

# HOUSEHOLD CONSUMPTION AND INCOME DIVERSIFICATION: THE CASE OF MEKONG RIVER DELTA, VIETNAM

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## Abstract

This study is to examine the link between income diversification and household consumption in Mekong River Delta, Vietnam. Moreover, we also identify the factors responsible for changes in total household consumption over time. Results show a clear link between the occupation of the household head and total household expenditure. After controlling for household size we see that additional labour resources in a household are associated with higher levels of household consumption. In terms of labour-quality, more educated households enjoy higher levels of consumption. In addition, a clear pattern is that returns to female education are substantially higher than returns to male education. Besides, access to land tends to significantly increase total household expenditure. Furthermore, the decomposition results show that changes in characteristics play an extremely limited role in determining changes in consumption (at the mean). While most of the increase in growth may be attributed to changes in returns, as discussed already and as now formally shown through the decomposition, most of the increase in consumption may be attributed to changes in the intercept.

**Keywords:** Vietnam, Mekong River Delta, diversification, household consumption

**JEL classification code:** D13, D14, D31, G31, G50

## 1. INTRODUCTION

The existing studies reveal a mixed picture of the link between diversification into non-farm activities and poverty (Ellis 2000, Lanjouw 2007). According to Lanjouw (2007), the association between a greater share of time allocated to non-farm activities and poverty levels is negative in some parts of the world while positive in others. For example, growth in the non-farm sector has been identified as a source of poverty reduction in China (de Janvry et al. 2005) while a higher share of non-farm income is associated with greater levels of poverty in Pakistan and Kenya (Lanjouw 2007). In Vietnam, based on an analysis of Living Standards Measurement Surveys (LSMS) 1993 and 1998, van de Walle and Cratty (2004) conclude that the development of non-farm self-employment provides a route for moving out of poverty for some households but not for others. Over time households in the Mekong River Delta (MRD) have diversified their sources of income. In particular, there has been an increasing reliance on non-farm wage employment and between 1993 and 2006, the share of time spent on non-farm wage employment has almost tripled in this region, from 7.3 percent in 1993 to 19.8 percent in 2006 (GSO, 2007). Yet, whether the increasing share of time has also led to a reduction in poverty and increased household consumption is not known. This study covers a longer time-period (1993 to 2006) and focuses on a one region of Vietnam to explore the links between household consumption expenditure and income diversification. More specifically, we

examine the relationship between consumption and diversification using a direct approaches. In this approach we introduce a proxy for diversification (occupation of household head) in the poverty and consumption relationships and use cross-section data to examine whether there is any link between diversification and consumption. Moreover, we also identify the factors responsible for changes in total household consumption over time.

## 2. THEORETICAL FRAMEWORK

Theoretically, agricultural household models (AHM) draw a distinction between factors that influence household consumption and household production. However, in the case of the rural MRD, given the high percentage of self-employment and the limited development of agricultural labour markets, it is unlikely that the separability assumption underlying AHM holds. Accordingly, variables that affect production and consumption decisions may be expected to influence household consumption patterns.

## 3. RESEARCH METHODS

### 3.1 Research data

The data used for the analyses in this paper is drawn from five rounds of the Living Standards Measurement Surveys (LSMS) in Vietnam, known as Vietnam Living Standard Survey (VLSS), and integrated with information drawn from other official sources collected by the Vietnam General Statistics Office (GSO). Specifically, data from five MRD samples 1993, 1998, 2002, 2004 and 2006 are utilized. Total household expenditure is composed of (i) consumption expenditure on food and non-food (nondurable goods), (ii) value of home-product food consumed, (iii) value of goods in-kind received (such as food and housing) beside wages, (iv) estimated used value of durable goods owned by the household, and (v) rental value of the dwelling occupied by the household. Total household expenditure and per capita expenditure (PCE) both are measured at the January prices in each year of the study.

