

**UNIVERSITY OF ADELAIDE
SCHOOL OF ECONOMICS**

**THE IMPACTS OF FINANCIAL DEVELOPMENT ON
HOUSEHOLD ECONOMIC ACTIVITIES**

The Vietnamese Household Cross-Section Data Evidence

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Abstract

This paper analyses the determinants of household financial development and its role in economic activities of Vietnamese households by using 1,685 households from the Vietnam Standard Living Survey conducted in 2004. This paper expands the existing literature by constructing a set of new financial development measures and analysing the simultaneous impact of financial development on economic activities at the household level. It is shown that the social relationship, location, fixed asset, households' size, education, age of households and Kinh group are the key determinants of household financial development. Moreover, financial development has a positive effect on household income through improving the level of saving and investment, labour productivity and reducing problem of asymmetric information. Financial development plays a positive role in household economic welfare.

Keywords: Financial development, household income, investment, savings, productivity, information technology, welfare and Vietnam

JEL codes: O16, O12, D1, D14

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I. INTRODUCTION

The economic growth of most developing countries depends largely on their own policies (Burnside et al., 2000). Vietnam, for instance, had experienced economic difficulties until the introduction of the Doimoi (renovation) policies in 1986. The difficulties arise from the Vietnamese government exercising too much control over the economy. The development of the financial sector was constrained. This led to the low level of saving, and the low level and quality of investment. Consequently, even food production was insufficient to feed a fast growing population. It was hard for many households, especially in the rural area, to meet the basic demand. However, the Doimoi policy started in 1986 has changed dramatically the picture of Vietnam. Not only can households now meet their basic needs, but also a growing number of rich households are appearing rapidly.

Arguably, the improvement can be attributed to the government policies that gradually reduce the constraints on production. The question raised here is whether reducing these constraints can improve the development of the financial system and in turn whether the development of the financial sector would stimulate economic activities of households. The answer is yes. I find that government policies improve financial development by encouraging education, financial liberalization, property holding right which increases people's fixed assets, and relationship of households. In turn, financial development promotes the level and quality of savings and investment, labor productivity and the progress of information technology, and hence income of households. Furthermore, financial development is positively related to household economic welfare.

Many papers have looked at the role of financial development in economic activities at both macro and micro level. However, only a few papers such as Guiso et al. (2002) analyze the role at the household level, although Guiso et al. do not examine the impact of financial development on household income and sources of household income.

The existing literature has not estimated the simultaneous equations to show how financial development can influence economic growth. The analysis of financial development on household welfare has been neglected. Furthermore, the measures of financial development used so far have not captured the role of the financial system in economic activities completely. Therefore, my paper has estimated the equations income and sources of household income, and the simultaneous equation to show how financial development influences economic activities and household welfare, which have been neglected by the existing literature. Furthermore, I have produced measures of financial development that capture the role of the financial system in economic activities more appropriately.

II. LITERATURE REVIEW

1. Financial indicators

There are many quantitative indicators designed to measure the extent of financial development in relation to economic development. Initially, the indicators of the ratio of M1/GDP and M2/GDP are used to measure the level of financial development. Although it is easy to collect the data, these indicators might be a poor proxy. In many developing countries with less developed financial systems, these ratios may be high because cash dominates in the economies. Thus, Levine (1997) uses the ratio of M3/GDP to measure the financial depth. However, this ratio still presents problems since M3 contains M1 and M2, which do not reflect correctly the level of financial development. Financial services, information processing and risk management for instance, are not reflected in this ratio. Kar and Pentecost (2000) point out that broad money stock covers a big part of currency outside the banking system in developing countries. And, in some cases, an increase in this ratio shows a bigger use of currency than bank deposits. Thus, the sound measure of financial development should not include currency in circulation.

In order to overcome the problems, Kar and Pentecost (2000) employ the ratio of bank deposit liabilities to income (BDY). Beck, Levine and Loayza (1999) use the ratio of private credit to GDP (PC/GDP), namely, the value of credits of financial intermediaries to the private sector divided by GDP. This ratio states more appropriately the role of the financial sector in allocating funds to the private sector. Nevertheless, these ratios do not capture the role of stock market, which is a very important channel of mobilizing savings for investment. Thus, Khan and Senhadji (2000) use stock market capitalization to measure financial depth.

In addition, in developing countries with low levels of financial development, governments or official banks sometimes provide cheap and abundant credit without appraising the efficiency of financed projects. Consequently, liquid liabilities going up might not make economic growth higher due to the collapse of many of these projects. Rioja and Valev (2002) assume that commercial banks would be better at appraising the projects' effectiveness, and then prove the relative importance of commercial banks vs. central banks in allocating savings. Therefore, they use another indicator, Commercial vs. Central bank (CCB), which is defined as commercial bank assets divided by commercial bank plus central bank assets.

At the household level, besides the provincial and national measures of financial development designed above, researchers use the ratio of loan to income, or the level of loan and access to credit as financial development indicators. Guiso et al. (2002) estimate the conditional probability of being rejected for a loan as an indicator of financial underdevelopment. In order to find their indicator of financial development, they compute their indicator of financial development $[1 - \frac{\text{Conditional Probability of Rejection}}{\text{Max(Conditional Probability of Rejection)}}]$, and then normalise their indicator of financial development by defining it as $[1 -$

$\frac{\text{Regional Effect}}{\text{Max (Regional Effect)}}$] from the coefficient on regional dummies.² They use this normalised

measure as their indicator of financial development. The value of this measure is zero in the region with the maximum value of the coefficient on the regional dummy (the less financially developed region). The value of this measure is between 0 and 1.

2. Determinants of financial development

The relationship between financial development and economic activities has been analysed in detail by the previous researchers, but they have paid little attention to answering the question “what determine financial development”. It is very hard to find any papers such as Gelb (1989) which analyse the determinants of financial development. Gelb uses data of 34 countries from 1965 to 1985 and employs M3/GDP as financial development indicator to point out that the impact of inflation on financial development is stronger than that of interest rate.

Guiso et al. (2001) employ around 8,000 households from the Survey of Households Income and Wealth in Italy to study the role of social capital in financial development. Besides social capital variables measured by the electoral turnout at the provincial level and voluntary blood donations, they include the characteristics of households' head such as education, age, place of birth, income, wealth and dummies. They conclude that social capital has the important role in the level of financial development in Italy.

Instead of answering the question above, many papers have paid attention to the question “what determine household borrowing”. Some examples from rural economies are Yadav et al. in Nepal, Duong et al. and Quach et al. in Vietnam. Yadav et al. (1992) use an intensive survey of farm household in Nepal to study the segmentation in the rural financial

² They use the following subsets: households that have received a loan, households that have been turned down for a loan, households that are discouraged from borrowing to run an OLS regression to get the coefficient on the regional dummies. Their regression function, $y = f(\text{regional dummies, age, gender, kind of job, income, household size, number of income recipients in the household, a control for the percentage of bankruptcies in the area})$. Where $y = 1$ if a household is a credit constrained or households that have been turned down for a loan, households that are discouraged from borrowing, and zero otherwise.

markets and conclude that farm size is the most important determinant of borrowing in the informal markets while farm size and irrigation are main determinants of borrowing in the formal markets.

Duong et al. (2002) survey 300 households in three provinces which are located in the North, the Centre and the South in Vietnam to analyse the determinants of borrowing in the rural financial markets. They conclude that total farming area and total value of livestock are the major determinants of borrowing in the formal markets. They also point out that dependent ratio of households and the total farming area are the decisive determinants of borrowing in the informal financial markets.

Quach et al. (2006) use data of 2,108 households from the Vietnam Living Standard Survey conducted in 1997/1998 to study the determinants of borrowing. They find that education, savings and farming area are the most important determinants of borrowing.

3. The role of financial development in economic activities

There has been steady progress on studying the relationship between financial development and economic growth, both theoretically and empirically. Studies started from Goldsmith (1969) to recent papers such as Levine et al. (2000), Drifill (2003), Hansan (2006) and Phan (2006). Generally, most studies find a positive role for the financial system in the economic activities. Most studies focus on the national and provincial level to conclude that financial development can improve economic growth through increasing mobilization of savings and investment, enhancing efficiency of using saving and investment, and productivity.

Much attention has been paid to the link between financial development and economic growth at the micro level. Demirguc et al. (1998) uses firm level data from 26 countries during the period 1980-1991 to analyze the influence of financial development on firm

growth. Market capitalization/GDP, turnover and bank assets/GDP ³ are used as financial development indicators in this research. Their research focuses on the impact of financial development on firms' investment constraints by looking at long run debt and external equity in financing firm growth. Their finding is that both the development of the banking system and the stock market liquidity have a positive correlation with the firm growth. Beck at al. (2001) uses an expanded sample to support for this finding.

Love (2003) is another micro study with the focus on the influence of financial development on firms' funding constraints. Love uses firm level data from 40 countries to conclude that financial development helps to reduce the financing constraints of small firms.

Guiso at al. (2002) consider this link at the household level. They use three datasets: 8,119 households, 326,590 firms and the provincial data with their new financial development indicator $[1 - \frac{\text{Regional Effect}}{\text{Max (Regional Effect)}}]$ to analyze the effects of differences of the local financial development on the economic activity across the Italian regions. Probit, OLS and 2SLS estimation are employed to conclude that financial development affects positively on firm growth, industrial competition and individual business starts. The local financial development accelerates economic activities in the Italian regions. They also point out that the domestic financial system is still very important to the Italian economy though the economy is financially integrated in the European Union.

4. The problem of endogeneity

The problem of endogeneity has also been paid much attention in the literature. Researchers have used several ways to resolve this problem. To cope with this problem, a series of researchers, such as King and Levine (1993), Carlin (2002), have employed

³ Market capitalization/GDP = the value of domestic equities listed on domestic exchanges as share of GDP; Turnover = the total value of trades of domestic shares on domestic exchanges as a share of market capitalization.

instrument variables in the estimation method of the Two Stage Least Square and Three Stage Least Square. Recently, researchers have increasingly used the GMM method.

The literature has used the following instrument variables to analyse the link between financial development and economic growth. King and Levine (1993) use the initial values of income, the initial rate of secondary school enrolment, the initial ratio of government expenditure to GDP, the initial openness measured by the value of export –import divided by GDP, the initial value of financial indicator and inflation in the previous decade. Beck et al. (2000) employs the legal origin as instrument variables. Carlin et al. (2002) considers the legal origin, population and the rule of law as instrument variables. The level of social capital, the level of judicial inefficiency, usury and fraction local banking lending over total lending in province, and the length of trials and pending trials are treated as instrument variables by Guiso (2002).

