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## Ethnic disadvantage in Vietnam: Evidence using panel data

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WIDER Working Paper 2015/097

## **Ethnic disadvantage in Vietnam**

Evidence using panel data

Saurabh Singhal,<sup>1</sup> and Ulrik Beck<sup>2</sup>

October 2015

**Abstract:** This study investigates the ethnic disadvantage in rural Vietnam, focusing on the magnitude of the majority–minority gap and the constraints on ethnic minority households that contribute to the gap. Using a biannual panel dataset spanning the period 2006–14, this paper documents large improvements in living standards both for the Kinh majority as well as for the ethnic minorities. However, a significant difference between the Kinh households and the rest persists—and there is no sign that the gap is closing. Examining the sources of income shows that non-Kinh households are less likely to diversify into high-yielding non-farm activities. Non-Kinh households have lower quality agricultural land, lower rates of ownership certificates, face more problems in producing and selling their agricultural products, and have worse access to credit. However, the locational disadvantage of the non-Kinh households has substantially declined over time. Finally, the data allows us to examine intra-minority dynamics and we find differences among the various non-Kinh minorities along spatial, ethnic, and linguistic lines.

**Keywords:** ethnic disadvantage, Vietnam

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## 1 Introduction

Vietnam is an ethnically diverse country with 54 officially recognized ethnic groups. The Kinh, the ethnic Vietnamese, constitute about 86 per cent of the population. Among the non-Kinh, the Tay, Thai, and Muong account for a little less than 2 per cent of the population each (World Bank 2009).

While Vietnam has witnessed rapid growth and poverty decline since the Doi Moi reforms initiated in 1986, the existing literature shows that these gains have not been shared equally across ethnic groups. Using household income as an indicator for welfare, research has found not only that the non-Kinh were systematically worse off than the Kinh but also that this gap widened during the 1990s (Baulch et al. 2007, 2012; Van de Walle and Gunewardena 2001) and the likelihood of them escaping poverty was relatively much smaller (Glewwe et al. 2002).<sup>1</sup> A variety of explanations have been put forward for the poor performance of the minority households in Vietnam. The ethnic minorities are less endowed (in key aspects such as land holdings, education, access to credit, etc.) and also face lower returns to endowments. While the remote location of the minority households can partially explain the gap in endowments, research has consistently found that it is not the sole reason for the gap.

In this study, we use the Vietnam Access to Resources Household Survey (VARHS), a biannual panel survey recorded since 2006, to examine how the welfare of ethnic minorities in Vietnam has evolved over the period 2006–14 (CIEM and Department of Economics, University of Copenhagen 2007, 2009, 2011, 2013; CIEM, forthcoming). Specifically, we check whether the ethnic gaps still exist, and if so, whether there has been any convergence over time; we also examine the factors constraining the growth of minority households. In line with the existing literature, we find that the non-Kinh continue to lag behind on a variety of welfare indicators. However, in contrast to the widening ethnic income gap during 1993–2006 noted in the studies by Baulch et al. (2012) and Dang (2012), we find the current gap to be fairly stable. An examination of the household income structure reveals that while the Kinh are more likely to diversify into wage employment and non-farm household enterprises, the non-Kinh rely more heavily on common pool resources (CPR). We explore the constraints to growth and income diversification and find several differences that can help explain the welfare gap. The quality of agricultural land and ownership certificate rates are lower for non-Kinh households, and the effects of these persist even when we control for the fact that non-Kinh households tend to live in certain provinces. Non-Kinh households also experience more problems producing and selling their agricultural output and have worse access to credit. While historically non-Kinh households have been more remotely located, their relative isolation appears to have abated over time. On the other hand, we find evidence of segmentation in social networks along ethnic lines. In the last section, we exploit the richness of the VARHS data to examine differences among groups that constitute the non-Kinh and find significant heterogeneity within the non-Kinh.

The VARHS data allows us to classify households into the various ethnic groups based on the ethnicity of the household head. In this study, a household is defined as a Kinh household if the household head belongs to the Kinh ethnicity.<sup>2</sup> Among the minorities, studies typically club the Hoa (or the Chinese) along with the Kinh as the Hoa are economically at least as well off as the

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<sup>1</sup> Similarly, Pham and Reilly (2009) find significant ethnic wage gaps in the labour market in Vietnam.

<sup>2</sup> In some cases, the ethnicity of other household members may differ due to inter-marriages. Unfortunately, we are unable to examine such cases.

Kinh. In this study, we consider the Hoa along with the non-Kinh as we only observe four Hoa households in the VARHS data.

Table 1 presents basic demographic information by ethnicity using the 2014 VARHS data. On average, the non-Kinh are more likely to have a household head who is illiterate and a larger household. The key defining characteristic of the non-Kinh, however, is that they are geographically concentrated in the mountainous northern region and the central highlands.

Table 1: Descriptive statistics by ethnicity for 2014

	Kinh	Non-Kinh
Household head illiterate (%)	4.35	31.24
Household head female (%)	27.06	11.89
Household size (mean)	3.9	5.05
Region of residence (%)		
Central highlands	11.54	20.28
Mekong River delta	15.98	0
North	16.39	71.33
Red River delta	26.89	0.93
Central coast	29.2	7.46
Number of households	1733	429

Source: Authors' calculations based on the Vietnam Access to Resources Household Survey (VARHS) database.

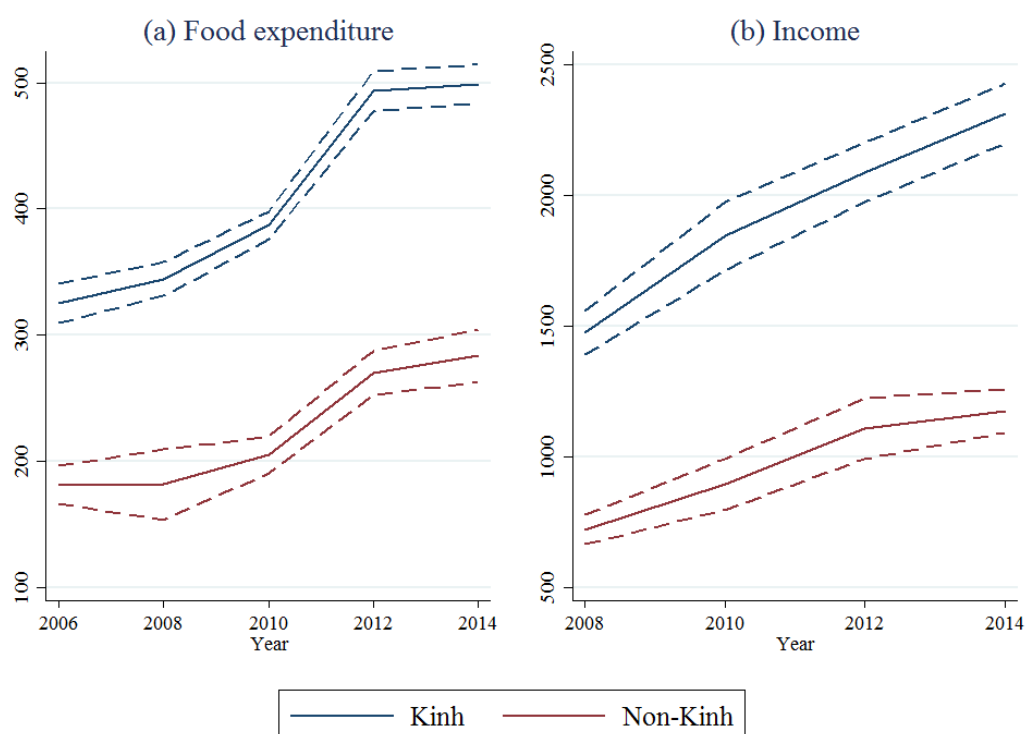
## 2 Welfare levels and trends

Figure 1 shows the evolution of mean real food expenditures and real income per capita for Kinh and non-Kinh households from 2006 to 2014, along with 95 per cent confidence intervals. While food expenditures of both Kinh and non-Kinh households increased significantly over the period, the level of food expenditures for minority households was significantly lower over the entire period. There are no signs of minority households catching up to the expenditure levels of their Kinh counterparts as growth rates have been almost the same over the period: from 2006 to 2014, food expenditures of Kinh households increased by 53.5 per cent (or 5.5 per cent annually) whereas those of non-Kinh households increased by 56.4 per cent (5.7 per cent annually).

The income time series presents a similar picture.<sup>3</sup> For both Kinh and non-Kinh households, income per capita increased over the period 2008–14 by annual rates of 7.8 and 8.5 per cent, respectively. However, despite the higher growth rate of income for non-Kinh households, convergence has been slow and the average income of non-Kinh households in 2014 was just half of the mean Kinh income. To illustrate, if one takes the difference in income in 2014 as a point of departure and projects future Kinh and non-Kinh mean income using the annual growth rates of the 2008–14 period, it would take 104 years before non-Kinh households caught up with their Kinh counterparts. It is of course not realistic to project current growth rates more than 100 years into the future, but it does illustrate the need to focus more on the minority ethnicities moving forward if the expenditure and income gaps are to be closed.

<sup>3</sup> Comparable income estimates can only be constructed for the period 2008–14.

Figure 1: Evolution of monthly food expenditure (a) and income (b) by ethnicity in real 1000 VND (2006–14)



Note: Dashed lines represent 95 per cent confidence intervals. Income data is not available in 2006. Expenditure and income are represented in real June 2014 prices.

