

Ethnic entrepreneurship, initial financing, and business performance in China

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Abstract Access to external financing is a major obstacle for starting a new business across various country contexts. Ethnic minorities, in particular, tend to face more extreme financial constraints, although the linkages between ethnicity, finance, and entrepreneurship have never been previously studied in China. Relying on a new proprietary dataset, this paper compares ethnic-based differences in external financing from both formal and informal sources used to start a new micro-enterprise or a small-and-medium-sized enterprise (SME) and the implications on post-entry business performance in China. The main results show that Han households tend to rely more on initial formal financing, but not initial informal financing, to start a new business. Furthermore, Han-operated businesses tend to perform better than their minority-operated counterparts, although this performance gap disappears given similar access to initial external financing.

Keywords Entrepreneurship · Ethnicity · Informal finance · Formal finance · Firm profits · China

JEL Classification L26 · J15 · G21

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1 Introduction

A large literature exists showing that access to financial capital is one of the most important determinants of small business creation and subsequent performance (Evans and Leighton 1989; Hurst and Lusardi 2004), especially in developing countries (Ayyagari et al. 2010). Firms with low access to liquidity tend to be less successful—e.g. more likely to close, are less profitable, and are less likely to hire employees—than if they could have invested the optimal amount of capital. One strand of the literature specifically compares ethnic minority and non-minority access to finance and the implications for business performance. In general, findings show that disadvantaged minorities tend to face more serious financial constraints due to lending discrimination and various other barriers, which in turn, results in lower business performance (Coleman 2004; Blanchflower et al. 2003; Fairlie and Robb 2008).

Despite the well-known barriers to finance for ethnic minorities across various country contexts, empirical studies that carry out a comparative analysis are essentially non-existent in China, due primarily to data limitations and political sensitivities surrounding some ethnic minority groups. The empirical literature that does exist tends to be restricted to small case studies or rely on mezzo-level data that use aggregate measures at the village or county level on a per capita

basis. The lack of relevant studies that are nationally representative is problematic given that rising ethnic inequality and the exclusion of ethnic minorities from the labor market are thought to be key drivers of ethnic conflict in some parts of China (Howell and Fan 2011).

Moreover, although not well-known to the general public, China is home to one of the largest and most ethnically diverse minority populations in the world. China's 55 different ethnic minority groups number a total population of 104 million people, 90 percent of which live in lesser developed inland parts of China. Given their sheer size and concentration in regions with fewer growth opportunities than in the coastal provinces, studies on the economic and employment outcomes of minorities are important for China's sustainable development. As entrepreneurship is generally thought to provide a path for poor households to exit poverty (Banerjee and Newman 1993; Hurst and Lusardi 2004), understanding the factors that influence occupational change into self-employment is particularly timely and relevant.

This paper therefore carries out the following objectives. First, probit models are estimated to test whether Han households are more likely than minority households to start a business, and whether they have better access to initial sources of start-up finance. Second, OLS models are used to compare Han- and minority-run business performance, and the importance of relying on initial sources of finance to start the business. The empirical analysis relies on the first wave of the China Household Ethnic Survey (CHES), which was administered over a 3-month period in 2012. CHES is a unique proprietary data source that contains detailed information on more than 3000 urban households, nearly half of which belong to an ethnic minority group, located in various regions across China. The empirical analysis compares Han households to several main ethnic minority groups – Hui, Uyghur, Miao, Dong, and 'Other' which combines more than 30 smaller ethnic minority groups observed in the data.

This paper makes the following contributions to the literature. First, this paper contributes to the growing number of studies on entrepreneurship in developing economies (Acs and Virgill 2010). Second, a comparative analysis of Han- and minority-run business owners is carried out, considering differences in initial access to start-up capital and the effects

of those differences on subsequent business performance. Third, firms are classified as micro-enterprises and small-and-medium enterprises (SMEs) to take into account that different enterprises require varying levels of start-up capital.

Lastly, focus is placed on distinguishing between both formal and informal sources of startup capital. Access to formal finance is generally thought to be important for explaining subsequent business success in China. However, the financial sector suffers from serious underdevelopment particularly in poor western areas where ethnic minorities tend to reside, giving rise to various types of informal lending. Given their high interest rates and being of limited scale, it remains unclear how informal finance influences business performance in China (Ayyagari et al. 2010), particularly for different ethnic groups.

The outline of the rest of the paper is as follows. Section 2 provides a brief overview of the relevant literature followed by an introduction to China's ethnic and affirmative action policy in Section 3. Section 4 introduces the data and empirical strategy. Section 5 presents the results and Section 6 concludes.