### 3.2 Static correlates of total household expenditure

To explore cross-section patterns in total household consumption expenditure, we propose to estimate the following equation.

$$\ln(y_i) = X_i\beta + u_i \quad (1)$$

where,  $\ln(y_i)$  is the natural logarithm of total household expenditure in a given year as defined in section 3.1;  $X_i$  is a vector of observed characteristics;  $\beta$  is a vector of coefficients to be estimated; and  $u_i$  is an error term assumed to be  $N(0, \sigma)$ . The vector of observed characteristics consists of household characteristics, occupation of head, household labour resource, household land resources and communal/provincial variables. The quantity and quality of household labour is captured by three labour-quantity variables and six labour-quality variables. Access to land is captured by the size of a household's landholdings. This variable is of course a part of a household's productive endowments but may also reflect access to capital. Beyond these variables which capture household assets and capacity, consumption is

treated as a function of ethnicity, sex of head of household. Since the dependent variable is household expenditure, household size and its square are also included in the specification. A set of occupation dummies representing the main occupation of the household head is included to examine the link between sector of work and consumption. This is similar to the specification used by Glewwe et al. (2004). Based on information about the most time-consuming job in the past twelve months preceding the survey, household heads are allocated to one of five categories—white-collar jobs, sales or services, agricultural work, non-farm manual work, and joblessness. In the specifications, agricultural work is used as a reference variable. These occupational categories are often included in consumption functions but are clearly endogenous. We treat these dummy variables as proxies for diversification of household into non-farming occupations. The last variable included in this specification is a dummy for households living in communes where there are accessible to paved roads. This variable captures the overall infrastructure and development of the commune. Equation (1) is estimated using OLS and estimates are provided for each of the years (1993, 1998, 2002, 2004, and 2006).

### 3.3 Examining changes in total household expenditure

After assessing the static correlates of consumption, we identify the factors responsible for changes in total household consumption over time. The study applies the well-known Oaxaca method (1973), this method has been widely used in different fields of study, including analysis of gender pay differentials (Adamchik and Bedi, 2003), rural-urban difference in consumption (Wodon 1999), and temporal growth in consumption (Glewwe et al. 2004). At the mean, changes (growth) in consumption may be decomposed into a proportion that may be attributed to changes in observed characteristics (changes in the means of the explanatory variables—for example, changes in education, labour resources) and a proportion that may be attributed to changes in returns to characteristics (estimated parameters). More formally, equation (1) is estimated upon the MRD cross-section samples collected at time  $t$  and  $t+1$ . Then, we can subtract the latter from the former to obtain

$$\begin{aligned} \overline{\ln(y^{t+1})} - \overline{\ln(y^t)} &= \overline{X^{t+1}} \hat{\beta}^{t+1} - \overline{X^t} \hat{\beta}^t \\ \overline{\ln(y^{t+1})} - \overline{\ln(y^t)} &= (\overline{X^{t+1}} - \overline{X^t}) \hat{\beta}^{t+1} + \overline{X^t} (\hat{\beta}^{t+1} - \hat{\beta}^t) \end{aligned} \quad (2a)$$

Or,

$$\overline{\ln(y^{t+1})} - \overline{\ln(y^t)} = (\overline{X^{t+1}} - \overline{X^t}) \hat{\beta}^t + \overline{X^{t+1}} (\hat{\beta}^{t+1} - \hat{\beta}^t) \quad (2b)$$

Where,  $\overline{\ln(y^{t+1})}$  and  $\overline{\ln(y^t)}$  are respectively the mean log of total household consumption Expenditure at time  $t+1$  and  $t$ ;  $\overline{X^{t+1}}$  and  $\overline{X^t}$  represent the means of observed characteristics;  $\hat{\beta}^{t+1}$  and  $\hat{\beta}^t$  are estimated parameters. The first component on the right-hand side of each equation, (2a) and (2b), captures the impact of changing characteristics between  $t$  and  $t+1$  while the second component captures the impact of changing returns to characteristics. Typically, the estimates are sensitive to the set of means and characteristics used as the baseline ( $t$  or  $t+1$ ) and accordingly, estimates based on both (2a) and (2b) are provided.

