kinh and Chinese	53.9	31.1	23.1	13.5	10.3	9.0
Ethnic minority groups	86.4	75.2	69.3	60.7	52.3	50.3

Source: GSO (1993 – 2009)

5. Empirical Analysis of Poverty in Vietnam

5.1. Model Specification

This paper applies a multinomial logistic model of poverty dynamics used by Glewwe *et al* (2002) and Justino *et al* (2008) for their study of poverty dynamics in Vietnam. Change in poverty between two years can be classified into four mutually exclusive outcomes: (i) being poor in both periods (P-P); (ii) being non-poor in the first period and poor in the second period (NP-P); (iii) being poor in the first period and non-poor in the second period (P-NP); and (iv) being non-poor in both periods (NP-NP).

The multinomial logit model determines the probability that household i experiences one of the j mutually exclusive outcomes. This probability is given by:

$$p_{ij} = P(Y_i = j) = \frac{e^{\beta_j x_i}}{\sum_{k=1}^J e^{\beta_k x_i}}, \text{ for } j = 0, 1, 2, \dots, J \quad (1)$$

where Y_i is the outcome experienced by household i , β_k are the set of coefficients to be estimated and x_i includes aspects specific to the individual household as well as to the choices. The model is, however, unidentified since there is more than one solution for $\beta_0 \dots \beta_J$ that leads to the same probabilities $Y = 0, Y = 1, Y = 2, \dots, Y = J$ (Greene, 2000). To identify the model, one of β_j must be set to zero (the base category), and all other sets are estimated in relation to this benchmark. For convenient, β_0 is set to zero, so the above probability function can be written as:

$$p_{ij} = P(Y_i = j) = \frac{e^{\beta_j x_i}}{1 + \sum_{k=1}^J e^{\beta_k x_i}}, \text{ for } j = 1, 2, \dots, J \text{ and } p_{i0} = P(Y_i = 0) = \frac{1}{1 + \sum_{k=1}^J e^{\beta_k x_i}} \quad (2)$$

In the case of the analysis of poverty in Vietnam, we have $J = 4$, where $P(Y = 0)$ is the probability of a household being non-poor in both years, $P(Y = 1)$ is the probability of a

household being non-poor in 2007 and poor in 2008, $P(Y = 2)$ is the probability of a household being poor in 2007 and non-poor in 2008 and $P(Y = 3)$ is the probability of a household being poor in both years.

Thus, the specific model applied in this study when standardizing β_0 equals to given as:

$$p_{ij} = P(Y_i = j) = \frac{e^{\beta_j x_i}}{1 + \sum_{k=1}^3 e^{\beta_k x_i}}, \text{ for } j = 1, 2, 3 \quad \text{and} \quad p_{i0} = P(Y_i = 0) = \frac{1}{1 + \sum_{k=1}^3 e^{\beta_k x_i}} \quad (3)$$

By estimating this multinomial logit regression, we obtain the estimated coefficients for three groups relative to the omitted group (being non-poor in both years). For ease of interpretation, the marginal effects are also estimated. The marginal effects measure the conditional probabilities of a change in the regressors on the outcome. The marginal effects are estimated as:

$$\frac{\partial p_{ij}}{\partial x_i} = p_{ij} \left(\beta_j - \sum_{k=1}^3 p_{ik} \beta_k \right)$$

which show the impact of a change in explanatory variable (x_i) on the probability of a household being in each one of the four categories.

The explanatory variables x_i includes characteristics of household and of individuals, household dynamics and shocks in the panel data of 2007 and 2008.

The characteristics of household include household size, dependency ratio and its location. Household size is measured by number of persons in the households. In *Vulnerability* surveys, definition of household member is open, then in data cleaning and analysis, we keep nuclear household members only by checking days living in the household and some other criterion. Dependency ratio is measured by ratio of members being either less than 18 or more than 65 years of age. Location of household takes some dummy variables with reference groups are i) households in Dak Lak, and ii) households in neither mountainous nor upland areas.

The characteristics of individual include the gender, age and age square, ethnicity, marital status, education and its square, occupation of household head. Education of household head is measured by years of schooling. Ethnicity of household head is classified by a dummy variable to distinguish the Vietnamese (Kinh) and other ethnic minority groups. Occupation of household head is divided into categories of: those working in agriculture, those working in non-agriculture, those working as public servants. The omitted category in the regression is the first group.

Household dynamics includes changes in households demographic, migration, remittance, and social support. Changes in household demographic is measured by number of children born in

the household, number of members getting married and joint the household, and number of members left the household between the two surveys. Migration is measured by number of migrants from the household, has been far from home for more than three months. Remittance includes cash and in-kind remittances from household members and non-household members. Public transfer includes transfer from government or non-government organizations. In this paper public transfer refers to social support only.