III. MODEL FOR ESTIMATION

1. The determinants of household financial development

There are several ways of analysing the determinants of financial development in the existing literature. Gelb (1989) employs the OLS estimation with inflation and real interest rate as the determinants of financial development. Other researchers such as Duong et al. (2002) and Quach et al. (2006), use the Tobit regression to estimate the determinants. They use the Tobit estimation since their dependent variables are truncated at zero for households holding non financial liabilities. Households with financial liabilities can show their level of financial liabilities.

The dependent variables are not truncated at zero in my dataset. Therefore, in this paper, I use the OLS estimation to analyse the determinants of household financial development. I propose the following model to analyse the determinants of household financial development:

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

Where y_i = financial development indicators; X_i includes the household number of dependent people, education, household size, age of household head, age of household head squared, household head's gender, household interest rate, household fixed asset, household health expenditure, household relationship, dummies for urban, ethnicity and region; u_i is error term.

The three new measures of financial development (FDs), which can capture all the role of the financial system, are built. These measures are calculated as follows:

$$FD_1 = \frac{\text{Deposit} + \text{the value of stock exchange} + \text{the value of asset of financial companies}}{\text{Income}}$$

$$FD_2 = \frac{\text{Loan} + \text{the value of stock exchange} + \text{the value of asset of financial companies}}{\text{Income}}$$

$$FD_3 = \frac{\text{Turnover of banks} + \text{the value of stock exchange} + \text{turnover of financial companies}}{\text{Income}}$$

These new measures of financial development reflect the role of the banking system, stock market and financial companies.⁴ It is likely that the financial development measures capture the role of the financial system. Hence, they reflect the role of the financial system in economic activities better than the measures used in the existing literature.

The financial system is very important in household economic activities by showing how much financial liabilities and financial assets households hold. Financial assets and financial liabilities are normally in the form of deposit, loan, bond (share) and insurance in Vietnam. Therefore, the ratio and the level of financial assets and liabilities are employed to analyse the role of financial development in economic activities at the household data level as follows:

$$FD = \frac{\text{Deposit} + \text{bond (share)} + \text{insurance}}{\text{Income}}$$

$$\text{LnDBSI} = \text{Log}(\text{deposit} + \text{bond (share)} + \text{insurance})$$

⁴ The value of assets of financial companies is measured as follows: Asset = liability + equity.

$$\text{LnLBSI} = \text{Log}(\text{loan} + \text{bond (share)} + \text{insurance})$$

There are some following reasons why these measures are better than those in other studies. Firstly, these measures reflect and appraise the situation of holding financial assets and financial liabilities by households directly. The more advanced financial system, the higher value of financial assets and financial liabilities held by households. Secondly, the household savings in Vietnam used to be in the form of non productive assets such as gold, land because of the poor financial system. However, the improvement of the financial system has been started when the Doimoi (renovation) policy was introduced and it has accelerated since 1998. This leads to the change of the saving habits to holding financial assets in which both individuals and the economy would benefit. The financial assets and liabilities held by households in Vietnam are mainly loans, deposits, bonds/shares and insurance. Therefore, the measures reflect more appropriately the development level of the financial system in Vietnam.

However, there are still issues with these measures. Firstly, economic activities are influenced by the following factors: loans, bond (share) and insurance, but hard to see which factor is more important. Secondly, another question is that how substitutable they are. Therefore, the good financial development indicators should weight the individual financial development factors by their influences on economic activities. Doing this way allows us to know the relative importance of each of those factors in my financial development indicator.

To overcome these issues, I run 8 OLS regressions for the equation 2.⁵ Note that each estimated equation, FDH is replaced by $\alpha_{11ij} * \text{Loan} + \alpha_{12ij} * \text{Bond (Share)} + \alpha_{13ij} * \text{Insurance}$.⁶ The individual indicators' estimated coefficients from these 8 estimated equations, then, are taken to construct my financial development index (FDindex) as follows:

$$\text{FDindex} = \alpha_{11i0} + \alpha_{11ij} * \text{Loan} + \alpha_{12ij} * \text{Bond (Share)} + \alpha_{13ij} * \text{Insurance}.$$

⁵ I reference the methodology of Burnside et al. (2000).

⁶ $i = \{1, 8\}; j = \{1, 3\}$

The values of α_{11ij} , α_{12ij} and α_{13ij} are taken from the results of the 8 estimated regressions based on the equation 2 meanwhile I nominate the value of α_{11i0} which can make the means of dependent variables in the equation 2 equal the means of FDindex. This nomination allows us to predict the level of per-capita income, investment, saving, labour productivity, information technology, per-capita expenditure, per-capita expenditure for food and drink, and per-capita spending for non-food and non-drink, given their loans, bond (share) and insurance, assuming that they had the mean values of all other variables.

2. The impact of financial development on household economic activities

The model in this paper is built on the models used by Deaton (1997), Maycock (2005), Croppenstedt (2006), Reddy at al. (2004), Levine (1997) and Beck at al. (2000). This paper has additional variables which consider the determinants of income, saving, investment, productivity, information technology and household economic welfare. This model is stated in equation 2 below as follows.

Financial development can help to improve income through increasing the level of savings, quantity and quality of investment, productivity (Levine, 1997 and Beck at al., 2000), and the efficiency of using savings and information technology (Phan, 2006). In addition, my regression results in this paper show that financial development is positively related to household economic welfare. Therefore, financial development variables are added in my model.

The social relationship can influence so strongly economic activities in Vietnam and is included in the model. The reason for adding this variable is that the economic activities of Vietnamese households depend largely on their own social relationship. This is not only because of the national culture but also because of a serious problem of corruption in Vietnam.

Health expenditure of households is also another factor, which might have an effect on economic activities of households and is included in the model. This spending can tell us the health situation of each household. The lower this spending, the better health situation the household has and vice versa. The better health might have a positive influence on household economic activities.

It is expected that financial development and relationship variables have a positive impact while health variable has a negative influence on household economic activities in this estimation model. Therefore, the model for estimation in this paper is built as follows:

$$\begin{aligned} \text{LnY} = & \alpha_0 + \alpha_1*\text{FDH} + \alpha_2*\text{FDN} + \alpha_3*\text{DEP} + \alpha_4*\text{EDU} + \alpha_5*\text{HSIZE} + \alpha_6*\text{HAGE} + \\ & \alpha_7*\text{HAGE2} + \alpha_8*\text{HGEN} + \alpha_9*\text{INT} + \alpha_{10}*\text{LnFA} + \alpha_{11}*\text{LnRE} + \alpha_{12}*\text{LnHEA} + \\ & \alpha_{13}*\text{URDUM} + \alpha_{14}*\text{EDUM} + \alpha_{15}*\text{RDUM} + e_i \end{aligned} \quad (2)$$

Where LnY = alternative dependent variables which are the log of household income per person (LnHIN), the log of household investment (LnHINV), the log of household savings (LnHSAV), the log of household labour productivity (LnHPRO) measured by household income divided by household labour, information technology (LnHTECH) measured by the log of the expenses of newspapers, books, telecom, phone and internet, and the log of household expenditure per capita; FDH = financial development indicator of households; FDP = financial development indicator of provinces measured by the value of capital resource of financial companies over the provincial GDP for 62 provinces; DEP = the household number of dependent people; EDU = education of the household head measured by the number of schooling years; HSIZE = the size of household measured by the household number of people; HAGE = the age of household head; HAGE2 = the age of household head squared; HGEN = the gender of household head, 1 for male and 0 otherwise; INT = household interest rate; LnFD = the log of fixed asset; LnRE = the social relationship of households measured by the log of the cost of parties and gifts; LnHEA = household health

measured by the log of expenses on health check, treatment and others at home and hospital; URDUM = urban dummy; RDUM = regional dummy; e_i = error term.

In this paper, I use the equation 2 as the following saving equation. This saving equation does not include income, despite of being an important determinant of saving. It is because of a correlation between income and financial development indicators. The literature and the regression results of this paper show the robust link between financial development and income. Thus, fixed asset is employed to proxy for income factor.

I use expenditure as a measure of household economic welfare since expenditure is a better measure of household economic welfare than that of income in the household survey data. Firstly, survey respondents are likely to report their spending honestly than their income. For low earners, they may report the higher level of income than they have since they feel shied. Secondly, some of these respondents may have some illegal sources of income resulting from imperfect markets and corruption, and hence they do not want to reveal these earnings. Finally, these respondents might forget what they earned from the previous period.

The existing literature has shown the impact of financial development on growth and sources of growth. However, the simultaneous impact of financial development on sources of growth and growth has not been shown in the existing literature. Therefore, this paper uses 3SLS to show clearly this relationship by estimating the following income equation: $\text{LnHIN} = \beta_0 + \beta_1 * \text{LnHINV} + \beta_2 * \text{LnHSAV} + \beta_3 * \text{LnHPRO} + \beta_4 * \text{LnHTECH}$ simultaneously with the four equations in which LnHINV, LnHSAV, LnHPRO and LnHTECH are dependent variables and functions of all explanatory variables in equation 2.

IV. DATA AND METHODOLOGY

This paper examines the determinants of financial development and the role of financial development in economic activities by looking at 1,685 households from the

household dataset of the Vietnam Standard Living Survey conducted by the General Statistics Office of Vietnam in 2004.

The paper uses OLS, 2SLS and 3SLS regression methods to estimate all equations. Breusch-Pagan is employed to test the heteroscedasticity problem. This problem is resolved by using White's the heteroscedasticity correction method if any estimation results present evidence for heteroscedasticity. The Hansen test from the overidentification test is applied to check the validity of the instrument variables.

In order to solve the problem of endogeneity, I use the Two Stage Least Square method to estimate the relationship with the following instruments. Firstly, the provincial and family population can be treated as instrument variables since the provincial and family population, which can capture the size of the province and households, will have an influence on the financial development in the presence of economies of scale in the financial system. Secondly, the lags of provincial financial indicator, regional dummies and provincial legal institution scores given by the Vietnam Chamber of Commerce and Industry (VCCI) in 2006 are used as instrument variables. Moreover, the other exogenous variables are used to take as instrument variables.

The provincial legal institution scores in 2006 are employed here since the survey conducted by VCCI give the similar results compared with that in 2004 and 2005. This means that these scores would seem to be not much different in 2002 and 2003.

