Chapter 6
Micro-determinants of Household Welfare, Social Welfare, and Inequality in Vietnam

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Abstract

This paper adopts the methodology of Wodon (1999) and applies it to the data from the Vietnam (Household) Living Standard Surveys in order to identify the micro-determinants of household welfare, social welfare, and inequality in Vietnam during the period 1993–2002. We find that, on average, Vietnamese people enjoyed an absolutely improved standard of living during the study period. At the same time, social welfare was also improved remarkably from 1993 to 2002 in absolute terms. However, the increase in income was accompanied by a rapid rise of inequality during 1993–1998, and a slight decrease in inequality during 1998–2002. The study reconfirms the determinants of the Vietnamese household welfare that were found in previous studies, in which occupation, educational level of the household head, and the geographical location where the households reside are still important factors.

1. Introduction

The Vietnamese government has notched up substantial achievements in economic growth as well as in the reduction of poverty. Those results have been achieved by the reform of a number of policies since the early of 1990s. Booming trade was marked by the deregulation in the trade regime in the early 1990s. The country actively joined free trade area and economic cooperation organizations such as the ASEAN Free Trade Area (AFTA) in 1995 and the Asia-Pacific Economic Cooperation (APEC) in 1998; Vietnam signed bilateral trade agreements with important partners like the European Union in 1992 and the United States in 2000. In addition, foreign direct investment also was legalized in 1987. The private sector was recognized as an important sector by the

enactment of the Law on Enterprise in 2000. The privatization process of state-owned enterprises, though it has not proceeded as expected, has still contributed positively to the corporate sector. In the agricultural sector, land rights were granted to individuals and farmers were allowed to trade their products in the market without any restriction. In addition, the government adopted policies for budgetary reform and financial sector reform in an attempt to produce macro-economic stability, which facilitates economic growth. With such reforms, Vietnam has achieved a remarkable average economic growth rate of 7.5 per-cent since 1990 (General Statistics Office [GSO], 2004). This growth has absolutely increased household welfare and reduced the poverty rate (Glewwe *et al*., 2000).

The impact of economic growth and trade liberalization on poverty and inequality as well as household welfare in Vietnam has been a topic of interest for many researchers. Notable studies include Glewwe *et al*. (2000), Justino and Julie (2003), Niimi *et al*. (2003), and Seshan (2005). A common point in the studies that have been completed is that they only cover the period 1993–1998 because they are based on two Vietnam Living Standard Surveys (VLSS): VLSS9293 and VLSS9798. In these surveys the evidence of the posi-tive impact of economic growth on household welfare and equality was rela-tively clear to observe because in the early 1990s the country had just started its transition from a highly centrally planned economy, in which most Vietnamese people were living in poverty, to a socialist-oriented market economy. Starting in 1998, however, the impact of economic growth on household welfare and equality appears to be mixed and is more difficult to identify because from this time the government strongly deregulated a number of restrictive trade policies to implement its commitments for entry to the AFTA and to prepare to enter the World Trade Organization (WTO). Since 1998, in parallel with a more open trade regime, Vietnam has also had to deal with a number of trade claims from other countries, such as for an anti-dumping price of fish by the United States and for shrimp by the European Union. These claims are likely to have negative impacts on households.

No comprehensive academic analysis of this period is yet available. Furthermore, no study has yet been attempted to investigate the changes in social welfare induced by economic growth during the period 1993–2002. This

is an important area for policy makers; analysis of the impact of economic policies at different points in time on households would provide a basis for policy adjustment.

Such an analysis is conducted in this paper using the most up-to-date household data from VLSS9293, VLSS9798, and the Vietnam Household Living Standard Survey 2002 (VHLSS2002). The next section of this paper describes these surveys in detail. The third section of the paper investigates the micro-determinants of Vietnamese household welfare in 1993–2002 and highlights the differences in welfare received among different households and socio-economic groups. The fourth section uses the dominance theories of Lorenz and Generalized Lorenz, as well as the social evaluation functions to examine the dynamics of social welfare and trace out the sources of changes in equality. Some concluding remarks are provided in the last section.