Shocks includes events in types of demographic shocks, agricultural shocks, social shocks, and economic shocks household experienced during the 5 years 2002-7, and between 2007-8. Demographic shocks include illness, death, household member left, someone joint, and a spending for ceremonies. Agriculture shocks include flooding, drought, heavy rainfall, crop pests, storage pests, livestock disease, and landslide/erosion. Social shocks include house damage, theft, conflict with others, someone stopped sending remittance, accident and law suit. Economic shocks include job loss, collapse of business, unable to pay back loan, strong rise of interest rate, rise of price of input, fall of price of output and change of market regulation. This paper aims at having indeed examination of how severe shocks hit households so the number of severe shocks is also included in the model.

5.2. Empirical Result

The multinomial logit model bases on the assumption of the Independence of Irrelevant Alternatives (IIA) which states that various outcomes must occur independently of each other or the decision between two alternatives is independent from the existence of more alternatives. In other words, the relative probability of choosing between two alternatives is unaffected by the presence of additional alternatives or the estimates do not change if the set of alternatives changes. The implication of IIA is that the multinomial logit model is not appropriate if the alternatives are close substitutes. Hausman test is used to test for the validity of IIA assumption. The result indicates that the assumption of IIA could not be rejected so estimates from multinomial logit model are efficient.

Table 5 presents marginal effects estimated after running the multinomial logit model. The result shows that households of small size, having lower dependency ratio tend to have less possibility of being poor in both years while households of larger size or having higher dependency ratio appear to have more possibility of falling into poverty or stay poor in both years.

Households in Ha Tinh and Thua Thien Hue appear to be worse off than dwellers Dak Lak, they are even worse off if located in mountainous area of Ha Tinh. Many households of the sample in Dak Lak are located in upland area, however they are mostly immigrants from all over the country, and mostly are Vietnamese (Kinh) so they are able to escape from poverty. Moreover, households in Dak Lak have plenty of land, grow coffee, pepper, rubber, etc., some households may become rich if their crops are of good yield and good price. People living in

Table 5. Estimated marginal effect results of the multinomial logit model

Variables	NP → NP	NP → P	P → NP	P → P
Household size, w1	-0.0989*** (0.0119)	0.000148 (0.00402)	0.0505*** (0.00929)	0.0482*** (0.00627)
Dependency ratio, w1	-0.301*** (0.0707)	0.0274 (0.0254)	0.0546 (0.0598)	0.219*** (0.0425)
Located in Ha Tinh	-0.436*** (0.0588)	0.0892** (0.0372)	0.0593 (0.0492)	0.288*** (0.0547)
Located in Thua Thien Hue	-0.154** (0.0698)	0.0757 (0.0462)	-0.00984 (0.0521)	0.0882 (0.0548)
Located in mountainous/upland area	-0.0706 (0.0637)	0.0540* (0.0282)	-0.0518 (0.0483)	0.0684* (0.0390)
Located in mountain/upland Ha Tinh	-0.0138 (0.0812)	-0.0458*** (0.0152)	0.128* (0.0754)	-0.0686** (0.0309)
Located in mountain/upland T.T. Hue	-0.00964 (0.0996)	-0.0297 (0.0202)	0.0418 (0.0861)	-0.00247 (0.0560)
Female head, w1	-0.000924 (0.0505)	0.0321** (0.0129)	-0.0281 (0.0434)	-0.00298 (0.0293)
Head is Vietnamese (Kinh), w1	0.420*** (0.0464)	-0.0878** (0.0388)	-0.0540 (0.0474)	-0.278*** (0.0552)
Member of political associations, w1	0.0560 (0.0383)	-0.0152 (0.0152)	0.000552 (0.0297)	-0.0413* (0.0232)
Age of head, w1	0.0239** (0.0101)	0.00168 (0.00351)	-0.0105 (0.00808)	-0.0151*** (0.00501)
Age square, w1	-0.000212** (9.77e-05)	-1.51e-05 (3.46e-05)	8.76e-05 (7.87e-05)	0.000140*** (4.87e-05)
Head's year of schooling, w1	0.120*** (0.0292)	-0.0200** (0.00956)	-0.0453* (0.0242)	-0.0544*** (0.0158)
Square of year of schooling, w1	-0.000726*** (0.000212)	0.000137** (6.68e-05)	0.000260 (0.000179)	0.000329*** (0.000114)
Head engage in non-agriculture activities, w1	0.120*** (0.0440)	0.0267 (0.0229)	-0.0816** (0.0336)	-0.0654*** (0.0209)
Head being government servant, w1	0.295*** (0.0609)	-0.0347* (0.0185)	-0.134** (0.0552)	-0.126*** (0.0153)
Head being housewife, w1	0.225*** (0.0825)	0.00298 (0.0528)	-0.134** (0.0612)	-0.0941*** (0.0284)
Head performs occasional and light work, w1	0.112 (0.0714)	0.00623 (0.0328)	-0.0814 (0.0551)	-0.0364 (0.0347)
Number of migrants, w1	0.113*** (0.0233)	0.000646 (0.00760)	-0.0444** (0.0195)	-0.0692*** (0.0153)
Get remittance from household member, w1	-0.0803 (0.0489)	0.00865 (0.0190)	-0.00436 (0.0393)	0.0761** (0.0371)
Get remittance from non-hh member, w1	0.0137 (0.0353)	-0.00772 (0.0126)	-0.0224 (0.0283)	0.0164 (0.0208)
Get social support, w1	-0.0595 (0.0501)	-0.0223* (0.0132)	-0.00503 (0.0388)	0.0869*** (0.0333)
No. of new born members, w2	-0.0535 (0.0540)	0.0289* (0.0165)	-0.0559 (0.0449)	0.0805*** (0.0252)
No. of members got married and joint hh, w2	-0.0696 (0.0923)	-0.0330* (0.0194)	0.111 (0.0845)	-0.00874 (0.0548)
No. of member left household, w2	-0.00408 (0.0334)	0.0222*** (0.00825)	-0.0211 (0.0279)	0.00301 (0.0192)
No. of shocks 2002-07	-0.0113 (0.0401)	0.00761 (0.0145)	-0.0314 (0.0340)	0.0351* (0.0204)
No. of severe shocks 2002-07	0.00167 (0.0182)	0.0214*** (0.00618)	-0.0100 (0.0147)	-0.0130 (0.0102)
No. of shocks 2007-8	-0.0357** (0.0154)	0.00461 (0.00512)	0.0236* (0.0122)	0.00744 (0.00847)
No. of severe shocks 2007-8	0.00616 (0.0191)	-0.00653 (0.00693)	-0.0100 (0.0153)	0.0104 (0.0104)
Observations	1,453	1,453	1,453	1,453