V. ESTIMATION RESULTS AND DISCUSSION

1. Determinants of household financial development

I run three OLS regressions with three different measures of financial development as dependent variables to give the following results as reported in table 2 in the appendix. Table 2 shows that the result in regression 1 is less robust than those in regression 2 and regression 3. The results become more robust from regression 1 to regression 3. The regression 1 has

only one estimated coefficient, which is significant while regression 2 has five and regression 3 has 8 significant coefficients.

The estimated results show that the variable Education enters with a positive significance. This implies that households with higher education promote household financial development. This is consistent with the finding in Quach et al. (2006) in which suggests the more educated households could get more formal credit.

The households' size is positively significant at 1 percent in regression 3, indicating that either the bigger households have more demand for credit, or lenders tend to give credit to the larger households due to a higher profit potential.

The variable Fixed Assets is positively and significantly related to the household financial development. This is because households with more assets are more likely to secure loans since the assets can be used as collateral for lenders.

The social relationship plays an important role in household financial development as indicated by all estimated coefficients being positive and significant.⁷ The finding indicates that the determinants of household financial development not only rely on their own characteristics but also depend on their social relationship. For example, a good relationship with bank managers helps to facilitate lending to households. Building the social relationship may include: inviting to meals and parties, giving valuable gifts and scholarship to the bank managers' children (Nguyen et al., 2006).

Another interesting point is that the age of the household head is negatively and significantly related to household financial development, while the age squared of the household head is positively significant. This implies that the middle-aged households get and hold the least amount of loans and financial assets. The result reflects the Vietnamese culture that people tend to trust the elderly aged household heads. Older people are always believable

⁷ See more detail in the section 2.1.

in all aspects. For instance, the age is the first criteria for people to take into account when considering any ones being leaders almost organizations in Vietnam. Younger people normally respect the older ones. This is because the old people tend to be more experienced, knowledgeable, self- respected and reliable.

The significance of urban dummy gives evident to how the location of the household plays a positive role in financial development. It is because most financial institutions in Vietnam are mainly located in the big cities and town areas where these areas have high demand for financial services. The significance of the ethnicity dummy reflects that minor group contributes to financial development less than Kinh people do.

2. The impacts of financial development on economic activities

2.1. The impact of financial development on households' per-capita income

The results of the OLS and 2SLS estimation for households' per-capita income with four alternative financial development indicators are reported in table 3.1 in the appendix. Financial development indicators show their positive influence on household per-capita income because they are positively significant at 1 percent. This supports the hypothesis that the higher level of financial development can lead to the better household per-capita income in particular and economic growth in general. This implies that households with bigger ability to borrow and hold financial assets can benefit more from the financial system. This also reflects the inequality in the credit distribution across households (Duong at al., 2002). Quach at al. (2006) conclude that the inequality in the credit distribution still appears within a province or across communes within a province. This is because households with larger assets have more chance to get loans from the financial market, especially from the banking system. All banks lend their money by looking at the collaterals rather than the efficiency of investment since bankers have been afraid of their responsibilities for loan repayment. In addition, the banking system is dominated by state owned banks. The market share of loans

by banking institutions of state owned banks had been around 75 percent during the period 2002-2005 (Phan, 2006). Thus, bankers do not pay much attention to profit of their banks and benefit of their clients. This has led to the fact that they have chosen the safety way by asking for collateral as lending. The social relationship is another factor that causes the inequality in loan distribution. Bankers normally consider the social relationship with their customers before making loans. They are sometime informally forced to lend from influential people such as their bosses or officials.

The variable Dependency is negatively significant at 1 percent. This is expected because the larger number of dependent people in the household worsens household per-capita income. Household size also bears a negative sign and is significant at 1 percent. Households with a bigger size, therefore, have less per-capita income. This explains why the Vietnamese government has been implementing its population policy in which each family could have less than three children since the early 1980s. In addition, the coefficient of the household head's age is positively significant at 10% while that of household age squared shows a negative significance at 10% in equation 4. This supports the Life Cycle Hypothesis that household heads increase the per-capita income as they become more mature. Before this point in life, the per capita income reduces when household heads become too old. This means that households with the middle-aged household heads hold the largest amount of per-capita income in Vietnam.

All coefficients of education, fixed asset and relationship are positively significant at 1 percent and have their expected sign. This implies that households can benefit from having educated, holding more assets and having a good social relationship. The coefficient Relationship shows its biggest value. This means that relationship has a strong influence on household per-capita income in Vietnam. This is a very good signal to realize the fact that doing business in Vietnam heavily relies on the relationship. This is the Vietnamese culture of

which any ones who want to be successful in their business should learn this lesson before doing business in Vietnam.

It is surprising that coefficient of health expenditure is significant at 1 percent with an unexpected sign. This coefficient should be negative since health expense might reflect the health situation of households. However, this result shows differently and can be explained as follows. On one hand, the richer and better educated households can have more chance to take health care than the poor and lower educated households. The better health care might help improve productivity and thus per-capita income. On the other hand, the poor households normally do not go to see doctor if they do not have a serious health problem. They just stay at home and use traditional medicine such as some herbs, which they do not need to pay, and wait for naturally recovering.

Dummy for urban households is positively significant at 1 percent in all estimated equations while dummy for ethnicity is negatively significant at 5 percent for only equation 5. Nevertheless, the sign of all coefficients is as expected. This evidence points out that households living in the urban area have much more per-capita income than those not living in the area. The estimated regression 1, for instance, presents that the per capita income of urban households is around 27 percent higher than that of non-urban households. There has been evidence that the ethnic minority group have lower per-capita income than Kinh people which is the majority group. It may be due to the King group being more educated and hence much more skilled than others.

2.2. The impact of financial development on households' investment

Table 3.2 in the appendix clearly shows that there exists a positive link between financial development and household investment since most financial development coefficients enter with positive and significant coefficients at the 1 percent level in all regressions. This finding confirms the arguments of previous researches such as Levine

(1997, 1999) and Beck et al. (2000) that both the level and quality of investment increase resulting from a better financial development. This reflects that the public have been becoming more confident in the financial system, especially in the banking system since the early 1990s. They are more confident to put their savings into the banking system in any forms (dong, dollar or gold). Subsequently, this helps the financial system to have more funds for household investment.

Furthermore, the Socio-Economics Development Program for Extremely Difficult Communities (CT135) and the National Program for the Poverty Alleviation and Employment for the period 2001-2005 (CT 143) have contributed to the increase in household investment. However, these programs have found that many households lack the financial knowledge in using the funds, resulting from the low level of financial development. Some of them put their monies borrowed into the bamboo holes of their houses' roof and then return them back to lenders on expiry. Thus, financial development has a big contribution to both the level and quality of investment.

As it can be seen that education, households' size and fixed asset also have a positive link with household investment as most coefficients of these variables are positively significant at the 10 percent level or better. The variable, relationship, enters strongly and significantly at the 1 percent level meanwhile health expense shows less robust. This evidence shows that households' relationship continues to present its importantly positive role in household investment while households' health shows its weaker role in household investment.

The positive and significant coefficients of urban and gender variables lead to the finding that the households with male head and living in the urban area have the higher investment than others. As expected, ethnicity enters with a negative and significant coefficient to show that ethnicity group has less investment compared with the Kinh group.

Compared with part 2.1, the link between financial development and household investment is robust as the link between financial development and household income but it has a much stronger link.

2.3. The impact of financial development on households' savings

The results are quite revealing in the table 3.3 in the appendix. Firstly, the estimated results in the table 3.3 suggest that financial development promotes household savings since the coefficients of financial development indicators are positively significant at least 10 percent. This is consistent with the conclusion of Levine et al (1999).

Secondly, the variables Dependency, Households' Size Fixed Asset and Relationship are highly significant while variable Education is less robust and the other variables are not significant. This indicates that household savings depends positively on education, households' size, fixed asset and relationship, and negatively on the number of dependent people each family.

In addition, it is argued that older household heads tend to force their family members to save while male household heads tend to consume rather than female household heads in Vietnam. This argument seems to be supported by my finding since the coefficient of household head's age squared is positively significant at 10% in equation 1 and that of household gender is negatively significant at 10 and 5 percent in regression 5 and regression 6 respectively.

Finally, dummy for urban households is positively significant at 10%. This evidence confirms that savings of households living in the urban area are much higher than those of non-urban households.

2.4. The impact of financial development on households' labour productivity

Table 3.4 in the appendix reports the empirical evidence about the link between the labour productivity and the financial development. Most financial development indicators in

the table 3.4 show their positive and significant coefficients at the 1% level. This confirms the literature that financial development promotes productivity.

Education, fixed asset and relationship express their important role in promoting labour productivity since most their estimated coefficients appear to be positively significant at least 10 percent while households' size and male household heads lesson labour productivity.

The urban dummy variable is positively significant at the 1 percent level. This supports the hypothesis that people living in the urban area have more chance for better education, and best people tend to live in the cities, especially in Vietnam and hence better productivity. This is because the gap between the rural and urban area is really big in the case of Vietnam.

The regional dummy is significant at a 5 percent level. This supports the hypothesis that the North East of the South region has higher labour productivity than other regions. This is because the reforms occur earliest and fastest in this region. Normally reforms come from and are tested in the region and then apply for other regions.

The variables Dependency and Health Expense show their positively significant coefficients at 1 percent. That is an interesting point. This indicates that number of dependent members can improve labour productivity. This can be explained as follows. Working people in families with more dependent members have to work harder and more efficiently in Vietnam. This is because they have more pressure to work and improve their skill. It is not surprising that higher health expenditure leads to higher labour productivity, which has been explained in part 2.1.

2.5. The impact of financial development on households' information technology

All financial indicators are less robust than those in other tables as shown in table 3.5 in the appendix. However, all the signs of coefficients of the financial development variables

are positive as expected. The households' financial development indicator presents with an expected sign and significantly at the 5 percent level in regression 3 and regression 6, significant at 1% in regression 5 and regression 7, 10% at regression 4. This supports the hypothesis suggested by Levine (1997) that financial development could reduce the problem of asymmetric information, leading to a better efficiency of investment.

Education, relationship and health expense appear to have a strongly positive influence on information technology because almost these coefficients are strongly robust, significant at 1 percent. Meanwhile the variable Dependency is only negatively significant at 10 percent in regression 3 and regression 5. This indicates that the larger dependent member of households deteriorate the ability to develop information technology.

Urban and gender dummy are significant. However, only urban dummy bears a positive sign. This implies that families living in the urban area have higher chance to access the information technology. Male household head is an obstacle for the development of information technology at that household.

3. The simultaneous impact of financial development on households' economic activities

The system of equations has been constructed in order to show the simultaneous influence of financial development on households' economic activities. The results are reported in four tables: table 3.6, table 3.7, table 3.8 and table 3.9 in the appendix.