## 4. FINDINGS AND DISCUSSION

### 4.1 Static correlates of total household expenditure

Table 1 displays estimates of the expenditure equation (equation 1) for the period 1993-2006. Across all years, female-headed households and ethnic minority groups experience far lower levels of consumption. As far as female-headed households are concerned, their consumption levels are between 3.9 to 10 percent lower than male-headed households. Except for 1998, belonging to a minority group is associated with 14.4 to 24.2 percent less consumption as compared to the majority group. Controlling for other household attributes, there is evidence of economies of scale with regard to total household consumption expenditure, indicated by strongly significant coefficients on household size and household size squared in all sets of regression results. According to this, total household expenditure reaches its maximum at a household size of 8-10 members.

**Table 1: Results of regression on (log) total household expenditure (equation 1)**

| Variables                                | 1993          | 1998          | 2002          | 2004          | 2006          |
|--|---------------|---------------|---------------|---------------|---------------|
| <b>Mean log of household expenditure</b> | <b>8.692</b>  | <b>9.216</b>  | <b>9.378</b>  | <b>9.532</b>  | <b>9.775</b>  |
|  | <b>(.588)</b> | <b>(.473)</b> | <b>(.545)</b> | <b>(.569)</b> | <b>(.597)</b> |
| <b>Household characteristics</b>         |               |               |               |               |               |
| Female head = 1                          | -.100**       | -.068**       | -.039**       | -.049*        | -.066**       |
|  | (.043)        | (.032)        | (.020)        | (.028)        | (.029)        |
| Ethnic minority = 1                      | -.242**       | -.088         | -.207***      | -.144***      | -.214***      |
|  | (.096)        | (.097)        | (.037)        | (.052)        | (.041)        |
| Household size                           | .223***       | .226***       | .208***       | .198***       | .254***       |
|  | (.027)        | (.024)        | (.019)        | (.028)        | (.027)        |
| Household size squared                   | -.011***      | -.014***      | -.013***      | -.011***      | -.013***      |
|  | (.002)        | (.002)        | (.002)        | (.003)        | (.003)        |
| <b>Occupation of head</b>                |               |               |               |               |               |
| White-collar job = 1                     | .250**        | .294***       | .117***       | .187***       | .214***       |
|  | (.100)        | (.072)        | (.041)        | (.054)        | (.059)        |
| Sales or services = 1                    | .310***       | .285***       | .116*         | .111*         | .256***       |
|  | (.088)        | (.039)        | (.062)        | (.087)        | (.083)        |
| Non-farm manual work = 1                 | .077          | .142*         | .163***       | .167***       | .130***       |
|  | (.075)        | (.079)        | (.022)        | (.032)        | (.029)        |
| Not working = 1                          | .045          | .089**        | .133***       | .084**        | .059          |
|  | (.048)        | (.041)        | (.024)        | (.034)        | (.037)        |
| <b>Household labour resource</b>         |               |               |               |               |               |
| Number of male members                   | .061**        | .077***       | .090***       | .071***       | .090***       |
| 19-59 age group (A)                      | (.026)        | (.023)        | (.018)        | (.024)        | (.021)        |
| Number of female members                 | .007          | .032          | .099***       | .106***       | .029          |
| 19-54 age group (B)                      | (.027)        | (.027)        | (.017)        | (.026)        | (.022)        |
| Number of members                        | .057*         | .075***       | .082***       | .043**        | .037**        |
| 15-18 age group                          | (.029)        | (.018)        | (.012)        | (.018)        | (.016)        |
| Share of main labour force (A+B):        | .124          | -.000         | .086*         | .123*         | .017          |
| males with primary education             | (.095)        | (.085)        | (.047)        | (.070)        | (.064)        |