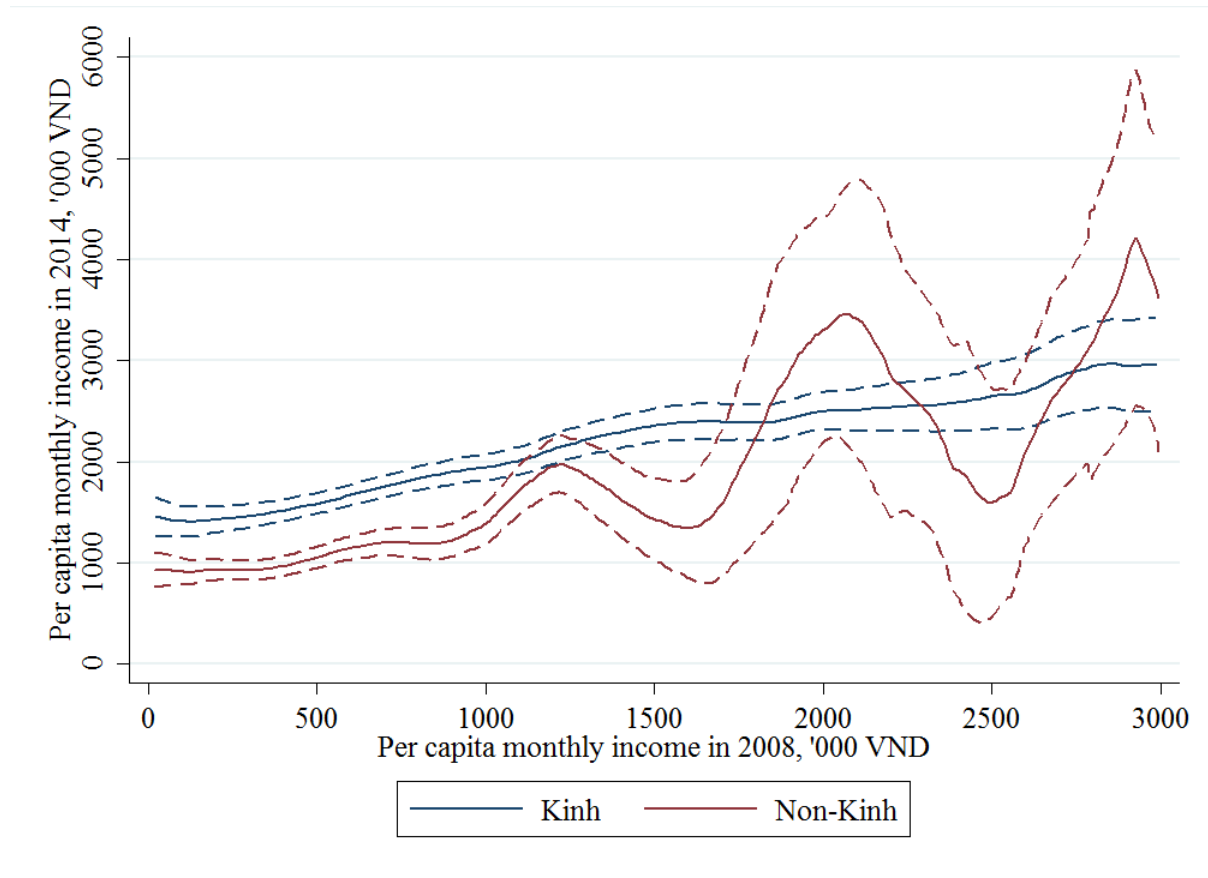
Source: Authors' calculations based on the VARHS database.

To summarize, non-Kinh households were on average worse off than Kinh households over the entire period. This was caused by the combination of a lower initial level of income and similar growth rates for the two groups. A logical next question is whether income evolved differentially for these two groups if one more directly compares households with the same initial levels of income. This can be done by exploiting the panel dimension of the VARHS database. Figure 2 presents non-parametric regression estimates of real monthly per capita income in 2014 on real per capita income in 2008 separately for Kinh and non-Kinh households. The solid lines show the average income level in 2014 for a given level of income in 2008. A striking picture emerges: for a wide range of initial incomes, Kinh households experienced higher income growth over the period. For example, non-Kinh households who earned around 500,000 VND per capita in 2008 had on average almost doubled their income in 2014 to around 1,000,000 VND per capita. However, Kinh households who earned a similar amount in 2008 could have expected to triple their income to 1,500,000 VND per capita in 2014.<sup>4</sup>

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<sup>4</sup> We note that the household-specific growth rates of income one gets from these example households are much higher than the average income growth rates. This is not unusual in this type of setup and is caused by negative idiosyncratic shocks in 2008. These shocks suppress incomes in 2008 but are gone by 2014. Therefore, the income growth for these households seems very high.

Figure 2: Non-parametric estimates of Kinh and non-Kinh income growth, depending on initial income (2008 and 2014)



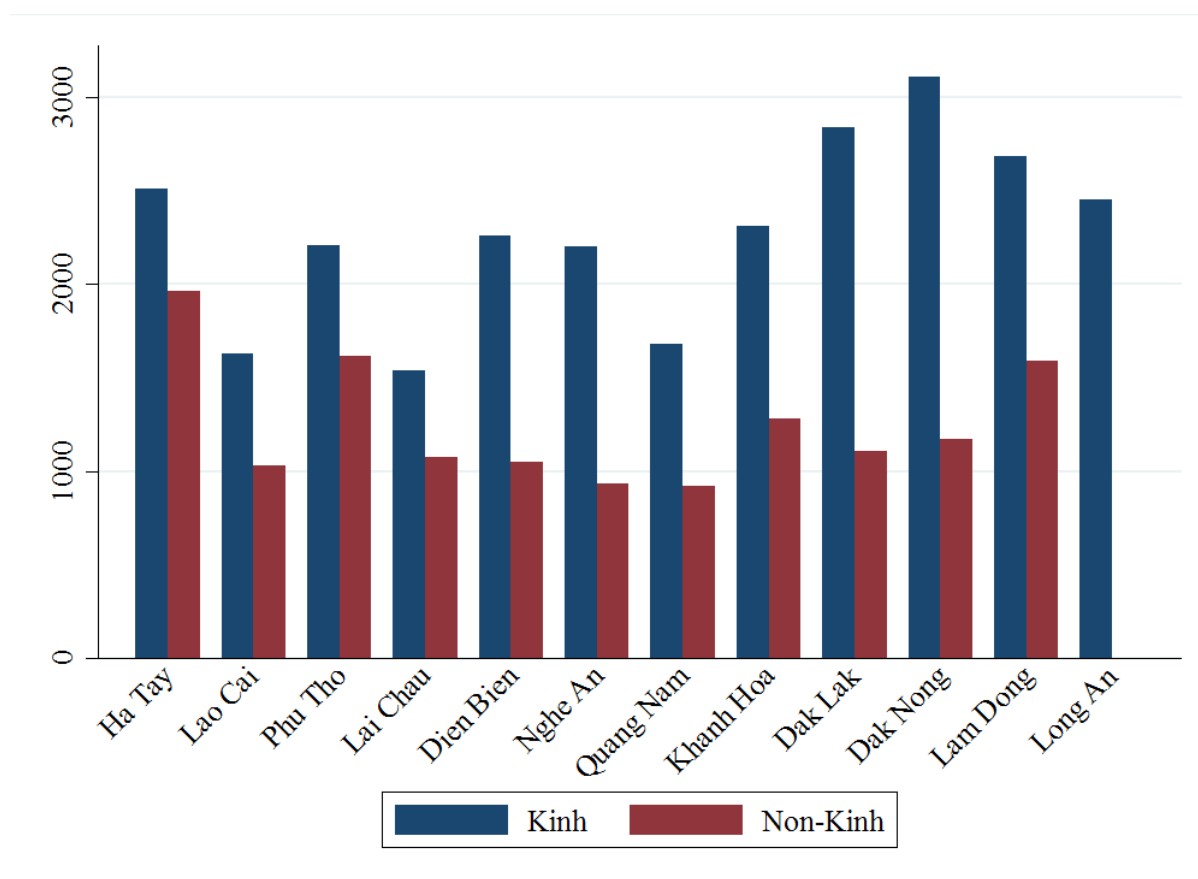
Note: Dashed lines represent 95 per cent confidence intervals. In order to increase legibility, the x-axis is cut off at 90,000 VND, which is above the 95th percentile of 2008 incomes. All values are in June 2014 prices.

Source: Authors' calculations based on the VARHS database.

The national averages presented in Figures 1 and 2 do not show much regional variation. Figure 3 shows mean income per capita by province in 2014.<sup>5</sup> In all provinces, Kinh income is on average higher than non-Kinh income. In Ha Tay, the difference is less than 20 per cent whereas in the two central highland provinces of Dak Lak and Dak Nong, Kinh households on average earn more than double that of non-Kinh households.

<sup>5</sup> We do not observe any non-Kinh households in Long An province in 2014.

Figure 3: Mean income per capita by province (2014)



Source: Authors' calculations based on the VARHS database.