The results show that any positive changes in savings, investment, labour productivity and information technology have positive impacts on household per-capita income. This can be seen that all coefficients of the variables Saving, Investment, Labour productivity and Information technology enter with a positive significance at 1 percent in equation 1.

The positive change in household per capita income is explained by the improvement of the financial system, fixed asset, social relationship and health of households. Education still plays a positive role on the change but less robust in this estimation method than in the

OLS and 2SLS ones. These results strongly reconfirm the hypothesis that the channels of transmission from financial development to economic growth are the channels through which financial development promotes savings, investment, productivity and technology.

4. The impact of financial development on households' economic welfare

Expenditure per capita, expense on food and drink per capita, and spending on non-food and non-drink per capita are used to proxy for households' economic welfare. All indicators of households' economic welfare are in the log form.

The results in table 3.10, table 3.11, table 3.12 and table 3.13 in the appendix show that both household financial development and provincial financial development are positively correlated to households' economic welfare. This supports the hypothesis that a better financial system can increase household welfare. This is also consistent with Quach (2006)'s conclusion that access to credit improves household economic welfare in Vietnam.

As expected, education plays a positive role in household welfare. Households with bigger asset, and better relationship and health care lead to a better welfare. Meanwhile the larger size of households makes household welfare worse. The significance of the variable Age and Age squared with an expected sign indicates correctly the Life Cycle hypothesis that households get more benefit as their heads become more mature up to a point but the benefit decline older beyond that point. The welfare of households with female heads and living in the urban area is better. The welfare of the Kinh group is also better than that of the other ethnic group.

VI. CONCLUSION

This paper uses the OLS, 2SLS and 3SLS method of estimation to analyse the determinants of household financial development and the role of financial development in economic activities of Vietnamese households. In this paper, I find that the social relationship,

location, fixed asset, households' size, education, age of households and Kinh group are the key determinants of household financial development.

Consistent with the literature, I find that the role of financial development in household economic activities is very important. Financial development could help increase level of saving and investment, improve labour productivity and diminish problem of asymmetric information and hence better household income. The impact of financial development on household income is not only direct but also indirect. In addition, financial development plays a key role in household welfare.

I also find that there has been an inequality in credit distribution across households due to collateral requirement and borrowing relationship of households. The empirical results indicate that the social relationship has an extremely importance role in every economic activities in Vietnam.

Other findings give some following interesting points. Firstly, households can benefit from having better education and larger assets, and taking health care regularly. Secondly, households with a large size can have more savings and hence investment but less per-capita income and lower labour productivity. Thirdly, the larger number of dependents in households could improve labour productivity while it deteriorates household per-capita income, saving and ability to access information technology. Fourthly, households with a male head are audacious in investment but less productivity. Fifthly, households living in the urban area have a better living standard. Economic activities appear to be better in households located in the North East of the South region. Finally, Kinh group dominates the economic activities and benefits more than the other ethnic group in Vietnam.

APPENDIX

Table 1: Economic Regions and Provinces in Vietnam

Code	Region and province	Code	Region and province
1	Red River Delta	5	South Central Coast
101	Hanoi	501	Danang
103	Haiphong	503	Quangnam
104	Vinhphuc	505	Quangngai
105	Hatay	507	Binhdin
106	Bacninh	509	Phuyen
107	Haiduong	511	Khanhhoa
109	Hungyen	6	Central Highlands
111	Hanam	601	Kontum
113	Namdinh	603	Gialai
115	Thaibinh	605	Daklak
117	Ninhbinh	607	Lamdong
2	North East	7	North East South
201	Hagiang	701	Ho Chi Minh
203	Caobang	705	Ninhthuan
205	Laocai	707	Binhphuoc
207	Backan	709	Tayninh
209	Langson	711	Binhduong
211	Tuyenquang	713	Dongnai
213	Yenbai	715	Binhthuan
215	Thainguyen	717	Baria - Vungtau
217	Phutho	8	Mekong River Delta
221	Bacgiang	801	Longan
225	Quangninh	803	Dongthap
3	North West	805	Angiang
301	Laichau	807	Tiengiang
303	Sonla	809	Vinhlong
305	Hoabinh	811	Bentre
4	North Central Coast	813	Kiengiang
401	Thanhhoa	815	Cantho
403	Nghean	817	Travinh
405	Hatinh	819	Soctrang
407	Quangbinh	821	Baclieu
409	Quangtri	823	Camau
411	Thuathien-Hue		

Source: General Statistics Office of Vietnam

Table 2: The determinants of household financial development

Independent Variables	Dependent Variables	FD	LnDBSI	LnLBSI
		(1)	(2)	(3)
Constant		-10.4664 (0.524)	5.2894*** (0.000)	6.6030*** (0.000)
Dependency		-0.3694 (0.510)	-0.03587 (0.676)	-0.0389 (0.245)
Education		0.2856 (0.353)	0.0248 (0.208)	0.0244*** (0.001)
Households' size		-0.4184 (0.235)	0.0245 (0.714)	0.0891*** (0.000)
Household head's age		-0.2439 (0.341)	-0.1141*** (0.002)	-0.0511*** (0.000)
Household head's age squared		0.0021 (0.341)	0.0010*** (0.003)	0.0010*** (0.001)
Household head's gender		2.3574 (0.198)	0.0398 (0.826)	0.0551 (0.471)
Household interest rate		-0.0153 (0.232)	-0.0037* (0.071)	0.0002 (0.843)
Fixed asset		0.6504 (0.205)	0.0512 (0.273)	0.1003*** (0.000)
Relationship		1.4553* (0.070)	0.3204*** (0.000)	0.3346*** (0.000)
Health expenditure		0.9795 (0.127)	-0.0162 (0.733)	0.0223 (0.215)
Urban dummy		3.2317 (0.228)	0.3723** (0.041)	0.2539*** (0.005)
Ethnicity dummy		15.2131 (0.263)	0.3016 (0.449)	-0.2912*** (0.002)
Regional dummy	Yes	Yes	Yes	Yes
R_squared		0.0573	0.0622	0.2342
Observations		939	939	1685

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance.

Table 3.1: The effects of financial development on households' income per capita

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	6.6738*** (0.000)	6.6826*** (0.000)	6.3195*** (0.000)	5.1323*** (0.000)	5.6042*** (0.000)	4.6351*** (0.000)	-1.02997 (0.144)	-8.7359* (0.083)
Households' financial development indicator								
1. FD	0.0028*** (0.006)	0.0038 (0.558)						
2. LnDBSI			0.0623*** (0.000)	0.2881** (0.029)				
3. LnLBSI					0.1545*** (0.000)	0.2965*** (0.000)		
4. LnFDindex							0.9462*** (0.000)	1.8955*** (0.002)
Provincial financial development indicator	0.0032*** (0.000)	0.0032*** (0.001)	0.0034*** (0.000)	0.0036*** (0.002)	0.0026*** (0.000)	0.0026*** (0.000)	0.0024*** (0.001)	0.0022** (0.011)
Dependency	-0.0574*** (0.010)	-0.0572*** (0.010)	-0.0561*** (0.010)	-0.0497* (0.096)	-0.0739*** (0.000)	-0.0694*** (0.000)	-0.0773*** (0.000)	-0.0749*** (0.000)
Education	0.0150*** (0.000)	0.0148*** (0.001)	0.0142*** (0.001)	0.0087 (0.201)	0.0125*** (0.000)	0.0087** (0.027)	0.0120*** (0.000)	0.0073* (0.088)
Households' size	-0.0429*** (0.009)	-0.0424** (0.011)	-0.0458*** (0.004)	-0.0509** (0.025)	-0.0540*** (0.000)	-0.0662*** (0.000)	-0.0470*** (0.000)	-0.0534*** (0.000)
Household head's age	0.0003 (0.969)	0.0005 (0.953)	0.0068 (0.433)	0.0322* (0.096)	0.0029 (0.639)	0.0108 (0.165)	0.0022 (0.732)	0.0105 (0.248)
Household head's age squared	-4.94e-06 (0.952)	-6.36e-06 (0.938)	-0.0001 (0.427)	-0.0003* (0.095)	-0.00002 (0.668)	-0.0001 (0.196)	-0.00002 (0.749)	-0.0001 (0.278)
Household head's gender	-0.0398 (0.366)	-0.0417 (0.363)	-0.0355 (0.399)	-0.0401 (0.475)	-0.0241 (0.449)	-0.0362 (0.285)	-0.0164 (0.604)	-0.0236 (0.485)
Household interest rate	0.0002 (0.694)	0.0003 (0.682)	0.0004 (0.505)	0.0013 (0.220)	-0.0002 (0.538)	-0.0001 (0.732)	-0.0001 (0.850)	0.0002 (0.668)
Fixed asset	0.0503*** (0.000)	0.0496*** (0.000)	0.0489*** (0.000)	0.0362** (0.023)	0.0332*** (0.000)	0.0236** (0.042)	0.0273*** (0.001)	0.0096 (0.532)
Relationship	0.2233*** (0.000)	0.2221*** (0.000)	0.2069*** (0.000)	0.1349*** (0.007)	0.1886*** (0.000)	0.1395*** (0.000)	0.1962*** (0.000)	0.1500*** (0.000)
Health expenditure	0.0268** (0.018)	0.0260** (0.027)	0.0303*** (0.007)	0.0342** (0.037)	0.0327*** (0.000)	0.0294*** (0.000)	0.0331*** (0.000)	0.0293*** (0.001)
Urban dummy	0.2720*** (0.000)	0.2701*** (0.000)	0.2542*** (0.000)	0.1694** (0.021)	0.1992*** (0.000)	0.1588*** (0.000)	0.1520*** (0.000)	0.0599 (0.359)
Ethnicity dummy	-0.0654 (0.340)	-0.0775 (0.449)	-0.0462 (0.472)	-0.1066 (0.339)	-0.0912** (0.018)	-0.0491 (0.294)	-0.1236*** (0.002)	-0.1107** (0.038)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.5583		0.9347		0.6617		0.5757
R_squared	0.4412	0.4404	0.4726		0.5147	0.4678	0.5249	0.4554
Observations	933	933	933	933	1663	1642	1663	1643

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance. $FDindex = 3994.2258 + 0.0524*Loan + 0.0906*Bond (Share) + 0.4497*Insurance$.