2. The Vietnam (Household) Living Standard Surveys (VLSS and VHLSS)

Three surveys were carried out by the General Statistics Office (GSO) of Vietnam in the past fifteen years. The first survey was carried out in 1992–93 (namely, VLSS9293) by the cooperation of the State Planning Committee and the GSO, with financial contributions from the United Nations Development Program (UNDP) and the Swedish International Development Agency (SIDA) and technical assistance from the World Bank. This survey covered 4,800 households nationwide and included a household survey, a community survey, and a market price survey. In the household survey, topics covered included household size and composition, health, anthropometric measures of nutrition, education, housing characteristics, migration, employment, non-farm enterprises, agriculture, other income, expenditure and food consumption, ownership of consumer durables, and savings and credit.

The second survey was conducted between December 1997 and December 1998 (namely, VLSS9798) by the GSO, with financial support from the UNDP and SIDA and technical assistance from the World Bank. Like VLSS9293, this survey included a household survey, a community survey, and a market price survey. Different from VLSS9293, in VLSS9798 a

survey of health centers was added. The household questionnaire covered the same topics as the VLSS9293 and was administrated to 6,000 households. Interestingly, about 4,302 households which were interviewed in VLSS9293 again participated in VLSS9798, creating a panel data which is a good source for analysis.

The Vietnam Household Living Standards Survey was carried out in 2002 (VHLSS2002) by the GSO with financial support from the Japanese Bank for International Cooperation (JBIC) and technical assistance from the World Bank. The VHLSS2002 was divided into two parts. In the first part, a small questionnaire (36 pages) was administered to about 60,000 households and a large questionnaire (43 pages) was administered to a smaller sample of about 15,000 households. The large questionnaire has an expenditure module, allowing calculation of more reliable expenditure-based estimates of living standards. The large VHLSS2002 questionnaire is similar to the VLSS questionnaire except that some modules are not included (anthropometrics, migration, and savings and credit) and most of the other modules are simplified. Moreover, the household questionnaire in VHLSS2002 is also simplified compared with the previous ones. However, the household questionnaire in VHLSS2002 has a significant advantage in that it combines the main sections of two surveys: the household economic survey and the household living standards survey. Thus, indicators in VHLSS2002 are still compatible with previous surveys.

3. Micro-determinants of Household Welfare and Welfare Growth

3.1. Expenditure data

The following paragraphs explain briefly how total household expenditure is computed, based on data collected from the surveys.

Total annual expenditure consists of five components:

- Consumption expenditure on food and nonfood (nondurable goods)
- Value of home-product food consumed
- Value of goods in-kind received (such as food and housing) beside wages
- Estimated used value of durable goods owned by the household

• Rental value of the dwelling occupied by the household.

To collect information, the interviewer asks household representatives for their household expenditure on 45 food items and the value of foodstuffs produced and consumed by the household. It is noted that the Tet holidays, the Vietnamese New Year, are a special event for every household, and people therefore tend to spend more on these days (approximately 2 weeks). Since some goods consumed on these days are different from usual days, additional questionnaires are given to obtain information of expenditure on Tet holidays and other holidays (mostly weekend days). Expenditure on 68 nonfood items as well as expenditure on health, education and utility expenditure are also collected. In some cases, employees may also receive goods and services from their employer in addition to their wages. Such payments were also considered as expenditure and are added to consumption expenditure.

Durable goods, once purchased, will certainly increase the well-being of a household for a certain period of time. Of course, the well-being cannot be completely utilized in the year of purchase. This purchase value of the well-being (consumption) therefore should be divided for the years following the year of purchase, using depreciation rates. The depreciation rates are computed based on current value and purchased value. These rates are used to calculate the value of 13 different kinds of durable goods. Finally, the annual rental value of housing also makes up a large portion of expenditure and is added to the expenditure of households. Since the number of households which rent dwellings at a market rate is relatively small, for the sake of simplicity the annual rental value is assumed to be 3 percent of the current estimated value of the dwelling. Summing up the above consumption expenditures yields a good measure of household welfare. Because the price of a good differs across the regions within the country, total consumption expenditure is adjusted using a regional prices table. Finally, the real total expenditure is then divided by household size to obtain real per capita household expenditure.

3.2. Methodology

The model used is adapted from Wodon (1999). The determinants of household welfare[1] can be established by a multiple regression as follows.

$$\log (y_i)] = \beta_i X_i + u_i, \tag{1}$$

where $\log (y_i)$ is log of real expenditure per capita; and X_i are categorical variables presenting characteristics of households which likely affect the expenditure per capita[2].

