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The Gender Wealth Gap by Household Head in Vietnam*

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Abstract

While the gender **income** gap has been examined extensively, the gender **wealth** gap has largely been ignored, especially for emerging markets such as Vietnam. The lack of serious analysis has caused great concern for practitioners and policymakers as public policy targeting the inequality in income and wealth across genders has not achieved their desired outcomes. Previous studies on gender in emerging markets have focused on income rather than wealth. This paper provides a comprehensive review and insightful policy recommendations on the important issue. Using data from Vietnam's Household Living Standard Survey (VHLSS), the paper examines the gender wealth inequality for sole-head families and partner-head families in Vietnam in 2016, the latest year for which data are available. In addition, the paper extends the Machado-Mata decomposition technique based on the Oaxaca-Blinder decomposition, which was developed for quantile regressions, to examine the relationship across the distributions of wealth accumulation. The empirical findings from the paper indicate that, among partnered heads, female-head families experienced a larger gap of wealth accumulation. At the lower quantiles of wealth accumulation, the gender wealth gap is primarily associated with different characteristics for both sole and partner-head households. At the median and upper tails of the distribution of wealth accumulation, gender differences in endowments (such as education level and living area) are the main determinants in explaining the wealth gap. Given the empirical findings in the paper, policy implications emerge for the Vietnam Government to consider policies targeting a support for females as female-head families appear to be poorer than their male-head counterparts in terms of wealth.

Keywords: Gender wealth gap, male-head households, female-head households, quantile regressions, wealth gap decomposition, Vietnam.

JEL: J12, J16, J18, D31.

1. Introduction

The gender wealth gap has long been a topic of substantial interest among academics, practitioners and public policymakers, especially in developed countries. Many empirical studies have been conducted in Australia, Canada, New Zealand, UK and USA (see, for example, Austen, Jefferson and Ong (2014), Austen, Ong, Bawa and Jefferson (2015), Ruel and Hauser (2013), and Gibson, Le and Scobie (2006)). The principle empirical findings are that partner-head households tend to be wealthier, on average, than single-head households. Income and labor market characteristics of males and females are generally considered as key determinants to explain the differences in wealth between males and females in developed countries.

In contrast to developed countries, however, the gender wealth gap has gained little attention in developing nations, such as Vietnam and other ASEAN countries. An exception is a recently conducted study by Anglade, Usech, and Deere (2017), who investigated patterns in the gender wealth gap in Ecuador. In Vietnam, gender inequality is generally examined based on differences in wages, incomes and opportunities (see, for example, Liu (2004) and Pham and Reilly (2007)). No analysis has yet been undertaken to examine the gender wealth gap in Vietnam. As such, a comprehensive analysis for Vietnam is essential for purposes of formulating appropriate public policy to reduce the perceived gap.

Empirical findings from previous studies in developed countries suggest that gender income inequality is one of the main causes for the gender wealth gap. In Vietnam, the gender earning gap is a problem across many generations. Moreover, due to the influence of the Eastern (or Asian) Culture, valuable assets from the family are generally under the control and ownership of males. Land tenure certificates are produced under the name of males in male-head households. As such, wealth accumulation for female households is lower than for male households in Vietnam.

Vietnamese women have been provided with many working and promotional opportunities and have contributed significantly to national economic development over an extended period. Many women hold key positions in the national government, which plays as an important role in establishing a modern and civilized society. It can be observed that many large corporations are controlled by Vietnamese women in recent years. However, the inequality between males and females is persistent in Vietnam. An important source of inequality in Vietnam is the discrimination against women in various aspects of economic and social life (see, for example, Oxfam (2017)).

Regardless of the substantial efforts by the Vietnam Government, enhanced with a legal framework that supports gender equality, women have been disadvantaged in the ability to access education and health, and to advance their capacity and developing opportunities. As a result, the gender earnings gap has been widening. Oxfarm (2017) reported that, in the formal economy, the gender income gap between males and females is approximately 12 per cent, while women in the informal sector earn less than 50 percent of their male counterparts. The probability of becoming paid workers in the workforce for females is only 12.4 per cent as compared with males. Such situations arise because females have tended to work in sectors that have required relatively lower skills and value added.

In Vietnam, the gap in the gender retirement age leads to differences in the average number of years of work between males and females. Women have shorter working lives, so that opportunities to be promoted to higher positions appear to be limited than for men. This has resulted in a gender inequality in opportunities, in earning and asset accumulation, and also in wealth. According to the Institute of Labor Science and Social Affairs, the lower retirement age for women contributes to lower total working hours as compared with men, so that women have fewer opportunities to maximize their wages during their working lives. The lower retirement age of women results in their average wages being 11 per cent lower than of their male counterparts, based on equivalent terms.

In response to the lack of comprehensive and systematic studies on the gender wealth gap in Vietnam, the paper provides updated and relevant evidence for Vietnam on the fundamental issue of the gender wealth gap. The paper will encourage practitioners and public policymakers to consider various options that should reduce the gap for appropriate social and economic development.