Table 3.2: The effects of financial development on households' investment

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	6.7540*** (0.000)	6.8133*** (0.000)	5.8649*** (0.000)	5.2365*** (0.000)	3.5337*** (0.000)	1.3652 (0.586)	-1.6224* (0.078)	-11.3770 (0.289)
Households' financial development indicator								
1. FD	0.0122*** (0.000)	0.0186 (0.198)						
2. LnDBSI			0.1471*** (0.000)	0.2659* (0.056)				
3. LnLBSI					0.4622*** (0.000)	0.7914** (0.036)		
4. FDindex							0.9238*** (0.000)	2.0227* (0.091)
Provincial financial development indicator	0.0031 (0.116)	0.0028 (0.215)	0.0038* (0.068)	0.0039* (0.074)	0.0008 (0.303)	0.0007 (0.412)	0.0012 (0.450)	0.0009 (0.624)
Dependency	0.0014 (0.975)	0.0024 (0.958)	0.0038 (0.931)	0.0073 (0.873)	-0.0245 (0.398)	-0.0115 (0.729)	-0.0382 (0.226)	-0.0332 (0.328)
Education	0.0191** (0.037)	0.0175* (0.068)	0.0187** (0.040)	0.0158 (0.101)	0.0178*** (0.004)	0.0097 (0.370)	0.0201*** (0.002)	0.0092 (0.502)
Households' size	0.1367*** (0.000)	0.1399*** (0.000)	0.1267*** (0.000)	0.1237*** (0.000)	0.0981*** (0.000)	0.0684* (0.091)	0.1327*** (0.000)	0.1242*** (0.000)
Household head's age	-0.0200 (0.254)	-0.0188 (0.286)	-0.0057 (0.732)	0.0078 (0.717)	-0.0099 (0.399)	0.0071 (0.750)	-0.0219* (0.083)	-0.0077 (0.718)
Household head's age squared	0.0002 (0.310)	0.0016 (0.341)	0.00003 (0.823)	-0.0001 (0.655)	0.0001 (0.633)	-0.0001 (0.627)	0.0002 (0.172)	0.00004 (0.840)
Household head's gender	0.1136 (0.198)	0.1006 (0.283)	0.1338 (0.125)	0.1302 (0.147)	0.1509** (0.017)	0.1325* (0.058)	0.1664** (0.014)	0.1537** (0.031)
Household interest rate	0.0012 (0.467)	0.0013 (0.440)	0.0015 (0.332)	0.0019 (0.243)	0.0005 (0.543)	0.0005 (0.598)	0.0009 (0.346)	0.0012 (0.203)
Fixed asset	0.1164*** (0.000)	0.1117*** (0.000)	0.1175*** (0.000)	0.1113*** (0.000)	0.0533*** (0.000)	0.0199 (0.633)	0.0618*** (0.000)	0.0158 (0.719)
Relationship	0.2724*** (0.000)	0.2645*** (0.000)	0.2403*** (0.000)	0.2023*** (0.001)	0.1829*** (0.000)	0.0725 (0.573)	0.2697*** (0.000)	0.1893** (0.032)
Health expenditure	0.0144 (0.579)	0.0059 (0.785)	0.0243 (0.232)	0.0263 (0.216)	0.0323** (0.029)	0.0247 (0.161)	0.0348** (0.031)	0.0248 (0.264)
Urban dummy	0.1999** (0.031)	0.1874* (0.053)	0.1694* (0.073)	0.1256 (0.265)	0.0861 (0.209)	0.0023 (0.985)	0.0141 (0.848)	-0.2078 (0.380)
Ethnicity dummy	-0.4474*** (0.001)	-0.5288** (0.017)	-0.3330** (0.016)	-0.3648*** (0.009)	-0.1558** (0.035)	-0.0608 (0.651)	-0.3048*** (0.000)	-0.3232*** (0.005)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.3206		0.9954		0.1133		0.7418
R_squared	0.3048	0.2929	0.3329	0.2869	0.4632	0.3718	0.3852	0.2397
Observations	934	934	934	934	1665	1665	1665	1657

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance. $FDindex = 9.3080 + 1.18e-05 * Loan + 1.82e-05 * Bond (Share) + 1.703e-04 * Insurance$.

Table 3.3: The effects of financial development on households' savings

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	6.8388*** (0.000)	5.7591**** (0.000)	6.2267*** (0.000)	1.0678 (0.769)	4.3689*** (0.000)	-0.4135 (0.861)	-0.7289 (0.463)	-29.6065** (0.021)
Households' financial development indicator								
1. FD	0.0083* (0.052)	0.0926* (0.078)						
2. LnDBSI			0.1035*** (0.000)	0.8466* (0.098)				
3. LnLBSI					0.3047*** (0.000)	0.9872*** (0.003)		
4. FDindex							0.9148*** (0.000)	4.5668*** (0.004)
Provincial financial development indicator	0.0063*** (0.003)	0.0095*** (0.001)	0.0066*** (0.003)	0.0108** (0.015)	0.0041** (0.045)	0.0049* (0.059)	0.0042** (0.046)	0.0060* (0.068)
Dependency	-0.1428** (0.026)	-0.1471** (0.046)	-0.1394** (0.026)	-0.1200 (0.219)	-0.1787*** (0.000)	-0.1814*** (0.001)	-0.1818*** (0.000)	-0.1953** (0.017)
Education	0.0209 (0.111)	0.0319* (0.098)	0.0189 (0.145)	0.0127 (0.556)	0.02472** (0.025)	0.0024 (0.879)	0.0266** (0.016)	-0.0053 (0.776)
Households' size	0.1809*** (0.000)	0.2493*** (0.000)	0.1718*** (0.000)	0.1641** (0.023)	0.1961*** (0.000)	0.1430*** (0.002)	0.2189*** (0.000)	0.2143*** (0.000)
Household head's age	-0.0475 (0.065)	-0.0105 (0.780)	-0.0363 (0.144)	0.0682 (0.405)	-0.0317 (0.103)	0.0139 (0.638)	-0.0387** (0.043)	0.0168 (0.703)
Household head's age squared	0.0004* (0.087)	0.0001 (0.830)	0.0003 (0.178)	-0.0006 (0.388)	0.0003 (0.136)	-0.0001 (0.592)	0.0003* (0.059)	-0.0002 (0.688)
Household head's gender	-0.1661 (0.223)	-0.1794 (0.361)	-0.1455 (0.275)	-0.0143 (0.949)	-0.1727* (0.074)	-0.2731** (0.037)	-0.1490 (0.128)	-0.2467* (0.081)
Household interest rate	-0.0003 (0.881)	0.0011 (0.638)	0.0002 (0.920)	0.0047 (0.253)	-0.0007 (0.544)	-0.0006 (0.562)	-0.0003 (0.780)	0.0011 (0.414)
Fixed asset	0.0994*** (0.002)	0.0685 (0.146)	0.0941*** (0.003)	0.0325 (0.645)	0.0671*** (0.008)	0.0004 (0.994)	0.0708*** (0.006)	-0.0370 (0.465)
Relationship	0.2575**** (0.000)	0.1931** (0.025)	0.2356*** (0.000)	0.0341 (0.840)	0.1778*** (0.000)	-0.0444 (0.697)	0.2193*** (0.000)	-0.0134 (0.888)
Health expenditure	-0.0144 (0.66)	-0.0363 (0.470)	-0.0053 (0.870)	0.0444 (0.509)	-0.0054 (0.834)	-0.0121 (0.695)	-0.0119 (0.640)	-0.0522 (0.208)
Urban dummy	0.2082* (0.089)	0.1687 (0.287)	0.1853 (0.126)	-0.0052 (0.892)	0.1496 (0.134)	0.0512 (0.720)	0.0801 (0.428)	-0.3653 (0.148)
Ethnicity dummy	-0.0757 (0.774)	0.1423 (0.668)	-0.0589 (0.821)	0.2117 (0.588)	0.0175 (0.891)	0.2219 (0.242)	-0.0338 (0.791)	0.1325 (0.419)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.2443		0.7232		0.8567		0.7184
R_squared	0.1746		0.1941		0.2391		0.2354	
Observations	640	636	640	636	1105	1093	1105	1093

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance. $FDindex = 8.1170 + 8.79e-06 * Loan + 0.6e-04 * Bond (Share) + 14.89e-05 * Insurance$.

Table 3.4: The effects of financial development on households' labor productivity

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	7.2887*** (0.000)	7.3226*** (0.000)	6.9480*** (0.000)	5.594*** (0.000)	6.22539*** (0.000)	5.1498*** (0.000)	-2.1090** (0.014)	-12.7005* (0.054)
Households' financial development indicator								
1. FD	0.0028*** (0.006)	0.0064 (0.446)						
2. LnDBSI			0.0604*** (0.000)	0.3202** (0.033)				
3. LnLBSI					0.1559*** (0.000)	0.3202*** (0.000)		
4. LnFDindex							1.0659*** (0.000)	2.2659*** (0.002)
Provincial financial development indicator	0.0033*** (0.000)	0.0031*** (0.002)	0.0035*** (0.000)	0.0037*** (0.004)	0.0026*** (0.000)	0.0027*** (0.000)	0.0024*** (0.001)	0.0022** (0.013)
Dependency	0.2784*** (0.000)	0.2791*** (0.000)	0.2802*** (0.000)	0.2899*** (0.000)	0.2611*** (0.000)	0.2656*** (0.000)	0.2589*** (0.000)	0.2619*** (0.000)
Education	0.0149*** (0.001)	0.0141*** (0.004)	0.0143*** (0.001)	0.0080 (0.286)	0.0124*** (0.000)	0.0084** (0.038)	0.0115*** (0.000)	0.0066 (0.152)
Households' size	-0.1854*** (0.000)	-0.1837*** (0.000)	-0.1885*** (0.000)	-0.1959*** (0.000)	-0.2014*** (0.000)	-0.2127*** (0.000)	-0.1959*** (0.000)	-0.2017*** (0.000)
Household head's age	-0.0005 (0.956)	0.0002 (0.986)	0.0058 (0.536)	0.0351 (0.109)	0.0024 (0.718)	0.0106 (0.200)	0.0016 (0.819)	0.0097 (0.309)
Household head's age squared	3.66e-06 (0.967)	-1.74e-06 (0.984)	-0.0001 (0.534)	-0.0003 (0.109)	-0.00002 (0.794)	-0.0001 (0.248)	-7.53e-06 (0.906)	-0.0001 (0.376)
Household head's gender	-0.0717 (0.126)	-0.0786 (0.111)	-0.0673 (0.136)	-0.0709 (0.254)	-0.0465 (0.166)	-0.0596* (0.100)	-0.0370 (0.266)	-0.0409 (0.250)
Household interest rate	0.0004 (0.542)	0.0004 (0.503)	0.0006 (0.392)	0.0015 (0.177)	-0.0001 (0.755)	-0.0001 (0.877)	0.00003 (0.944)	0.0002 (0.612)
Fixed asset	0.0489*** (0.000)	0.0463*** (0.001)	0.0475*** (0.000)	0.0325* (0.061)	0.0307*** (0.000)	0.0178 (0.163)	0.0254*** (0.003)	0.0042 (0.798)
Relationship	0.2265*** (0.000)	0.2220*** (0.000)	0.2102*** (0.000)	0.1251** (0.028)	0.1874*** (0.000)	0.1312*** (0.000)	0.1964*** (0.000)	0.1463*** (0.000)
Health expenditure	0.0278** (0.018)	0.0247* (0.054)	0.0314*** (0.007)	0.0368** (0.039)	0.0331*** (0.000)	0.0302*** (0.001)	0.0334*** (0.000)	0.0299*** (0.001)
Urban dummy	0.2709*** (0.000)	0.2638*** (0.000)	0.2538*** (0.000)	0.1565* (0.052)	0.1988*** (0.000)	0.1554*** (0.001)	0.1503*** (0.000)	0.0501 (0.471)
Ethnicity dummy	-0.0537 (0.435)	-0.0993 (0.395)	-0.0348 (0.582)	-0.1035 (0.392)	-0.1065*** (0.006)	-0.0584 (0.228)	-0.1397*** (0.000)	-0.1259** (0.016)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.9626		0.9626		0.6726		0.4151
R_squared	0.4440	0.4333	0.4717		0.5016	0.4383	0.5105	0.5105
Observations	928	928	928	928	1641	1622	1641	1622