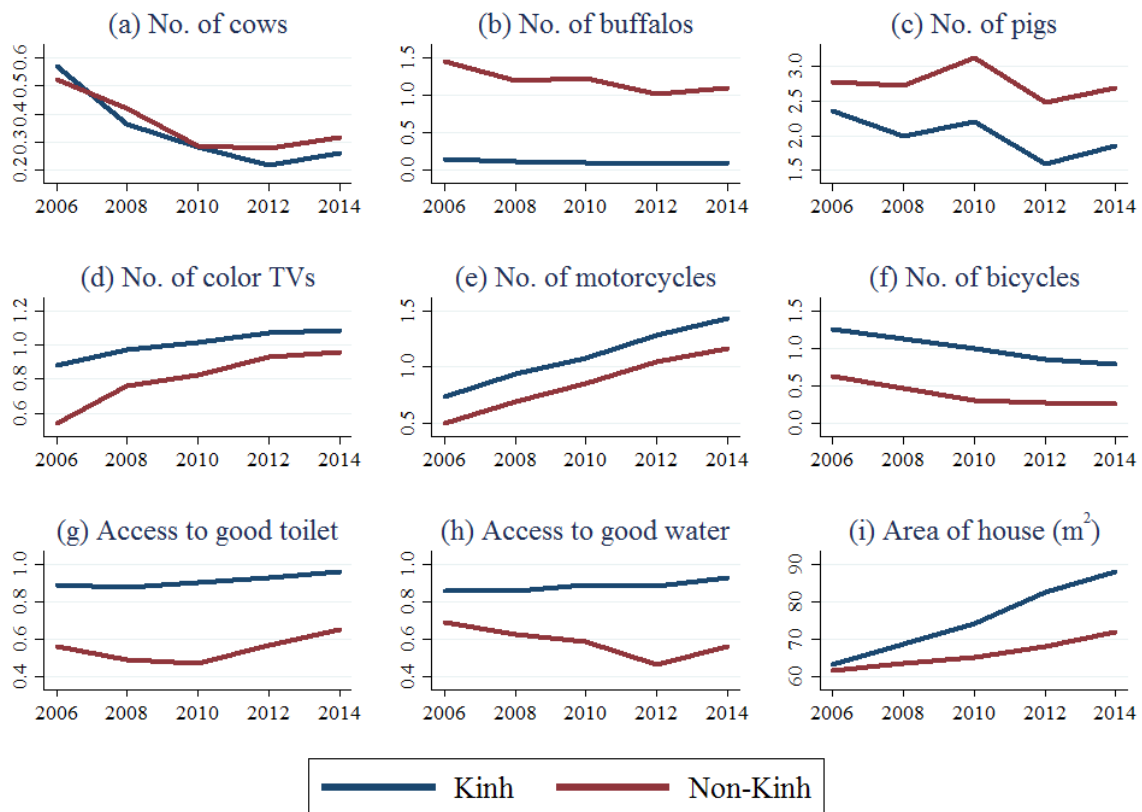
Welfare is not exclusively determined by monetary indicators such as income and expenditure. Figure 4 shows the evolution of a series of asset indicators by ethnicity. Figures 4a–c detail the evolution of ownership of cows, buffaloes, and pigs that are all used in agricultural production. Perhaps surprisingly, in the study period, non-Kinh households did better in terms of the number of pigs and buffaloes and were on par with Kinh households in terms of the number of cows. How is this connected to the clear expenditure and income discrepancy in favour of Kinh households? One possibility is that as agriculture becomes increasingly mechanized, draft animals such as cows and buffaloes become less important. The process of mechanization takes place at a more rapid pace for richer households since they have the requisite education, capital, and credit access. Since Kinh households are in general better off, they are more able to implement modern agricultural methods. This explanation is consistent with the general decline in the number of cows and buffaloes observed in Figures 4a and b, respectively. Another possibility is that non-Kinh households with worse access to credit are more likely to utilize animals as a store of value to be realized in the event of a negative income shock. The issue of access to credit is discussed in more detail in Section 4.

Figures 4d–f detail the evolution of ownership of three durable consumption assets: colour televisions (TVs), motorcycles, and bicycles. Here, the trend is closer to the evolution of monetary indicators: for both Kinh and non-Kinh households, ownership rates of colour TVs and motorcycles increased, but the level of non-Kinh ownership lagged behind throughout the entire period. Ownership rates of bicycles fell for both groups, most likely because of substitution by motorcycles or, more rarely, cars.



Figures 4g–i show three housing indicators: toilets, water supply, and area of house in square metres, respectively. Over the entire period 2006–14, Kinh households improved their outcomes in all three dimensions. In 2014, over 90 per cent had access to an improved water supply such as tap or well water and an improved toilet facility such as a flush, squat, or double-vault compost toilet. Houses were larger as well: in the span of eight years, the average house size increased by almost 40 per cent. For non-Kinh households, the picture is bleaker: in 2014, less than 60 per cent had a good toilet and less than 50 per cent had access to good water supply. The steady improvement in monetary welfare is reflected in the housing indicators only for Kinh households: worryingly, for non-Kinh households, the proportion of households with a good toilet fell between 2006 and 2010 and the proportion with access to improved water supply fell from 2006 to 2012. Non-Kinh households were more likely to own a motorbike or a colour TV than to have access to an improved water supply or to a good toilet facility in 2014. Finally, the housing size picture is more optimistic in that the average area increased for both groups. What is less optimistic is the widening of the gap between Kinh and non-Kinh households over the study period. While the square-metre area increased for both groups, it increased much slower for non-Kinh households.

Figure 4: Household asset ownership rates by asset and ethnicity (2006–14)



Note: A good toilet is defined as flush, squat, or a double-vault compost toilet. A good water supply is defined as tap or well water.

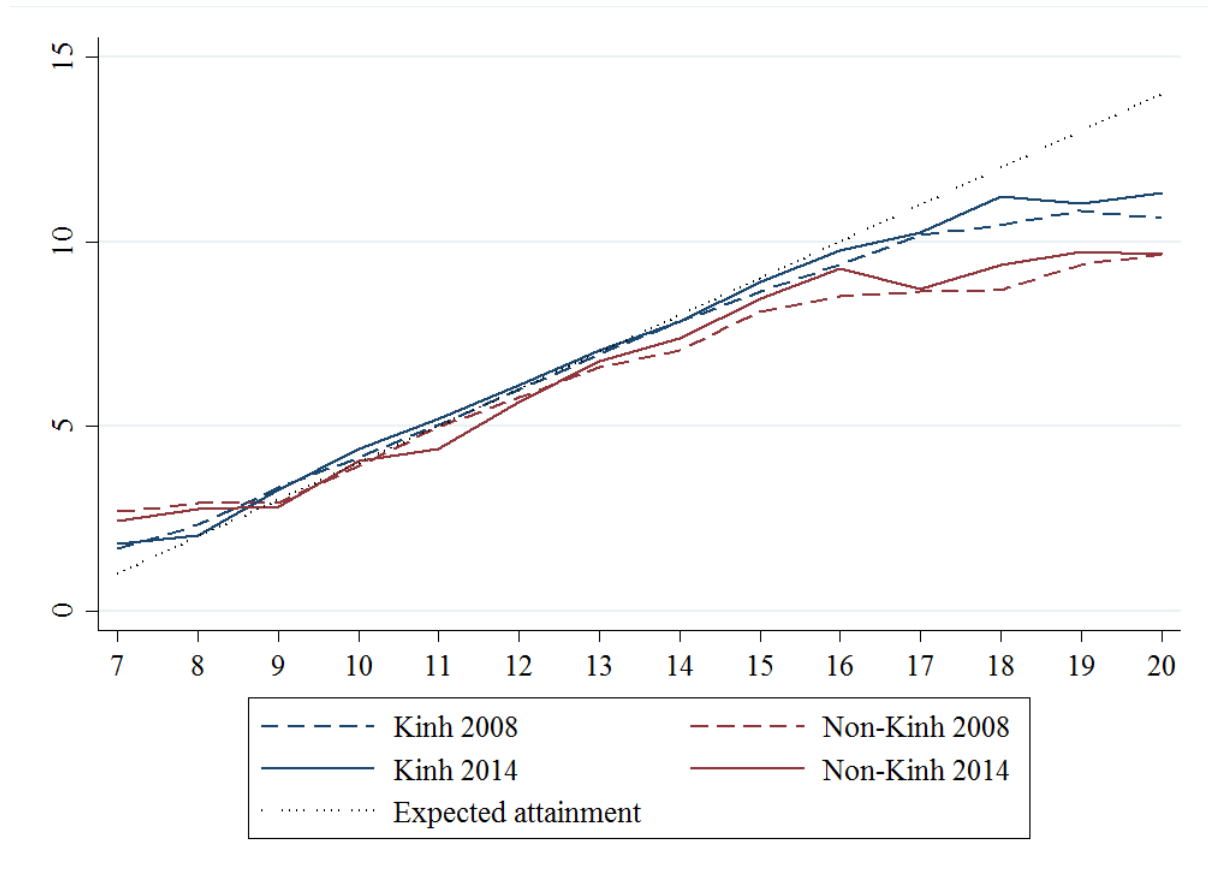
Source: Authors' calculations based on the VARHS database.

## 2.1 Educational attainment of children

Figure 5 shows the average grade attained by children of different ages in 2008 and 2014 by ethnicity. Both groups experienced improvements in education over the period: for a given age except for the very young, children in 2014 attained slightly more schooling than in 2008. Up

until 15 years of age, the average grade-for-age is very close to the grade expected for children who progress one grade every year. In both periods, children of ethnic minorities do slightly worse than children of Kinh households. This is particularly the case after 15 years of age, which corresponds to the end of junior high school. At 20 years of age, this amounts to a difference in educational attainment of more than 1.5 years. This indicates that while both Kinh and non-Kinh children progress as one would expect through the primary education system, there is a higher propensity to leave the school system at an early stage for children of minority households. Like the differential in the monetary indicators of food expenditure and household income, the difference is unchanged in 2014 compared to 2008.