Standard errors in parentheses; P: poor, NP: non-poor; *** p<0.01, ** p<0.05, * p<0.1; w1: survey 2007, w2: 08

mountainous and upland area in Ha Tinh are mostly of ethnic minority groups, infrastructure service there is worse, so they find difficult escaping poverty.

Households have higher probability of falling into poverty if the head is female, less probability of falling into poverty if the head is Vietnamese (Kinh). Households of Kinh group also have higher probability of staying non-poor over the two years, and lower probability of being poor in the same period. The Kinh is the majority in Vietnam, they are advanced in many aspects such as having better education, having better market access, etc. so they find easier to escape poverty than other groups.

If the head is member of political organizations, the household is more likely to stay the same over the two years. There are more than 1500 households the head of which are member of political organizations such as farmer, former war fighter or women associations. Those who are too young, have no land, have permanent job or are disabled belong to none of these associations, therefore they have low level of well-being and stay poor in both periods.

As the head is older, the household have higher probability of staying non-poor but lower probability of staying poor in both years. The marginal effect of age on probability of being poor in both periods is positive while this effect on probability of being non-poor in is negative. This means the older the head is, the less possibility of being poor the household has.

The probability of being non-poor is higher, falling into poverty or staying poor is lower if the head has more years of schooling. The marginal effect of an additional year of schooling on poverty transition is positive for poor households but negative for non-poor households. This implies that for poor households, an additional year of schooling of the head affects strongly on probability of getting better off, but for the non-poor households this effect is less effective.

Households with the head working in non-agricultural, government servants and doing housework have higher probability of being non-poor over the two years, they also have less probability of being poor in one or both years. In Vietnam, working in non-agricultural sectors such as doing non-farm business, being casual labour or being permanently employed in non-agriculture, and being government servants earn more than doing agriculture activities. Farming in rural area in Ha Tinh and Thua Thien Hue are of small scale, using household labour and yielding low income. In Dak Lak, there are a number of households growing coffee and pepper and these households are likely to be non-poor.

The number of migrants from the household as of the survey 2007 correlates positively with the probability of staying non-poor, negatively on the probability of staying poor and negatively with probability of moving out of poverty. This can be explained by looking at the data sets.

Table 6. Number of migrants leaving before 2007 by household groups

No. of migrants	NP → NP	NP → P	P → NP	P → P	Total
1	255	26	84	59	424
2	153	13	20	23	209
3	53	4	10	4	71
4	21	4	1	1	27
5	6	0	0	0	6
6	1	0	0	0	1
Total	489	47	115	87	738

Source: own calculation from *Vulnerability* data

In 2007, there were more than 1000 migrants coming from more than 700 households in the three provinces, most of them are in Ho Chi Minh City or in Southern economic zone (more than 800 migrants) where industry is growing, the rest go to provincial town or other cities. People leave home for university, for finding a job in factories or in construction industry, some for starting a business, and some others for being street vendors. Table 6 shows that the majority of migrants are from households staying non-poor in both years (498 heads).

Many of migrants are students, and only non-poor households are able to send their children to university. In addition, migrants find a job in a new place and have better earning, some send money home. Moreover, as one leave home, he or she no more shares household consumption so well-being per capita of that household gets better.

Remittance from household members appears to affect positively on probability of being poor in both years. This can be explained by the fact that for non-poor households, the majority of their migrants are university students they do not send money home but even take money from home, some others go to cities for working but they do not send money home, they accumulate their money aiming at settling down in new places. For poor households, their migrants work in cities and give money back home to cover household daily subsistence.