| Variables                                       | 1993     | 1998     | 2002     | 2004     | 2006     |
|---|----------|----------|----------|----------|----------|
| Share of main labour force (A+B):               | .309***  | .142**   | .048     | .073     | .094     |
| females with primary education                  | (.094)   | (.065)   | (.047)   | (.066)   | (.066)   |
| Share of main labour force (A+B):               | .342***  | .171*    | .222***  | .299***  | .138**   |
| males with secondary education                  | (.099)   | (.099)   | (.054)   | (.078)   | (.066)   |
| Share of main labour force (A+B):               | .450***  | .238**   | .244***  | .315***  | .267***  |
| females with secondary education                | (.106)   | (.095)   | (.055)   | (.073)   | (.076)   |
| Share of main labour force (A+B):               | .284**   | .320**   | .536***  | .592***  | .393***  |
| males with tertiary education                   | (.115)   | (.119)   | (.063)   | (.096)   | (.076)   |
| Share of main labour force (A+B):               | .532***  | .360***  | .694***  | .692***  | .811***  |
| females with tertiary education                 | (.109)   | (.088)   | (.068)   | (.101)   | (.103)   |
| <b>Household non-labour capitals</b>            |          |          |          |          |          |
| Farm size (hectare)                             | .263***  | .199***  | .163***  | .233***  | .189***  |
|   | (.037)   | (.050)   | (.016)   | (.028)   | (.022)   |
| Farm size squared                               | -.015*** | -.017*   | -.009*** | -.021*** | -.012*** |
|   | (.004)   | (.009)   | (.002)   | (.006)   | (.003)   |
| <b>Communal level variables</b>                 |          |          |          |          |          |
| Having access to paved roads = 1 <sup>(a)</sup> | -.015    | .014     | .079***  | .118***  | .101***  |
|   | (.061)   | (.052)   | (.024)   | (.025)   | (.027)   |
| Constant  | 7.323*** | 7.998*** | 8.128*** | 8.236*** | 8.472*** |
|   | (.104)   | (.090)   | (.052)   | (.067)   | (.067)   |
| N   | 800      | 830      | 5,079    | 1,488    | 1,473    |
| PSU   | 25       | 26       | 500      | 496      | 491      |
| R <sup>2</sup>                                  | .490     | .515     | .475     | .502     | .523     |
| F   | 45.97    | 23.23    | 112.07   | 60.75    | 70.73    |
| Prob>F  | 0.0002   | 0.0004   | 0.0000   | 0.0000   | 0.0000   |

Notes: Expenditure is measured at the January prices in each corresponding year. Figures in parentheses are standard errors.

\*, \*\*, \*\*\* respectively denote statistically significant at, at least the 10, 5, and 1 percent level.

<sup>(a)</sup> It is a road for motor vehicles for 1993 while a road for cars for 1998, 2002, 2004, and 2006.

The estimates display a clear link between the occupation of the household head and total household expenditure. The pattern of coefficients indicates that a household headed by someone who worked in a white-collar job enjoys a 12.4 to 34.2 percent advantage over a household headed by an individual mainly engaged in farming. There are no clear temporal patterns, but in recent years (2002 to 2006) there seems to be an increase in returns to such occupations. Similar patterns are observed for households headed by individuals working in sales and service jobs (premiums of between 11.7 to 36.3 percent). While these occupational premiums may be expected, the interesting element is the return for household heads mainly engaged in non-farm manual work. In 1993, there is no difference in consumption levels

between households working primarily in non-farm manual occupation and in farming. However, in 1998 there is a clear difference and despite the increased movement of individuals to this occupational category, the consumption premiums enjoyed by such households remains at the same level as seen in 1998 (that is a 13.9-18.2 percent premium).

Turning now to the household labour resource variables, the results show a clear pattern of positive association between the number of males aged 19 to 59 years and the number of younger members in a household (aged 15 to 18). Having an additional male member in the 19-59 age-group is associated with a 6-9 percent increase in household expenditure. Similarly, the marginal effect of an additional person in the age range 15 to 18 translates into a 3-9 percent increase in total household expenditure. In contrast, the effect of an additional female worker is not always significant. Nevertheless, the main point is that after controlling for household size we see that additional labour resources in a household are associated with higher levels of household consumption.

In terms of labour-quality we see that, in general, more educated households enjoy higher levels of consumption. While this is expected, the patterns reveal that over time returns to secondary education tend to decline while returns to the highest levels of education tend to increase. In addition, a clear pattern is that returns to female education are substantially higher than returns to male education. In 1993, a 10 percentage point increase in the share of female workers with secondary education is associated with an increase in consumption of 4.5 percent while in 2006 it declines to 2.7 percent. For males the corresponding figures are 3.4 and 1.4 in 1993 and 2006, respectively. With regard to tertiary education, a 10 percentage point increase in the share of female workers with tertiary levels of education is associated with an 8.1 percent increase in consumption while for males it is about 3.9 percent.