Figure 5: Grade-for-age of children by ethnic group (2008 and 2014)

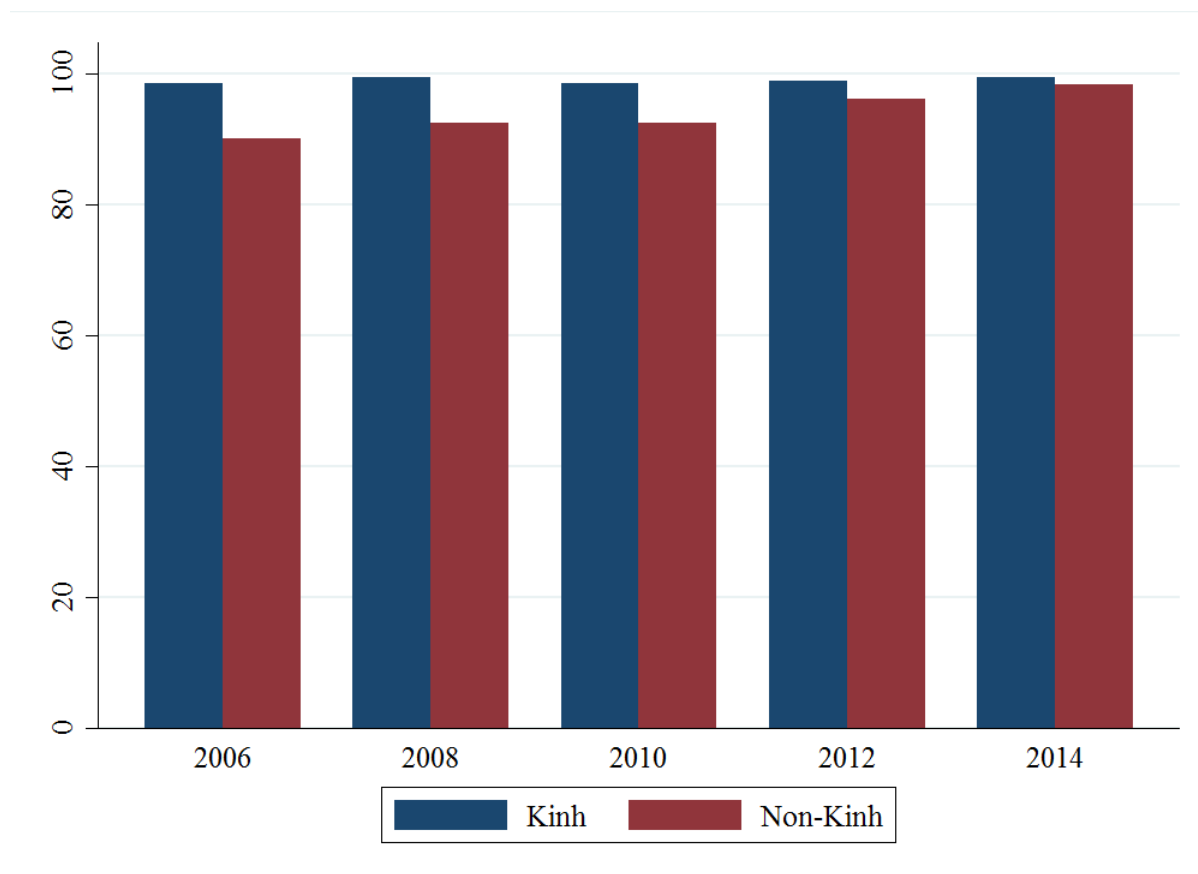


Note: Expected attainment is defined as age minus six since the normal school start age is at 6 years.

Source: Authors' calculations based on the VARHS database.

Educational attainment in terms of the achieved grade level is only one indicator of the effectiveness of education. Figure 6 shows literacy rates of 7–18 year olds. In 2006, literacy of Kinh children was already close to 100 per cent whereas literacy of non-Kinh children lagged behind at just below 90 per cent. However, Figure 6 shows an improvement of literacy rates of non-Kinh children over the study period. In 2014, literacy of non-Kinh children was over 98 per cent and very close to that of Kinh children.

Figure 6: Literacy rates of 7–18 year olds by ethnic group (2006–14)



Source: Authors' calculations based on the VARHS database.

### 3 Structure of household income

In order to better understand the observed lack of convergence between Kinh and non-Kinh households, we now explore how the patterns of economic activity differ between the Kinh and the non-Kinh. Is the likelihood of diversifying out of agriculture into wage employment, household enterprises, or CPR different for the two groups? Income diversification is important as it allows households to weather shocks, smoothen consumption, and boost income. For the case of rural Vietnam, Khai et al. (2013) show that income diversification over the period 2008–12 led to an increase in household welfare. Similarly, Oostendorp et al. (2009) find that operating non-farm household enterprises significantly increased household income in Vietnam during 1993–2002. We examine such diversification using the 2014 data.

We begin by splitting the sample into diversifiers and non-diversifiers, that is, those who solely depend on agriculture for their income and those who have at least one other non-agricultural source of income. The first row of Table 2 shows the proportion of Kinh and non-Kinh households that are non-diversifiers. The non-Kinh are more likely to have diversified out of agriculture in 2014: 13 per cent of Kinh households depend only on agriculture as opposed to 7.7 per cent of non-Kinh households.

While almost all the households rely on agriculture to some degree, they also derive income from wage employment, household non-farm enterprises, and CPR. We further categorize the diversifying households into the following mutually exclusive groups: those that combine agriculture with (i) wage employment; (ii) household enterprises; (iii) CPR; (iv) wage employment

and CPR; (v) wage employment, household enterprises, and CPR; or (vi) some other combination. Looking at differences across ethnicity for each category in Table 2, we find that the Kinh are more likely to diversify into either wage employment or household enterprises, while the non-Kinh are more likely to depend on CPR, either independently or in conjunction with wage employment or household enterprises. Conditional on diversifying out of agriculture, the 2014 data reveals that the non-Kinh and the Kinh differ significantly on the income-generating activities they diversify into.

Table 2: Income diversification by ethnicity in 2014

	Kinh	Non-Kinh	Difference
Non-diversifiers			
Agriculture only	12.98	7.69	5.29***
Diversifiers			
Agriculture and wage only	29.20	14.22	14.98***
Agriculture and business only	7.44	0.93	6.51***
Agriculture and CPR only	5.83	16.78	-10.95***
Agriculture, wage, and CPR	14.25	45.92	-31.67***
Agriculture, wage, business, and CPR	2.14	6.53	-4.39***
Other combinations	28.16	7.93	20.23***
Observations	1,733	429	

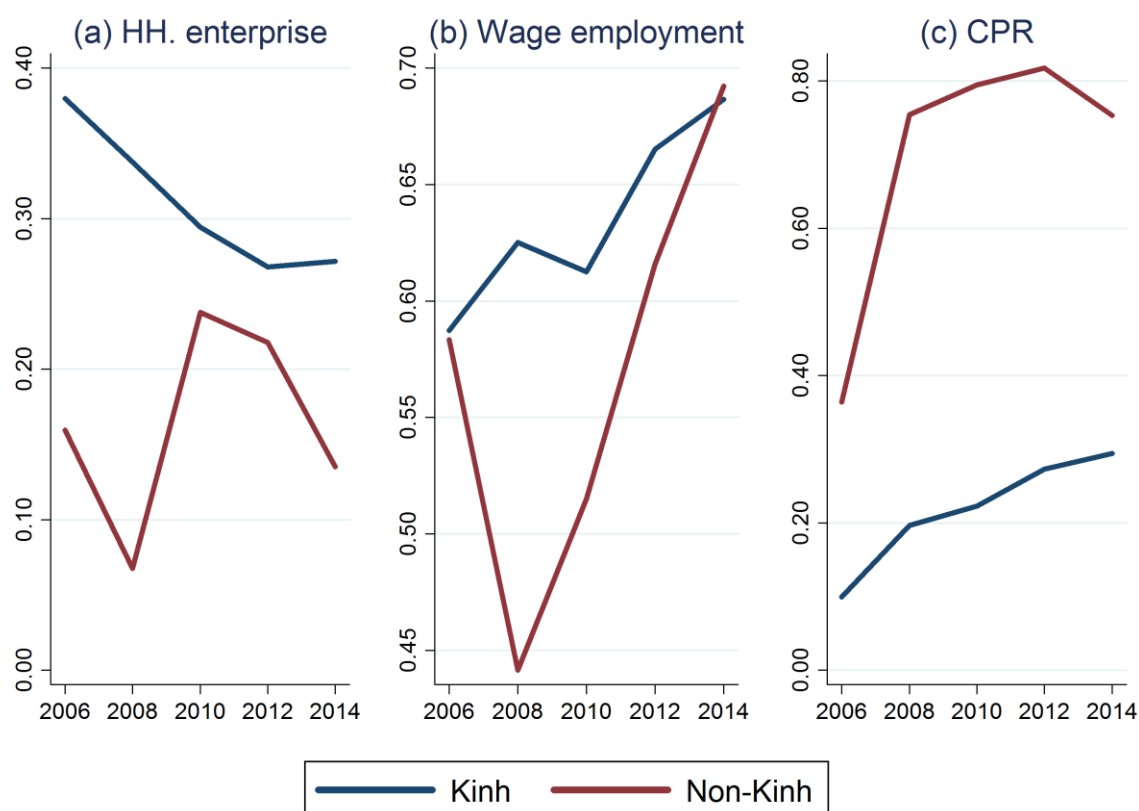
Note: CPR, common pool resources. The last column reports the *t*-test of proportions. \*\*\* indicates significance at the 99 per cent confidence level.

Source: Authors' calculations based on the VARHS database.

Next, we move beyond this static view to examine whether patterns of diversification strategies have changed over time. Figures 7a–c show the proportion of Kinh and non-Kinh households that derived income from household enterprises, wage employment, and CPR, respectively, over the period 2006–14. Figure 7a shows that while the proportion of Kinh households involved in household enterprises declined slightly over time from 0.38 in 2006 to 0.27 in 2014, it is consistently more than that of the non-Kinh. More importantly, we find large fluctuations in the proportion of non-Kinh households engaged in household enterprises. This flux in and out of self-employment indicates that the household enterprises operated by non-Kinh households are transitory and not able to survive for long.

Figure 7b reveals somewhat similar dynamics with respect to wage employment. While the Kinh and non-Kinh were equally likely to engage in wage employment in 2006 and 2014, the non-Kinh exhibited more variability. The picture is completely different when we examine the trends for CPR in Figure 7c. The non-Kinh were more reliant on CPR than the Kinh. While the proportion of Kinh households using CPR increased modestly over 2006–14, the proportion of non-Kinh more than doubled from 36 per cent in 2006 to 75 per cent in 2014.