Remittance from non-household member such as friends, relative and neighbours, appears to be insignificant because the majority of households in the sample get remittance. It is traditional life in Vietnam, people give money of gifts in occasion of wedding, funeral, birthday, illness, accidents, having a new house, having a new child, etc. The amount of each remittance varies substantially from some thousand Dong (some Dollar cent) to the maximum of 20 million Dong (1000 Dollar), a moped. Therefore, this affect is insignificant.

Public transfer appears to have negative correlation with probability of moving into poverty and positive correlation with probability of staying poor over the two years. Social support includes i) social guarantee fund for regular relief, ii) contingency fund for pre-harvest starvation and disaster relief, iii) hunger eradication and poverty reduction program, iv) allowances for war and veterans and martyrs. The positive impact can be explained by the fact that households receive social support because they are poor. The negative impact implies that public transfer helps non-poor households not to fall back into poverty.

The number of child being born in the household between the two years affects negatively on the probability of staying non-poor and of moving out of poverty, however, this effects are insignificant. It affects positively on the probability of falling into poverty and staying poor in both years. In rural Vietnam, the poor tend to have more child than others because they have lower level of education so they are not fully aware of disadvantage of having many children, they also unable to apply family planning methods. Another reason is that they are poor so their children tend to be undernourished and illness so there is a high risk of a child being died, so to be safe they have more children. Giving birth to a child incurs some cost of taking care of the mother, going to hospital and the foregone earning for some months during the time of taking care of the baby. Having one more child, total household income is shared for one more member, so income per capital of the household is lowered.

The number of people got married and joint the household affect negative and significantly on the probability of falling into poverty. As the household has a new comer, it has addition labour and hence income generator, thus contribute to the well-being of the household. In contrast, the number of people permanently left the household affect positively on the probability of falling into poverty. Those who leave the household are ones getting married and live with other households, getting divorced or separated, forming new households, etc. They are one of the main income earners of the household so their leaving affect negatively on the well-being of the household.

The number-of-shocks affecting the household during the five years before 2007 has negative correlation with probability of staying poor in years 2007 and 2008. The shocks become significantly positive to the possibility of falling into poverty if they seriously affect income and assets of the households. In consistence with this result, the number-of-shocks happening between the two years affects negatively on the probability of staying non-poor over the same period. However, it appears to have positive effect on the probability of moving out of poverty.

6. Conclusions

This paper uses two waves of rich panel data set on 2000 households from *Vulnerability* surveys 2007, 2008 and a multinomial logit model to examine dynamics of poverty in rural Vietnam. This study aims at updating the poverty profile in rural Vietnam by assessing empirically the determinants of the household poverty status.

The result shows that household characteristics such as household size, dependency ratio, location are associated with household poverty status. Households of small size, have less number of dependents are more likely to be non-poor while the others have higher possibility of either stochastically poor or structurally poor. Households located in remote area also have higher probability of being poor.

The result also supports the point that characteristics of household head such as sex, ethnic group, participating social associations, age, education attainment and occupation are drivers of household transition into and out of poverty. Households headed by female are more vulnerable to poverty. In consistence with other's finding, this paper again emphasizes that ethnic minority groups benefit less from economic growth. Education is also a key factor of poverty transition. Having better education people have better access to markets of labor, financial, production inputs and outputs, etc., enabling them to move forward. Education also enables one to know how to employ the asset he has to generate income. Households engaging in agriculture activities find it hard to escape poverty because agriculture yield low income and be vulnerable to weather shocks. Therefore, creating more jobs choices in rural area would help.

The finding supports the relationship between household social assets and its poverty changes in some points but does not in some others. People from non-poor households have more likely to migrate more than others. Always-poor households tend to rely much on remittance from its members than households of other groups. Remittance from non-household members appears not to correlate with household's poverty status. Social support helps non-poor households to against falling into poverty but there is no support that it helps always-poor households go up.

The evidence assists the point that household dynamics such as migration, changes in households size matters poverty status. Migrants go to different places, which are often better for them in terms of human capital accumulation and of job opportunity, making household economic activities more dynamic and hence higher income and less vulnerable to risks such as agriculture or weather and shocks. Poor and nearly poor household are vulnerable so as they have a new child, it is difficult for them to escape from or likely to fall into poverty. This implies policies should concern about family planning especially to the poor. Nearly-poor households having someone left because of death, getting divorced or separated, or migration, etc. become worse off because they loss an income generator.

Finally, the result shows that shocks generally affect badly on household's moving out of poverty, staying non-poor, and escaping poverty. Rural households have low level of asset, low level of well-being so they are vulnerable to shocks and risks. Some households experienced many shocks in the same years such as a hurricane destroy the house; it is followed by heavy rain, and then a flood destroying crop and everything. Some households experienced series of shocks happening one after another such as one ill seriously and spent a lot for medical treatment, then he died, the household has to spent money for the funeral. Ha Tinh and Thua Thien Hue are vulnerable to natural disasters such as storms, floods, flash floods, heavy rainfall and drought, etc. In 2007 and 2008 high inflation also affected household livelihood, especially poor and nearly poor households.