2 Ethnicity, finance, and entrepreneurship: a review

There are a number of reasons why ethnic minorities may have lower access to finance compared to the ethnic majority in the population, chief among them is due to discrimination.¹ In the theoretical literature, economic agents discriminate against a certain group for various reasons. The taste-based theory of discrimination (Becker 1957), for instance, suggests that economic actors simply do not like a particular group and do not want to interact with those individuals. Information-based theories of discrimination (Phelps 1972), argue that discrimination exists because economic actors believe certain groups are less productive (e.g., lower credit quality), which in turn, threatens to reduce lenders' profits. Bertrand et al. (2005) also suggest that economic agents may engage in discriminatory lending due to negative implicit attitudes or

¹Other potential explanations is that ethnic minorities lack access to information, lack sufficient human and physical capital, or maintain stronger cultural or religious preferences that prevent them seeking out formal loans.

unconscious mental associations towards members of a particular group.

The empirical evidence that compares access to finance for minority- and majority-run businesses lends support to discrimination theories. In one of the earliest studies, Bates (1989) finds that Black males in the USA were significantly less likely than their white counterparts to access startup finance, either formal or informal. The same study further shows that firms that relied on start-up finance to start the business subsequently became more profitable than firms without initial access to external liquidity. In another study, Bates (1991) control for differences in human capital and show that the lower access to formal financing among black-run businesses is due to discrimination rather than their riskier potential or default likelihood. More recent studies further confirm that minority-run businesses tend to be disadvantaged in terms of the access to financial resources.²

Of course, in the empirical literature, it is difficult to detect whether ethnic differences in reliance on external finance is due to discrimination or rather differences in application rates between ethnic minorities and the ethnic majority group. For instance, ethnic minorities may be less likely to seek out or apply for external financing for a number of reasons: (1) lack of sufficient information, (2) negative perceptions associated with Han-dominated institutions, and (3) because they fear that they will be turned down. Empirical evidence from the USA finds evidence of both selection and lending discrimination (Robb 2013). That is, ethnic minority entrepreneurs are less likely than their white counterparts to apply for loans because they feared being turned down, and given they already applied for a loan, ethnic minorities are less likely to have loans approved even after controlling for individual characteristics.

2.1 Access to finance and entrepreneurship in China

The aforementioned studies are all based on a western context and highlight the role of ethnic-based discrimination in the ability of entrepreneurs to access external liquidity. No comparable study exists that directly compares differences in access to start-up finance for different ethnic groups in China, although

one existing study does confirm that a liquidity shock tends to have larger effects on out-migration for ethnic minorities compared to the Han majority (Howell 2016), an indication that in general, ethnic minorities face larger financial constraints. Nevertheless, several studies exist worth mentioning that do focus on financial constraints on business formation in China and the importance of distinguishing between formal and informal financing sources.

In recent years, expansion of formal financial sector in China has provided additional resources to in-need entrepreneurial ventures, even in China's lesser developed western areas (Zhang 2015). Expanding access to formal finance that transfers income, capital, and skills may alleviate financial constraints for initial investment of enterprises and post-entry success (Rosenzweig and Wolpin 1983; Bianchi and Bobba 2013). Besides the formal market, interpersonal exchanges between neighbors, friends, and relatives may also be a way in which small entrepreneurs reduce startup costs and business risks (Besley and Levenson 1996; Bose 1998). Informal lending in China remains a main source of liquidity due to the large lending bias in favor of SOEs (Tsai 2004), which has resulted in a "liquidity crisis" for private would-be entrepreneurs (Djankov et al. 2006; Wang 2012).

A recent debate has emerged in the literature in terms of whether access to informal or formal finance plays a more important role in explaining business performance. On the one hand, Elston et al. (2016) find that informal financing plays a more important role in the growth of private enterprises in China, while Ayyagari et al. (2010) find that it is access to formal financing from banks that spurs firm growth. In a recent study, Beck et al. (2015) study this debate in the context of micro-enterprises in rural China. The authors find that informal financing is positively associated with firm growth among micro-enterprises that have at least one employee, despite formal financing having no effect. The authors' findings point to the inefficiency of formal institutions and the importance of informal financial services to help fill the financial intermediary gap.

3 Ethnic and affirmative action policy in China

Ethnic minority groups in China have historically lagged behind the Han in terms of various

²See, for instance, Bates (1997), Coleman (2004), Blanchflower et al. (2003), and Fairlie and Robb (2008).

socioeconomic indicators (Poston and Shu 1987). To help reduce ethnic-based disparities, China has implemented a combination of ethnic and affirmative action policies that focus on preserving ethnic diversity and encouraging gradual, state-guided development of local ethnic minority regions and individuals. These ethnic-based policies essentially can be grouped into three inter-related objectives: (1) identification and classification of ethnic groups, (2) a system of regional ethnic autonomy, and (3) a series of preferential minority-treatment policies. A brief discussion of each major policy objective is briefly discussed below.

