

**OCCUPATIONAL CHOICE IN VIETNAM:
ENTREPRENEURSHIP OR WAGE EMPLOYMENT? –
INVESTIGATION OF DETERMINANTS AND POLICY
IMPLICATIONS**

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ABSTRACT

The study investigates the determinants of individuals' occupational choice between entrepreneurship and wage employment. The Multinomial Probit Model with instrumental variables has been applied for the panel data established from three rounds of Vietnam Household Living Standard Survey in 2004, 2006 and 2008. The key results exposed that individuals with lower educational attainment are more likely to be self-employed than the ones with higher education, possibly reflecting the fact that majority of self-employment in Vietnam have engaged in own-account workers. In addition, individuals have propensity to remain or switch into the self-employment particularly in trade and service sectors. These findings imply that the authorities should focus on these sectors to improve the business environment for the employers and change the share of own-account workers in a positive way.

KEY WORDS: Occupational choice, Entrepreneurship, Self-employment, Wage employment, Multinomial Probit Model

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ABBREVIATION

GSO	General Statistics Office
PCI	Provincial Competitiveness Index
VHLSS	Vietnam Household Living Standard Survey
VLSS	Vietnam Living Standard Survey
WB	World Bank

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I. INTRODUCTION

1.1. Rationale

The private entrepreneurship has been one of the major forces of recent rapid economic growth and poverty reduction in Vietnam (Perkins *et al.* 2008, To Trung Thanh *et al.* 2009). In addition to a huge number of informal household businesses, there have been a number of newly registered enterprises over the last decade as the result of new Enterprise Laws in 2000 and 2005. Accordingly, the number of private registered firms has increased by 160,000 enterprises during 2000-2005, and increased 15 times within 9 years (2000-2009). During 2000-2008, on average, private firm's asset increased 4 times (VND 14.6 billion in 2008 compared to VND 3.3 billion in 2000) (ECNA 2012). In 2008, private sector accounted for 36.4% of total fixed capital in the economy. This boom in private businesses has attracted a large number of unemployed in big cities and redundant farmers in rural areas, and made a great contribution to economic growth in Vietnam over years (Perkins *et al.*, 2008). Until 2010, private sector, especially in agricultural field and informal sector, has created as much as 86% employment for the whole economy; meanwhile, the corresponding figures for state sector and foreign-owned sector are only 10.4% and 3.6%. Many studies in Vietnam have shown that the private entrepreneurship has contributed to employment creation, budget revenue, income improvement for the employees, and thus to economic growth and poverty reduction (ECNA 2012).

Being aware of the importance of entrepreneurship in the economic development, the Vietnamese Government has launched many policies to encourage the private entrepreneurship development. The introduction of Entrepreneur Law is considered a significant step towards solidifying the domestic legal framework necessary for liberalization. The Law has dramatically reduced time and monetary costs for new enterprises and created more favourable business environment. The SME (small and medium size) development policy also helps private enterprises, accounting for most of the domestic enterprises, be treated more equally.

In Vietnam, it is believed that the self-employment sector accounts for a large part of the private entrepreneurship. However, individuals who have a choice between being a wage earner and a self-employed still face many challenges. People who want to be self-employed may suffer from limited access to resources including land, credit, and critical market information resulted from many issues related to financial and land policies. For financial policies, problems could be discrimination against small-size private businesses, corruption, strict application procedures, unreasonable credit policy, lack of information about credit policy, etc. (ECNA, 2013). The issues for land policies bureaucratic control of land ownership and the use of land for business purposes, poor land records, lack of information about such land issues as resources and industrial zones, high rental fees and bureaucratic procedures involved in rent application processes (To Trung Thanh *et al.*, 2009). The situation is even worse due to lack of supporting institutions for the employment choices such as shortages of good technical advisors and information.

Under this context, a comprehensive study on the individual's choice between wage employment and self-employment in Vietnam could be significant for the government strategies in the next phase of development. Having good knowledge of determinants of this occupational choice, the authorities could create a more favourable environment for individuals to choose their occupations, contributing to economic growth and employment development. In addition, this study will also fill the literature gap in Vietnam by applying the updated database of VHLSS and estimating the occupational transition model by the multinomial probit model with instrumental variables (IV).

1.2. Objectives and Scope of Study

The study will investigate the occupational choices of individuals between entrepreneurship and wage employment. This objective will be addressed by examining the determinants of occupational transition between self-employment and wage employment over time.

Regarding scope of the study, we will follow Resolution concerning the international classification of status in employment, adopted by the 15th International Conference of Labour Statisticians, Geneva, 1993¹ in defining wage employment, where the incumbents hold explicit (written or oral) or implicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work.

There are several definitions of entrepreneurs. Some identify entrepreneurs with residual claimants such as small business owners or the self-employed; others restrict their definition of entrepreneurs to business owners who employ other workers. Unlike developed countries, the concept of entrepreneur in developing could include various types of entrepreneurs, from informal survivalist entrepreneurs who do not have access to wage-employment and are constrained to become entrepreneurs to formal entrepreneurs. In this study, due to data limitation, we consider entrepreneurs as self-employment in the urban areas. The self-employed are formally classified as individuals who earn no regular wage or salary but who derive their income by exercising their profession or business on their own account and at their own risk (Parker, 2009). This definition is actually similar to the *own-account workers* defined by 1993 ICSE², who work on their own account or with one or more partners, hold the type of jobs defined as a “self-employment jobs” (i.e. jobs where the remuneration directly depends on the profits of goods and services sold) and have not engaged on a continuous basis any employees to work for them.

1.3. Methodology and Data

To address the research objective, we employ the multinomial probit model with instrumental variable to investigate the determinants of individuals’ occupational transition between wage earners and self-employment and vice versa. The study will use panel data extracted from 3 rounds of VHLSS 2004, 2006 and 2008. The variables

¹ http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang--en/docName--WCMS_087562/index.htm.

² The 1993 ICSE categories the self-employed group – self-employed workers with employees (employers), self-employed workers without employees (own account workers) and members of producers’ cooperatives

are suggested by the literature including finance variables, human capital variables, individual and socioeconomic characteristics, economic activity dummies, geographical variables.

1.4. Structure of the Study

Study is structured into 5 sections. The first section is the introduction, the second reviews existing researches, the third presents the methodology, data and variables and the fourth section discusses estimation results. The last section is for key findings and policy implications.

II. LITERATURE REVIEW

With regard to occupational choices, many studies have been done so far, however most of them focus on industrialized countries such as Rees and Shah (1986), Blanch flower and Oswald (1990), Le (1999), Evans and Jovanovic (1989), Evans (1989), Kidd (1993), De Wit and Van Winden (1993), Bernhardt (1994), Constant and Zimmermann (2006). Only a few similar studies conducted in developing countries, for example, Cunningham and Maloney (1999) in Mexico, Earle and Sakova (2000) in several transition countries, Destré and V. Henrard (2004) in Colombia, Tamvada (2010) in India. This section will examine the literature through groups of determinants of occupational choices mentioned in previous studies.

2.1. Financial constraints

Individual financial constraints such as home ownership, wage, subsidy and so forth may have considerable influence on occupational choices, as widely agreed in many studies. Furthermore, who will finance an individual's business, the person himself or the market? Much debate has been made to find the answer to this question. Frank Knight (1921) and Evans and Jovanovic (1989) show that people cannot rely solely on the capital market to finance for their own business due to ethical concerns as well as the risk of adverse selection. On one hand, people who use their savings to invest may expose to a high risk of losing money. Schumpeter (1934, 1950) indicates that entrepreneurs only need to find the profit-seeking

opportunities and push the risk to capitalists who are willing to finance their businesses.

Financial resources as the key determinant of individual's occupational choices could be found in empirical papers of Evans and Jovanovic (1989), Bernhardt (1994), Blanchflower and Oswald (1998), Destrés and Henrad (2004), and Constant and Zimmermann (2006). Though using different approaches, these studies commonly agree the important role of financial conditions as two sides of the same coin: a necessity for starting business, but also a barrier for people who want to become entrepreneurs.