As may be expected, access to land tends to significantly increase total household expenditure. Regression results displayed in Table 1 indicate the existence of a quadratic relation with decreasing returns between total amount of land used for agricultural production and household expenditure. According to this relationship, an additional hectare of land increases consumption by between 15.4 and 24.8 percent. There are no clear patterns over time suggesting that returns to land are quite stable over the years.

The commune-level variable shows that communes with better access to physical infrastructure (traffic paved roads) enjoy an 8-13 percent consumption premium, this effect is only noticeable since 2002. While it is clear that characteristics such as a household's labour quantity and quality play a role in determining consumption, there is a sharp increase in the value of the constant over time. Taken literally, the constant is the average expenditure for male-headed households belonging to the ethnic majority, where the household head is mainly engaged in farming and where the commune does not have access to a paved road.

The sharp increase in expenditure for this reference group suggests that while households with other factors such as access to a paved road and household heads working in white-collar jobs do enjoy an earnings premium over farmers, over time, all household regardless of their occupation or education, regardless of whether they belong to a majority or a minority,

experience a sharp increase in consumption. Since these gains are universal it suggests that factors that affect all households such as policy changes that led to an increase in rice prices, changes in migration laws, changes in rules governing private enterprise and other similar reforms are likely to have been responsible for the bulk of the observed increase in consumption.

#### **4.2 Decomposition of growth in household consumption expenditure**

More formally, to attribute changes in consumption to changes in a household's characteristics and to changes in returns, this section provides results from an Oaxaca decomposition. Table 2 provides detailed results of the decomposition based on equations (2a) and (2b). For each period, column "C" represents the impact of changing characteristics on growth over a given period while column "R" reports the impact of changing returns to characteristics.

Regardless of the sub-period under consideration and regardless of whether we use (2a) or (2b), the message emerging from the decomposition does not change. Overall, the decomposition results show that changes in characteristics play an extremely limited role in determining changes in consumption (at the mean). While most of the increase in growth may be attributed to changes in returns, as now formally shown through the decomposition, most of the increase in consumption may be attributed to changes in the intercept.

Focusing on the decomposition for 1993-2006 and the last two columns of the table we see that the difference in log overall household consumption expenditure is 1.083. Of this, increases in returns to non-manual work and the increasing participation of households in non-manual work account for about 2.2 (0.011+0.011) percent of the increase in consumption, increases in the share of males and females with tertiary education and higher returns to tertiary education for about 4.6 percent (0.010+0.009+0.017+0.010), while larger labour endowments and returns to labour account for a further 6.2 percent (0.034+0.004+0.024).

Access to better infrastructure in the form of better roads is associated with a 5 percent increase in consumption. While these household and commune level variables account for some of the increase in consumption (about 18 percent), they pale in comparison with the overall macro-effect of policy changes as captured by changes in the intercept. Over this period the intercept increases by 1.149 or accounts for a 109 percent of the increase in consumption. In line with the interpretation provided earlier, this implies that all households regardless of their characteristics experience a sharp increase in consumption.