A nation-wide effort was carried out in the 1950s to identify, classify, and chronicle ethnic diversity in the newly founded China. By the 1980s, the state officially recognized 56 different ethnic groups, including the Han majority. While the classification system did not completely coincide with unified, self-ascribed communities, institutionalization of the classification system reinforced the importance of the ethnic identifiers in the daily lives of all Chinese. For instance, every personal identification card has clearly marked on it the individuals' ethnic category, which must be listed on any other official documents filed by the individual (Gladney 2004).

The law on Regional Ethnic Autonomy was implemented in 1984, permitting minority groups living together in concentrated numbers the right of regional autonomy. These self-governing units are allowed, at least in theory, to interpret, adapt, and implement state policies according to what is most suitable to the local prevailing conditions. More than three quarters of the ethnic minority population live within one of the more than 1300 autonomous regions, which cover nearly two-thirds of China's total territory (Huang and Zhang 2007). The Chinese state provides massive subsidies, through both the national treasury and regional-pairing schemes, and other types of support to boost economic development in these ethnic minority autonomous regions.

In addition, the non-Han population specifically benefit from extended special rights and privileges regardless of where they live. Preferential policies include, but are not limited to, preferential access to employment, higher education, political office, and special tax breaks (Sautman 2010), although no preferential lending policies exist for ethnic minorities. Ethnic minorities also benefit from exemptions from

personal family planning restrictions and the right to use their own culture, language, and religion.

3.1 Debates about ethnic discrimination in China

Despite the varied policies that promote regional autonomy and existence of affirmative action policies, ethnic minorities remain significantly behind the Han majority. Over 50 percent of the officially designated impoverished counties are in rural areas with high proportions of ethnic minorities (Zhu and Blachford 2012). Moreover, new research is revealing a great deal of information on the social and economic situation of specific Chinese minority groups. A recent debate has emerged regarding whether ethnic minorities in China are at an economic disadvantage relative to the Han majority due to discrimination or rather due to other potential explanatory factors.

On the one hand, since the late 1970s, the creation of new labor markets and social stratification are generally viewed as placing ethnic minorities at an economic disadvantage relative to their Han counterparts (Hannum and Xie 1998; Howell 2011). Numerous studies support this view showing that minorities are at a heightened risk of experiencing economic discrimination, as well as wage insecurity, poverty, and stratification in the labor market (Howell and Fan 2011; Howell 2017). On the other hand, other studies find that no significant difference in income exists between Han and ethnic minorities (Shi and Sai 2013), or that an income gap does exist, but is explained by geographical differences as opposed to any ethnic-based income discrimination (Gustafsson and Li 2003).

One reason for the contrasting findings is due to the lack of representativeness, either geographically or ethnically, of the above studies that potentially conceal important regional and ethnic heterogeneities that exist in China. In support of this view, Maurer-Fazio et al. (2007) show that only some ethnic minority groups tend to be more disadvantaged relative to the Han majority, while other minority groups enjoy an economic premium due to affirmative action policies in China. Specifically, MacDonald and Hasmath (2015) distinguish between "insider" minority groups (e.g., Hui) and "outsider" minority groups (e.g., Uyghurs and Tibetans), and find evidence of ethnic-based pay discrimination but only against the outsider minority groups.