Evans and Jovanovic (1989), using a sample of 1839 white men in US, finds that people who have more assets could start their business more effectively and get higher income than poorer people. However, this correlation decreases gradually over time when their business become more stable. In addition, the smaller firms with tigher financial conditions are found to develop faster. Still, the authors realize two limitations in their study: i) only half of the observations are regressed; ii) a simple static model of financial constraints is employed

Bernhardt (1994), applying the structured and reduced probit model, examines the sample in Canada and finds that an individual who owns a house and whose wife has a job could reduce income fluctuation, and then tends to become an entrepreneur. Holtz-Eakin, Joulfaian and Rosen (1994) also describe wife's income as "safety net" for highly risky jobs of the husband. Constant and Zimmermann (2006) investigates the motivation behind the decision of self-employment for the immigrant and the local in Germany. The results imply s that house ownership and financial constraint variables seem to increase the ability of becoming entrepreneurs in both two groups of people. For married men, the probability of becoming an entrepreneur increases but the opposite is true if they become fathers, due to the fact that they have to be responsible for their family expenses .Blanchflower and Oswald (1998) examines financial resource in a different persepective using two

explanatory variables such as inheritance and gifts. They argue that inheritance from other people helps individuals to start their own businesses. Bianchi and Bobba (2010) use a baseline survey of 24,077 households in Mexico, apply a simple occupational choice model to investigate the determinants of being self-employed and find that financial constraints matter the most in the choice of becoming an entrepreneur.

2.2. Individual conditions

Many studies find that married people tend to become entrepreneurs for several reasons: a spouse can help provide start-up capital and become trustworthy worker (Borjas, 1986); spouses can use their own income as insurance against the risky income of their husband (wife) as entrepreneur, or spouses can offer emotional support (Bruderl and Preisendorfer, 1998, Bosma et al, 2004). Parker (2008) also indicates that spouse can share relevant information and knowledge about business ownership and business conditions effectively. Davidson and Honig (2003) even refer a marriage to a form of social capital. Rees and Shah (1986) utilize the data from General Household Survey in 1978 including 11794 households and 4762 householders, finding that individuals having a family are more willing to take risks than unmarried people. On the other hands, support from families can help married entrepreneurs reduce pressure. Christopher Dawson, Andrew Henley and Paul Latreille (2009), using United Kingdom Quarterly Labor Force Survey in the period of 1991-2001 with nearly 59000 households and 138000 individuals, examine the relationship between entrepreneurs and motivations of becoming entrepreneurs. They find that having dependent children increases the probability of becoming entrepreneurs. The relationship between marital status and the choice of starting their own business is found to be negative for people having a family and positive for widow or divorced people and singles. This result is opposite to Rees and Shah (1986).

In addition, family background has proven to be an important driver of individual entrepreneurship (Parker 2009). Family members of business owners benefit from informal learning processes at home so that general and business-specific human capital can be transferred. Family members may have shared preferences and successful firm owners transfer or inherit financial capital to the family members (Pasquier-Doumer L 2013, Fairlie and Robb 2007). Based on 1992 CBO data, Fairlie and Robb (2007a) indicate that over half of business owners had a self-employed family member prior to starting their business due to some reasons such as: i) easy acquisition of business or managerial skills, industry or firm-specific business experiences; ii) easy access to business network; iii) inheritance of a business; iv) being provided cheap finance by parents to overcome constraints; v) sharing preferences for entrepreneurial activities among family members...According to Dunn and Holtz-Eakin (2000), a son's probability of becoming self-employed doubles (from 0.015 to 0.031) when either of his parents is self-employed. Similar conclusion could be found in Arum and Muller (2004), Colombier and Masclat (2008). Parental self-employment both increases the fraction of time that offspring spends in self-employment and reduces the age at which they enter it (Dunn and Holtz-Eakin, 2000; Nittykangas and Tervo, 2005). Similarly, Hout M and Rosen H (2000) find that if any family member is a business man/woman, the ability of becoming entrepreneurs is higher. They also argue that larger household size reduces the probability of becoming entrepreneurs. Individuals living without both father and mother have lower probability of choosing self-employment, which is similar to Rees and Shah's opinions about the support of family.

2.3. Education

Education is believed to have unclear impact on occupational options in the theoretical literature. Education might improve entrepreneurial judgment by providing people with analytical abilities, information about business opportunities, and understanding of markets and the entrepreneurial process (Casson, 1995). Education is also associated with general searching skills, foresight and computational

and communication skills, as well as specific skills and knowledge needed to run businesses in particular sectors. Even if skills and knowledge gained from formal education are unnecessary for starting a business, in an empirical context, they might provide a proxy for social background, ambition and endurance. And there might also be a selection effect at work, if more educated workers select themselves into occupations in which entrepreneurship is more common, such as managerial occupations among professionals (Evans and Leighton, 1989b) or skilled craft jobs among manual workers (Form, 1985). On the other hand, the skills that make entrepreneurs successful are unlikely to be the same as those embodied in formal qualifications (Casson, 2003). Education increases the value of the outside option of paid employment, which can make entrepreneurship relatively less attractive to highly educated people at the margin (Le, 1999).

In the empirical literature, there is also no consensus on the impact of education on occupational option. Education is found to have substantial impacts on the decisions of becoming entrepreneurs in many studies. Better education is positively related with the chance of starting a business because education can be associated with better entrepreneurial judgment and greater skills (Parker 2009). Rees & Shah (1986) pointed out that education has positive impacts on the self-employed option. This effect could happen in two ways. First, education acts as a filter which people with higher education wanted to synchronize their ability. Second, people who have more knowledge are able to identify their own opportunities better. The estimated results also point out that education has considerable impacts on the income of entrepreneurs. Peter *et al.* (2009), using data of European survey on entrepreneurship including 20,674 observations in 25 EU members and Norway, Iceland, the US, concluded that the appearance of entrepreneurship education plays a vital role for individuals thinking of becoming self-employment, but has no effect on the transition process in the future. Joern *et al* (2009) add education to the model as an endogenous variable by using instrumental variables and utilize data from more than 10,000 individuals in 27 European countries. The authors show that the effects

of education on the decision of starting business are significantly positive, accordingly, individuals with a higher level of education have greater possibility to become entrepreneurs. Vu Hoang Nam *et al.* (2010) examined the roles of formal schooling in worker's job self-selection and income in vilagge-based industrial clusters in Northern Vietnam, finding that workers' education variable has positive and significant effect on their income, implying that highly educated workers tend to self-select to do more difficult jobs.

However, some studies show that education has significant and positive impacts on ability of becoming wage employed workers but little on self-employment such as Carolona Castagnetti, Francesco Chelli and Luisa Rosti (2008). Other studies show negative impacts of education on the decision of becoming entrepreneurs. Van der Sluis *et al.* (2005) pointed out that in developing countries, better educated individuals tend to choose to work as employees although they prefer entrepreneurship over farming. Tamvada *et al.* (2010) find that in non-agricultural sector, education decreases the probability of becoming entrepreneurs but in agricultural sector, education boosts the probability of becoming self-employment. T.Le (1999), in a study of factors affecting immigrants' decision of starting a business in Australia, concluded that the most important determinants are education, experience, levels of English proficiency, home ownership, marital status, in which, education reduces the probability of becoming entrepreneurs. Similarity of finding could be found in Guillaume and Henrad (2004) who use the data of Household survey in Colombia (ENH) and Trang, Do and Duchêne (2007) who use Viet Nam Living Standard Survey (VLSS) in 2004.