Figure 7: Income diversification (2006–14)



Note: The dummy variable 'HH. enterprise' takes a value 1 if the household operates at least one enterprise and 0 otherwise. Similarly, the variables 'Wage employment' and 'CPR' take a value 1 if a household participates in off-farm wage employment and collects common pool resources (CPR), respectively.

Source: Authors' calculations based on the VARHS database.

In this section, we find that the structure of household income varies significantly between the Kinh and the non-Kinh. The non-Kinh households are more likely to diversify out of agriculture. We examine three avenues of diversification: wage employment, household enterprises, and CPR. We find that non-Kinh households that diversify are more likely to depend on CPR as opposed to Kinh households that rely primarily on wage employment and household enterprises. As income from CPR is more susceptible to climate change this finding indicates severe implications for the vulnerability of non-Kinh households in the future.

#### 4 Constraints to agricultural and non-agricultural production

We now turn to identifying some of the constraints on agricultural growth and the ability to diversify out of agriculture, as established in Section 3. We do this by looking at differences in plot characteristics, reported problems regarding agriculture, credit access, remoteness, and social networks.

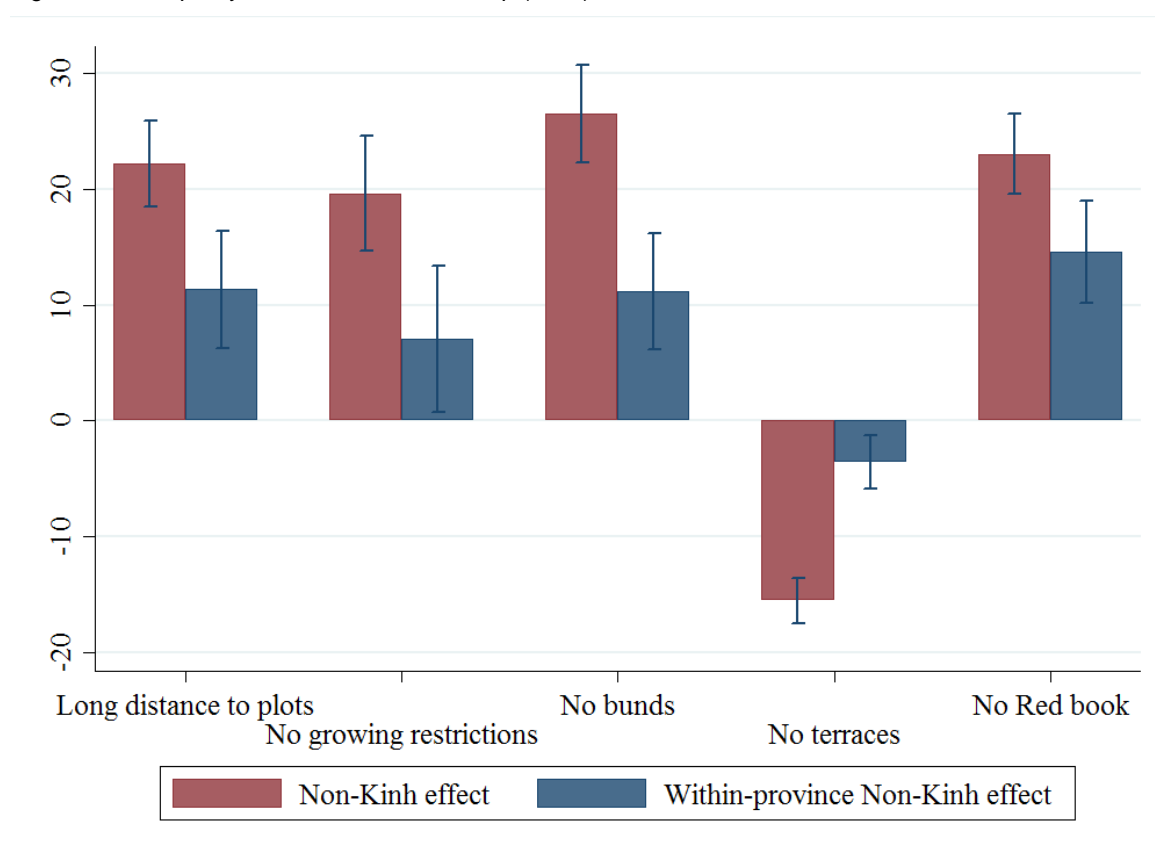
##### 4.1 Land and agriculture

This section investigates how the agricultural production of non-Kinh households is differentially constrained compared to their Kinh counterparts. This is done by analysing

differences in land quality and ownership status, self-reported problems by the households as well as exposure to shocks.

Figure 8 shows the difference in some characteristics of land quality as well as in red-book ownership between Kinh and non-Kinh households in 2014. These are calculated by regressing the outcome variable on a dummy variable equal to ‘1’ if the household is of an ethnicity other than Kinh. As shown in Table 1, non-Kinh households are not equally distributed between the provinces. Rather, the non-Kinh tend to live in upland areas where climatic conditions such as rainfall and temperature as well as soil fertility and composition differ fundamentally from those in the lowland coastal areas. In order to ensure that the differences observed are real differences between Kinh and non-Kinh farmers, Figure 8 also includes estimates that are based only on differences between Kinh and non-Kinh households *within* the same province. Formally, this is done by including province fixed effects in the regressions.

Figure 8: Land quality and Red-book ownership (2014)



Note: ‘Long distance to plots’ is defined as the share of plots that are more than 1 km away from the residence. Categories of ‘No growing restrictions’, ‘No bunds’, ‘No terraces’, and ‘No Red book’ are the share of plots on which there are no growing restrictions, no soil or rock bunds present, no terraces built, or where the household has no Red book for the plot, respectively. All shares are calculated as simple averages over the number of plots the household owns and operates or rents in. Shares are reported in percentage. Black bars indicate 95 per cent confidence intervals. Within-province non-Kinh effects are calculated by including province fixed effects in the regressions.

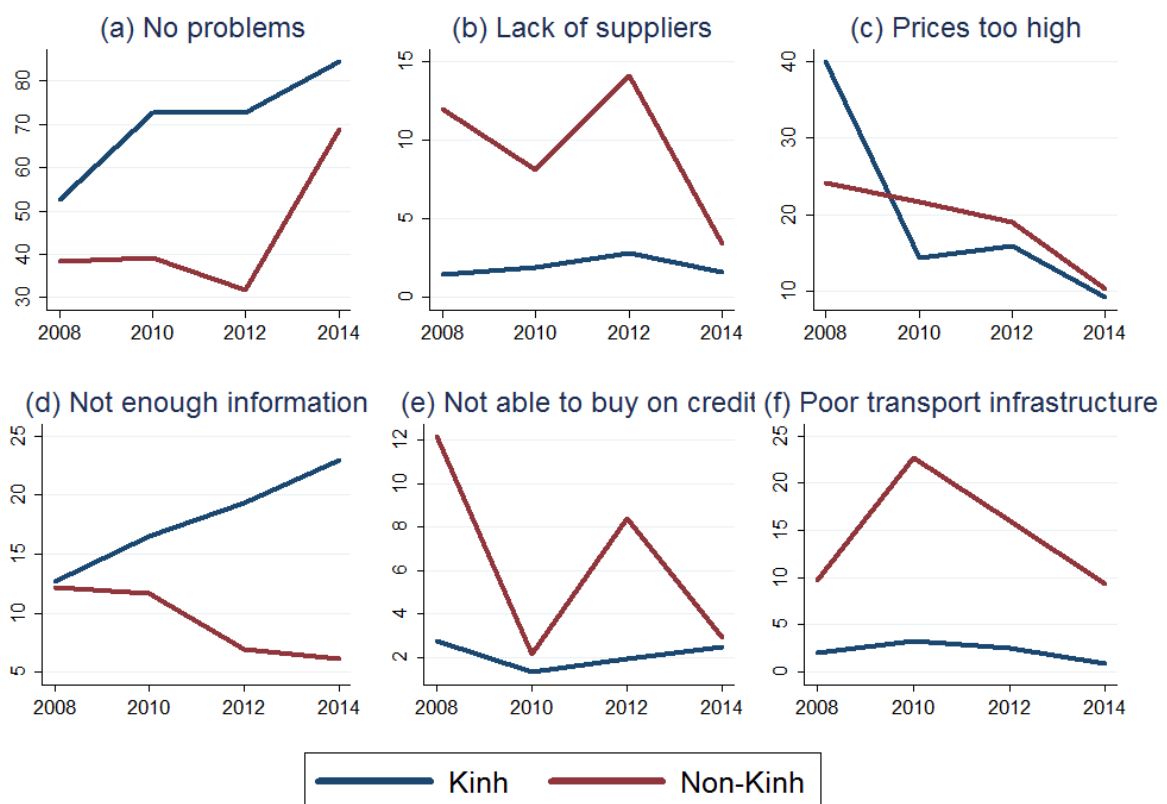
Source: Authors’ calculations based on the VARHS database.

Non-Kinh farmers have to travel significantly longer distances to their plots, they have fewer plots with soil or rock bunds in place, and they have a larger share of plots without formal ownership rights in the form of a Red book. The effects of these factors are all significant, although small, using the within-province estimates. On the other hand, non-Kinh farmers on average face fewer growing restrictions and have more terraces on their plots than their Kinh

counterparts. These effects are still significant using the within-province estimator, although they are significantly smaller and the lower confidence bounds are very close to ‘0’. That this is the case for these two variables makes intuitive sense: there are fewer restrictions on having to grow rice in the upland areas where rice production is of less importance, and this is where a higher proportion of the non-Kinh households live. Similarly, there are more terraces in the more hilly and mountainous upland areas. In sum, non-Kinh farmers face some constraints in terms of access to their land, the quality of the land they own, and tenure security.