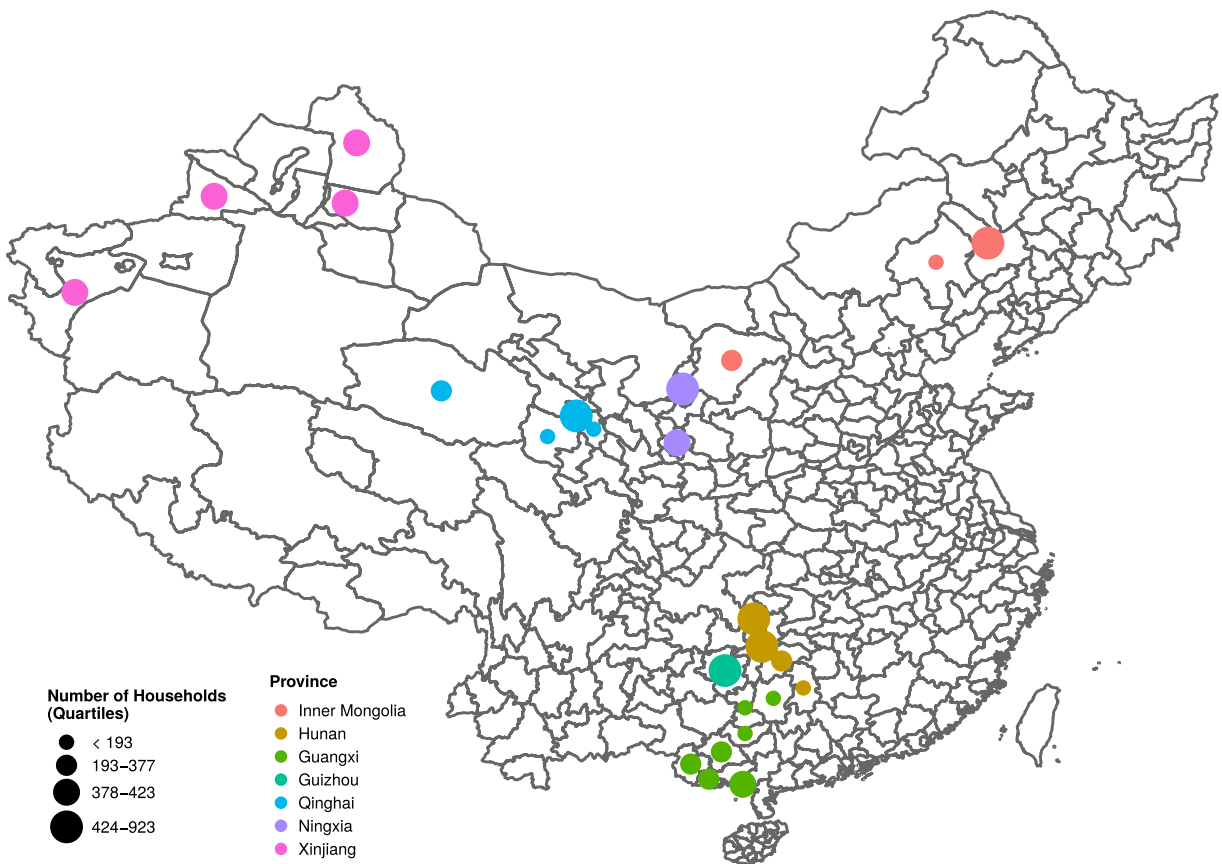


Fig. 1 2012 CHES urban sampling locations

Building on this literature, the next section turns to the empirical part of the paper focusing on ethnic-based differences in access to finance and its effects on post-entry business success for Han- and minority-run businesses. If similar barriers to finance exist in China as in other countries, then Chinese ethnic minorities will likely have comparatively lower access to start-up finance and, in turn, experience lower subsequent performance. Although, based on the recent discussion above, some minority groups may benefit from a premium associated with affirmative action policies and have better access to finance than the Han majority.

4 Data and empirical strategy

Carried out in collaboration between the China Academy of Social Sciences and the Central Nationalities University in 2012, the CHES project represents

the first large-scale attempt to collect nationally representative data for China's ethnic minority groups.³ In total, 3259 urban households were surveyed in 27 different city prefectures across 7 provinces and autonomous regions (Inner Mongolia, Qinghai, Ningxia, Xinjiang, Guangxi, Guizhou, Hunan).⁴ Figure 1 shows the urban sampling location sites. The survey questionnaire includes detailed information on employment and occupation details, and formal finance and informal finance at the startup year. The survey questionnaire also includes households' demographic, income, and wealth profiles.

³Note that ethnic minorities in China are concentrated in lesser developed regions with fewer growth opportunities, so the survey areas are not representative of China as a whole.

⁴Spatial deflators developed by Brandt and Holz (2006) were updated and used take into account regional price differences among the seven provinces.

Based on the CHES questionnaire, I define an entrepreneurial household as any household where at least one member is self-employed or is a private business owner. A proxy for access to initial informal finance is created using a dummy variable that is assigned a 1 if the entrepreneurial household borrowed from family, friends or informal financial institution when the enterprise was started, and 0 otherwise. Similarly, a proxy for access to initial formal finance is created using a dummy variable that is assigned a 1 if the entrepreneurial household received a loan from a bank or credit union when the enterprise was started, and 0 otherwise. Note that less than 4% of entrepreneurial households rely on both formal and informal sources of initial financing. Due to their small sample size, meaningful comparison analyses are not possible, hence these households are not included in the analysis.

Within each province, the official urban household registries were used to select CHES households. Based on these registries, a stratified sampling method was adopted to ensure a sufficient sample size of minority households. The resulting ethnic composition of the data is approximately 55% Han and 45% minority households. Sample weights based on the 2010 Census are used to offset the over-sampling of minority households. In addition to the Han majority, the main ethnic minority groups with large-enough sample size to separately compare include the Hui, Uyghur, Miao, and Dong. A total of 31 other ethnic minority groups are observed in the data; however, due

to their small sample size, they are collapsed together into an “Other” minority grouping.

Table 1 reports the summary statistics. On average, slightly more than 15% of Han households have an enterprise compared to slightly less than 15% of ethnic minority households. Uyghurs have the highest rate of entrepreneurship (25%) and the highest percentage of entrepreneurs operating a micro-enterprise (81%). Across each ethnic grouping, households rely more on initial informal financing to start their enterprise rather than initial formal finance. Han households are the most likely to rely on informal financing (56%), while Dong are most likely to rely on formal financing (24%).