The remainder of the paper is as follows. Following the Introduction, a literature review is discussed in Section 2. The research methodology and data are examined in Section 3. Section 4 presents the empirical results, followed by concluding remarks and policy implications in Section 5.

2. Literature Review

Income and income inequality are widely accepted as dimensions representing current differences in living standards and potential differences of future opportunity between males and females. Kuznets (1955) postulated that income inequality emerged from specialization and an imbalanced labour market during industrialization. Differences in incomes among individuals within society lead to other inequality issues, such as education, health care, and accommodation. In comparison, wealth and the wealth gap between males and females is a product of differences in progress of asset accumulation, which is a more complex mechanism that represents inequality.

Wealth is a vital element of economic well-being and quality of life. An accumulation of wealth serves as an important buffer in times of income fluctuations. Older people appear to rely heavily on wealth, especially in developing countries where a comprehensive welfare benefit system does not exist. For females, wealth accumulation is even more important because they tend to live longer than do males. In addition, females generally have lower pension funds due to lower salaries and a shorter number of working years (see, for example, European Commission and Social Protection Committee (2015)). It is worth noting that the life-cycle perspective is

particularly important when examining wealth across genders. Differences in ages, asset accumulation behaviour, and education levels result in different rates and levels of wealth accumulation (see Sierminska (2017)).

Rutstein and Johnson (2004) stated that wealth is a theoretically measurable quantity, namely the difference between total assets and total liabilities. A listing of all property, which includes both physical and economic property, assigning them a cost primarily based on market forces, depreciating them, and aggregating the values. The same can be achieved for debts, after which the debts can be subtracted from the property to determine (net) assets.

Wealth captures the asset accumulation behaviour of individuals. The gender wealth gap can be explained by the difference in savings behaviour, expenses behaviour, education level and opportunities in the labour force. Various empirical studies have found that gender differences in wealth accumulation occur regardless of how difficult it might be to distinguish gender and marital status. The empirical findings from previous studies indicate that unmarried-head households accumulate substantially less wealth than do married families (see Schmidt and Sevak (2006)).

Other studies have also found that single male-head families vary little from traditional married families in wealth accumulation (see Ozawa and Lee (2006) and Yamokoski and Keister (2006)). Grinstein-Weiss, Yeo, Zhan, and Charles (2008), however, found that male-head and female-head families, with at least one child, achieved 5 percent and 15 per cent less in terms of wealth accumulation, respectively, in comparison with married households. Many studies have also reported that unmarried women with children achieve the least in terms of asset accumulation (see, for example, Grinstein-Weiss et al (2008), Ozawa and Lee (2006), Warren (2006), and Yamokoski and Keister (2006)).

Austen, Jefferson, and Ong (2014) investigated the gender wealth gap using survey data from households, income and labour dynamics in an Australia survey (HILDA) by examining

differences in the net worth of single female-head and single male-head households. Empirical findings from the paper illustrate that the gender wealth gap in Australia is concentrated in particular types of assets (such as primary home, other property, superannuation, business, and others), and attributed to the diverse composition of wealth, especially in high net worth households. In addition, the decomposition techniques and quantile regression methods were used to identify individual characteristics of single male and single female households that contributed to the wealth gap.

Austen et al. (2014) analyzed the available component assets of households from the HILDA 2006 data set. They modified the decomposition technique to adapt to the quantile regression model. The empirical results implied that, in Australia, the wealth gap distinguished by gender was significantly large (in absolute terms) in the upper net worth distribution. However, moving toward the bottom distribution of wealth, the lower the net worth level, the lower were the levels of differences in wealth between males and females. The empirical results suggested that financial equalization between male-head and female-head households was more easily achieved in the lowest net worth level of wealth accumulation. Moreover, Austen et al. (2014) presented weak evidence of individual elements that accounted for the large gender wealth gap at the top of the wealth distribution in Australia.

In another study, Austen et al. (2015) explained the gender wealth inequality/gap by comparing the differences between single female-head and male-head households (SFHs and SMHs, respectively) in Australia in 2002, 2006, and 2010. Using data from various HILDA surveys, the authors calculated the wealth gap between males and females for different age groups (younger than 35, 35-55 and more than 55 years of age), marital status (never-married and separated/divorced) for each year. In addition, the wealth holdings of single female-head and single male-head households were examined according to net worth, meaning the total assets (including the primary home, business, bank accounts, cash redeemable life insurance) minus total debts.

In adding further insights, Austen et al. (2015) compared the gender wealth gaps in various quartiles of the wealth distribution. The key empirical discovery in this paper was the significant increase in the gender wealth gap over the period 2002-2010 due to an increase in the ratio of average value of primary home asset holdings by SMHs. Although the wealth portfolios of SFHs exhibited positive changes, the gender wealth gap increased substantially due to the low starting point of real asset values. This empirical finding is different to that of Bolin and Palsson (2001), who indicated that SMHs achieved better outcomes on the primary home, which was the key component of increases in the gender wealth gap.

Moreover, because of the financial costs associated with adult children and the limits on working hours due to childcare responsibilities, women have faced greater disadvantages on housing choice than other households. There were differences in occupation and pay between males and females. Therefore, it was argued that labour market policies and housing policies were the critical tools for purposes of reducing the gender wealth gap.