We next turn to the problems that households report they face before harvest (Figure 9) and after harvest (Figure 10). In both cases, Kinh households are more likely to report no problems than non-Kinh households. For instance, in 2014, 85 per cent of Kinh households reported facing no problems before and after harvest. On the other hand, 69 per cent of non-Kinh farmers faced no problems before harvest and 63 per cent faced no problems after harvest. What is the nature of the problems faced before harvest? According to Figure 9, non-Kinh farmers are more likely to face a lack of suppliers, not being able to buy on credit, and poor transport infrastructure. Kinh farmers, on the other hand, are increasingly impeded by lack of information, a trend not observed for non-Kinh households possibly because they are facing other and more pressing problems. In 2008, almost 40 per cent of non-Kinh farmers reported facing very high input prices; in 2014, this fell to around 10 per cent for both Kinh and non-Kinh farmers. In terms of problems after harvest, more non-Kinh farmers are concerned about lack of output storage, information about prices, and high transportation costs, even though the last seems to be of less importance in later years.

Figure 9: Most important constraints *before* harvest as reported by households by year (2008–14)

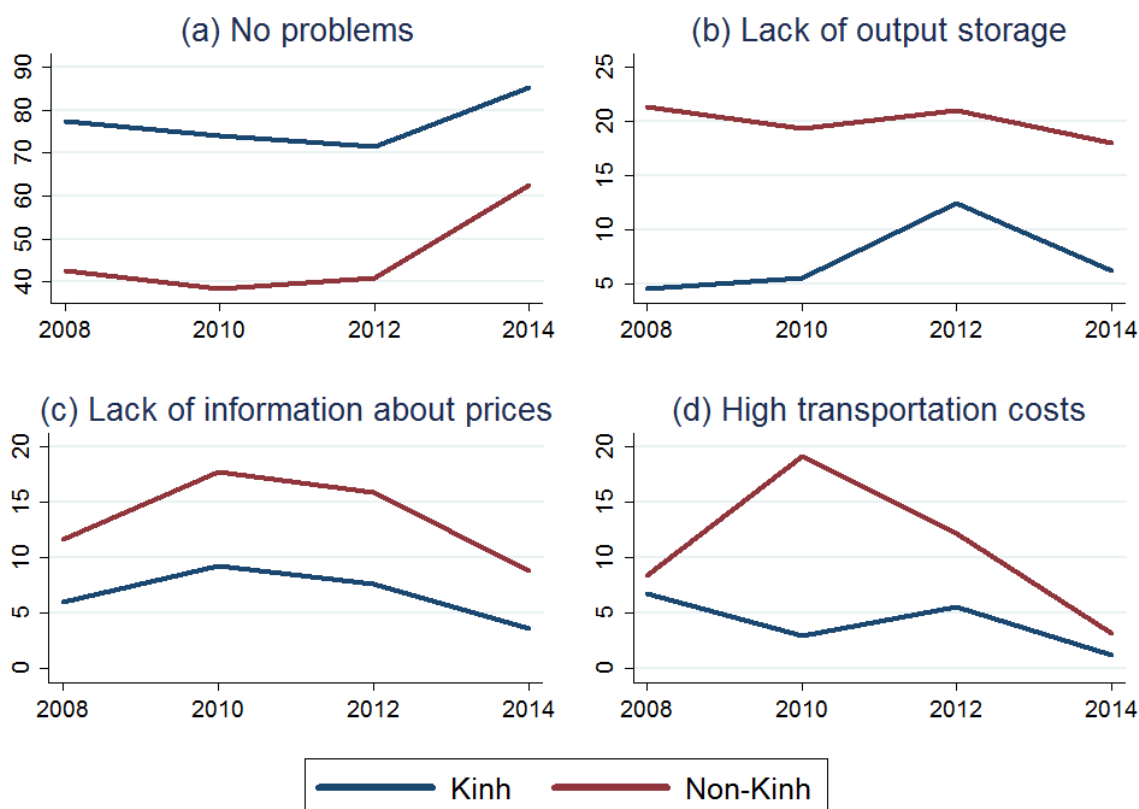


Note: Some categories with very few answers are left out. Shares are reported in percentage.

Source: Authors' calculations based on the VARHS database.

Overall, non-Kinh households face additional agricultural constraints due to lower quality of plots, lower ownership rates, and more problems regarding agriculture both before and after harvest.

Figure 10: Most important constraints *after* harvest as reported by households by year (2008–14)



Note: Households were asked to list up to two problems. Some categories with very few answers are left out. Shares are reported in percentage.

Source: Authors' calculations based on the VARHS database.

## 4.2 Credit and borrowing

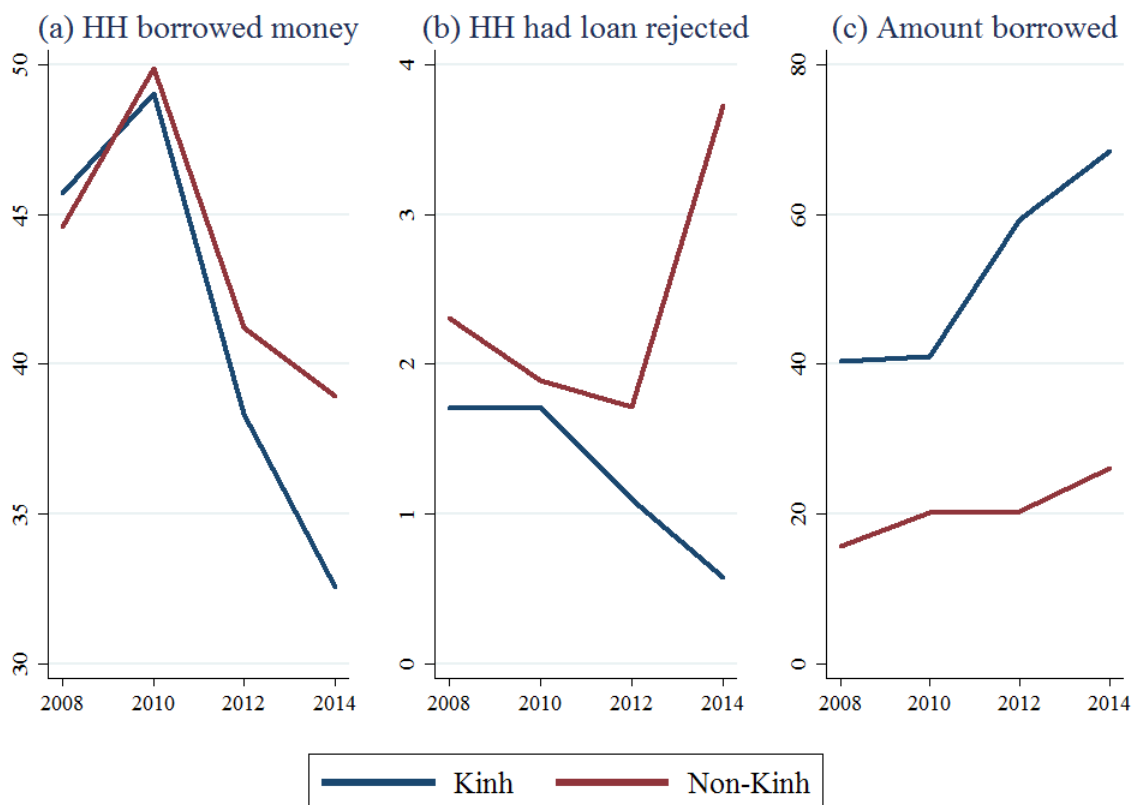
This section looks at differences in access to credit (both formal and informal) between Kinh and non-Kinh households. A loan is often required if a farmer wants to expand agricultural production or start a non-farm enterprise. Poor access to credit can therefore severely limit a household's possibilities for agricultural growth and diversification out of agriculture.

Figure 11 shows some information on loans. Figure 11a, which shows the share of households' borrowed money in the last two years, indicates that in the later part of the study period, and especially in 2014, a larger share of non-Kinh households borrowed money. At first glance, this would indicate that ethnic minority households do not have worse access to credit. However, Figure 11b shows that more non-Kinh households have had their loan applications rejected (although note that the overall rejection rate is low). This discrepancy is particularly large in 2014 during which almost 4 per cent of non-Kinh households had a loan rejected in the last two years whereas this was the case for less than 1 per cent of Kinh households. It should be noted that borrowing money is not always a good thing: borrowing because of difficulties in making ends meet is very different from borrowing for investments.



Figure 11c looks into the types of loans in more detail by showing how the amount borrowed varies between ethnicities. The average loan size for non-Kinh households was less than half of the size of Kinh household loans in 2008. This discrepancy increased over time: in 2014, the average non-Kinh loan size was reduced to less than a third of the size of the loans of Kinh households.

Figure 11: Access to credit by ethnicity (2008–14)



Note: Shares are reported in percentage. The figures in (c) are calculated conditional on receiving a loan and are reported in million Vietnamese Dong. 'HH' is abbreviation for household.

Source: Authors' calculations based on the VARHS database.

To summarize, the picture is not as positive as a quick glance at Figure 11a seems to indicate: Although more non-Kinh households got loans in the study period, also more non-Kinh households got loan applications rejected and when they did get a loan, it was substantially smaller. Most worryingly, the discrepancy appears to increase over time.

### 4.3 Remoteness

As mentioned in Section 1, the ethnic minorities of Vietnam tend to live in more mountainous and remote parts of the country. Longer distances to population centres can result in less access to public services and infrastructure and increased transportation costs. Over the years, the government has targeted several programmes such as the 'Socio-Economic Development Program for the Communes Facing Greatest Hardships in the Ethnic Minority and Mountainous

Areas' ('Program 135' or 'P135') to support infrastructure development and public services in such areas.<sup>6</sup>

Although there have not been any rigorous evaluations of such policies, we examine whether minority households continue to systematically differ in their access to infrastructure due to their geographical location. In this section, we consider two indicators of remoteness, namely, distance to an all-weather road as well as distance to the commune People's Committee. The distance to an all-weather road is an indicator of how well connected the household is to its immediate surroundings. A long distance to an all-weather road increases transportation time and can make transportation of people as well as of agricultural products and other goods very difficult during floods. The distance to the commune People's Committee is a meaningful proxy for remoteness since the People's Committee, the administrative centre of the commune, tends to be better connected to the rest of Vietnam than more remote parts of the commune. Figure 12 shows the additional distance that ethnic minorities have to an all-weather road and to a People's Committee.