Interestingly, none of the Uyghur households with an enterprise relied on initial formal finance to start their business raising important questions in terms of access to formal financing for certain ethnic groups. Another important question to consider is whether the self-identified entrepreneurs are choosing self-employment in order to capitalize on profitable arbitrage or rather are forced into self-employment due perhaps to their inability to find wage employment. Indeed, there is growing awareness that in developing countries, entrepreneurship may be less of a choice and more of a necessity (Fields 2012; Poschke 2013). Due to data limitations, however, it is not possible to explore this issue more directly and remains a topic for future research.

Table 2 reports similar summary statistics by industry. The results show that more than half of

Table 1 Summary information on entrepreneurship by ethnicity

	Households (#)	Entrepreneurship		Enterprise type		Initial use of finance	
		(#)	(%)	(%)		(%)	
		(1)	(2)	(3)	Micro-(4)	SME (5)	Informal (6)
Han majority	2160	357	16.5	64.6	35.4	55.7	22.4
All minority (average)	1687	246	14.6	55.4	44.6	38.7	13.6
– Hui	303	60	19.8	44.5	55.5	38.2	14.9
– Uyghur	137	34	24.8	80.6	19.4	46.2	0
– Miao	327	41	12.5	67.1	32.9	42.1	8.2
– Dong	172	24	14	36.6	63.4	33.9	24.0
– “Other” minority	748	87	11.6	48.3	51.7	32.9	21.0

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 2 Summary information on entrepreneurship by sector

	Households (#)	Entrepreneurship		Enterprise type		Initial use of finance	
		(2)	(3)	%		%	
				Micro-(4)	SME (5)	Informal (6)	Formal (7)
Agriculture	83	4	4.8	66.7	33.3	0	0
Mining/production gas, water, electricity	58	4	6.9	50	50	25	50
Manufacturing	81	7	8.6	36.4	63.6	25	25
Construction/transportation	249	48	19.3	75.4	24.6	67.3	30.6
Services, retail/wholesale, catering	760	311	40.9	77.9	22.1	50.7	17.0
High-end services/financial	186	27	14.5	35.5	64.5	40	10
Other services	1408	163	11.6	28.9	71.1	47.3	21.1

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

entrepreneurial households (311) are engaged Services, Retail/Wholesale, and Catering sector. Within this sector, more than 40 percent of the 760 households operate a household enterprise, of which more than 75 percent are micro-enterprises, slightly more than half relied on informal uses of initial financing. Although the samples sizes are quite small across some sectors, it appears that borrowing constraints exist across all sectors as seen by the relatively significant percentage of entrepreneurial households that relied on informal financing. It appears that borrowing constraints are lowest in agriculture, which is not surprising given the comparatively lower initial capital requirements, combined with the difficulties in obtaining loans for agriculture-based enterprises.

4.1 Empirical Strategy

According to the theoretical framework in Evans and Leighton (1989), occupational transition into self-employment occurs when entrepreneurial income can be higher than wage income. A probit model is applied to find out whether ethnicity, as well as other demographic characteristics, and access to initial finance determine the decision to entry. The model is written as:

$$Y_i = \alpha + \theta \text{Ethnicity}_i + \gamma z_i + \beta x_i + \epsilon_i \quad (1)$$

where Y_i equals 1 if household i has an enterprise, and 0 otherwise. On the right hand side, Ethnicity_i includes a dummy variable (1=Han and 0=Minority),

as well as a categorical variable for each specific ethnic grouping. z_i includes the factors associated with access to informal and formal financing sources, and x_i includes the household head characteristics. Provincial dummies are included to control for other important cultural and socioeconomic differences across. ϵ_i is a heteroskedasticity robust error term.

The ethnicity of the household head is expected to influence the transition into entrepreneurship (Fairlie and Robb 2008). Several controls are used to proxy for access to financial services, z_i . First, household wealth (measured as the value of durable goods), is used to gauge the internal funds of the household and proxy for possible collateral.⁵ The amount of gifts that the household has received or given, as well as the household size, are both used as gauges to proxy for the household's access to funds from family members and friends.

Other characteristics of the household head, x_i , may also be correlated with the decision to start a business. The following proxies are included as controls for the decision to start a business and the subsequent performance of that business: urban hukou, fluent in Mandarin, communist party membership, age, educational attainment, and gender.⁶ Having an urban hukou versus a rural hukou may improve the probability of obtaining bank loans to start a business (Liu 2005).

⁵The following items are included as durable goods: car, motorcycle, washing machine, refrigerator, color TV, home computer, air conditioner, and mobile phone.

⁶See the Appendix for a description of all the variables and summary statistics (Table 7)

Communist party membership indicates better political connections, which can improve access to obtain bank loans and spur subsequent firm performance (Zhou 2014). Age, education, gender, and language skills, respectively, serve as proxies for human capital.