**Table 2**  
Decomposition results of growth in total household consumption expenditure

| Variables   | 1993-98    |       | 1998-2002  |       |            |       | 2002-2006  |       |            |       | 1993-2006  |       |            |       |
|---|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|   | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2b) |       |
|   | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     |
| <b>HH characteristics</b>   |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| Female head = 1   | .008       | .000  | .007       | .001  | .006       | .000  | .007       | .000  | -.006      | .000  | -.006      | .000  | .008       | .000  |
| Ethnic minority = 1   | .015       | -.000 | .016       | -.001 | -.012      | .007  | -.008      | .003  | -.001      | .000  | -.001      | .000  | .003       | .006  |
| Household size  | .017       | -.073 | .016       | -.072 | -.090      | -.107 | -.081      | -.116 | .209       | -.114 | .189       | -.094 | .169       | -.327 |
| Household size squared  | -.081      | .064  | -.070      | .053  | .026       | .072  | .022       | .077  | -.010      | .058  | -.008      | .057  | -.065      | .194  |
| <b>Occupation of head</b>   |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| White-collar job = 1  | .009       | .003  | .008       | .003  | -.014      | .021  | .004       | .003  | -.013      | .007  | -.010      | .004  | .000       | .012  |
| Sales/services work = 1   | .001       | .001  | .002       | .001  | -.006      | -.001 | -.005      | -.001 | .003       | .004  | .005       | .002  | -.001      | .003  |
| Non-farm manual work = 1  | -.002      | .003  | -.002      | .003  | -.013      | -.008 | -.002      | -.019 | .001       | .002  | .002       | .001  | -.004      | .013  |
| Not working = 1<br>(Farming work = 0)                                 | .004       | -.001 | .004       | -.000 | .004       | .009  | .007       | .006  | -.011      | -.001 | -.010      | -.002 | .001       | .002  |
| <b>Household labour resource</b>                                      |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| Number of male members  | -.070      | .009  | -.068      | .008  | .124       | .014  | .132       | .006  | -.122      | .007  | -.116      | .001  | -.068      | .030  |
| 19-59 age group (A)   | .018       | .004  | .019       | .003  | .014       | .004  | .015       | .004  | .001       | -.004 | .001       | -.004 | .032       | .006  |
| Number of female members  |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| 19-54 age group (B)   | .030       | .001  | .030       | .000  | .080       | -.002 | .079       | -.001 | -.083      | -.002 | -.078      | -.007 | .026       | -.002 |
| Number of members   |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| 15-18 age group   | .010       | .004  | .011       | .003  | .004       | -.009 | .003       | -.008 | -.022      | -.003 | -.019      | -.006 | -.011      | -.005 |
| Share of main labour force (A+B):<br>males with primary education     | -.025      | -.000 | -.027      | .002  | .019       | -.001 | .017       | .000  | -.014      | -.000 | -.013      | -.001 | -.022      | -.000 |
| Share of main labour force (A+B):<br>females with primary education   | -.048      | .001  | -.049      | .002  | -.028      | -.002 | -.024      | -.005 | .012       | -.004 | .010       | -.002 | -.062      | -.007 |
| Share of main labour force (A+B):<br>males with secondary education   | -.026      | -.001 | -.025      | -.002 | .008       | .003  | .008       | .002  | -.014      | .002  | -.015      | .002  | -.031      | .003  |
| Share of main labour force (A+B):<br>females with secondary education | -.022      | .001  | -.023      | .001  | .001       | .007  | .001       | .006  | .003       | -.000 | .003       | -.000 | -.019      | .008  |

**Table 2 (Cont.)**

Decomposition results of growth in total household consumption expenditure

| Variables  | 1993-98    |       | 1998-2002  |       |            |       | 2002-2006  |       |            |       | 1993-2006  |       |            |       |
|--|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|  | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2a) |       | Eq. (4.2b) |       | Eq. (4.2b) |       |
|  | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     | R          | C     |
| Share of main labour force (A+B):<br>males with tertiary education   | .002       | .001  | .002       | .001  | .013       | .008  | .016       | .005  | -.011      | .006  | -.013      | .009  | .006       | .013  |
| Share of main labour force (A+B):<br>females with tertiary education | -.007      | -.002 | -.007      | -.003 | .013       | .006  | .016       | .003  | .005       | .011  | .007       | .010  | .012       | .015  |
| <b>Household non-labour capitals</b>                                 |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| Farm size (hectare)  | -.059      | -.003 | -.058      | -.004 | -.018      | -.017 | -.013      | -.021 | .015       | .004  | .015       | .003  | -.060      | -.019 |
| Farm size squared  | .003       | .000  | .003       | .000  | .013       | .001  | .014       | .001  | -.005      | .002  | -.005      | .001  | .005       | .002  |
| <b>Communal level variable</b>                                       |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
| Access to paved road = 1   | .012       | -.001 | .009       | .001  | .021       | -.001 | .020       | -.000 | .007       | .013  | .009       | .010  | .046       | .003  |
| Constant   | .675       | .000  | .675       | .000  | .131       | .000  | .131       | .000  | .344       | .000  | .344       | .000  | 1.149      | .000  |
| <b>Total</b>   |            |       |            |       |            |       |            |       |            |       |            |       |            |       |
|  | .525       | -.002 | .525       | -.012 | .174       | -.012 | .211       | -.049 | .423       | -.028 | .416       | -.019 | 1.183      | -.101 |
| Percentage in the difference, %                                      | 100.2      | -0.3  | 102.9      | -2.2  | 107.4      | -7.2  | 130.2      | -30.1 | 106.5      | -8.8  | 104.8      | -4.9  | 109.2      | -9.3  |
| Difference in log expenditure  |            | .524  |            | .162  |            | .387  |            | 1.083 |            |       |            |       |            |       |