Table 2.1. Summary of Relevant Studies on Occupational Option

Authors, year	Data and sampling	Methodology	Key findings
Rees and Shah (1986)	General Household Survey 1978, covering 11,794	Structural probit model: binary variables representing occupational choice	<ul style="list-style-type: none"> - Educations: effect following the form of U-turned shape; - Finance and individual conditions: effect selection decisions; - Initial capital (wealth accumulation,

	households: 4762 householders, in which 327 self-employed and 4435 employees	decisions of individuals	gift, inheritance or debts), all those affect the decisions of being self-employed; - married persons are more willing to take risks than unmarried people
Evans and Jovanovic, 1989	National Longitudinal Survey of Young Men (NLS); Sample including 5225 men, aged 14-24, from 1966 to 1981.	Probit Model used	- Educations: negative influences - Finance: as a determining factor - The setting up and running business demand a large of capital, but due to various reasons, not everyone has easy access.
Bernhardt, 1994	Samples including white men in Canada.	Reduced probit model (Two regions model).	- Finance: Significantly positive influence - as a determinant of the choice; - Potential Income is the determinant. - Self-employed has higher incomes.
Le, 1999	- The author uses research data "Population and Housing Survey in Australia, 1981 and 1991"; - Focusing on the sample covering the group of 15-64 who are salaried workers or self-employed with hourly earnings.	- Logit and probit model used in the study; investigating the factors affect to the propensities working in self-employment sector for Australian immigrants.	- Educations: negative effects, reducing self-employment trends; - Finance and individual conditions: who owns home has a strongly positive impact; - Key determinant variables: education, labor market experience, English proficiency, homeownership, marital status, and occupational status; especially married individuals, homeowners with higher probabilities for self-employment trends;
Hout M. and Rosen H. (2000)	Data: General Social Survey (University of Chicago), from 1973 to 1996; Sample: Man, 25-64 years old, takes off-farm works over 15 hours per week.	Logit model: computing the probability that a personal make a decision to self-employed; Considering the relationship between family background, and race with business decisions	Educations: Effectiveness; Individual conditions: positive impact, as a central element; - The higher probability being entrepreneur if father was an entrepreneur; - The household size has significantly negative impact on the propensity being businessman; - Family structure affects nonsignificant
W.P.M. Vijverberg and J. Houghton. 2002.	Considering the volatility of non-farm enterprises in Vietnam through two surveys VLSS in 1993 and VHLSS in 1998.	Logit model: similar to Vijverberg (1998)	- Individual conditions: insignificant impact; - If parents are well-educated and a businessmen, children also are more likely to work in self-employment. - Urban population is more capable of doing business owners.

Destré and Henrard (2004)	Sample: Men, 18-70 years old, are householders from the Household survey in Colombia (ENH), 06/1996.	Structural probit model: similar to Rees and Shah (1986) and Bernhardt's (1994).	<ul style="list-style-type: none"> - Education: negative effects. The negative effects probably because the higher education levels bring the greater benefits for employees; - Finance and individual conditions: negligible impact; because, it is not the good proxy variables for capital accumulation before starting a business.
Delmar and Davidsson (2000)	Sample: Finland in 1990.		<ul style="list-style-type: none"> - Educations: positive effect, but not significant; - Finance and individual conditions: Analysing the impact of educated self-employed to their business success during the recession and return to growth in the 1990s in Finland.
Van der Sluis et al (2005, 2007, 2008)	Sample: Europe and Americas areas	Methods: Meta-analysis approach used to consider the impact of education to decision being self-employed.	<ul style="list-style-type: none"> - Educations: positive effect, not significant; - The returns to education for an individual being a self-employed is higher in USA than in Europe.
A. Constant and K. F. Zimmermann, 2006	German Socio-economic Panel (GSOEP) in 2000. Sample: Working people (except for those who go to school or in the military), from 20 to 64 years old.	Reduced probit model	
Trang Do and Duchêne, 2008	Using data from the Vietnam Household Living Standards Survey in 2004 (VHLSS, 2004).	Reduced and structural probit model	<ul style="list-style-type: none"> - Education: The positive impact on the propensities to work in paid employment (higher education tends to become employees), but not for self-employment; - Finance and individual conditions: Financial proxy variable have positive impact to the decision being self-employed; married status do not affect to men but to women; - The average income in self-employment is higher than pai employment.
Peter van der Zwan, Ingrid Verheul, Roy Thurik và Isabel Grilo (2009)	Sample: 20,674 observations including 25 European members and Norway, Iceland and the U.S.	Cumulative logit model	<ul style="list-style-type: none"> - Education: positivey and significantly; - Entrepreneurship education appear really important for the intended start business, but no effect on the transition in the future, the decision to starting a business.
Joern H.	Sample: More	Using regression tool	- Educations: Significant and positive

Block Lennart, Hoogerheide and Roy Thurik (2009)	than 10,000 individuals in 27 European countries and the U.S.	Logit, and probit model with instrumental variables	<p>impact;</p> <ul style="list-style-type: none"> - The authors use educational attainment as endogenous variables and run the regression using instrumental variable; the findings imply that the impact of education on decisions of being self-employed is stronger and more positive than the standard logit and probit models; - Standard logit and probit models underestimate the powerful impact of education on business decisions and lead to misleading results.
Christopher Dawson-Andrew, Henley-Paul Latreille, 2009	Data: United Kingdom Quarterly Labour Force Survey (QLFS) from 1999 to 2001; Sample surveys collected nearly 59000 households, approximately 138000 individuals	Logit model similar to Satori (2003).	<ul style="list-style-type: none"> - Educations: significant effect; - Individual conditions: impact; - Dependent children increases the probability of self-employment choice; - The homeowners tend to work in self-employment than others who have to rent.
Tamvada, Jagannadha Pawan, 2010	Data: Employment and unemployment survey from NSSO in India	Geoaddivitive models	<ul style="list-style-type: none"> - Education reduces the probability of choice of self-employment in the non-agricultural sector; - Education in the informal sector impacts positively to the decision being a self-employed.

In brief, the impacts of key determinants of education, financial constraints and personal conditions on occupational choices between wage earners and self-employment have varied among previous studies. Moreover, most of these studies have been done in developed countries and only a few have been done in developing countries, especially in Vietnam. This leaves the room for us to carry out this study, which will make use of updated Vietnam Household Living Standard Survey conducted by General Statistics Office in different years to investigate the factors behind occupational transition between self-employment and wage employment.

III. METHODOLOGY, DATA AND VARIABLES

3.1. Methodology

The study will apply the multinomial probit model (MPL) to investigate the determinants of occupational transition over time and take the endogenous problem into consideration.

Given the data availability, we make use of three rounds of VHLSS 2004, 2006 and 2008. Let Γ denote the vector of occupational status transition variables taking the value $j \in \{1, 2, 3, 4\}$. Γ takes the value 1 if a person remains wage employment status in two years, 2 if transiting from wage employment to self-employment, 3 if transiting from self-employment to wage employment, 4 if remaining as self-employment. Our aim is to model probabilities for these 4 occupational transition outcomes of the dependent variable Γ on the vector of explanatory variables, defined as individual conditions of the initial transition year, covering personal characteristics, educational attainments, financial constrain, economic sectors, etc.

The probit model is preferred to logit model in this case because it could deal with at least three limitations of standard logit models, i.e. i) they cannot represent random taste variation, ii) they only allow restrictive substitution patterns (IIA), and iii) they cannot be used with panel data when unobserved factors are correlated over time. The only limitation to probit models is that they require normal distributions for all of the unobserved portions of utility.