Deere and Doss (2006) examined the literature and policy evidence available on the gender wealth distribution globally, especially in the USA. In the 19th Century, because of the effects of regulations that granted married females similar rights to those of unmarried females and led to more equal treatment of female children in inheritance bequests. In the 20th Century, this change was facilitated by means of felony exchanges and social practices: inheritance started to favour widows over children, sons and daughters tended to be treated similarly, and no-fault divorce, where marital assets are divided equally, became universal.

Deere and Doss (2006) stated that marital and inheritance regimes were the key issues in analyzing gender wealth inequality. Separation of assets regimes are often blended with the greater favourable treatment of widows underneath intestate, in comparison with community assets regimes to compensate for the fact that females generally convey fewer assets to the marriage and appear to access fewer possibilities to accumulate assets throughout the marriage.

In another study for the USA, Yamokoski and Keister (2006) examined the non-pension wealth of US males and females, with ages ranging from 36 to 43 by marital status, gender, and parental wealth. Using the data set from the National Longitudinal Survey of Youth (NLSY) from 1979 to 2000, the paper concentrated on young baby-boomers born in the 1946-1964 period and found a negligible sexual orientation hole in the abundance of never-wedded individuals. The paper presented strong evidence to support the view that the wealth accumulation of couple-households was in favour of single-households. The empirical results showed that the lowest gap in wealth appeared within the non-married group.

Yamokoski and Keister (2006) discovered that single mothers endure the most serious monetary punishments in household equity accumulation. In a separate study for the USA, McDevitt and Irwin (2017) investigated the timing of extensions of female assets holdings, drawing on authentic and distributed confirmation from probate records. Starting with Richmond, Virginia, and its agricultural hinterland, McDevitt and Irwin (2017) consider a variety of places, including urban and rural, in the entire country, to recommend an overall view of the eastern USA. In a harsh framework, while provincial females were at most one-tenth of the probated riches holders, prior to the war females were no less than one-fifth.

The levels of female wealth holdings expanded far more. The considerable narrowing of the gender riches hole cannot be ascribed to the Married Women's Property Act that took after. Maybe those demonstrations will clarify the further narrowing of the gender riches hole in the late 19th Century, although the narrowing may be better understood as a continuation of past patterns. The empirical finding shows that some legitimate changes can be comprehended as reflections over the reasons for social change.

Ruel and Hauser (2013) applied the Wisconsin Longitudinal Study to estimate wealth accumulation by conjugal status and restricted to the respondents who are the best earners in the family to clarify the wealth differences between males and females in the USA. The authors investigated substantial gender wealth inequality between married males and females, and

never-married males and females. The never-married individuals accumulate fewer assets than married couples, which clearly affects asset accumulation. The status-fulfillment model demonstrates the greatest influence in clarifying the gender wealth inequalities.

Warren (2006) examined the effects of gender, group, and ethnic divisions on the differences in asset accumulation in the UK. Using the Family Resources Survey, the analysis provided an evaluation, based on the population age group from 18 to 59, of the distribution of individual-level pension wealth to investigate the extent of the gender wealth gap. The paper also analyzed family-level wealth to indicate how class and ethnicity-related asset accumulation imbalances can affect different genders, and how other key factors, such as pay and the life-cycle, can affect wealth accumulation.

Schmidt and Sevak (2006) investigated how household wealth accumulation in the USA is fluctuated by gender and household type. This statement justified the huge wealth differences between single female-head households and couple families. By using the Panel Study of Income Dynamics (PSID), which is a survey collected detailed wealth household-level data in USA and applying OLS and quantile regression, the authors found that the wealth differences decreased, but were not eliminated, by the expansion of family incomes.

Moreover, quantile regression results suggested altogether different sizes of the wealth differences than those from OLS regressions, showing the significance of using quantile regression and aspects of the wealth distribution. The wealth possession of single females in the USA, controlling for these equivalent determinants, were additionally essentially lower than the wealth property of single males. The observed wealth differences in young families, where the heads were aged from 25 to 39, were almost non-existent.

In analyzing the patterns of asset possession between females and males in Ecuador, Ghana, and Karnataka, India, Doss, Deere, Oduro, and Swaminathan (2014) find that gender inequality in assets and wealth is different across countries, and on the type of assets. The empirical findings suggest that joint-assets ownership reduces the gaps, while individual-level ownership has the

opposite effect. For example, in Ecuador, wherein joint possession is dominant in all aspects of real estate, the differences in domestic land possession between males and females is exceptionally small. In cases where character-ownership is dominant, consisting of financial savings, the gender wealth inequality favours males. These empirical findings in both assets possession and wealth indicate that efforts to promote gender equality would benefit from greater egalitarian possession of assets inside marriage, either through joint ownership or enabling an expansion of female-asset possession.

Anglade et al. (2017) investigated patterns of the gender equality gap in Ecuador. In the recent study, the wealth gap inequality across genders, both for sole-head and partner-head households, was examined. The data were collected from the nationally representative assets in Ecuador (EAFF) survey in 2010. Using unconditional quantile regressions and the new Oxaca-Blinder decomposition method (see Oaxaca (1973) and Blinder (1973)), the authors identified significant differences in the wealth gap between these two groups, including sole-head and partner-head households, respectively, for difference quantiles.