Next, additional probit models are estimated after restricting the sample to only the entrepreneurial households to link the actual use of external finance with ethnicity, controlling for other factors. The following probit model is written as:

$$Y_i^F = \alpha + \theta \text{Ethnicity}_i + \gamma z_i + \beta x_i + \epsilon_i \quad (2)$$

where the dependent variable is a dummy variable that equals 1 if the entrepreneurial household relied on finance (either formal or informal) to start its new enterprise, and 0 otherwise. The same controls are included as before, with the addition of industry fixed effects to control for demand differences across industries.

Finally, the ethnicity of the household and access to finance may also be related to business performance. OLS regression is employed to test whether firm performance is associated with ethnicity, access to finance, and other controls. The model is written as follows:

$$\log(P_i) = \alpha + \theta \text{Ethnicity}_i + \lambda F_i + \beta x_i + \epsilon_i \quad (3)$$

where P_i is the logarithm of firm i 's profits, and F_i includes the separate dummy variables for the initial use of informal and formal finance. In addition to the head of household characteristics, x_i includes the following firm-level controls: age and legal designation. Firm's legal designation is a dummy variable that equals 1 if the firm makes contributions to social security, and 0 otherwise. Firms that do not make contributions to social security may be considered as operating outside of the formal market, which may have an important effect on firm performance.

It is important to note that because the empirical strategy relies on cross-sectional survey data, the findings are described as associations rather than implying causality. On theoretical grounds, a main difficulty in developing an instrument is that lenders are either consciously or unconsciously trained to look for effects that are consistent with their beliefs. It is therefore nearly impossible to erase all possible differences in

the credit risks of minorities and non-minorities due to unobserved effects (Heckman 1998). Moreover, due to data limitations, no clear instrument could be found for households' access to initial finance.

5 Main results

Table 3 presents the results from the occupational models separately estimated for micro-enterprises and SMEs. Each column reports marginal effects (at the means) for the probability that a household operates a micro-enterprise or a SME. In Columns (1)–(4), estimations include only the household's ethnic status and the characteristics of the head of household. The household ethnicity variable enters in as a dummy variable (1=Han, 0=ethnic minority) in Columns (1)–(2), and is replaced with a categorical variable that show specific ethnic sub-groupings in Columns (3)–(4). In order to better proxy for access to financial services, the models are re-run in Columns (5)–(8) after including household characteristics to the specifications.

In Columns (1) and (2), Han households are more likely to have a micro-enterprise and SME, although the coefficient is only statistically significant for SMEs. The results in Columns (3) and (4) show some heterogeneity across different ethnic sub-groupings. Specifically, Dong households are less likely than Han households to have a micro-enterprise, while Uyghur and "Other" minority households are less likely than Han to have an SME.

In Columns (5)–(8), the results show that the household characteristics are important for the decision to start an enterprise. Wealth, as measured by durable goods, is positively associated with the likelihood of operating a micro-enterprise and SME, respectively. A 10% increase in wealth is associated with a half percent increase in the likelihood of having a micro-enterprise and a 1.5% increase for having a SME. Household wealth can be seen as both a proxy for internal financing capacity of enterprises, as well as for possible collateral to receive outside informal or formal funding. The coefficient on gifts is positive and statistically significant for micro-enterprises. Finally, the coefficient on the size of the household is positive and statistically significant for SMEs, suggesting that