Nevertheless, the MPL could have the endogeneity problem due to unobserved characteristics, especially for the variable of education attainment. Using years of schooling to estimate return to education is considered as biased coefficient by endogeneity and unobserved characteristics (van der Sluis and van Praag, 2008). It occurs when individuals who choose different levels of education differ systematically in unobserved characteristics that affect their earnings such as differences in relevant dimensions of ability and motivation (Hartog and Oosterbeek, 2007). In order to fix the potential problems of endogeneity and/or unobserved heterogeneity, four

methods could be basically applied: (i) coping with unobserved ability (trying to make the unobservable observable), (ii) using the variation in schooling and income among monozygotic twins to estimate returns to schooling, (iii) identifying causal effects extracts information from randomized or controlled experiments, and (iv) identifying causal effects using an instrumental variable (IV) approach to imitate a controlled experiment (see Ashenfelter et al., 1999; van der Sluis and van Praag, 2008). Given the data availability, we will apply the IV approach to address this problem. The endogenous problem may also happen with the financial constraint variables. However, the omitted variables of social background that could make financial constraints endogenous are not available in our dataset. Therefore, we mostly deal with the possibility of endogeneity of education attainment.

3.2. Data and variables

3.2.1. Data

We assume that there are two employment sectors (wage employment and self-employment), based on the VHLSS questionnaire on employment and salaries/wages. The definition of these two occupations follows the defined scope of the study. In more detail, we follow the OIT definition of active occupied worker (more than 1 hour per week), aged from 15-75. The sample also includes all individuals who do not have a fixed working location. They may include the self-employed working with flexible time and location.

We follow McCaig (2012) to match the panel data between VHLSS 2004 and VHLSS 2006, and traditional method introduced by GSO to match the panel data between VHLSS 2006 and VHLSS 2008. The three-round pooled data is made up by merging each two rounds. The McCaig's matching method was employed because it could correct the significant number of mismatching observations.³ Accordingly, the panels VHLSS 2004 – 2006 and VHLSS 2006-2008 include 1480 and 1443 observations obtained at individual levels, respectively. The pooled data has 2923 individual-level

³ See McCaig (2012) for more details.

observations, of which, 449 observations are present in all three surveys, 994 in both VHLSS 2006-2008, and 1031 in both VHLSS 2004-2006. Observations with missing values are removed from the sample, leaving the final sample of 2921 observations.

3.2.2. Variables

It should be noted that the explanatory variables have been defined for the first year of occupational transition, then characteristics in 2004 and 2006 are regarded as determinants of occupational transition during 2004-2006 and 2006-2008, respectively. Following suggestions from literature review, we will examine some key variables of personal and family characteristics, education variables, financial variables, economic sectors and geographical variables.

Table 3.1. Definition of key variables

Variables	Definition and measure
SE/WE	The self-employed and wage workers defined in the scope of study and VHLSS
Γ	The vector of binary transition variables including 4 options measures the occupational transition of each individual between wage employment and self-employment
<i>Individual and family characteristics</i>	
Age	Used as proxy of potential experiences in labor market
Gender	Gender of individual
Married	Marital status, 1 if married, 0 otherwise.
Child	The number of children in the family in the age of 0-15
Hhsize	The household size
<i>Educational attainment variables</i>	
Schoolyears	Years of schooling
<i>Financial variables</i>	
Home_own	1 if owning houses, 0 otherwise
Other_income	Other income of the individual, not from wage employment or self-employment
<i>Economic sectors</i>	
Economic sector	Economic sector dummy variables
<i>Geographic variables</i>	
Regional dummies	Geographic areas
<i>Instrumental variables</i>	
R_dhcd	The rate of college/university distribution in provinces (representative for college availability) ⁴

⁴ Extracted from Ministry of Education and Training (MOET, Appendix 1 in Document No. 1279/BGDĐT-KHTC, March 17, 2014).

In terms of personal and family characteristics, the variable *Age* is used as a proxy for potential experiences in labor market. The marital status variable (*Married*) takes the value 1 if individual is married, zero otherwise. The variable *Child* is used to capture the number of children in the age of 0-15. The household size (*Hhsize*) is also included in the model. Regarding education, the educational attainment variables are presented by years of schooling (*school years*). The variables of financial constraints include the dummy variable of *Home_own* (taking value of 1 if the individual own houses and 0 otherwise) and *Other_income* (including familial aid from overseas, incomes from capitals, real estate renting, etc.).

For the IV approach, there are three instrumental variables for education attainment widely identified in the literature. The most popular instrumental variable group is family background variables such as father and mother education (Blackburn and Neumark, 1993). The second instrumental group is natural experiment variables introduced by Angrist and Krueger (1991), who used quarter of birth as an instrument for schooling⁵ (Harmon and Walker, 1995; Oreopoulos, 2006). The third instrumental variable is the college availability (Card, 1993; García *et al.*, 2001). In this study, given the data availability, we employ the rate of college/university distribution in provinces (*R_dhcd*) as instrument for education achievement. The college availability is a possible instrument because it could shape the causal relationship with schooling and can be legitimately excluded from the earning equation. Students who grow up in an area without university/college could have to incur higher cost of university/college education, since the option of living at home is precluded (Card, 1993; García *et al.*, 2001).

⁵ Exogenous variation in the length of schooling is generated by the fact that the students whose birthday is just after the school enrolment date for primary school have to wait up to a year before they can start their education, whereas the minimum compulsory schooling age is the same for every student. Hence, birth quarters generate exogenous variation in schooling attainment but not in later labor market outcomes. Recently, changes in compulsory schooling laws are used because these created discontinuities over time in the average individual schooling levels, which are plausibly exogenous to labor market outcomes later in life.

3.2.3. Data Descriptive Analysis

For the occupational transition statistics, the number of individuals who made occupational changes over time is not much in the sample. Table 3.2 shows that only 5.96% and 4.1% of the male and female switch from wage-employment to self-employment sector in the period of 2004-2006, respectively, and the numbers for the period of 2006-2008 are only 6.45% and 3.79%, respectively. The corresponding numbers for the individual who transit from self-employment to wage employment are 2.98% and 4.66% (for the period 2004-2006) and 4.53% and 4.49% (for the period 2006-2008).

Table 3.2. The occupational transition in the periods of 2004-06 and 2006-08

Occupational transition	Male		Female	
	2004-2006	2006-2008	2004-2006	2006-2008
Γ 1 (remaining in WE)	63.08	61.59	43.08	49.3
Γ 2 (WE to SE)	5.96	6.45	4.1	3.79
Γ 3 (SE to WE)	2.98	4.53	4.66	4.49
Γ 4 (remaining in SE)	27.98	27.43	48.16	42.42
Total	100	100	100	100

For the occupational transition statistics, the number of individuals who made occupational changes over time is not much in the sample. Table 3.2 shows that only 5.96% and 4.1% of the male and female switch from wage-employment to self-employment sector in the period of 2004-2006, respectively, and the numbers for the period of 2006-2008 are only 6.45% and 3.79%, respectively. The corresponding numbers for the individual who transit from self-employment to wage employment are 2.98% and 4.66% (for the period 2004-2006) and 4.53% and 4.49% (for the period 2006-2008).

Regarding the individual characteristics, Table 3.3 indicates that individuals who stay in the self-employment have the relatively highest age, and most of them are married, for both men and women. Meanwhile, individuals who have higher family size tend to transit from wage employment to self-employment sector, especially in the period of 2004-2006. For the academic educational attainment, individuals who

have higher workers in this switching status also have the higher years of schooling are likely to remain in the wage employment sector rather than occupational transition.