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance. $FDindex = 8091.3494 + 8.52e-02 * Loan + 0.1116 * Bond (Share) + 0.8844 * Insurance$.

Table 3.5: The effects of financial development on households' information technology

	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.2339 (0.797)	0.1494 (0.895)	-0.6526 (0.481)	-3.9620 (0.131)	-1.6874** (0.039)	-5.3845** (0.038)	-4.3324*** (0.009)	-28.6069 (0.101)
Households' financial development indicator								
1. FD	0.0016 (0.451)	0.0425 (0.251)						
2. LnDBSI			0.0712** (0.014)	0.6610* (0.086)				
3. LnLBSI					0.2657*** (0.000)	0.7768** (0.025)		
4. FDindex							1.0262*** (0.003)	6.9234* (0.098)
Provincial financial development indicator	0.0064 (0.758)	0.0030 (0.891)	0.0078 (0.704)	0.0191 (0.408)	0.0058 (0.119)	0.0061 (0.131)	0.0057 (0.169)	0.0058 (0.224)
Dependency	-0.1194* (0.099)	-0.1081 (0.149)	-0.1187 (0.102)	-0.1087 (0.273)	-0.1118* (0.051)	-0.0962 (0.122)	-0.1187* (0.099)	-0.1022 (0.287)
Education	0.0441*** (0.006)	0.0314 (0.128)	0.0442*** (0.005)	0.0415* (0.061)	0.0354*** (0.007)	0.0297** (0.043)	0.0415*** (0.010)	0.0122 (0.661)
Households' size	0.0794 (0.201)	0.1292* (0.099)	0.0832 (0.183)	0.1457 (0.126)	0.0459 (0.302)	0.0272 (0.592)	0.0787 (0.200)	0.0659 (0.389)
Household head's age	-0.0045 (0.877)	0.0113 (0.747)	0.0041 (0.890)	0.0781 (0.235)	0.0031 (0.901)	0.0350 (0.310)	0.0058 (0.850)	0.0645 (0.315)
Household head's age squared	0.0001 (0.749)	-0.00004 (0.901)	0.00001 (0.969)	-0.0007 (0.272)	-0.00002 (0.929)	-0.0003 (0.327)	-4.09e-06 (0.989)	-0.0005 (0.367)
Household head's gender	-0.2536 (0.114)	-0.3129* (0.087)	-0.2522 (0.120)	-0.2421 (0.275)	-0.2621** (0.038)	-0.2673* (0.052)	-0.2716* (0.086)	-0.3651* (0.052)
Household interest rate	0.0001 (0.998)	0.0004 (0.924)	-0.0004 (0.927)	-0.0034 (0.520)	-0.0001 (0.957)	-0.0001 (0.974)	0.0003 (0.944)	0.0013 (0.800)
Fixed asset	0.0555 (0.169)	0.0325 (0.485)	0.0545 (0.171)	0.0355 (0.519)	0.0539* (0.097)	-0.0081 (0.884)	0.0357 (0.376)	-0.1034 (0.320)
Relationship	0.4005*** (0.000)	0.3089*** (0.001)	0.3699*** (0.000)	0.0860 (0.666)	0.3034*** (0.000)	0.1409 (0.262)	0.3503*** (0.000)	0.1577 (0.273)
Health expenditure	0.1636*** (0.000)	0.0990* (0.054)	0.1647*** (0.000)	0.1506*** (0.007)	0.1382*** (0.000)	0.1271*** (0.000)	0.1600*** (0.000)	0.1525*** (0.002)
Urban dummy	1.4470*** (0.000)	1.3756*** (0.000)	1.4251*** (0.000)	1.2302*** (0.000)	1.1203*** (0.000)	0.8914*** (0.000)	1.2905*** (0.000)	0.7618* (0.077)
Ethnicity dummy	0.0797 (0.816)	-1.0790 (0.173)	0.0962 (0.765)	-0.1461 (0.806)	0.0382 (0.850)	0.1146 (0.623)	0.0603 (0.855)	-0.1101 (0.785)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.3416		0.4801		0.9448		0.8473
R_squared	0.4019	0.1590	0.4079		0.3706	0.2797	0.4167	0.0783
Observations	597	592	597	592	933	922	596	590

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

FD is measured by the share of deposit, bond and share, and insurance to income. LnDBSI is measured by the log of the level of deposit, bond and share, and insurance. LnLBSI is measured by the log of the level of loan, bond and share, and insurance. $FDindex = 4.2476 + 4.62e-06 * Loan$.

**Table 3.6: The simultaneous effects of financial development on households' economic activities
(3SLS Estimation Approach)**

Dependent Variables Independent Variables	INCOME	INVESTMENT	SAVINGS	LABOUR PRODUCTIVITY	INFORMATION TECHNOLOGY
	(1)	(2)	(3)	(4)	(5)
Constant	2.0141*** (0.000)	6.8046*** (0.000)	7.2639*** (0.000)	7.7866*** (0.000)	0.1947 (0.858)
Investment	0.0505*** (0.000)				
Savings	0.1459*** (0.000)				
Labour productivity	0.4823*** (0.000)				
Information technology	0.0821*** (0.000)				
Households' financial development indicator		0.0177*** (0.000)	0.0049 (0.180)	0.0044*** (0.005)	0.0073 (0.112)
Provincial financial development indicator		0.0046* (0.057)	0.0029 (0.281)	0.0021* (0.074)	0.0018 (0.337)
Dependency		0.0165 (0.789)	-0.2434*** (0.000)	0.2980*** (0.000)	-0.2881*** (0.001)
Education		0.0129 (0.333)	-0.0046 (0.754)	0.0042 (0.513)	0.0525*** (0.005)
Households' size		0.1208*** (0.009)	0.1545*** (0.003)	-0.1763*** (0.000)	0.1033 (0.114)
Household head's age		-0.0325 (0.248)	-0.0321 (0.304)	-0.0139 (0.309)	-0.0115 (0.774)
Household head's age squared		0.0003 (0.303)	0.0003 (0.349)	0.0001 (0.307)	0.0001 (0.708)
Household head's gender		-0.0087 (0.947)	-0.1819 (0.209)	-0.1308** (0.039)	-0.2240 (0.226)
Household interest rate		0.0038 (0.241)	-0.0018 (0.615)	0.0010 (0.502)	0.0001 (0.979)
Fixed asset		0.1291*** (0.000)	0.0811** (0.013)	0.0372*** (0.009)	0.0564 (0.176)
Relationship		0.3013*** (0.000)	0.2506*** (0.000)	0.2304*** (0.000)	0.4034*** (0.000)
Health expenditure		0.0534 (0.102)	0.0096 (0.790)	0.0442*** (0.005)	0.1793*** (0.000)
Urban dummy		0.1323 (0.270)	0.2589* (0.052)	0.2440*** (0.000)	1.3264*** (0.000)
Ethnicity dummy		-0.5186** (0.043)	0.1028 (0.719)	-0.0216 (0.862)	0.2442 (0.502)
Regional dummy	0.8381	Yes	Yes	Yes	Yes
R_squared	417	0.3136	0.1804	0.4627	0.3974
Observations	417	417	417	417	417

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the share of deposit, bond and share, and insurance to income.

**Table 3.7: The simultaneous effects of financial development on households' economic activities
(3SLS Estimation Approach)**

Dependent Variables Independent Variables	INCOME	INVESTMENT	SAVINGS	LABOUR PRODUCTIVITY	INFORMATION TECHNOLOGY
	(1)	(2)	(3)	(4)	(5)
Constant	1.9879*** (0.000)	5.9991*** (0.000)	6.6553*** (0.000)	7.4332*** (0.000)	-0.2215 (0.842)
Investment	0.0516*** (0.000)				
Savings	0.1462*** (0.000)				
Labour productivity	0.4837*** (0.000)				
Information technology	0.0819*** (0.000)				
Households' financial development indicator		0.1484*** (0.000)	0.0918*** (0.000)	0.0568*** (0.000)	0.0730** (0.029)
Provincial financial development indicator		0.0049** (0.039)	0.0033 (0.219)	0.0023** (0.046)	0.0019 (0.311)
Dependency		0.0222 (0.716)	-0.2409*** (0.000)	0.2997*** (0.000)	-0.2853*** (0.001)
Education		0.0084 (0.524)	-0.0065 (0.658)	0.0029 (0.651)	0.0505*** (0.007)
Households' size		0.1071** (0.018)	0.1534*** (0.002)	-0.1787*** (0.000)	0.0982 (0.130)
Household head's age		-0.0213 (0.447)	-0.0206 (0.508)	-0.0078 (0.560)	-0.0048 (0.904)
Household head's age squared		0.0002 (0.519)	0.0002 (0.554)	0.0001 (0.542)	0.0001 (0.830)
Household head's gender		0.0152 (0.906)	-0.1553 (0.278)	-0.1173* (0.059)	-0.2094 (0.257)
Household interest rate		0.0034 (0.281)	-0.0022 (0.539)	0.0009 (0.575)	-0.0001 (0.986)
Fixed asset		0.1261*** (0.000)	0.0784** (0.015)	0.0358*** (0.010)	0.0545 (0.190)
Relationship		0.2703*** (0.000)	0.2196*** (0.000)	0.2144*** (0.000)	0.3848*** (0.000)
Health expenditure		0.0792** (0.014)	0.0211 (0.556)	0.0524*** (0.001)	0.1909*** (0.000)
Urban dummy		0.1148 (0.333)	0.2398* (0.069)	0.2342*** (0.000)	1.3164*** (0.000)
Ethnicity dummy		-0.4870* (0.055)	0.1267 (0.653)	-0.0081 (0.947)	0.2614 (0.471)
Regional dummy		Yes	Yes	Yes	Yes
R_squared	0.8382	0.3285	0.1975	0.4861	0.3989
Observations	417	417	417	417	417

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the log of the level of deposit, bond and share, and insurance.