References

- Alisjahbana, A. and A.A. Yusuf, 2003, 'Poverty Dynamics In Indonesia: Panel Data Evidence', *Working Paper in Economics and Development Studies*, No. 200303, Center for Economics and Development Studies, Department of Economics, Padjadjaran University, Indonesia.
- Bane, M.J. and D. Ellwood, 1986, 'Slipping Into and Out of Poverty: The Dynamics of Spells', *Journal of Human Resources*, Volume 21, No. 1, Winter, 1-23.
- Barrett, C.B. and M.R. Carter, 2001, 'Can't Get ahead for Falling behind: New Directions for Development Policy to Escape Poverty and Relief Traps', *Choices* 16, 4: 35-38.
- Barret, C.B., 2003, 'Rural Poverty Dynamics: Development Policy Implications', *Working Paper* 2003-30, Department of Applied Economics and Management, Cornell University, New York.
- Baulch, B. and J. Hoddinot, 2000, 'Special Issue on Economic Mobility and Poverty Dynamics in Developing Countries', *Journal of Development Studies*, Vol. 36: 6, 1-24.
- Baulch, B., and N. McCulloch, 2002, 'Being Poor and Becoming Poor: Poverty Status and Poverty Transitions in Rural Pakistan', *Journal of Asian and African Studies* 37: 168.
- Baulch, B. and E. Masset, 2003 'Do Monetary and Non- monetary Indicators Tell the Same Story about Chronic Poverty? A Study of Vietnam in the 1990s', *World Development*, vol. 31 (3): 441-453.
- Becker, G., 1975, *Human Capital*. 2nd ed., Chap. 2, New York: Columbia University Press.
- Becker, G., 1992, 'The economic way of looking at life', *John M. Olin Law and Economics Working Paper* No. 12, The Law School, University of Chicago, US.
- Berg, M. and Kumbi, B., 2006, 'Poverty and the Rural Non-Farm Economy in Oromia, Ethiopia', International Association of Agricultural Economists Conference, Gold Coast, Australia.
- Besley, T., 1995, Savings, Credit and Insurance. *Handbooks in Economics*, Vol. 9, Vol 3A: pp. 2123-2207, Elsevier Science, North Holland: Amsterdam.
- Bester, H., 1985, 'Screening vs. rationing in credit markets with imperfect information', *American Economic Review*, Vol. 75, No. 4, 850-855.
- Bhide, S. and A.K. Mehta, 2003, 'Tracking Poverty Through Panel Data: Rural Poverty in India 1970-1998', *CPRC-IIPA Working Paper* 28, Chronic Poverty Research Centre, Manchester, UK.
- Bigsten, A., K. Bereket, S. Abebe and M. Taddesse, 2003, 'Growth and Poverty Reduction in Ethiopia: Evidence from Household Panel Surveys', *World Development*, Elsevier, vol. 31(1), 87-106.
- Binswanger, H.P. and J. McIntire, 1987, 'Behavioural and Material Determinants of Production Relations in Land-abundant Tropical Agriculture', *Economic Development and Cultural Change*, Vol. 36, No. 1, pp. 73 - 99.
- Blank, R. and D. Card, 1993, 'Poverty, Income Distribution and Growth: Are they Related?', *Brookings Papers on Economic Activity*, Vol. 2, 285-339.
- Bloom, D.E. and J.D. Sachs, 1998, 'Geography, Demography and Economic Growth in Africa', *Brookings Papers on Economic Activity*, 2: 207-273.