The empirical findings demonstrate that, for sole-head groups, the gap favoured males across all the quantiles, with the gap being the largest at the lower tail. The empirical results were much less pronounced for the partner-head counterparts. The paper added confirmation to the long-standing civil argument about whether female-head families are poorer than their counterpart male-head families. The findings suggest that a strategy is required in respect of social projects to enable investments by females in the formal economy that will lead to profits for their cooperative efforts.

Pham and Reilly (2007) examined the underdevelopment of ethnic minorities in Vietnam by measuring the wage gap of ethnic minorities and the current wages in the labour market. The authors use the Vietnam Living Standard Survey (VHLSS) data for 2002 and is based on the Oaxaca-Blinder decay method (see Oaxaca (1973) and Blinder (1973)) to decompose the wage gap by ethnicity into the effects of policy interventions and ownership based on the units in the

conditional wage distribution. The empirical results confirm the existence of the wage gap by ethnicity in the labour market, although the gap is much lower than determined by calculating household expenditures according to ethnicity in the household living standard report of Vietnam in 2002.

However, the empirical findings contradict those from alternative sources of data. The main reason is that the author selected a group of ethnic minorities that worked well in the Vietnam labour market, which is dominated by the Kinh majority. For ethnic minorities in this selective sub-region, the data showed that their living standards and other observable characteristics, such as education levels, are above average. Despite evidence of relatively good labour market performance, the analysis suggested that the average ethnic group earns less than their contribution, as opposed to the Kinh majority in the labour market.

Benjamin, Brandt, and McCaig (2017) used the Vietnam Living Standard Survey (VHLSS) data for 2002-2014 to develop a measure of household income disparities and estimate the inequality of incomes. In addition, gender wage inequality is measured through the Gini coefficient. The authors use the Shorrocks (1982) method of decomposition to highlight the main factors that lead to differences in household incomes, particularly urban / rural and ethnicity. The results show that the income gap between urban and rural areas tends to decrease, although income inequality appears in rural areas arising from differences in incomes between the Kinh and ethnic minorities.

Although the income of ethnic minority households has increased, growth is slower than that of the Kinh. Moreover, income disparities in ethnic minority areas have also increased compared with the Kinh. This is in line with studies in China, where most of the change in inequality is due to increased inequality in rural and urban areas, arising from unequal access to new opportunities outside agriculture. The paper shows that localities no longer play an important role in household income disparities. The main reason is that government policy to promote

rural migration has contributed to reducing the importance of the place of residence in the household income gap.

The review has shown that there are presently no published studies about the gender wealth gap in Vietnam, particularly regarding retirement age. The few notable studies that have been undertaken in Vietnam have focused on different gender inequality aspects, such as the gender earnings gap, gender income gap, and gender social-economic behaviour gap.

3. Methodology and Data

a. Quantile regression

Quantile regression (QR) models are used in this paper. By enhancing the estimation of conditional mean functions with methods for assessing a group of conditional quantile function, QR is equipped to provide a total measurable evaluation of the stochastic connections among random variables. With the QR method proposed by Koenker and Bassett (1978), the estimator can be found according to the following minimization function:

$$\beta_{QR} = \arg\min\left[\sum_{Y_i>\beta X_i} \tau|Y_i - \beta X_i| + \sum_{Y_i<\beta X_i} (1-\tau)|Y_i - \beta X_i|\right] \forall\tau \in (0,1)$$

The ordinary least squares (OLS) estimators suggest the average marginal effect of regressors on the dependent variable, the quantile regression estimators examine the marginal effects under each conditional quantile. The proposed regression is as follows:

$$w_g^\tau = \beta_0^\tau + \beta_1^\tau y_{t-1} + \beta_2^\tau Ac.saving_{i,t-1} + \beta_3^\tau Ac.Home_{i,t-1} + \beta_4^\tau Ac.Other_{i,t-1} + \beta_5^\tau No.Chil_{i,t-1} + \beta_6^\tau Age_{i,t-1} + \beta_7^\tau X_{i,t-1} + \varepsilon_{i,t}$$

where:

w_g^τ: net worth;

τ: particular estimation quantiles (o=0.1, 0.5 and 0.9);

g: gender of household head;

$Ac.Saving$: saving account;

$Ac.home$: value of the primary home;

$Ac.other$: value of other assets, including savings accounts, values of vehicles and other fixed assets in the household;

$No.Chil$: number of children;

Age: ages of the household head.

X: vector of marital status, working age, ethnicity, living area and education level.