**Table 3.8: The simultaneous effects of financial development on households' economic activities
(3SLS Estimation Approach)**

Dependent Variables Independent Variables	INCOME	INVESTMENT	SAVINGS	LABOUR PRODUCTIVITY	INFORMATION TECHNOLOGY
	(1)	(2)	(3)	(4)	(5)
Constant	1.9626*** (0.000)	3.7075*** (0.000)	3.9078*** (0.000)	6.3384*** (0.000)	-1.8467* (0.055)
Investment	0.0602*** (0.000)				
Savings	0.1249*** (0.000)				
Labour productivity	0.4941*** (0.000)				
Information technology	0.0889*** (0.000)				
Households' financial development indicator		0.5147*** (0.000)	0.3573*** (0.000)	0.1846*** (0.000)	0.2692*** (0.000)
Provincial financial development indicator		0.0038** (0.041)	0.0023 (0.373)	0.0020** (0.039)	0.0007 (0.649)
Dependency		-0.0430 (0.293)	-0.2330*** (0.000)	0.2926*** (0.000)	-0.3514*** (0.000)
Education		0.0001 (0.993)	-0.0045 (0.706)	0.0004 (0.929)	0.0311** (0.037)
Households' size		0.0834*** (0.007)	0.1697*** (0.000)	-0.2055*** (0.000)	0.0567 (0.281)
Household head's age		-0.0196 (0.296)	0.0005 (0.984)	0.0007 (0.940)	0.0086 (0.787)
Household head's age squared		0.0001 (0.417)	-0.00002 (0.929)	2.13e-06 (0.982)	-0.00004 (0.888)
Household head's gender		-0.0466 (0.590)	-0.2057* (0.086)	-0.1163** (0.011)	-0.13330 (0.364)
Household interest rate		0.00004 (0.980)	-0.0035* (0.100)	-0.0004 (0.592)	0.0010 (0.692)
Fixed asset		0.0485** (0.015)	0.0371 (0.178)	0.0207** (0.050)	0.0495 (0.143)
Relationship		0.2106*** (0.000)	0.1680*** (0.001)	0.1824*** (0.000)	0.3369*** (0.000)
Health expenditure		0.0435** (0.049)	0.0134 (0.662)	0.0463*** (0.000)	0.1839*** (0.000)
Urban dummy		-0.0246 (0.771)	0.1184 (0.312)	0.1674*** (0.000)	1.1146*** (0.000)
Ethnicity dummy		-0.0834 (0.548)	0.1724 (0.369)	-0.0227 (0.757)	-0.1404 (0.551)
Regional dummy		Yes	Yes	Yes	Yes
R_squared	0.8271	0.5001	0.2574	0.5385	0.3640
Observations	639	639	639	639	639

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the log of the level of loan, bond and share, and insurance.

**Table 3.9: The simultaneous effects of financial development on households' economic activities
(3SLS Estimation Approach)**

Dependent Variables Independent Variables	INCOME	INVESTMENT	SAVINGS	LABOUR PRODUCTIVITY	INFORMATION TECHNOLOGY
	(1)	(2)	(3)	(4)	(5)
Constant	1.9756*** (0.000)	0.7344 (0.425)	2.4102** (0.028)	1.1586 (1.59)	-4.0661** (0.013)
Investment	0.0415*** (0.002)				
Savings	0.1527*** (0.000)				
Labour productivity	0.4906*** (0.000)				
Information technology	0.0804*** (0.000)				
Households' financial development indicator		0.7374*** (0.000)	0.6113*** (0.000)	0.7679*** (0.000)	1.0956*** (0.001)
Provincial financial development indicator		0.0058*** (0.008)	0.0036 (0.152)	0.0028*** (0.007)	0.0078** (0.022)
Dependency		-0.0029 (0.957)	-0.2618*** (0.000)	0.2842*** (0.000)	-0.3035*** (0.000)
Education		0.0005 (0.967)	-0.0148 (0.290)	-0.0018 (0.758)	0.0469** (0.012)
Households' size		0.1171*** (0.004)	0.1558*** (0.001)	-0.1769*** (0.000)	0.1113* (0.082)
Household head's age		-0.0205 (0.414)	-0.0198 (0.500)	-0.0086 (0.483)	-0.0069 (0.859)
Household head's age squared		0.0002 (0.469)	0.0002 (0.573)	0.0001 (0.462)	0.0001 (0.773)
Household head's gender		-0.0623 (0.591)	-0.2022 (0.137)	-0.1377** (0.016)	-0.2688 (0.138)
Household interest rate		0.0046 (0.106)	-0.0017 (0.605)	0.0011 (0.441)	0.0009 (0.835)
Fixed asset		0.0892*** (0.001)	0.0540* (0.081)	0.0144 (0.274)	0.0375 (0.366)
Relationship		0.2212*** (0.000)	0.2246*** (0.000)	0.1967*** (0.000)	0.3557*** (0.000)
Health expenditure		0.0259 (0.375)	0.0016 (0.962)	0.0371*** (0.010)	0.1691*** (0.000)
Urban dummy		-0.0109 (0.919)	0.1476 (0.242)	0.1772*** (0.001)	1.2101*** (0.000)
Ethnicity dummy		-0.5866*** (0.010)	0.1225 (0.648)	-0.0231 (0.838)	0.1825 (0.609)
Regional dummy		Yes	Yes	Yes	Yes
R_squared	0.8380	0.4233	0.2647	0.2647	0.4150
Observations	416	416	416	416	416

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

Households' financial development indexes are constructed as follows:

- FDindex for income equation = $3994.2258 + 0.0524 \cdot \text{Loan} + 0.0906 \cdot \text{Bond (Share)} + 0.4497 \cdot \text{Insurance}$.
- FDindex for investment equation = $9.3080 + 1.18e-05 \cdot \text{Loan} + 1.82e-05 \cdot \text{Bond (Share)} + 1.703e-04 \cdot \text{Insurance}$.
- FDindex for saving equation = $8.1170 + 8.79e-06 \cdot \text{Loan} + 0.6e-04 \cdot \text{Bond (Share)} + 14.89e-05 \cdot \text{Insurance}$.
- FDindex for labour productivity equation = $8091.3494 + 8.52e-02 \cdot \text{Loan} + 0.1116 \cdot \text{Bond (Share)} + 0.8844 \cdot \text{Insurance}$.
- FDindex for information technology equation = $4.2476 + 4.62e-06 \cdot \text{Loan}$.

Table 3.10: The effects of financial development on households' economic welfare

Independent Variables	Expenditure Per Capita		Expenditure for Food and Drink Per Capita		Expenditure for Non Food and Drink Per Capita	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Constant	6.4126*** (0.000)	6.1977*** (0.000)	6.4248*** (0.000)	6.2186*** (0.000)	4.8592*** (0.000)	4.5997*** (0.000)
Households' financial development indicator	0.0018 (0.183)	0.0315* (0.069)	0.0007 (0.507)	0.0319* (0.051)	0.0035 (0.127)	0.0380 (0.147)
Provincial financial development indicator	0.0032*** (0.000)	0.0039*** (0.000)	0.0024*** (0.000)	0.0031*** (0.000)	0.0039*** (0.000)	0.0047*** (0.000)
Dependents	-0.0900*** (0.000)	-0.0744*** (0.000)	-0.0750*** (0.000)	-0.0574*** (0.001)	-0.1038*** (0.000)	-0.0870*** (0.001)
Adults	-0.0371*** (0.004)	-0.0165 (0.370)	-0.0295*** (0.009)	-0.0077 (0.651)	-0.0437** (0.021)	-0.0198 (0.467)
Education	0.0164*** (0.000)	0.0197*** (0.000)	0.0064** (0.025)	0.0099** (0.031)	0.0306*** (0.000)	0.0341*** (0.000)
Household head's age	0.0142** (0.032)	0.0181** (0.041)	0.0060 (0.224)	0.0097 (0.214)	0.0222** (0.041)	0.0270** (0.041)
Household head's age squared	-0.0001** (0.027)	-0.0002** (0.031)	-0.0001 (0.236)	-0.0001 (0.184)	-0.0002** (0.032)	-0.0003** (0.032)
Household head's gender	-0.0575 (0.148)	-0.1019* (0.056)	-0.0167 (0.568)	-0.0627 (0.131)	-0.0863 (0.147)	-0.1380* (0.066)
Household interest rate	0.0003 (0.519)	0.0004 (0.406)	0.0004 (0.315)	0.0005 (0.263)	0.0002 (0.695)	0.0003 (0.574)
Fixed asset	0.0366*** (0.000)	0.0268** (0.023)	0.0252*** (0.000)	0.0136 (0.228)	0.0464*** (0.000)	0.0364** (0.035)
Relationship	0.1727*** (0.000)	0.1688*** (0.000)	0.1217*** (0.000)	0.1170*** (0.000)	0.2281*** (0.000)	0.2239*** (0.000)
Health expenditure	0.0160* (0.061)	0.0178 (0.111)	0.0113 (0.115)	0.0129 (0.226)	0.0233* (0.079)	0.0250 (0.109)
Urban dummy	0.2546*** (0.000)	0.2637*** (0.000)	0.2275*** (0.000)	0.2386*** (0.000)	0.2917*** (0.000)	0.3027*** (0.000)
Ethnicity dummy	-0.0245 (0.676)	0.0435 (0.562)	-0.0512 (0.348)	0.0233 (0.744)	0.0047 (0.960)	0.0807 (0.474)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.7000		0.7834		0.1553
R_squared	0.4646	0.1579	0.4338		0.3798	0.1751
Observations	931	920	931	920	931	923

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the share of deposit, bond and share, and insurance to income.