Table 3.3. The individual characteristics before occupational transition

INDICATORS	Characteristics of occupational transition between 2004 and 2006							
	Male				Female			
	Γ1	Γ2	Γ3	Γ4	Γ1	Γ2	Γ3	Γ4
<i>The variables of individual and family characteristics</i>								
age	36.220 (11.438)	38.717 (12.541)	35.826 (11.723)	42.519 (11.499)	36.413 (10.329)	34.931 (12.424)	37.091 (11.772)	42.021 (9.716)
married	0.647	0.717	0.652	0.856	0.666	0.621	0.515	0.812
child	1.033 (1.004)	1.109 (1.100)	1.087 (1.083)	1.144 (0.999)	0.908 (0.846)	1.414 (1.402)	0.909 (1.011)	1.202 (1.036)
hsize	4.643 (1.694)	5.261 (2.245)	4.304 (1.663)	4.787 (1.654)	4.357 (1.485)	6.138 (2.863)	4.000 (1.414)	4.639 (1.700)
<i>Educational attainment variables</i>								
Schoolyears	10.839 (4.156)	9.750 (3.448)	10.000 (3.162)	9.572 (3.261)	11.307 (3.831)	9.241 (3.999)	8.091 (3.724)	8.478 (3.548)
<i>Financial variables</i>								
Home_own	.9075975	.9565217	.9565217	.9351852	.8918033	.9655172	.8181818	.9178886
Other_income	13378.82 (27402.89)	18015.76 (35994.09)	44652.87 (113707.5)	46266.59 (186823.3)	18857.4 (49609.08)	22978.79 (43560.79)	5374.424 (7461.48)	29577.17 (143805.1)
<i>The economic sectors</i>								
Industry	0.238	0.130	0.261	0.199	0.275	0.414	0.273	0.176
Construction	0.185	0.217	0.000	0.009	0.043	0.069	0.000	0.009
Trade	0.078	0.196	0.304	0.352	0.079	0.138	0.333	0.510
Services	0.160	0.217	0.261	0.347	0.115	0.103	0.182	0.220
other_industries	0.339	0.239	0.174	0.093	0.489	0.276	0.212	0.085
<i>Geographic variables</i>								
Red_River_Delta	0.183	0.174	0.304	0.153	0.197	0.103	0.212	0.196
East North Mountians	0.119	0.043	0.217	0.083	0.128	0.034	0.061	0.120
West North Mountians	0.027	0.000	0.000	0.028	0.033	0.000	0.030	0.021
North Central Coast	0.105	0.065	0.000	0.093	0.082	0.103	0.152	0.109
South Central Coast	0.136	0.130	0.087	0.134	0.161	0.138	0.091	0.132
Central Highland	0.057	0.065	0.043	0.042	0.049	0.103	0.030	0.070
Southeast	0.211	0.348	0.174	0.245	0.200	0.379	0.212	0.185
Mekong River Delta	0.162	0.174	0.174	0.222	0.151	0.138	0.212	0.167
<i>Instrumental variables</i>								
R_dhcd	4.158 (6.519)	4.885 (7.167)	4.605 (6.860)	3.645 (5.959)	4.555 (6.892)	4.291 (6.128)	4.946 (7.643)	3.825 (6.308)
Observations	487	46	23	216	305	29	33	341

INDICATORS	Characteristics of occupational transition between 2006 and 2008							
	Male				Female			
	Γ1	Γ2	Γ3	Γ4	Γ1	Γ2	Γ3	Γ4
<i>The variables of individual and family characteristics</i>								
age	36.909 (11.052)	34.277 (11.133)	36.545 (10.402)	43.425 (10.198)	35.732 (10.272)	34.222 (12.116)	40.031 (12.299)	42.798 (10.234)
married	0.684	0.660	0.636	0.880	0.627	0.593	0.719	0.808
child	0.953 (0.968)	1.149 (1.122)	1.000 (1.369)	1.130 (0.953)	0.860 (0.901)	0.778 (0.641)	1.156 (1.110)	1.162 (1.033)
hsize	4.454 (1.562)	5.489 (1.627)	4.909 (1.569)	4.430 (1.328)	4.325 (1.349)	4.037 (1.224)	4.438 (1.740)	4.490 (1.548)
<i>Educational attainment variables</i>								
Schoolyears	11.065 (4.316)	9.755 (3.475)	9.439 (3.112)	9.573 (3.338)	11.489 (3.907)	8.944 (3.358)	6.828 (4.069)	8.392 (3.666)
<i>Financial variables</i>								
Home_own	.9265033	.8723404	.969697	.95	.9230769	.8888889	.90625	.9370861
Other_income	17302.04 (47943.11)	21649.79 (59020.13)	33653.48 (88865.9)	37650.11 (109531)	22709.04 (65394.52)	9093.63 (15167.77)	16184.41 (31796.66)	21788.64 (62865.29)
<i>Economic sectors</i>								
Industry	0.243	0.191	0.182	0.260	0.313	0.370	0.188	0.156
Construction	0.180	0.255	0.030	0.015	0.037	0.074	0.000	0.003
Trade	0.073	0.170	0.182	0.375	0.066	0.259	0.406	0.523
Services	0.169	0.277	0.515	0.275	0.128	0.111	0.281	0.235
other_industries	0.334	0.106	0.091	0.075	0.456	0.185	0.125	0.083
<i>Geographic variables</i>								
Red_River_Delta	0.167	0.170	0.212	0.160	0.197	0.148	0.156	0.142
East North Mountains	0.125	0.021	0.030	0.090	0.128	0.037	0.094	0.113
West North Mountains	0.027	0.000	0.030	0.010	0.014	0.037	0.000	0.007
North Central Coast	0.073	0.085	0.091	0.095	0.080	0.037	0.094	0.093
South Central Coast	0.134	0.128	0.061	0.140	0.128	0.148	0.063	0.132
Central Highland	0.038	0.021	0.030	0.035	0.034	0.074	0.063	0.076
Southeast	0.272	0.234	0.394	0.240	0.268	0.259	0.250	0.245
Mekong River Delta	0.165	0.340	0.152	0.230	0.151	0.259	0.281	0.192
<i>Instrumental variables</i>								
r_dhcd	4.271 (6.400)	3.237 (5.302)	6.061 (7.906)	4.083 (6.166)	4.808 (6.986)	5.350 (6.904)	4.653 (6.759)	3.468 (5.633)
Observations	449	47	33	200	351	27	32	302

IV. ESTIMATION RESULT

As mentioned above, the potential endogeneity is likely to occur with the variable of schooling years, and to deal with this problem, we use instrumental variable of the rate of college/university distribution in provinces. We apply Hausman test for endogeneity. We first estimate the potential endogenous variable (*Schoolyears*) with all exogenous variables and instrumental variables (which are believed to be correlated with endogenous variable but not with error terms in the initial estimation model), and computing error terms. In the second stage, we re-estimate the original

model including error terms from the first stage. The instrumental variable is valid as its coefficients are statistically significant. The testing result is presented in the Table 4.1.

The empirical results from MPM and MPM with IV for overall sample are illustrated in Table 4.2. In terms of personal and family characteristics, in comparison to the status of remaining in self-employment (base alternative), the age is found to be negative and statistically significant at the 1% level, implying that the experience in the labor market has negative impact on the choice of remaining in the wage employment and switching between occupations. In other word, the older individuals are likely to stay in the self-employment sector. Similarly, other personal characteristics as marriage status and the number of dependent children also have negative effect on the decision of occupational transition and remaining in wage employment in comparison with remaining in self-employment. Meanwhile, the household size has positive effect on the decision of switching to self-employment sector.

Regarding the academic educational attainment, the findings from MPM with IV are better those from MPM in both statistical significance level and magnitude of coefficients. Accordingly, individuals with the higher educational attainment tend to remain or switch to wage employment. It probably suggests that formal education does not necessarily provide appropriate qualifications for being self-employed (Lentz and Laband, 1990). In the case of Vietnam, high and professional education should be more appreciated in wage earner sector than self-employment sector (de Wit, 1993). This finding is similar to Card (1993); García *et al.* (2001); and Pons and Gonzalo (2001). The financial variables are found to be negative, implying that those who have more other income sources are likely to stay in the self-employment sector, reluctant to remain in the wage employment or switching between occupations. This result could be explained by the fact that financial conditions are the necessity for starting business, which is in line with Destrés and Henrad (2004) and Constant and Zimmermann (2006).