- Burgess, S.M. and C. Propper, 1998, 'An Economic Model of Household Income Dynamics with an Application to Poverty Dynamics among American Women', *CASE paper 9*, Centre for Analysis of Social Exclusion, London: London School of Economics.
- Cancian, M. and D. Reed, 2001, 'Changes in Family Structure', in *Understanding Poverty*, Danziger, S. and R. Haveman, (eds.) New York: Russell Sage Foundation, 69-96.
- Cappellari, L. and S.P. Jenkins, 2002, 'Modelling low income transitions', *DIW Berlin Discussion Paper 288*, DIW Berlin, Germany.
- Carter, M. R. and J. May, 1999, 'Poverty, livelihood and class in rural South Africa', *World Development*, 27, pp. 1–20.
- Carter, M. and C. Barrett, 2001, 'One Kind of Freedom: Poverty Dynamics in Post-apartheid South Africa', *World Development*, Vol. 29, No. 12, pp. 1987-2006.
- Carter, M. and C. Barrett, 2006, 'The Economics of Poverty Traps and Persistent Poverty: An Asset-Based Approach', *Journal of Development Studies*, Vol. 42, No. 2, 178–199.
- CCFSC (Central Committee for Flood and Storm Control), 2007, 'Summary of damages caused by natural disasters in 2007', online <http://www.ccfsc.gov.vn>.
- CCFSC (Central Committee for Flood and Storm Control), 2009, 'Summary of damages caused by natural disasters in 2008', online <http://www.ccfsc.gov.vn>.
- Cellini, S.R., S.M. McKernan and C. Ratcliff, 2008, 'The Dynamics of Poverty in the United States: A Review of Data, Methods, and Findings', *Journal of Policy Analysis and Management*, Vol. 27, No. 3, 577–605.
- Christiaensen, L., V. Hoffmann and A. Sarris, 2007, 'Gauging the Welfare Effects of Shocks in Rural Tanzania', *Policy Research Working Paper 4406*.
- Danziger, S. and P. Gottschalk, 1985, 'The Impact of Budget Cuts and Economic Conditions on Poverty', *Journal of Policy Analysis and Management*, Vol. 4, No. 4, 587-593.
- Deaton, A., 1992, *Understanding Consumption*, Oxford: Clarendon Press.
- Dercon, S., 1998, 'Wealth, risk and activity choice: cattle in Western Tanzania', *Journal of Development Economics*, 55, 1: 1–42.
- Dercon, S. and P. Krishnan, 2000, 'Vulnerability, Seasonality and Poverty in Ethiopia', *Journal of Development Studies*, 36-6: 25-53.
- Dercon, S., and J. S. Shapiro, 2007, 'Moving On, Staying Behind, Getting Lost: Lessons on Poverty Mobility from Longitudinal Data, in Narayan, D. and P. Petesch (eds.), 2007, *Moving out of Poverty, Volume 1: Cross-Disciplinary Perspectives on Mobility*, Washington, D.C.: Palgrave, Macmillan and the World Bank.
- Doeringer, P.B. and M.J. Piore, 1971, *Internal Labor Markets and Manpower Analysis*, Lexington, Health and Company.
- Donald R. Davis, E. David and E. Weinstein, 1998, 'Market Access, Economic Geography and Comparative Advantage: An Empirical Assessment', online <http://www.columbia.edu/~dew35/PDF/geo3.pdf>
- Dornbusch, R. and S. Fischer, 1990, *Macroeconomics*, 5th ed., New York: McGraw-Hill.
- Duncan, G.J., 1984, *Years of Poverty, Years of Plenty*, Ann Arbor, MI: Institute for Social Research, University of Michigan.

- Duncan, G. J., and W. Rodgers, 1988, 'Longitudinal aspects of childhood poverty', *Journal of Marriage and the Family*, 50, 1007–1022.
- Easterly, W., 2001, *The Elusive Quest for Growth*. Cambridge: MIT Press.
- Eller, T. J., 1996, 'Who Stays Poor? Who Doesn't?', (Current Population Reports. Dynamics of Economic Well-Being: Poverty 1992–1993, P70–55), Washington, DC: Census Bureau.
- Fafchamps, M. and S. Lund, 2003, 'Risk-Sharing Networks in Rural Philippines', *Journal of Development Economics*, 71-2: 261-287.
- Fox, W., 1994, 'Strategic options for urban infrastructure management', *Urban Management Programme Policy Paper 17*, Washington, DC: World Bank.
- Galor, O. and J. Zeira, 1993, 'Income distribution and macroeconomics', *Review of Economic Studies*, 60(1), pp. 35–52.
- Gallup, J.L. and J.D. Sachs, 1998, 'Geography and Economic Growth', in B. Pleskovic and J.E. Stiglitz, eds., *Proceedings of the Annual World Bank Conference on Development Economics*, Washington: World Bank.
- Glewwe, P., N. Agrawal and D. Dollar (eds.), 2004, *Economic Growth, Poverty, and Household Welfare in Vietnam*. Washington, D.C.: The World Bank.
- Glewwe, P., M. Gragnolati and H. Zaman, 2002, 'Who Gained from Vietnam's Boom in the 1990s?', *Economic Development and Cultural Change*, 50(4), 773-92.
- Goldberg, P. and N. Pavcnik, 2003, 'The Response of the Informal Sector to Trade Liberalization', *Journal of Development Economics*, 72: 463–96.
- Gottschalk, P. and S. Danziger, 1993, 'Family Structure, Family Size, and Family Income: Accounting for Changes in the Economic Well-Being of Children, 1968-1986', in *Uneven Tides: Rising Inequality in America*, (eds.) Danziger, S. and P. Gottschalk, New York: Russel Sage Foundation.
- Greene, W. H., 2000, *Econometric Analysis* (4th edition). New Jersey: Prentice-Hall.
- GSO (General Statistics Office), 2009, 'Foreign direct investment projects licensed in period 1988 – 2008', online <http://www.gso.gov.vn>.
- GSO, 1933 – 2009, VLSS data sets of 1993, 1998, 2002, 2004, 2006, 2008, Hanoi, Vietnam.
- GSO, 2010, *Result of the survey on household living standards 2008*, Hanoi: Statistical
- Iceland, J., 1997, 'Urban Labor Markets and Individual Transitions out of Poverty', *Demography*, Vol. 34, No. 3, 429-441.
- Index Mundi, 2011, [Population below poverty line, Vietnam], online www.indexmundi.com.
- Justino, P. and J. Litchfeld, 2003a, 'Welfare in Vietnam during the 1990s: poverty, inequality and poverty dynamics', *PRUS Working Paper No.8*, Poverty Research Unit at Sussex, University of Sussex, UK.
- Justino, P. and J. Litchfeld, 2003b, 'Poverty Dynamics in Rural Vietnam: Winners and Losers during Reform', *PRUS Working Paper*, Poverty Research Unit at Sussex, University of Sussex, UK.
- Justino, P., J. Litchfield and T.H. Pham, 2008, 'Poverty Dynamics during Trade Reform Evidence from Rural Vietnam', *Review of Income and Wealth*, Series 54, Number 2.
- Haughton, J. and S.R. Khandker, 2009, *Handbook on Poverty and Inequality*, Washington, DC:

World Bank.