Table 3 Ethnicity and household entrepreneurship

	Dependent variable equals 1 if household enterprise, 0 otherwise							
	Micro-(1)	SME (2)	Micro-(3)	SME (4)	Micro-(5)	SME (6)	Micro-(7)	SME (8)
Han majority	0.041 (0.031)	0.030*** (0.008)			0.035 (0.035)	0.022* (0.010)		
– Han (Ref.)								
– Hui			– 0.044 (0.055)	– 0.018 (0.030)			– 0.051 (0.063)	– 0.021 (0.034)
– Uyghur			0.013 (0.073)	– 0.049*** (0.012)			0.017 (0.085)	– 0.042* (0.019)
– Miao			0.032 (0.068)	0.023 (0.027)			0.026 (0.074)	0.011 (0.031)
– Dong			– 0.090** (0.032)	0.040 (0.037)			– 0.098* (0.040)	0.034 (0.042)
– “Other” minority			– 0.055 (0.044)	– 0.039*** (0.009)			– 0.050 (0.051)	– 0.036* (0.011)
HOH characteristics								
Urban Hukou	– 0.110** (0.032)	0.167*** (0.030)	– 0.111** (0.032)	0.166*** (0.029)	– 0.108** (0.039)	0.162*** (0.034)	– 0.109** (0.039)	0.162*** (0.034)
Mandarin fluent	– 0.041 (0.031)	0.005 (0.018)	– 0.047 (0.031)	0.004 (0.019)	– 0.039 (0.035)	0.002 (0.020)	– 0.034 (0.036)	0.001 (0.020)
Political connection	– 0.042 (0.031)	0.097*** (0.012)	– 0.041 (0.032)	0.095*** (0.012)	– 0.039 (0.036)	0.090*** (0.017)	– 0.036 (0.037)	0.089*** (0.017)
Age	0.009 (0.089)	– 0.042** (0.018)	0.013 (0.088)	– 0.041** (0.018)	0.005 (0.094)	– 0.042* (0.017)	0.011 (0.095)	– 0.039* (0.017)
Senior education	– 0.048 (0.091)	0.033** (0.012)	– 0.039 (0.092)	0.031** (0.013)	– 0.043 (0.096)	0.026** (0.010)	– 0.035 (0.096)	0.026** (0.011)
Male	0.143 (0.098)	0.019** (0.009)	0.151 (0.098)	0.025** (0.010)	0.139 (0.095)	0.016* (0.007)	0.147 (0.095)	0.020* (0.007)
HH characteristics								
Durable goods					0.006* (0.003)	0.016*** (0.004)	0.006* (0.003)	0.019*** (0.004)
Gift					0.021** (0.007)	– 0.004 (0.003)	0.020* (0.008)	– 0.004 (0.003)
Family size					0.014 (0.015)	0.023** (0.008)	0.011 (0.016)	0.024** (0.008)
Location dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	570	2195	573	2211	581	2263	580	2261
Num. obs.	913	3620	913	3620	913	3620	913	3620

Each column reports marginal effects (at the means) for the probability that a household operates a micro-enterprise or a SME

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

access to more family members for possible funding or other support (e.g., labor) increases the likelihood that households run their own enterprises.

Next, probit regressions using only the subset of households with an enterprise are carried out to test whether ethnicity, as well as access to financial services, is important for starting a new business. Table 4 reports the results. Using the dummy variable for ethnicity, there is no statistically significant difference between Han and minority households in their access to initial external finance, either formal or informal, to start a new enterprise. Although the results do indicate that specific ethnic minority groups, mainly Uyghur and Miao, tend to have less access to formal and informal financing, especially for starting an SME. By contrast, other ethnic minority groups, such as the Hui and “Other” minorities, appear to have better access to informal finance used to start an SME.

Household wealth is generally positively related to reliance on initial external finance, either informal or formal, to start a new micro-enterprise and SME, while households with a higher amount of gifts explains reliance on initial informal finance to start a micro-enterprise, but not an SME. The size of the household cannot explain the initial use of informal or formal finance for either micro-enterprises or SMEs. Many of the other control variables are only sometimes statistically significant depending on the specification. Head of households that are fluent in Mandarin, and have urban hukou, better political connections, and a high school degree tend to be less likely to rely on informal finance to start a business, especially an SME.

The main findings show that certain ethnic minorities tend to rely less on external financing even after controlling for households’ differences in access to financial services, political connections, and human capital levels. A question that naturally arises then is what can explain the results? Based on the theoretical literature (Becker 1957; Phelps 1972; Bertrand et al. 2005), one of the main reasons why certain minority groups in China may face more extreme financing constraints is because they face the most severe lending discrimination due to negative stereotypes held against them.

While discriminatory lending may be the dominant explanation with the most important policy implications, it is important to emphasize that the empirical

findings presented above do not confirm or disaffirm the existence of lending discrimination against certain ethnic groups. Alternative explanations, such as selection effects, could also drive the results. For instance, rather than facing lending discrimination per se, certain ethnic minorities may be less likely to seek out external sources of finance in the first place, hence why they rely less on external financing. Unfortunately, due to data limitations regarding entrepreneurs’ initial efforts to secure external start-up capital, it is not possible to distinguish between the two potential explanations. External evidence from the USA sheds some light onto this issue, finding that ethnic minorities are less likely to rely on external finance due to both selection as well as discriminatory lending (Robb 2013). In the case of China, future research is clearly needed as additional data become available in order to tackle this issue.

5.1 Ethnicity, finance, and post-entry enterprise performance

Table 5 shows how ethnicity and access to initial formal and informal finance influence the subsequent performance outcomes of micro-enterprises and SMEs, respectively. The results in Columns (1) and (2) show that Han households with an enterprise tend to be more profitable than minority-run enterprises, irrespective of the enterprise type. Columns (3) and (4) show that these results are driven by the lower respective profitability of Hui and Uyghur minority-run enterprises. By contrast, Dong households that have an SME tend to be more profitable than their Han counterparts.