The finding that ethnic minority households are on average more remotely located can therefore simply be an artefact of the fact that population density is lower in these parts of the country. In order to rule this out, Figure 11 also presents the effects of belonging to an ethnic minority, using Kinh households within the same provinces for comparison. We do this by running a year-specific regression that includes province fixed effects, similarly to the regression in Section 4.1.

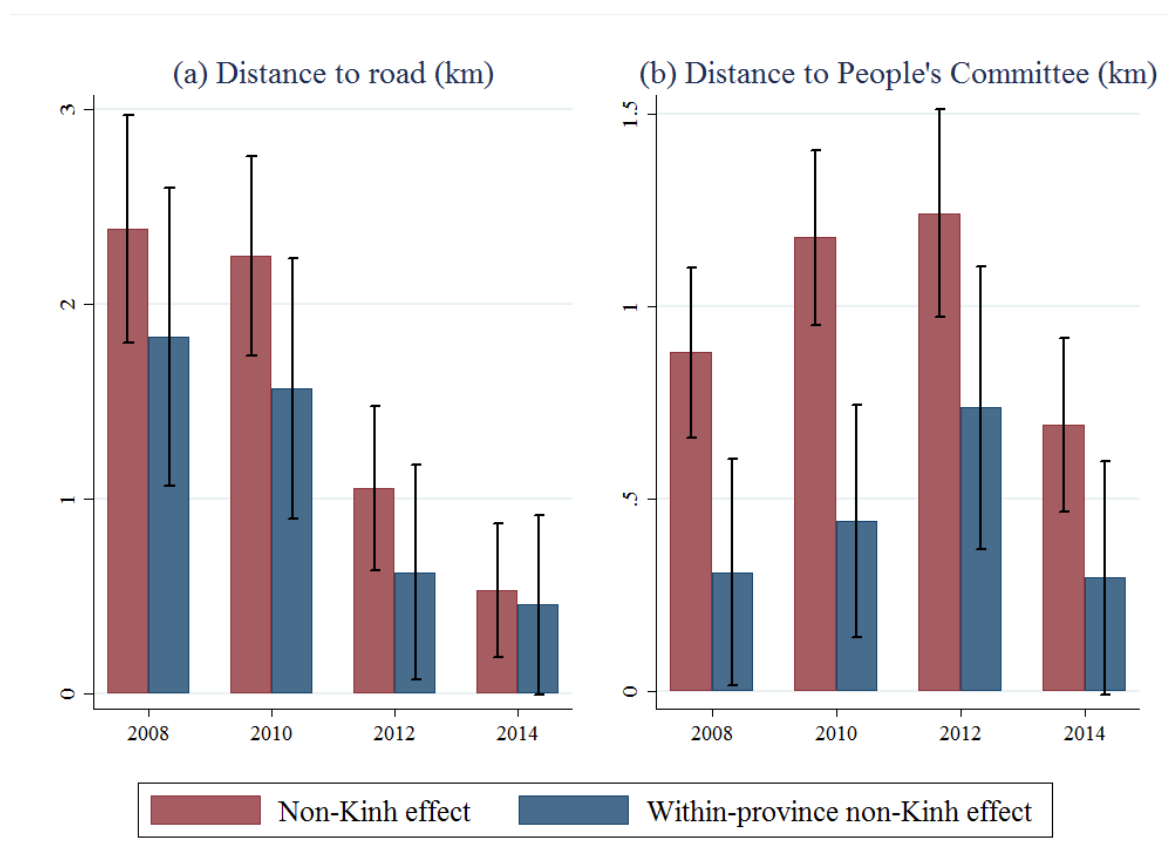
The additional distance to an all-weather road is greater for minority households in all years. In 2008, the average additional distance was just above 2 km for the sample as a whole and just below 2 km when controlling for provincial differences. This is a long distance: The average distance to an all-weather road for Kinh households was 3.1 km in 2008. However, the discrepancy has fallen over time. In 2014, the within-province effect was statistically indistinguishable from '0'. So while non-Kinh households still on average live further away from roads than the ethnic Vietnamese, the entirety of this effect can in later years be attributed to non-Kinh households living in provinces where all households—Kinh and non-Kinh—on average live in more remote locations.

The additional distance to the People's Committee is also positive for the minorities in all years. In 2008, the total additional distance was around 0.8 km, or 0.25 km using the within-province estimate. The average distance for Kinh households in 2008 was 2.4 km. The additional distance to the commune People's Committee is therefore smaller in both absolute and relative terms, compared to the additional distance to roads that non-Kinh households experience. The trend over time is less clear, but we do note that, as was the case with the distance-to-road measure, the estimate of additional distance for the non-Kinh in 2014 is statistically indistinguishable from '0', once province fixed effects are taken into account.

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<sup>6</sup> The first phase of P135 was implemented over 2001–05 and the second phase over 2006–10. Cuong et al. (2014) assess the second phase and find that minority households in targeted communes experienced a larger decline in poverty than those in control communes.

Figure 12: Additional distances for non-Kinh households by year (2008–14)



Note: The effect shown is the parameter estimate of an ethnic minority dummy regressed on distance to road using year-specific regressions. The within-province fixed effects include a full set of province dummies. The lines represent 95 per cent confidence intervals.

Source: Authors' calculations based on the VARHS database.

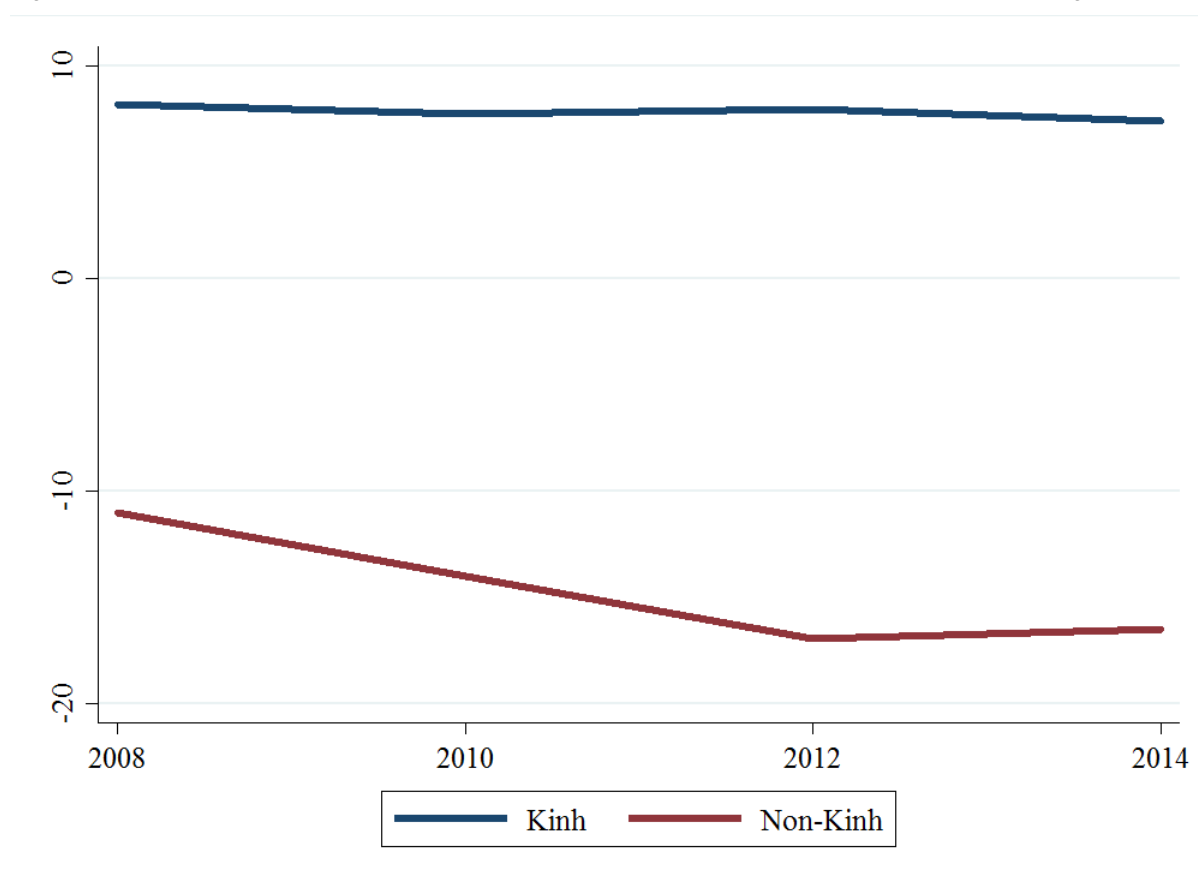
#### 4.4 Social networks

The final aspect of constraints we investigate is the social network of ethnic minority households. Figure 13 explores the extent of segregation of Kinh and non-Kinh households. It does so by exploiting information on the ethnicity of the three most important people that a household can contact for money in case of emergencies. This, combined with information on the commune-level share of minority households allows us to compare the share of contacts of Kinh ethnicity in a household's network with the share of Kinh ethnic households in the commune. If ethnicity does not play a role in the formation of contacts, one would expect these two shares to be equal. Figure 13 shows the difference between these shares for Kinh and non-Kinh households. The positive number for Kinh households implies that they have more contacts among other Kinh households than would be expected if the share of contacts was to mirror the share of Kinh households in the commune. Likewise, the negative number for non-Kinh households implies that they have fewer contacts among Kinh households (and, therefore, more contacts among other minority households) than expected if ethnicity did not play a role in contact formation.