Note: C is the Impact of changing characteristics over time; R is the Impact of changing returns to characteristics.

## 5. CONCLUSIONS

This study is interested in identifying the effects of diversification on consumption and identify the factors responsible for changes in total household consumption over time. The estimates display a clear link between the occupation of the household head and total household



expenditure. There are no clear temporal patterns, but in recent years (2002 to 2006) there seems to be an increase in returns to such occupations. Nevertheless, the main point is that after controlling for household size we see that additional labour resources in a household are associated with higher levels of household consumption. In terms of labour-quality we see that, in general, more educated households enjoy higher levels of consumption. While this is expected, the patterns reveal that over time returns to secondary education tend to decline while returns to the highest levels of education tend to increase. In addition, a clear pattern is that returns to female education are substantially higher than returns to male education. Besides, access to land tends to significantly increase total household expenditure. While it is clear that characteristics such as a household's labour quantity and quality play a role in determining consumption, there is a sharp increase in the value of the constant over time. These findings suggest that factors that affect all households such as policy changes that led to an increase in rice prices, changes in migration laws, changes in rules governing private enterprise and other similar reforms are likely to have been responsible for the bulk of the observed increase in consumption. Furthermore, the decomposition results show that changes in characteristics play an extremely limited role in determining changes in consumption (at the mean). While most of the increase in growth may be attributed to changes in returns, as discussed already and as now formally shown through the decomposition, most of the increase in consumption may be attributed to changes in the intercept. This result implies that all households regardless of their characteristics experience a sharp increase in consumption.

## References

- ❖ Adamchik, V.A. and A.S. Bedi (2003) 'Gender Pay Differentials During the Transition in Poland', *Economics of transition* 11(4): 697-726.
- ❖ Ellis, F. (2000) *Rural Livelihoods and Diversity in Developing Countries*. New York: Oxford University Press.
- ❖ Glewwe, P., N. Agrawal and D. Dollar (2004) *Economic Growth, Poverty, and Household Welfare in Vietnam*. Washington D.C.: World Bank Regional and Sectoral Studies.
- ❖ Greene, W.H. (2003) *Econometric Analysis (Fifth Ed.)*. New Jersey: Prentice Hall.
- ❖ GSO (2007) *Result of the Survey on Households Living Standards 2004*. From [www.gso.gov.vn](http://www.gso.gov.vn).
- ❖ Janvry, A. de, E. Sadoulet and N. Zhu (2005) 'The Role of Non-Farm Incomes in Reducing Rural Poverty and Inequality in China', Department of Agricultural & Resource Economics, UCB. CUDARE Working Paper 1001. [http://repositories.cdlib.org/are\\_ucb/1001](http://repositories.cdlib.org/are_ucb/1001).
- ❖ Lanjouw, P. (2007) 'Does the Rural Nonfarm Economy Contribute to Poverty Reduction?' in S. Haggblade et al. (eds), *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World* (pp. 55-81). Baltimore: Johns Hopkins University Press.
- ❖ Walle, D. van de and D. Cratty (2004) 'Is the Emerging Non-farm Market Economy the Route out of Poverty in Vietnam?' *The Economics of Transition* 12(2): 237-274.
- ❖ Wodon, Q.T. (1999) 'Micro-determinants of Consumption, Poverty, Growth, and Inequality in Bangladesh', Policy Research Working Paper no.2076. Washington, D.C.: World Bank.