According to Wodon (1999), due to the properties of the linear regressions, the expected consumption levels of households obtained by conditioning on the household's sample mean must equal the actual mean values observed in the sample. This then provides a good way to examine the impact of household characteristics and the return to these characteristics on growth. If X_M is denoted as the mean characteristics of all households, the growth in household per capita expenditure from time t to time $t+1$ can be decomposed as follows:

$$Growth \approx E^{t+1}[\log(Y_M)] - E^t[\log(Y_M)] = (\beta_M^{t+1} - \beta_M^t)X_M^t + \beta_M^t(X_M^{t+1} - X_M^t) + U. \tag{2}$$

In equation (2), $(\beta_M^{t+1} - \beta_M^t)X_M^t$ represents the impact of changes of returns to those characteristics; $\beta_M^t(X_M^{t+1} - X_M^t)$ represents the impact of changing characteristics of the household.

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[1] Expenditure is chosen as proxy for household welfare because expenditure is a good proxy for permanent income and thus also for long-term average well-being (Balisacan et al., 2003). For example, a low-income household can withdraw its savings or borrow money to consume and maintain its relative living standard. In contrast, a high-income but highly indebted household has to cut down on part of its income to pay off the debt. Moreover, data on expenditure are less difficult to gather than those on income, especially for developing countries where self-employed individuals are reluctant to provide their earnings precisely. Thus, in this study, as notably used before, household expenditure per capita also is employed as an approximation for household welfare.

[2] In this paper, independent variables used include: (1) Sex of the household head (Male or Female); (2) Area in which household resides (Urban or Rural); (3) Regions (divided into 8 regions: Red River Delta, North East, North West, North Central Coast, South Central Coast, Central Highlands, South East, and Mekong River Delta); (4) Education level of household head (categorized in seven levels: Never, Primary School, Junior High School, High School, Technical Training, Vocational Training, and College or Higher); (5) Occupation of household head (categorized in seven kinds of jobs, including White Collar, Sales/Service, Agriculture, Skilled Worker, Unskilled Worker, and Other Not Working); (6) Ethnicity of household head (actually, there are 54 ethnic majorities in the country, but for the sake of simplicity, ethnicity is divided in three groups: Vietnamese, Chinese, and Others); (7) Religion of household head (like ethnicity, religion is classified into 3 main religious affiliations: Buddhist, None, and Others); and (8) Other variables such as age and age-square of household head as well as log of household size are also added.

3.3. Utilizing cross-sectional data for analysis

The cross-sectional estimates using data from VLSS9293, VLSS9798, and VLHSS2002 are shown in Table 1. There were no difference in expenditure between the households with male heads and the ones with female heads; the fact that the coefficients of household heads are male in all three years shows no statistical significance. Yet, the ethnicity of household heads appears to be an important factor.

The Chinese account for only a small portion of the population (1.85 percent in VLSS9293) but had higher living standards than did the Vietnamese. Specifically, households with heads who are Chinese spent 24 percent[3] more in 1993 and about 19.5 percent more in 1998 than households headed by Vietnamese. Households headed by minorities other than the Chinese had lower standards of living when compared to Vietnamese households.

It is unsurprising that we found higher spending in households located in the urban areas than those of the rural areas. Table 1 also highlights that people living in regions other than the North Central Coast, with the exception of the North West region and the Central Highlands region in 2002, enjoyed a higher well-being than those of the North Central Coast region; however, the degree of benefit diminished during the period 1993–1998 except for in the South East region. In detail, in 1993, expenditure per capita of households in the South East was 57 percent higher than those of the base region—the North Central Coast; in 1998, the difference was up to around 66 percent and about 50 percent in 2002. For the Mekong River Delta region, the expenditure of households in 1998 was still higher than that of the North Central Coast region but it decreased at its sharpest rate from 53 percent in 1993 to 25 percent in 1998. This decrease was probably due to the severe typhoon in late 1997, although the difference had recovered only slightly to 28 percent by 2002.