Although estimating alternative quantiles can simultaneously provide a complete view on numerous issues, this paper presents only the estimation results at some quantiles which are commonly used in empirical studies (specifically, 0.1, 0.5 and 0.9).

b. Decomposition

The decomposition analysis of the gender wealth gap applies the Machado-Mata decomposition (see Machado and Mata (2005)) based on the standard Oaxaca-Blinder decomposition (see Oaxaca (1973) and Blinder (1973)). This approach combines a quantile regression model with a bootstrap approach to simulate counterfactual wealth densities. This method is propelled by information indicating vast differences in the wealth distribution across Vietnam households. A standard OLS decomposition, which presents the connection between the determinants and net wealth, would be insufficient in revealing the contrasts in the determinants of male-head households and female-head households at various quantiles of the wealth distribution.

This method is given as follows:

$$\overline{w}^m - \overline{w}^f = \beta_\tau^m\left(X_\tau^m - X_\tau^f\right) + X_\tau^f\left(\beta_\tau^m - \beta_\tau^f\right)$$

where w represents net wealth; τ represents particular estimation quantiles, namely 10th, 50th, and 90th quantiles); and m and f represent male-head and female-head households, respectively. X includes marital status, working age, living area, and education level.

c. Data

The paper uses data from the 2016 Vietnam Household Living Standard Survey (VHLSS), which is the series of living standard measurement surveys for Vietnam, to investigate gender inequality in the total value of wealth portfolios of households in Vietnam. For policymaking purposes, Vietnam's General Statistics Office, under the technical support of the World Bank, sponsored by the United Nations Development Program (UNDP) and the Swedish International Development Agency (SIDA), conducted the survey. The general technique adopted in these surveys complies with the framework inside the Living Standard Measurement Surveys of the World Bank. The surveys are broadly recognized as being the best and most representative at the national level.

The first survey was conducted in 1993, and the sample contained 4,800 households. The 1998 survey included 5,994 households. These surveys have been used extensively to explore the impact on various issues after the 1986 Economic Reforms in Vietnam. The latest data set was collected in 2016 with 9,399 households, including 7,000 male-head households and 2,399 female-head households.

d. Definition of variables

In this paper, we examine gender inequality in total wealth accumulation, including total assets and debt portfolios of single- and partner-head Vietnam households. Consequently, the sample used in the empirical analysis is restricted to male-head and female-head households. For the

definitions of the variables, and descriptive statistics for sole-head sand partner-heads, see Table 1 and Table 2.

< Tables 1 and 2 here >

The wealth holdings of male-head households (MH) and female-head households (FH) are measured by net worth, defined as the net balance of total assets and total debts. Assets represent the sum of value of the primary home, durables, vehicles, production profits, savings (total household salary and bonuses, less the total household expenditure on food, education, health, and other daily expenditures), savings accounts, and other property. Debt includes debt secured against the primary home, business and vehicle, consumption loans, and education loans.

This paper reports gender wealth inequality, and compares the MH and FH wealth differences for two age groups (working age: up to 55 years for females, and up to 60 for males; and retirement age: more than 55 years for females, and above 60 for males), marital status (partnered and sole families, including single/never married, separated, divorced, and widowed), living area (urban/rural), ethnicity (Kinh/minority), and education level (non-education, primary, lower secondary, upper secondary, postgraduate and tertiary).

The data set permits emphasis on differences in wealth accumulation throughout distinct levels of the life cycle and among individuals. In order to examine the wealth distribution, the paper also reports changes inside the median wealth of FHs and MHs at retirement age and examines the gender wealth gap inside the alternative quartiles of the wealth distribution.

e. Descriptive statistics

Table 3 presents the summary descriptive statistics of the mean characteristics of sole and partnered male and female household heads. Considering sole-heads, the wealth accumulation of male-heads from savings accounts and other assets seems higher than for female-heads. Sole-

heads are more likely to be single/never married. In Vietnam, male-heads are usually married, while the percentage of unmarried female-heads is high.

< Table 3 here >

Vietnam has long adopted a family planning policy, so the number of children in each family has remained at less than two. The number of children in sole and partnered household is different. The average number of children in sole households is lower than for married couple families. In addition, in sole female-head families, the number of children is higher than in sole male-head families. This is in contrast to partner households, where the number of children of male partner-heads is higher than for female partner-heads.

A number of non-education sole female-heads are higher than sole male-heads. The proportion completing postgraduate and tertiary levels of sole female-heads are also higher than for sole male-heads. On the other hand, among married couples, the proportion of non-education is higher for male-heads, while the percentage of female-heads having completed postgraduate studies is higher than for males. Most male partner-heads are living in rural areas, while the majority of female partner-heads lives in urban areas. Regarding sole households, they are more likely to live in rural than urban areas for male-heads and female-heads. There are differences between rural and urban areas for sole male-head and sole female head households.

A majority of partner-heads are in the working age range, from 15 to 60 years. In contrast, the number of retired sole-heads is not significantly different from the working age range. The *Kinh* population accounts for approximately 85 per cent of Vietnam's population, so it can be appreciated why the rate of *Kinh* heads is much higher than minority heads for both sole-head and partner-head households. The proportion of minority female partner-heads is lower than for male partner-heads, while the proportion is equal for sole male-heads and sole female-heads.

A few differences between sole- and partner-heads can be emphasized. Sole-heads are older, with lower education levels, and fewer children than for married couples. In addition, partner-

heads are more likely than sole-heads to have primary home value, savings accounts and other assets, including vehicle value and other fixed assets.