Table 4.1: Testing for endogeneity (Hausman method)

VARIABLES	FIRST STAGE	SECOND STAGE			
	schoolyears	WE	WEtoSE	SEtoWE	SE
age	-0.033*** (0.007)	-0.036*** (0.005)	-0.031*** (0.007)	-0.019*** (0.007)	
married	0.869*** (0.183)	-0.788*** (0.131)	-0.434** (0.183)	-0.782*** (0.179)	
child	-0.392*** (0.083)	-0.137** (0.060)	-0.217** (0.085)	0.022 (0.087)	
hsize	-0.105** (0.049)	0.065** (0.031)	0.195*** (0.040)	0.012 (0.045)	
schoolyears		0.401*** (0.082)	0.205* (0.118)	0.263** (0.117)	
home_own	-0.180 (0.252)	-0.380** (0.154)	-0.346 (0.219)	-0.180 (0.222)	
ln_other_income	0.222*** (0.027)	-0.082*** (0.025)	-0.050 (0.036)	-0.102*** (0.036)	
Industry	-1.446*** (0.195)	-0.710*** (0.165)	-0.418* (0.240)	-0.107 (0.257)	
Construction	-2.343*** (0.276)	1.665*** (0.304)	1.727*** (0.389)	0.502 (0.578)	
Trade	-2.036*** (0.195)	-2.368*** (0.198)	-1.289*** (0.288)	-0.536* (0.290)	
Services	-1.373*** (0.205)	-1.474*** (0.159)	-0.799*** (0.235)	-0.142 (0.240)	
Red_River_Delta	-0.738*** (0.284)	-0.088 (0.154)	0.510* (0.282)	0.210 (0.236)	
West_Northern_Mtns	-0.183 (0.513)	0.256 (0.309)	0.136 (0.592)	0.302 (0.481)	
North_Central_Coast	-0.775** (0.305)	0.120 (0.193)	0.502 (0.331)	0.239 (0.294)	
South_Central_coast	-1.107*** (0.277)	0.357* (0.186)	0.744** (0.317)	0.043 (0.304)	
Central_Highlands	-1.736*** (0.365)	0.399 (0.268)	0.922** (0.409)	0.357 (0.403)	
Southeast	-2.186*** (0.256)	0.626*** (0.209)	1.050*** (0.344)	0.610* (0.313)	
Mekong_River_Delta	-3.047*** (0.263)	0.777*** (0.300)	1.084** (0.463)	0.813* (0.440)	
r_dhcd	0.091*** (0.013)				
resid_iv1		-0.267*** (0.082)	-0.140 (0.119)	-0.263** (0.118)	
Constant	12.395*** (0.479)	-0.226 (1.053)	-1.922 (1.522)	-1.979 (1.509)	
Observations	2,901	2,901	2,901	2,901	2,901
R-squared	0.185				

Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Data from VHLSS 2004-2006-2008

In addition, the dummies of economic sectors show a strong influence on the occupational transition choice, especially in trade and service sectors. The individuals working in these sectors have more propensity to remain in self-employment, meanwhile those who work in the construction sector tend to remain in wage employment or switch from wage employment into self-employment. The decision of switching between occupations also varies across geographical areas. The coefficient of geographical dummies is higher in the South implies that individuals in the South tend to switch between occupations, particularly in Southeast and Mekong River Delta regions. They also have higher tendency to switch or stay in wage employment.

Table 4.2: The occupational transition: Overall sample

VARIABLES	MULTINOMIAL PROBIT MODEL (MPM)				'MPM' WITH 'IV': TWO STAGE LEAST SQUARE				
					FIRST STAGE	SECOND STAGE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	WE	WEtoSE	SEtoWE	SE	schoolyears	WE	WEtoSE	SEtoWE	SE
age	-0.044*** (0.004)	-0.036*** (0.006)	-0.027*** (0.006)		-0.033*** (0.007)	-0.034*** (0.005)	-0.032*** (0.007)	-0.020*** (0.007)	
married	-0.574*** (0.112)	-0.335** (0.156)	-0.580*** (0.153)		0.869*** (0.183)	-0.789*** (0.127)	-0.430** (0.181)	-0.783*** (0.177)	
child	-0.241*** (0.050)	-0.276*** (0.070)	-0.078 (0.072)		-0.392*** (0.083)	-0.129** (0.058)	-0.213** (0.084)	0.023 (0.086)	
hsize	0.046 (0.030)	0.186*** (0.039)	-0.005 (0.045)		-0.105** (0.049)	0.065** (0.030)	0.195*** (0.040)	0.015 (0.045)	
schoolyears	0.139*** (0.011)	0.067*** (0.016)	0.004 (0.017)						
home_own	-0.460*** (0.152)	-0.391* (0.215)	-0.266 (0.218)		-0.180 (0.252)	-0.360** (0.150)	-0.336 (0.217)	-0.210 (0.218)	
ln_other_income	-0.022	-0.018	-0.045**		0.222***	-0.084***	-0.052	-0.100***	
Industry	-1.083*** (0.118)	-0.617*** (0.175)	-0.461** (0.194)		-1.446*** (0.195)	-0.655*** (0.161)	-0.393* (0.238)	-0.161 (0.252)	
Construction	1.051*** (0.240)	1.437*** (0.279)	-0.104 (0.510)		-2.343*** (0.276)	1.667*** (0.300)	1.715*** (0.387)	0.473 (0.572)	
Trade	-2.875*** (0.125)	-1.560*** (0.181)	-1.031*** (0.187)		-2.036*** (0.195)	-2.230*** (0.192)	-1.239*** (0.284)	-0.598** (0.283)	
Services	-1.797*** (0.121)	-0.976*** (0.180)	-0.472** (0.188)		-1.373*** (0.205)	-1.380*** (0.154)	-0.775*** (0.231)	-0.210 (0.234)	
Red_River_Delta	-0.044 (0.152)	0.536* (0.280)	0.246 (0.234)		-0.738*** (0.284)	-0.096 (0.150)	0.488* (0.280)	0.214 (0.233)	
West_Northern_Mtns	0.182 (0.308)	0.097 (0.592)	0.229 (0.479)		-0.183 (0.513)	0.219 (0.303)	0.102 (0.593)	0.246 (0.479)	

North_Central_Coast	-0.078	0.395	0.042		-0.775**	0.130	0.492	0.240	
	(0.182)	(0.319)	(0.280)		(0.305)	(0.188)	(0.328)	(0.289)	
South_Central_coast	0.074	0.595**	-0.242		-1.107***	0.357**	0.727**	0.028	
	(0.163)	(0.290)	(0.275)		(0.277)	(0.181)	(0.315)	(0.300)	
Central_Highlands	-0.080	0.668*	-0.120		-1.736***	0.389	0.890**	0.368	
	(0.223)	(0.348)	(0.342)		(0.365)	(0.261)	(0.406)	(0.396)	
Southeast	0.157	0.799***	0.141		-2.186***	0.605***	1.014***	0.595*	
	(0.149)	(0.270)	(0.231)		(0.256)	(0.203)	(0.341)	(0.307)	
Mekong_River_Delta	-0.042	0.648**	-0.003		-3.047***	0.779***	1.072**	0.821*	
	(0.158)	(0.278)	(0.243)		(0.263)	(0.292)	(0.460)	(0.434)	
r_dhcd					0.091***				
					(0.013)				
schoolyears_hat						0.389***	0.195*	0.261**	
						(0.080)	(0.117)	(0.115)	
Constant	3.019***	-0.198	1.244***		12.395***	-0.250	-1.832	-1.874	
	(0.319)	(0.470)	(0.468)		(0.479)	(1.023)	(1.508)	(1.485)	
Observations	2,921	2,921	2,921	2,921	2,901	2,901	2,901	2,901	2,901
R-squared					0.185				1

Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Data from VHLSS 2004-2006-2008

The marginal effect of variables on the probability of occupational transition choice is represented in Table 4.3. The average probability of individual remaining in wage employment and self-employment is higher at the level of 0.54 and 0.37, respectively; whereas the probability switching to self-employment sector is 0.05 and switching to wage employment is 0.04.