The results show the returns of education in a trend as expected: higher education levels correlate with higher standards of living. For example, in

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[3] Since the dependent variable is in the form of a logarithm, the difference is *exp(coefficient)*. Here, exp(0.2145) =1.239, so that the difference is nearly 24 percent. Other comparisons are made in the same way

Table 1: Micro-determinants of welfare in Vietnamese households, 1993–2002

	1992–1993			1997–1998			2002		
	Coef.	St. Err.	Mean	Coef.	St. Err.	Mean	Coef.	St. Err.	Mean
HH Head Gender									
HH Head is Male	0.021	0.018	0.7312	0.022	0.0147	0.7293	-0.0094	0.0094	0.7638
(HH Head is Female)									
HH Head Ethnicity									
(Vietnamese)									
Chinese	0.2145**	0.0637	0.0185	0.1782**	0.047	0.0218	0.0008	0.0398	0.0071
Other	-0.2498**	0.0237	0.1177	-0.2862**	0.019	0.1165	-0.0303**	0.0117	0.138
Region									
Red River Delta	0.1176**	0.0205	0.24	0.0966**	0.0209	0.1958	0.1883**	0.0136	0.215
North East	0.0898**	0.0235	0.14	0.03124	0.024	0.1218	0.0321*	0.0143	0.1479
North West	0.1311**	0.0364	0.0267	-0.0741*	0.0375	0.0213	-0.2506**	0.0212	0.0351
(North Central Coast)									
South Central Coast	0.2197**	0.0296	0.0933	0.1068**	0.0244	0.1047	0.1225**	0.0166	0.0933
Central Highlands	0.3007**	0.0588	0.02	0.0637***	0.0365	0.046	-0.1004**	0.0208	0.0572
South East	0.4523**	0.0296	0.14	0.5041**	0.0232	0.2068	0.4055**	0.0166	0.1244
Mekong River Delta	0.4267**	0.0234	0.2067	0.2259**	0.0214	0.1853	0.2443**	0.0137	0.2132
Area									
Urban	0.3299**	0.022	0.2	0.3688**	0.0185	0.2883	0.6844**	0.0108	0.2339
(Rural)									
HH Head Education									
Never	-0.1815**	0.0257	0.3611	-0.1630**	0.0169	0.3962	0.0053	0.011	0.3207
(Primary School)									
Junior High School	0.0558**	0.0188	0.2338	0.0684**	0.0177	0.2052	0.0131	0.011	0.2429
High School	0.1919**	0.0336	0.0467	0.1834**	0.0283	0.055	0.0540**	0.0161	0.0779
Technical Training	0.1060**	0.032	0.0461	0.2128**	0.0305	0.067	0.0619*	0.0289	0.0237
Vocational Training	0.2811**	0.0334	0.0465	0.1466**	0.0294	0.0518	0.0041	0.0201	0.0393
University or Higher	0.4125**	0.0533	0.0216	0.4162**	0.0442	0.0338	0.0787**	0.0227	0.0368
HH Head Occupation									
White Collar	0.2158**	0.0256	0.1102	0.2285**	0.0275	0.0758	0.0029	0.016	0.0687
Sales/Service	0.1752**	0.0423	0.0304	0.2231**	0.0233	0.1057	0.0211	0.133	0.1047
(Agriculture)									
Skilled Worker	0.1615**	0.0452	0.0314	0.1219**	0.0235	0.1008	0.0119	0.0142	0.0979
Unskilled Worker	0.0707**	0.0271	0.0767	-0.0950**	0.0247	0.062	-0.0119	0.0161	0.0808
Other not working	0.0906**	0.0284	0.1067	0.0550***	0.024	0.1204	0.0051	0.0121	0.1329
Log HHsize	-0.2585	0.0175	1.501	-0.364**	0.0171	1.46	-0.2720**	0.0102	1.4106
HH Head age	0.0211**	0.0034	45.3438	0.0236**	0.0034	48.0128	-0.0042*	0.0019	47.55
HH Head age square	-0.00015**	3.6E-05	2271.64	-0.00018**	3.5E-05	2494.82	0.000037*	1.8E-05	2465.1
Constant	6.53**	0.0758		7.36**	0.0813		8.05**	0.0534	
	Obs: 4999, R-squared=0.46			Obs: 5999, R-squared=0.52			Obs: 29532, R-squared=0.36		

Note: Dependent variable is log of total expenditure per capita
:denotes significant level at 1%; *: denotes significant level at 5%; *: denotes significant level at 10%
- Regressions with robust standard errors.
Source: Author's calculations

1993, households with the heads completing a university or higher degree spent 51 percent more than those in which the heads only finished primary school. The same difference also was found in 1998. Less improvement was seen in households with the heads having a high school degree. They only spent 21 and

19 percent in 1993 and 1998, respectively—spending which was higher than those households with heads who only finished primary school. In 2002, these differences were still evident but the magnitudes were much smaller.