4. Empirical Findings

a. Quantile regression

The quantile regressions calculate male-heads and female-heads in sole- and partner-head households, respectively, at the 10^{th}, 50^{th} and 90^{th} percentiles, and are given in Tables 4 and 5. The coefficients can be used to explain the marginal effects of the independent variables to the dependent variable for the different quantiles.

< Tables 4 and 5 here >

Table 4 presents the results from quantile regression estimation of sole-heads. From the regressions, the characteristics that contribute most significantly to wealth accumulation across the wealth distribution of households, in both sole- and partner-head households, are primary home value, savings accounts, other assets, and the living area. Primary home values have a large effect at the bottom, and decrease at the top, of the distributions in both samples. The empirical results also show that savings accounts of female-head households have a more significant effect on the wealth distribution than do male-head households. Other assets tend to have effects at the bottom of the distribution, and increase at the top of the wealth distribution, in both sole- and partner-head households.

In relation to sole-head households, the marital status has a significant effect on the wealth distribution, particularly at the lower end of the distribution. Divorced males have significantly lower wealth than never-married males, while separated females are in the same situation, which means they have lower wealth accumulation as compared with never-married females. The education level also significantly affects wealth accumulations at the upper end of the distributions. Non-educated males have higher wealth accumulations than do males who have completed primary school only.

Among partner-heads, the education level is significantly associated with wealth holdings at the middle and upper ends of the distributions. The higher the education level that female-heads have completed, the higher is the wealth accumulation for both female-head and male-head households. In addition, households living in an urban area have higher wealth accumulation than in the rural area, in particular for the top wealth distribution, with the difference being higher in female-head households. Ethnicity is also significantly related with the wealth distribution. The empirical results show that the minority heads have lower wealth than do Kinh heads, with the differences in wealth between Kinh and minority households being larger in female-head households at the 10^{th} and 50^{th} percentiles.

b. Decomposition results

The decomposition method investigates the contribution of each characteristic to gender inequality. The empirical results are reported in Figures 1 and 2, as well as in Tables 6 and 7. The findings indicate that sole male-head and female-head (Figure 1, Table 6), and partner male- and female-head (Figure 2, Table 7) households, contribute to the gender wealth gap. In the top percentiles of the wealth distributions, a large majority of the gender wealth gap occurs in favour of males in both samples.

< Figures 1 and 2 here >

< Table 6 here >

Regarding sole-heads, the total difference at the 10^{th} percentile stems largely from gender gaps due to characteristics. In the middle tails, the effects of the characteristics of households are not clearly observable in the changes in the total differences. In addition, at the 90^{th} percentile, the total wealth difference increases in favour of males due to lower endowment effects, such as education levels and living areas. Among partner-heads, the decomposition shows that the gap favouring males can be interpreted in part by female lower-tail returns on the characteristics.

The effects of the characteristics of households are significantly associated with the total differences at each percentile. The differences in education level, ethnicity, living area and age are observed to widen the gender wealth gap.

5. Conclusions and Policy Implications

Using the most recent data available from the 2016 Vietnam Household Living Standard Survey, the research in this paper has examined the extent and sources of the gender wealth inequality gap across the wealth distributions in Vietnam. The research focused on comparing sole- and partner male-head and female-head households. The empirical findings have provided important and additional evidence for public policy orientation based on the striking differences between male-head and female-head households in the future.

The significant finding from this study can be summarized as follows:

(i) The gender wealth gap in Vietnam is much larger among partner-heads than among sole-heads. This observation suggests that the government should expect the mean gender wealth inequality to change depending on various factors and characteristics, such as the prevailing marital and asset accumulation behaviour after marriage, including the specific features of divorce legislation, and opportunities for young individuals to accumulate assets before marriage.

(ii) This empirical finding provides additional evidence to confirm that property regulations that support joint ownership of marital property, and the number of children, directly affect the gender wealth gap.

(iii) For the gender wealth gap across the wealth distribution in Vietnam, it is observed that the gap is larger among partner-head than for sole-head households. This striking finding is similar to the mean gender gap. In relation to the partner-heads, a gender wealth gap favours females across the lower tails of the wealth distribution. The gap

increases at the median and decreases at the higher percentiles, following an inverse-U pattern.

(iv) Factors such as education level, living area and ethnicity all affect the gender wealth gap in Vietnam, particularly at the middle and upper quantiles in both sole- and partner- female-head and male-head households.

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On the basis of these empirical findings, public policy implications can be drawn for the Vietnam Government and academic researchers. For example, laws regarding marriage and the family, especially for the joint ownership of marital property and equal inheritance among children, that contribute to a lower gender wealth gap should be encouraged in public policy reforms.

In Vietnam, the main source of income for about one-third of workers is wages (see Oxfam (2017)). Therefore, laws regarding labour will heavily affect wealth accumulation. Laws that ensure fair pay and the promotion of female employees should be addressed. Senior positions for females, as well as quotas, should be seriously considered to redress the gender wealth gap. In addition, stronger support for education and minority ethnic groups should be seriously considered. Implementing such policies would be expected to reduce the currently high gender wealth gap in Vietnam.