Regarding personal and family characteristics, the marginal effect of age positively affects the probability of staying in self-employment. An increase of 10 years in age may result in an increase 9% in the probability of remaining self-employed sector. Marital status also has impact on individual occupational transition. Marriage is likely to increase 20% probability of remaining self-employment and decrease 18.5% probability of remaining wage employment. Besides, an additional child will raise the probability of remaining self-employed by 3.4% while reduces the probability of switching to self-employment status by 1.3%.

Table 4.3. Multinomial probit marginal effects for overall sample

	(1)	(2)	(3)	(4)
	Pr(Remaining in WE = 0.54)	Pr(WEtoSE = 0.05)	Pr(SEtoWE = 0.04)	Pr(Remaining in SE = 0.37)
VARIABLES	dy/dx	dy/dx	dy/dx	dy/dx
age	-0.008*** (0.001)	-0.001* (0.001)	0.000 (0.000)	0.009*** (0.001)
married	-0.185*** (0.034)	0.006 (0.015)	-0.024** (0.012)	0.202*** (0.032)
child	-0.029* (0.016)	-0.013** (0.007)	0.009 (0.006)	0.034** (0.015)

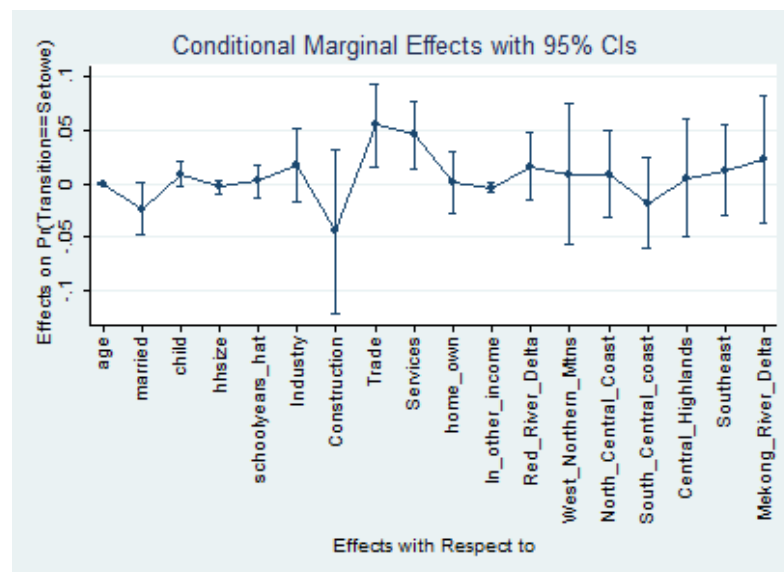
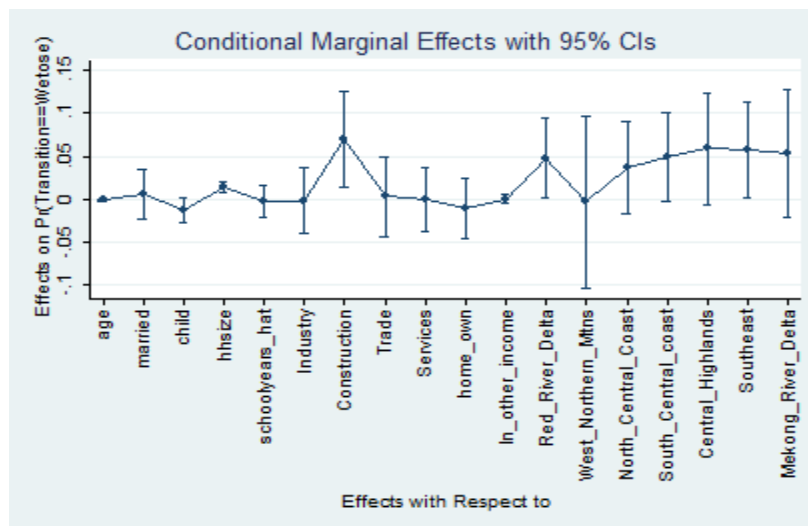
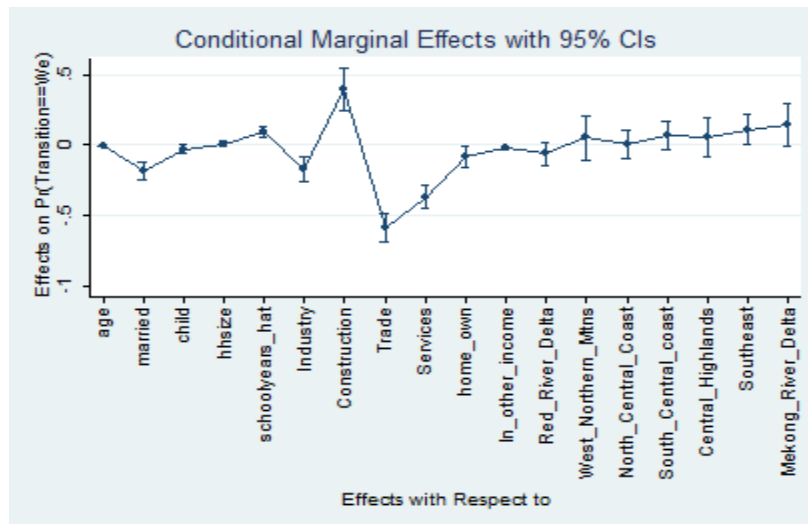
hhsz	0.009 (0.008)	0.014 ^{***} (0.003)	-0.003 (0.003)	-0.021 ^{***} (0.008)
schoolyears_hat	0.097 ^{***} (0.021)	-0.004 (0.010)	0.003 (0.008)	-0.096 ^{***} (0.020)
home_own	-0.083 ^{**} (0.040)	-0.011 (0.018)	0.001 (0.015)	0.093 ^{***} (0.038)
ln_other_income	-0.019 ^{***} (0.006)	0.000 (0.003)	-0.004 (0.002)	0.022 ^{***} (0.006)
Industry	-0.171 ^{***} (0.042)	-0.002 (0.0190)	0.017 (0.017)	0.156 ^{***} (0.041)
Construction	0.398 ^{***} (0.075)	0.070 ^{**} (0.029)	-0.045 (0.039)	-0.422 ^{***} (0.078)
Trade	-0.586 ^{***} (0.051)	0.003 (0.023)	0.054 ^{***} (0.020)	0.529 ^{***} (0.049)
Services	-0.369 ^{***} (0.040)	0.000 (0.019)	0.046 ^{***} (0.016)	0.323 ^{***} (0.039)
Red_River_Delta	-0.062 (0.041)	0.048 ^{**} (0.024)	0.016 (0.016)	-0.002 (0.039)
West_Northern_Mtns	0.051 (0.083)	-0.003 (0.051)	0.009 (0.034)	-0.056 (0.078)
North_Central_Coast	0.005 (0.051)	0.036 (0.028)	0.009 (0.020)	-0.050 (0.048)
South_Central_coast	0.070 (0.049)	0.048 [*] (0.026)	-0.018 (0.021)	-0.100 ^{**} (0.046)
Central_Highlands	0.058 (0.070)	0.059 (0.034)	0.005 (0.028)	-0.122 (0.066)
Southeast	0.108 ^{**} (0.055)	0.058 ^{**} (0.028)	0.013 (0.021)	-0.178 ^{***} (0.052)
Mekong_River_Delta	0.148 ^{**} (0.078)	0.052 (0.038)	0.022 (0.030)	-0.223 ^{***} (0.074)