Usually, it is expected that people involved in white collar jobs or business work as well as skilled laborers have a higher standard of living compared with those engaged in agricultural and blue collar jobs. The findings of Vietnamese households during this period, without exception, support this expectation. As shown in Table 1, individuals living in households with a head who had a white collar job or a job related to sales/services had a higher expenditure per capita compared to those of the reference occupation—agriculture—and also benefited more than those living in households with a head working in other job categories. However, in 2002 the differences in spending between households with the head being farmers or working in the agricultural sector and other jobs were not evident. It is possibly the case that in 2002, households headed by farmers and other agricultural employees were gradually catching up with the expenditure levels of households of other occupational categories. However, in order to come to a precise conclusion, this finding should be further investigated by using panel data as well as incorporating data of the three surveys, which are estimated in the following sections.

It is worth noting that the "other not working" category in the regression includes not only the unemployed but also those who were retired and not working for any reason (e.g., illness, leave) at the time of interviewing. Hence, one may find that the households headed by individuals adhering to this group had higher living standards than those of the base category.

The age of the household head also affected the expenditure of that household, with higher spending for older household heads, but negative coefficients of *age_square* of the household head in the regressions imply that this disparity will actually decrease at a certain age, which is what we expected.

Importantly, one should be careful when interpreting negative coefficients of the variable *LogHHsize* without taking account of the estimate of equivalence scales as suggested by Deaton (1997). This does not mean that households with more members tend to have lower expenditure per capita than do those with fewer members: if we substitute total expenditure per capita with another welfare indicator and divide total household expenditure by "adult-

scale equivalents," the result is likely to change (Wodon, 1999; Glewwe et al., 2000).

3.4. Micro-determinants of expenditure growth

Table 2 presents micro-determinants of expenditure growth of the two periods 1993–1998 and 1998–2002 using (2) in the methodology based on the results of Table 1.

Table 2: Micro-determinants of expenditure growth

	Change 1993–1998		Change 1998–2002	
	Return	*Characteristics*	*Return*	*Characteristics*
HH Head Gender	**0.0007**	**-0.00004**	**-0.0229**	**0.00076**
HH Head is Male	0.0007	-0.00004	-0.0229	0.00076
(HH Head is Female)				
HH Head Ethnicity	**-0.005**	**0.001**	**0.0259**	**-0.00877**
(Vietnamese)				
Chinese	-0.0007	0.00071	-0.0039	-0.00262
Other	-0.0043	0.0003	0.0298	-0.00615
Region	**-0.0682**	**0.0239**	**-0.0086**	**-0.03409**
Red River Delta	-0.005	-0.0052	0.018	0.00185
North East	-0.0082	-0.00163	0.0001	0.00082
North West	-0.0055	-0.00071	-0.0038	-0.00102
(North Central Coast)				
South Central Coast	-0.0105	0.0025	0.0016	-0.00122
Central Highlands	-0.0047	0.00782	-0.0075	0.00071
South East	0.0073	0.03021	-0.0204	-0.04154
Mekong River Delta	-0.0415	-0.00913	0.0034	0.0063
Area	**0.0078**	**0.0291**	**0.091**	**-0.0201**
Urban	0.0078	0.02913	0.091	-0.02006
(Rural)				
HH Head Education	**0.008**	**0.0024**	**0.0193**	**0.0093**
Never	0.0067	-0.00637	0.0667	0.01231
(Primary School)				
Junior High School	0.0029	-0.0016	-0.0113	0.00258
High School	-0.0004	0.00159	-0.0071	0.0042
Technical Training	0.0049	0.00222	-0.0101	-0.00921
Vocational Training	-0.0063	0.00149	-0.0074	-0.00183
University or Higher	0.0001	0.00503	-0.0114	0.00125
HH Head Occupation	**-0.0149**	**0.0172**	**-0.0504**	**-0.0033**
White Collar	0.0014	-0.00742	-0.0171	-0.00162
Sales/Service	0.0015	0.01319	-0.0214	-0.00022
(Agriculture)				
Skilled Worker	-0.0012	0.01121	-0.0111	-0.00035
Unskilled Worker	-0.0127	-0.00104	0.0052	-0.00179
Other not working	-0.0038	0.00124	-0.006	0.00069
Log HHsize	**-0.1584**	**0.0106**	**0.1343**	**0.01798**
HH Head age	**0.1134**	**0.05632**	**-1.3348**	**-0.01092**
HH Head age square	**-0.0681**	**-0.03348**	**0.5414**	**0.00535**

Note: Total sum may not be equal due to rounding
Source: Author's calculations