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Table 1

Variable Descriptions

Variable	Variable descriptions
Net wealth (w)	Net wealth equals total assets, including primary house value, savings account, vehicle value and other fixed assets, except total debts
Ac.Saving	Household savings account equals total household earnings minus total household expenditures
Ac.Home	Primary home value
Ac.other	Vehicles value and other fixed assets
No.Chil	Number of children
Age	The age of the household heads
Married status	Partnered and sole-head families including single/never married, separated, divorced, and widowed
Ethic	Kinh – popular ethic in Vietnam, and Minority
Working age	Working age of less than 60 years and retirement age of more than 60 years
Education level	Includes non-education, primary, lower secondary, upper secondary, postgraduate and tertiary
Living area	Urban or rural

Table 2

Descriptive Statistics, Sole Heads and Partnered Heads

	Sole heads			Partnered heads		
	Male	Female	SD	Male	Female	SD
Net wealth	9.444	9.375	1.417	9.576	9.934	1.403
Home value	8.753	8.783	2.585	9.082	9.089	2.304
Saving account	6.975	6.801	1.945	7.320	7.684	1.849
Other asset	6.127	5.994	1.537	6.791	7.066	1.228
No. of children	0.815	1.125	1.064	1.710	1.561	1.088
Married status						
Married				0.952	0.372	0.397
Single/never married	0.027	0.473	0.450			
Widowed	0.011	0.074	0.347			
Divorced	0.006	0.062	0.306			
Separated	0.003	0.019	0.190			
Education level						
Non-education	0.272	0.452	0.494	0.205	0.180	0.402
Primary	0.304	0.238	0.433	0.260	0.197	0.435
Lower secondary	0.266	0.195	0.406	0.314	0.251	0.461
Upper secondary	0.093	0.082	0.278	0.155	0.237	0.371
Postgraduate	0.125	0.169	0.367	0.108	0.167	0.319
Tertiary	0.000	0.003	0.047	0.004	0.003	0.064
Living Area						
Urban	0.346	0.323	0.469	0.252	0.555	0.453
Rural	0.654	0.677	0.469	0.748	0.445	0.453
Working age						
Working	0.528	0.468	0.500	0.814	0.886	0.382
Retire	0.472	0.532	0.500	0.186	0.114	0.382
Ethic						
Kinh	0.866	0.888	0.321	0.804	0.872	0.391
Minority	0.134	0.112	0.321	0.196	0.128	0.391
Observations	**335**	**1,506**		**6,665**	**893**	

Table 3

Quantile Regressions, Sole Heads

	10th quantile		50th quantile		90th quantile	
	SMH	SFH	SMH	SFH	SMH	SFH
Home value	0.797***	0.875***	0.441***	0.646***	0.297***	0.291***
Saving account	0.094***	0.122***	0.071**	0.082***	0.107***	0.081***
Other assest	0.062***	0.018*	0.217***	0.115***	0.163***	0.226***
No of children	0.005	-0.020	-0.053	-0.004	0.016	-0.039
Age	0.000	0.002	-0.004	0.001	-0.003	0.002
Married status						
Single/never married	-	-	-	-	-	-
Widowed	-0.048	-0.036	0.064	-0.066	0.095	-0.133
Divorced	-0.094**	0.001	-0.015	-0.069	-0.198	-0.088
Separated	-0.020	-0.149*	-0.005	-0.041	-0.380	-0.013
Education level						
Non-education	-	-	-	-	-	-
Primary	-0.001	0.006	-0.012	0.049	-0.332*	0.156*
Lower secondary	0.017	0.000	0.079	0.039	0.055	0.183**
Upper secondary	-0.107**	0.000	0.246	0.067	-0.099	0.357***
Postgraduate	0.034	0.008	0.164	0.022	0.119	0.071
Tertiary	-	0.079	-	0.470	-	0.802
Area						
rural	-	-	-	-	-	-
Urban	0.045	0.018	0.343***	0.246***	0.737***	0.673***
Working age						
Retire	-	-	-	-	-	-
Working	-0.006	-0.011	-0.124	-0.026	0.071	-0.094
Ethic						
Kinh	-	-	-	-	-	-
Minority	-0.066	-0.013	-0.186	-0.009	-0.463**	-0.049
cons	0.968***	0.198	3.771***	2.188***	5.825***	5.340***

Note: Roust standard errors in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 4