- Hoddinott, J. and B. Kinsey, 2001, 'Child growth in the time of drought', *Oxford Bulletin of Economics and Statistics* 63, 4: 409-436.
- Hoynes, H.W., M.E. Page and A.H. Stevens, 2006, 'Poverty in America: Trends and Explanations', *Journal of Economic Perspectives*, Vol. 20, No. 1, Winter, 47-68.
- Kazianga, H. and C. Udry, 2006, 'Consumption Smoothing? Livestock, Insurance and Drought in Rural Burkina Faso', *Journal of Development Economics*, 79-2: 413-446.
- Kedir, A.M. and A. McKay, 2005, 'Chronic poverty in urban Ethiopia: panel data evidence', *International Planning Studies*, 10:1, 49-67.
- Krugman, P.R., 1991, 'Increasing Returns and Economic Geography', *Journal of Political Economy* 99 (3): 483-99.
- Krugman, P.R., 1995, *Development, Geography, and Economic Theory*, Cambridge: MIT Press.
- Lawson, D., A. McKay and J. Okidi, 2003, 'Factors affecting poverty dynamics and persistence in Uganda', presented at Staying Poor: Chronic Poverty and Development Policy, Institute for Development Policy and Management, University of Manchester, 7-9 April 2003. Chronic Poverty Research Centre (CPRC), Manchester, UK.
- Lawson, D., A. McKay and J. Okidi, 2006, 'Poverty persistence and transitions in Uganda: A combined qualitative and quantitative analysis', *Journal of Development Studies*, 42:7, 1225-125.
- Lewis, O., 1968, *La Vida*. London: Panther Books, in Cellini, S.R., S.M. McKernan and C. Ratcliff, 2008, 'The Dynamics of Poverty in the United States: A Review of Data, Methods, and Findings', *Journal of Policy Analysis and Management*, Vol. 27, No. 3, 577-605.
- Lillard, L. A. and R.J. Willis, 1978, 'Dynamic aspects of earning mobility', *Econometrica*, 46, 985-1012.
- Litchfield, J. and P. Justino, 2004, 'Welfare in Vietnam during the 1990s: Poverty, inequality and poverty dynamics', *Journal of the Asia Pacific Economy*, 9:2, 145-169
- Loury, G.C., 1981, 'Intergenerational transfers and the distribution of earnings', *Econometrica*, 49, pp. 843-67.
- Marjit, S., Kar, S., and Beladi, H., 2007, 'Trade reform and informal wage', *Review of Development Economics*, 11: 313-320.
- Masika, R., S. Baden, 1997, 'Infrastructure and Poverty: A Gender Analysis', Report prepared for the Gender Equality Unit, Sida, Report No. 51.
- Mayo, E., T. Fisher, P. Conaty, J. Doling and A. Mullineux, 1998, *Small is Bankable, Community reinvestment in the UK*, New Economics Foundation, Birmingham, UK.
- McCulloch, N. and B. Baulch, 1999, 'Distinguishing the Chronically from the Transitory Poor: Evidence from Pakistan', *IDS Working Paper 97*, Institute of Development Studies, University of Sussex, Brighton, UK.
- McKay, A., and D. Lawson, 2002, 'Chronic Poverty: A Review of Current Quantitative Evidence', *CPRC Working Paper No 15*, Chronic Poverty Research Centre, Manchester, UK.