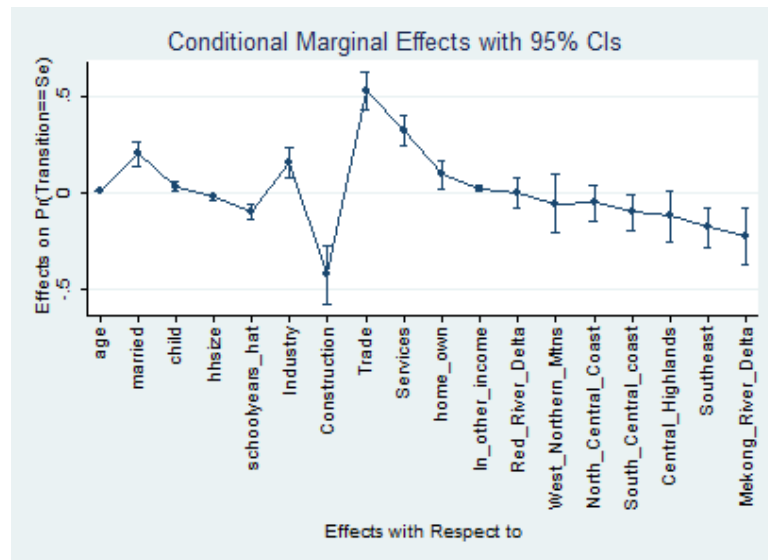
Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Data from VHLSS 2004-2006-2008

Higher education attainment could increase the probability of remaining wage employed while significantly reduce probability of occupational transition and remaining self-employed. An additional school year will increase probability of remaining wage-earner by 9.7% whereas lower probability of remaining self-employment by 9.6%. The result also reveals that higher financial support will increase significant the probability of remaining self-employment but decrease the probability of remaining wage employment. In addition, individuals in the South regions have higher probability of switching occupations, reflecting the fact that the South provides a more dynamic working environment which facilitates the occupational transition process.

Figure 4.1. Conditional marginal effects with 95% confidence intervals (overall sample)





In addition, there is a considerable difference between males and females in terms of occupational transition, which is illustrated in Table 4.4. For instant, regarding household size, higher estimated coefficient obtained in male sample may imply higher financial responsibility of men to their families. Meanwhile, in terms of children number, higher statistically significant negative coefficient for female sample indicates the burden of dependent children for women is heavier as women are more responsible for housework and child care. Moreover, education and financial constraints are also reported to have higher marginal effects on women.

Table 4.4: The occupational transition: Subsample

VARIABLES	MALESAMPLE					FEMALESAMPLE				
	FIRST STAGE	SECOND STAGE				FIRST STAGE	SECOND STAGE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	schoolyears	WE	WEtoSE	SEtoWE	SE	schoolyears	WE	WEtoSE	SEtoWE	SE
age	0.003 (0.011)	-0.043*** (0.006)	-0.035*** (0.009)	-0.031*** (0.010)		-0.055*** (0.010)	-0.036*** (0.008)	-0.036*** (0.012)	-0.010 (0.011)	
married	0.232 (0.298)	-0.568*** (0.183)	-0.186 (0.244)	-0.547** (0.273)		1.012*** (0.235)	-0.830*** (0.170)	-0.560** (0.253)	-0.890*** (0.239)	
child	-0.246** (0.118)	-0.104 (0.077)	-0.245** (0.105)	-0.014 (0.116)		-0.480*** (0.117)	-0.243*** (0.086)	-0.272** (0.129)	0.049 (0.125)	
hhsz	-0.152** (0.067)	0.077* (0.044)	0.211*** (0.057)	0.068 (0.067)		-0.090 (0.071)	0.036 (0.044)	0.153** (0.060)	-0.029 (0.063)	
Industry	-1.078*** (0.276)	-0.960*** (0.214)	-0.936*** (0.310)	-0.417 (0.349)		-1.805*** (0.271)	-0.695*** (0.210)	-0.359 (0.310)	0.052 (0.352)	
Construction	-2.281*** (0.324)	1.483*** (0.411)	1.275** (0.521)	0.428 (0.700)		-2.326*** (0.640)				
Trade	-0.731** (0.301)	-2.531*** (0.198)	-1.450*** (0.277)	-0.920*** (0.314)		-2.711*** (0.256)	-2.436*** (0.269)	-1.554*** (0.408)	-0.332 (0.430)	
Services	-0.756*** (0.280)	-1.641*** (0.186)	-0.907*** (0.264)	-0.321 (0.296)		-2.094*** (0.297)	-1.464*** (0.231)	-1.285*** (0.373)	-0.093 (0.376)	
home_own	-0.302 (0.360)	-0.736*** (0.233)	-0.779** (0.310)	-0.066 (0.418)		0.020 (0.346)	-0.120 (0.206)	-0.000 (0.331)	-0.310 (0.267)	

ln_other_income	0.198***	-0.087***	-0.019	-0.072		0.237***	-0.040	-0.038	-0.122**	
	(0.036)	(0.033)	(0.047)	(0.049)		(0.039)	(0.033)	(0.051)	(0.049)	
Red_River_Delta	-0.539	-0.194	0.633*	0.198		-0.837**	0.000	0.451	0.227	
	(0.401)	(0.209)	(0.370)	(0.313)		(0.393)	(0.212)	(0.435)	(0.337)	
West_Northern_Mtns	0.390					-0.952	0.562	0.905	0.848	
	(0.686)					(0.756)	(0.482)	(0.767)	(0.710)	
North_Central_Coast	-0.516	-0.165	0.264	-0.410		-0.993**	0.270	0.686	0.745*	
	(0.429)	(0.258)	(0.435)	(0.441)		(0.422)	(0.270)	(0.501)	(0.397)	
South_Central_coast	-0.776**	0.062	0.539	-0.341		-1.412***	0.482*	0.794	0.366	
	(0.389)	(0.242)	(0.406)	(0.407)		(0.385)	(0.261)	(0.489)	(0.437)	
Central_Highlands	-1.157**	0.169	0.452	-0.031		-2.031***	0.170	0.988*	0.673	
	(0.536)	(0.354)	(0.543)	(0.561)		(0.490)	(0.368)	(0.582)	(0.547)	
Southeast	-2.297***	0.373	0.660	0.246		-2.042***	0.511**	0.936**	0.760*	
	(0.357)	(0.316)	(0.495)	(0.468)		(0.362)	(0.253)	(0.473)	(0.402)	
Mekong_River_Delta	-3.015***	0.255	0.353	-0.022		-3.053***	0.703**	0.957	1.362**	
	(0.368)	(0.443)	(0.654)	(0.655)		(0.368)	(0.355)	(0.612)	(0.567)	
r_dhcd	0.084***					0.094***				
	(0.018)					(0.018)				
schoolyears_hat1		0.316**	0.016	0.145						
		(0.124)	(0.172)	(0.177)						
schoolyears_hat2							0.311***	0.112	0.311**	
							(0.091)	(0.140)	(0.147)	
Constant	11.709***	1.571	0.734	-0.431		12.961***	0.268	-0.913	-2.625	
	(0.668)	(1.507)	(2.104)	(2.180)		(0.680)	(1.220)	(1.891)	(1.975)	
Observations	1,488	1,488	1,488	1,488	1,488	1,413	1,413	1,413	1,413	1,413
R-squared	0.180					0.232				

Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
Data from VHLSS 2004-2006-2008

V. POLICY IMPLICATIONS

The results also show that people with lower educational attainment are more likely to be self-employed than the ones with higher education. This could imply that the majority of self-employment in Vietnam are engaged in own-account workers, which is indicative of a country with a large agriculture sector, low growth level in sectors of the economy that are regulated. Then when there is a lack of decent and sufficiently paid employment, individuals with lower education qualifications tend to turn to own account work (and/or contributing family work). In addition, this type of self-employment is regarded as more vulnerable. Therefore, the authorities should take measures to decrease the share of own-account workers in the self-employment, for example to improve the education level in general and push up the job growth.

The empirical evidences show the propensity to remain or switch into the self-employment particularly in trade and service sectors. In fact, these sectors can absorb the large number of redundant labours from agricultural sector, involving in self-employment sector because it does not need so much capital and high skill levels. This implies that the authorities should focus on these sectors to improve the business environment for the employers and change the share of own-account workers in a positive way.

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