Table 3.11: The effects of financial development on households' economic welfare

Independent Variables	Expenditure Per Capita		Expenditure for Food and Drink Per Capita		Expenditure for Non Food and Drink Per Capita	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Constant	6.2047*** (0.000)	5.2195*** (0.000)	6.3017*** (0.000)	5.5530*** (0.000)	4.5455*** (0.000)	3.3504*** (0.000)
Households' financial development indicator	0.0388*** (0.000)	0.2111** (0.031)	0.0225*** (0.000)	0.1562* (0.056)	0.0595*** (0.000)	0.2657** (0.045)
Provincial financial development indicator	0.0032*** (0.000)	0.0036*** (0.000)	0.0025*** (0.000)	0.0028*** (0.000)	0.0039*** (0.000)	0.0044*** (0.000)
Dependents	-0.0910*** (0.000)	-0.0897*** (0.000)	-0.0754*** (0.000)	-0.0734*** (0.000)	-0.1056*** (0.000)	-0.1053*** (0.000)
Adults	-0.0392*** (0.002)	-0.0401** (0.026)	-0.0304*** (0.007)	-0.0308** (0.048)	-0.0473** (0.011)	-0.0489** (0.040)
Education	0.0156*** (0.000)	0.0130** (0.013)	0.0060** (0.037)	0.0040 (0.339)	0.0293*** (0.000)	0.0260*** (0.000)
Household head's age	0.0183*** (0.007)	0.0373*** (0.010)	0.0084* (0.091)	0.0228** (0.049)	0.0283*** (0.010)	0.0516*** (0.009)
Household head's age squared	-0.0002*** (0.006)	-0.0004*** (0.009)	-0.0001* (0.096)	-0.0002** (0.050)	-0.0003*** (0.008)	-0.0005*** (0.008)
Household head's gender	-0.0557 (0.158)	-0.06231 (0.228)	-0.0162 (0.572)	-0.0211 (0.558)	-0.0827 (0.165)	-0.0912 (0.214)
Household interest rate	0.0004 (0.337)	0.0010 (0.125)	0.0004 (0.233)	0.0009 (0.116)	0.0004 (0.457)	0.0011 (0.158)
Fixed asset	0.0353*** (0.000)	0.0254** (0.039)	0.0245*** (0.000)	0.0156 (0.136)	0.0448*** (0.000)	0.0340** (0.042)
Relationship	0.1620*** (0.000)	0.1144*** (0.000)	0.1154*** (0.000)	0.0778*** (0.000)	0.2117*** (0.000)	0.1553*** (0.000)
Health expenditure	0.0177** (0.037)	0.0262** (0.044)	0.0122* (0.086)	0.0190* (0.074)	0.0258* (0.051)	0.0358** (0.047)
Urban dummy	0.2418*** (0.000)	0.1889*** (0.000)	0.2202*** (0.000)	0.1805*** (0.000)	0.2719*** (0.000)	0.2080*** (0.003)
Ethnicity dummy	-0.0253 (0.660)	-0.0101 (0.893)	-0.0508 (0.347)	-0.0356 (0.584)	0.0019 (0.984)	0.0166 (0.878)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.9967		0.7115		0.5227
R_squared	0.4850	0.0639	0.4449	0.0455	0.4029	0.1041
Observations	931	920	931	920	931	920

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the log of the level of deposit, bond and share, and insurance.

Table 3.12: The effects of financial development on households' economic welfare

Independent Variables	Expenditure Per Capita		Expenditure for Food and Drink Per Capita		Expenditure for Non Food and Drink Per Capita	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Constant	6.0311*** (0.000)	5.3220*** (0.000)	6.2570*** (0.000)	5.6740*** (0.000)	4.1074*** (0.000)	2.7278*** (0.000)
Households' financial development indicator	0.0826*** (0.000)	0.1887*** (0.002)	0.0434*** (0.000)	0.1327** (0.016)	0.1367*** (0.000)	0.3435*** (0.000)
Provincial financial development indicator	0.0025*** (0.000)	0.0026*** (0.000)	0.0022*** (0.000)	0.0022*** (0.000)	0.0028*** (0.001)	0.0029*** (0.003)
Dependents	-0.1114*** (0.000)	-0.1163*** (0.000)	-0.0917*** (0.000)	-0.0960*** (0.000)	-0.1321*** (0.000)	-0.1424*** (0.000)
Adults	-0.0458*** (0.000)	-0.0544*** (0.000)	-0.0434*** (0.000)	-0.0502*** (0.000)	-0.0461*** (0.001)	-0.0636*** (0.000)
Education	0.0162*** (0.000)	0.0136*** (0.000)	0.0078*** (0.000)	0.0056** (0.036)	0.0292*** (0.000)	0.0242*** (0.000)
Household head's age	0.0071 (0.138)	0.0126** (0.032)	0.0013 (0.720)	0.0058 (0.228)	0.0129 (0.101)	0.0239** (0.014)
Household head's age squared	-0.0001 (0.123)	-0.0001** (0.030)	-6.79e-06 (0.845)	-0.00005 (0.290)	-0.0001* (0.063)	-0.0002*** (0.010)
Household head's gender	-0.0352 (0.225)	-0.0413 (0.180)	0.0128 (0.566)	0.0070 (0.771)	-0.0852* (0.056)	-0.0978** (0.041)
Household interest rate	-0.00001 (0.962)	-0.00001 (0.969)	0.0001 (0.517)	0.0002 (0.512)	-0.0001 (0.788)	-0.0002 (0.749)
Fixed asset	0.0251*** (0.000)	0.0152* (0.090)	0.0192*** (0.000)	0.0092 (0.281)	0.0276*** (0.005)	0.0086 (0.535)
Relationship	0.1614*** (0.000)	0.1259*** (0.000)	0.1182*** (0.000)	0.0883*** (0.000)	0.2143*** (0.000)	0.1446*** (0.000)
Health expenditure	0.0184*** (0.003)	0.0159** (0.016)	0.0137*** (0.010)	0.0122** (0.029)	0.0269*** (0.007)	0.0219** (0.045)
Urban dummy	0.2102*** (0.000)	0.1830*** (0.000)	0.2104*** (0.000)	0.1860*** (0.000)	0.2136*** (0.000)	0.1614*** (0.004)
Ethnicity dummy	-0.0511 (0.114)	-0.0179 (0.637)	-0.0296 (0.293)	-0.0019 (0.956)	-0.0886* (0.100)	-0.0272 (0.663)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.7636		0.1111		0.7257
R_squared	0.5095	0.4650	0.4649	0.4168	0.4294	0.3488
Observations	1665	1643	1665	1635	1665	1643

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

Households' financial development indicator is measured by the log of the level of loan, bond and share, and insurance.

Table 3.13: The effects of financial development on households' economic welfare

Independent Variables	Expenditure Per Capita		Expenditure for Food and Drink Per Capita		Expenditure for Non Food and Drink Per Capita	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Constant	-1.2480 (0.409)	-27.3352** (0.042)	-1.6746 (0.493)	-45.9354** (0.047)	-1.8567 (0.119)	-26.3016* (0.070)
Households' financial development indicator	1.0001*** (0.000)	4.3346** (0.011)	1.1226*** (0.001)	7.1710** (0.023)	1.0011*** (0.000)	4.5641** (0.031)
Provincial financial development indicator	0.0026*** (0.000)	0.0029*** (0.000)	0.0021*** (0.000)	0.0021*** (0.001)	0.0029*** (0.001)	0.0034*** (0.001)
Dependents	-0.1076*** (0.000)	-0.1077*** (0.000)	-0.0901*** (0.000)	-0.0931*** (0.000)	-0.1255*** (0.000)	-0.1254*** (0.000)
Adults	-0.0384*** (0.000)	-0.0376*** (0.001)	-0.0404*** (0.000)	-0.0446*** (0.000)	-0.0335** (0.015)	-0.0315* (0.073)
Education	0.0166*** (0.000)	0.0114*** (0.002)	0.0080*** (0.000)	0.0035 (0.283)	0.0304*** (0.000)	0.0228*** (0.000)
Household head's age	0.0041 (0.387)	0.0086 (0.201)	0.0006 (0.873)	0.0087 (0.189)	0.0073 (0.354)	0.0131 (0.213)
Household head's age squared	-0.00004 (0.360)	-0.0001 (0.219)	-2.17e-07 (0.995)	-0.0001 (0.230)	-0.0001 (0.252)	-0.0001 (0.188)
Household head's gender	-0.0307 (0.288)	-0.0327 (0.315)	0.0146 (0.512)	0.0096 (0.715)	-0.0776* (0.084)	-0.0803 (0.113)
Household interest rate	0.00002 (0.922)	0.0001 (0.745)	0.0002 (0.412)	0.0004 (0.151)	-0.0001 (0.876)	-0.0001 (0.907)
Fixed asset	0.0269*** (0.000)	0.0047 (0.708)	0.0196*** (0.000)	-0.0033 (0.793)	0.0327*** (0.001)	0.0017 (0.937)
Relationship	0.1767*** (0.000)	0.1351*** (0.000)	0.1262*** (0.000)	0.0907*** (0.000)	0.2433*** (0.000)	0.1820*** (0.000)
Health expenditure	0.0183*** (0.004)	0.0111 (0.249)	0.0144*** (0.006)	0.0134** (0.032)	0.0271*** (0.007)	0.0151 (0.328)
Urban dummy	0.2006*** (0.000)	0.0953 (0.135)	0.2025*** (0.000)	0.0954 (0.103)	0.2078*** (0.000)	0.0592 (0.586)
Ethnicity dummy	-0.0665** (0.041)	-0.0368 (0.322)	-0.0405 (0.150)	-0.0309 (0.335)	-0.1154** (0.034)	-0.0706 (0.257)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Hansen test (p-value)		0.7310		0.1976		0.1917
R_squared	0.5081	0.2246	0.4612	0.2331	0.4206	0.0913
Observations	1665	1643	1665	1643	1665	1643

Note: * = significant at 10%; ** = significant at 5%; ***= significant at 1%. P-values are in brackets.

Households' financial development indexes are constructed as follows:

- FDindex for estimated equation of expenditure per capita = $7.9143 + 1.38e-06*Loan + 7.64e-05*Insurance$.
- FDindex for estimated equation of expenditure for food and drink per capita = $7.3432 + 1.28e-06*Loan$.
- FDindex for estimated equation of expenditure for non food and non drink = $6.9912 + 1.64e-06*Loan + 11.85e-05*Insurance$.

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