- McKernan, S.M. and C. Ratcliffe, 2002, 'Transition Events in the Dynamics of Poverty', *The Urban Institute Working Paper*, online <http://www.urban.org/url.cfm?ID=410575>.
- Minot, N., B. Baulch and M. Epprecht, 2003, *Poverty and inequality in Vietnam: Spatial patterns and geographic determinants*, Food Policy Research Institute and the Institute for Development Studies.
- Naifeh, M., 1998, 'Trap Door? Revolving Door? Or Both?', (Current Population Reports. Dynamics of Economic Well-Being: Poverty 1992–1993, P70–63), Washington, DC: Census Bureau.
- NCNDP (National Committee of Natural Disaster Prevention), 2011, online <http://www.ccfsc.gov.vn>.
- Nguyen, T. D.T. Le, H.D. Vu, T.P. Nguyen, 2009, 'Poverty, Poverty Reduction and Poverty Dynamics in Vietnam', *Background Paper for the Chronic Poverty Report 2008-09*, Chronic Poverty Research Centre, Manchester, UK.
- Nguyen, V.N, Nguyen, N.S. Pham, T.H, 2008, 'Poverty reduction in Vietnam with new challenges', presented at Poverty, Singapore.
- Nimi, Y., P. Vasudeva-Dutta and A. Winters, 2003, 'Trade Liberalization and Poverty Dynamics in Vietnam', *PRUS Working Paper No. 17*, Poverty Research Unit at Sussex, University of Sussex, UK.
- Patridge, D.M. and D.S. Rickman, 2008, 'Distance from Urban Agglomeration Economies and Rural Poverty', *Journal of Regional Science*, 48:2 258-310.
- Phelps, E.S., 1972, 'The Statistical Theory of Racism and Sexism', *American Economic Review*. Vol. 62, No. 4, 659-661.
- Phung, D. T. and P. Nguyen, 2007, 'Vietnam Household Living Standard Surveys 2002 and 2004: Basic Information', in Nguyen, T. and H. Hansen, (eds.), 2007, *Market, Policy, and Poverty Reduction in Vietnam*, Hanoi: Cultural and Information.
- Prasad, K., P. Belli and M. Das Gupta, 1999, 'Links Between Poverty, Exclusion and Health', World Bank background paper for the World Development Report 2000/2001.
- PWT (Penn World Table), 2011, online <http://pwt.econ.upenn.edu>.
- Quisumbing, A.R., 2007, 'Investments, bequests, and public policy_intergenerational transfers and the escape from poverty', *CPRC Working Paper 98*. Chronic Poverty Research Centre, Manchester, UK.
- Rank, M. and T. Hirschl, 1999a, 'Estimating the Proportion of Americans Ever Experiencing Poverty During their Elderly Years', *The Journals of Gerontology*, Vol. 54B, Issue 4, S184-194.
- Rank, M. and T. Hirschl, 1999b, 'The Likelihood of Poverty across the American Adult Life Span', *Social Work*, Vol. 44, No. 3, May 201-216.
- Redding, S. and A.J. Venables, 2004, 'Economic geography and international inequality', *Journal of International Economics* 62, 53- 82.
- Rios, V. 2009, 'Can poverty be reduced everywhere? The role of location in poverty-relief policy efficiency', online <http://www.gov.harvard.edu>.

- Ruggles, P. and R. Williams, 1987, 'Transitions in and out of poverty: New data from the Survey of Income and Program Participation', U.S. Department of Commerce, Bureau of the Census, No. 8716, Washington, DC: Bureau of the Census.
- Schiller, B., 1976, *The economics of poverty and discrimination* (2nd ed.), Englewood Cliffs, NJ: Prentice-Hall.
- Sida, 1996, *Promoting Sustainable Livelihoods*, Stockholm: Swedish International Cooperation Development Agency.
- Stevens, A.H., 1994, 'The Dynamics of Poverty Spells: Updating Bane and Ellwood', *The American Economic Review*, Vol. 84, No. 2, Papers and Proceedings of the Hundred and Sixth Annual Meeting of the American Economic Association (May, 1994), pp. 34-37.
- Thoma, T., L. Christiaensen, Q.T. Do, D.T. Le, 2010, 'Natural Disasters and Household Welfare: Evidence from Vietnam', *Policy Research Working Paper 5491*, Washington, DC: The World Bank.
- Tomlinson, M. and R. Walke, 2010, 'Recurrent poverty: the impact of family and labour market changes, Joseph Rowntree Foundation', online <http://www.jrf.org.uk>.
- UNISDR, 2009, 'Global Assessment Report on Disaster Risk Reduction', United Nations International Strategy for Disaster Reduction Secretariat: Geneva.
- VASS (Vietnam Academy of Social Studies), 2010, Poverty in Vietnam, presented at Poverty Assessment in Vietnam, Ho Chi Minh City, Vietnam.
- Vulnerability in Southeast Asia, 2007, 'Survey Samples in Thailand and Vietnam', online www.vulnerability-asia.uni-hannover.de.
- Wilson, W. J., 1991, 'Studying inner-city social dislocations: The challenge of public agenda research: 1990 presidential address', *American Sociological Review*, 56, 1–14.
- World Bank, 1994, *World Development Report 1994: Infrastructure for Development*, Oxford: Oxford University Press.
- World Bank, 1999, 'Voices of the poor', Synthesis of Participatory Poverty Assessments funded by The World Bank and DFID in Partnership with ActionAid Vietnam, Oxfam (GB), Save the Children (UK) and Vietnam-Sweden MRDP, Ha Noi, Viet Nam.
- Woolard, I. and S. Klasen, 2005, 'Determinants of Income Mobility and Household Poverty Dynamics in South Africa', *The Journal of Development Studies*, Vol.41, No.5, pp. 865-897.
- Zimmerman, F. J. and M. R. Carter, 2003, 'Asset smoothing, consumption smoothing and the reproduction of inequality under risk and subsistence constraints', *Journal of Development Economics*, 71, pp. 233–60.