Quantile Regressions, Partnered Heads

	10th quantile		50th quantile		90th quantile	
	PMH	PFH	PMH	PFH	PMH	PFH
Home value	0.850***	0.704***	0.704***	0.275***	0.259***	0.226***
Saving account	0.136***	0.218***	0.094***	0.119***	0.060***	0.045**
Other asset	0.047***	0.117***	0.109***	0.315***	0.255***	0.270***
No of children	-0.012*	-0.013	0.007**	0.009	0.002	-0.023
Age	0.001	0.001	0.002***	0.007*	0.004***	0.001
Married	-	-	-	-	-	-
Education level						
Non-education	-	-	-	-	-	-
Primary	0.008	0.014	0.006	0.184	0.010**	0.367***
Lower secondary	0.007	0.028	0.0262**	0.346***	0.203***	0.487***
Upper secondary	-0.001	0.021	0.060***	0.280**	0.394***	0.630***
Postgraduate	0.002	-0.015	0.0585***	0.218	0.345***	0.405***
Tertiary	0.008	0.124	0.164***	1.478**	0.450**	1.179**
Area						
rural	-	-	-	-	-	-
Urban	0.0462***	0.079**	0.095***	0.422***	0.553***	0.505***
Working age						
Retire	-	-	-	-	-	-
Working	0.009	0.010	0.007	0.011	0.032	-0.468***
Ethic						
Kinh	-	-	-	-	-	-
Minority	-0.059***	-0.122**	-0.082***	-0.288**	-0.401***	-0.245**
cons	0.118	0.387**	1.476***	3.483***	5.282***	6.164***

Note: Roust standard errors in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 5

Decomposition of gender wealth gap into the effects of characteristics and coefficient across wealth distributions, Sole Heads, US dollars

Quantile	Total difference	Effect of	
		Characteristics	Coefficient
10	-0.005	-0.138	0.132
20	0.239	0.133	0.106
30	0.350	0.250	0.100
40	0.431	0.331	0.100
50	0.461	0.374	0.086
60	0.488	0.410	0.078
70	0.509	0.444	0.065
80	0.511	0.456	0.055
90	0.404	0.396	0.008

Table 6

Decomposition of gender wealth gap into the effects of characteristics and coefficients across wealth distributions, Partnered Heads, US dollars

Quantile	Total difference	Effect of	
		Characteristics	Coefficient
10	-0.038	0.067	-0.105
20	-0.105	-0.084	-0.021
30	-0.118	-0.117	-0.001
40	-0.025	-0.051	0.026
50	-0.006	-0.049	0.044
60	0.001	-0.037	0.038
70	-0.001	-0.057	0.056
80	0.019	-0.053	0.072
90	0.047	-0.046	0.093

Figure 1

Decomposition of gender wealth gap into the effects of characteristics and coefficients across wealth distributions, Sole Heads, US dollars

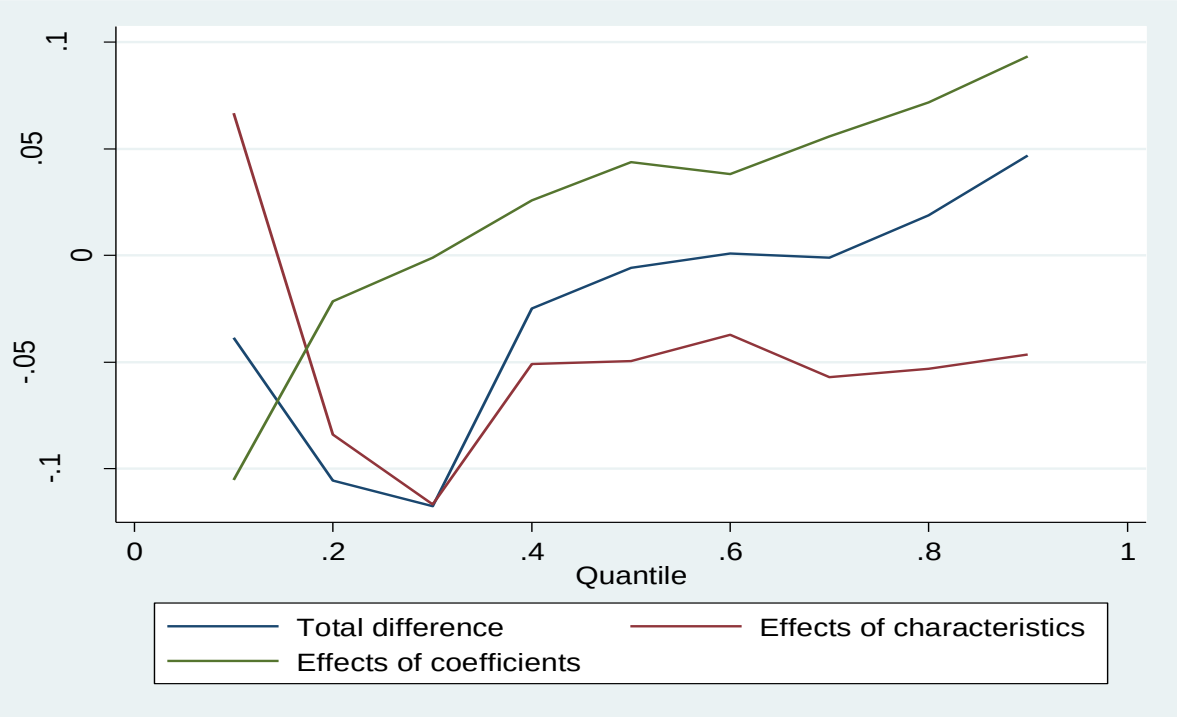

Figure 2

Decomposition of gender wealth gap into the effects of characteristics and coefficients across wealth distributions, Partnered Heads, US dollars