This is therefore evidence of segmentation among ethnic lines. There are no indications that this discrepancy reduces over time; if anything, it appears that minority households get further isolated towards the end of the study period. This is potentially problematic for the ethnic minority households given that these ties may be less valuable in times of emergency since, as shown in Section 1, ethnic minorities tend to be worse off and the links may therefore be less

valuable. Further research is needed in order to understand how these links are formed and what the consequence of this difference is for welfare outcomes.

Figure 13: Over- and under-representation of links to Kinh farmers compared to the commune average (2008–14)



Note: Households were asked to name up to three contacts that they depend on for money in case of emergencies. The figure shows the average share of those links in percentage that households have to Kinh households, minus the average share of Kinh households in the commune. If a group scores 10 it means that the group has 10 percentage points more links to Kinh farmers than what would be expected if link formation was random. This could happen if communes consist of 75 per cent Kinh farmers and 85 per cent of these farmers' links are to other Kinh farmers. Since this figure also uses data from the commune questionnaire, the sample is somewhat reduced ( $N=2162$ , on average per year).

Source: Authors' calculations based on the VARHS database.

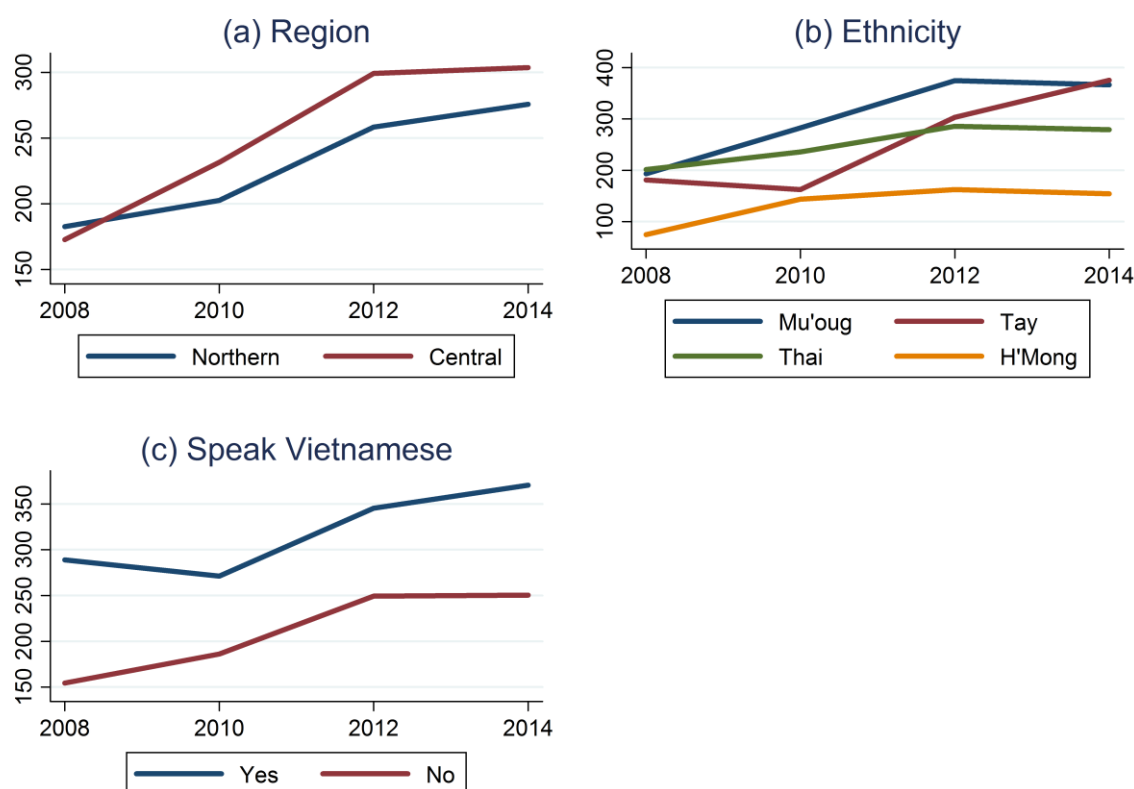
## 5 Differences within the Non-Kinh

We now explore differences within the non-Kinh minorities. While we have so far considered the non-Kinh as a homogeneous group, the fact remains that outcomes within non-Kinh households vary on account of differences such as region they reside in, the specific ethnic group they belong to, and whether they know Vietnamese. In this section, we examine these three dimensions.

As discussed previously in the study, non-Kinh minorities are largely concentrated in the northern mountains and the central highlands of Vietnam. While both these regions are mountainous and have relatively limited access to public services and infrastructure, previous research has noted that the minorities in the central highlands performed worse as compared to the northern mountain minorities during the 1990s (Baulch et al. 2007).

Using the VARHS data we compare the economic welfare of minority households residing in the mountainous northern region (provinces of Lao Cai, Phu Tho, Dien Bien, and Lai Chau) to those residing in the central highlands (provinces of Dak Lak, Dak Nong, and Lam Dong). Figure 14a shows how real per capita monthly food consumption evolved for minority households over the period 2008–14. We find that while there were no regional disparities in 2008, the per capita consumption of minority households in the central highlands grew a lot faster than that of the non-Kinh in the northern mountains. This finding is consistent with those derived from the Vietnam Household Living Standards Survey (VHLSS) data that the central highlands experienced a higher reduction in poverty rates in the 2000s (World Bank 2012).

Figure 14: Differences in monthly per-capita food expenditures in real 1000 VND within minorities by (a) region, (b) ethnicity, and (c) language (2008–14)



Note: In (a) the northern region includes the provinces of Lao Cai, Phu Tho, Dien Bien, and Lai Chau and the central region includes the provinces of Dak Lak, Dak Nong, and Lam Dong.

Source: Authors' calculations based on the VARHS database.

Next, we examine whether the growth trajectories of minority groups vary by ethnicity. The non-Kinh consist of 53 officially recognized ethnic groups. In order to have meaningful results, we limit our analysis to those minority ethnic groups where we have at least 45 observations in each wave of the VARHS data. This gives us four groups: Tay (the largest minority group in Vietnam), Thai, Muong, and H'Mong. As all four of these ethnic groups largely reside in the northern mountains, comparative data can also shed further light on the economic stagnation among minority households discussed earlier.

In Figure 14b, we examine how real per capita monthly food consumption has evolved over 2008–14 for these four groups. We find that the Muong are consistently strong performers and the H'Mong consistently lag behind throughout this period. On the other hand, the Thai and Tay exhibit a lot of dynamics during this time period. While consumption rates of the Tay were

similar to that of the Thai in 2008, and appear to have stagnated in 2010, consumption grew rapidly since then and was significantly higher than that of the Thai in 2014 ( $p$ -value=0.025).

Finally, we consider knowledge and fluency in Vietnamese. Many of the minority groups either do not know or are not fluent in the Vietnamese language. In the VARHS data, 72.5 per cent of the 429 non-Kinh households interviewed in 2014 reported that Vietnamese was not their main language. A lack of knowledge of the Vietnamese language may be preventing minorities from applying for credit, taking part in market transactions, and migrating, and prompting them to drop out of school. This may also limit their understanding of government programmes available in the commune that are mostly in Vietnamese, leading to lower participation in such schemes. Indeed, as shown in Figure 14c, we find that minority households that speak Vietnamese as their main language are significantly better off than those that do not. Given the consistent nature of this finding it is imperative to explore the ways in which the lack of fluency in Vietnamese is restraining the growth of non-Kinh households and compounding the disadvantage they already face.

## 6 Conclusion

Over the years, the Government of Vietnam has undertaken various measures to address the ethnicity gap in Vietnam. This includes setting up the Committee for Ethnic Minority and Mountainous Area Affairs (CEMA) and specifically targeting poverty in remote and inaccessible areas under policies such as the ‘Socio-Economic Development Program for the Communes Facing Greatest Hardships in the Ethnic Minority and Mountainous Areas’ (P135).

Over the period 2006–14, the average rural Vietnamese household in the VARHS survey has seen spectacular improvements in living standards as measured by household income and consumption expenditure. However, national averages mask substantial differences in the level of welfare between the Kinh majority households and the non-Kinh households belonging to one of Vietnam’s 53 ethnic minority groups. Both groups have seen increases in their living standards, but a significant difference in the relative level of welfare remains. In this period, there are no strong signs of convergence in welfare between the two groups. The evolution of food expenditure and household income is better characterized by parallel trends than by catch-up: the relative difference in these two important indicators in 2014 is almost identical to the difference observed in 2006. On other indicators, the evidence is even more worrisome: while housing indicators of Kinh households have improved, they have remained more or less stagnant for the average non-Kinh household.

An examination of the sources of income reveals that the non-Kinh are more likely to diversify into non-farm activities, but when non-Kinh households do diversify, they are more likely to depend on CPR as opposed to Kinh households that primarily engage in wage employment and household enterprises. We also identified several constraints to help explain these differences. Non-Kinh households have lower quality agricultural land and lower rates of ownership certificates. They also face more problems producing and selling their agricultural products and have worse access to formal and informal credit. While remoteness was found to matter in the earlier part of the period, non-Kinh households no longer appear to be more remotely located than their Kinh counterparts living in the same provinces. There is, however, some evidence of segmentation in social networks along ethnic lines.

Finally, we find a fair amount of heterogeneity within the non-Kinh minorities along spatial, ethnic, and linguistic lines. Minority households residing in the central highlands have grown faster than those in the northern mountains; the Tay and the Muong have fared better than the

Thai and H'Mong; and minority households that speak Vietnamese have done better than those that do not. Overall, while differences between the Kinh and the non-Kinh continue to exist, it appears that currently social distance rather than geographical distance plays a greater role in the slow growth of the non-Kinh.

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