In terms of firm characteristics, access to initial formal finance is positive and statistically significant across most specifications, while access to initial informal finance is only significant for micro-enterprises. In line with the literature, access to both formal and informal financing influence business performance, although access to the former plays a more important role in explaining business performance as seen by the larger coefficients. More mature firms are associated with higher profits, but the firm’s age is only significant for SMEs. Operating a formal enterprise and having political connections is positively associated to firm profits across each specification, while having urban hukou and a high school education matters only for SMEs.

Table 4 Ethnicity, initial use of finance, and household entrepreneurship

	Initial formal finance				Initial informal finance			
	Micro-(1)	SME (2)	Micro-(3)	SME (4)	Micro-(5)	SME (6)	Micro-(7)	SME (8)
Han majority	0.115** (0.038)	0.043*** (0.016)			0.065 (0.053)	-0.011 (0.056)		
- Han (Ref.)								
- Hui			-0.002 (0.088)	0.031 (0.423)			-0.169 (0.093)	0.178*** (0.050)
- Uyghur			-0.172 (0.757)	-0.210*** (0.022)			-0.057 (0.121)	-0.305** (0.098)
- Miao			-0.052 (0.518)	-0.070* (0.033)			-0.215* (0.096)	-0.163 (0.099)
- Dong			-0.008 (0.385)	-0.065 (0.992)			0.001 (0.137)	-0.192 (0.130)
- "Other" minority			0.028 (0.256)	0.036 (0.496)			0.030 (0.083)	0.159* (0.075)
HOH characteristics								
Urban Hukou	0.044 (0.090)	0.042 (0.062)	0.018 (0.826)	0.014 (0.196)	-0.083 (0.057)	-0.134* (0.062)	-0.061 (0.059)	-0.181* (0.070)
Mandarin fluent	-0.052 (0.105)	0.078 (0.046)	-0.025 (0.739)	0.074 (0.628)	-0.056 (0.053)	-0.146** (0.056)	-0.042 (0.055)	-0.180** (0.059)
Political connection	0.028 (0.081)	0.107* (0.053)	0.009 (0.399)	0.094 (0.247)	0.101 (0.086)	-0.114* (0.049)	0.104 (0.090)	-0.091* (0.042)
Age	-0.070 (0.155)	-0.200* (0.094)	-0.016 (0.752)	-0.141 (0.997)	-0.377** (0.127)	-0.105 (0.123)	-0.454*** (0.134)	-0.086 (0.126)
Senior education	0.264* (0.127)	0.237* (0.102)	0.080 (0.373)	0.097 (0.201)	-0.252** (0.090)	-0.044 (0.154)	-0.287* (0.119)	-0.074 (0.156)
Male	0.005 (0.044)	-0.086 (0.058)	0.000 (0.026)	-0.046 (0.623)	-0.019 (0.062)	0.072 (0.066)	-0.020 (0.063)	0.109 (0.047)
HH characteristics								
Durable goods	0.028* (0.012)	0.018* (0.006)	0.006 (0.179)	0.010 (0.144)	0.029* (0.014)	0.016*** (0.005)	0.024* (0.010)	0.008 (0.012)
Gift	-0.017 (0.033)	-0.009 (0.008)	-0.006 (0.286)	-0.005 (0.068)	0.032** (0.012)	0.011 (0.009)	0.033** (0.012)	0.014 (0.009)
Family size	0.002 (0.018)	-0.022 (0.022)	0.012 (0.351)	-0.018 (0.256)	0.066** (0.025)	-0.024 (0.027)	0.059* (0.027)	-0.033 (0.028)
Location dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	205	212	191	206	295	274	292	266
Num. obs.	452	426	452	426	453	425	453	425

The sample of households is restricted to only those that operate an enterprise. In Columns (1)–(4), the dependent variable equals 1 if a household enterprise relied on initial formal finance, and 0 otherwise. In Columns (5)–(8), the dependent variable equals 1 if a household enterprise relied on initial informal finance, and 0 otherwise. Each column reports marginal effects (at the means)

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 5 Ethnicity, initial use of finance, and enterprise performance

	Dependent variable is firm profits (ln)			
	Micro-(1)	SME (2)	Micro-(3)	SME (4)
Han majority	0.399** (0.123)	0.195* (0.093)		
– Han (Ref.)				
– Hui			– 0.793*** (0.230)	– 0.944*** (0.168)
– Uyghur			– 0.893*** (0.241)	– 0.231 (0.264)
– Miao			0.025 (0.238)	0.022 (0.165)
– Dong			– 0.127 (0.303)	0.324* (0.152)
– “Other” minority			– 0.055 (0.189)	0.090 (0.127)
Firm characteristics				
Initial formal finance	0.380* (0.166)	0.258* (0.109)	0.305 (0.168)	0.244* (0.106)
Initial informal finance	0.210*** (0.023)	– 0.020 (0.091)	0.243* (0.063)	– 0.016 (0.088)
Firm age	0.012 (0.078)	0.119* (0.057)	0.012 (0.077)	0.120* (0.055)
Firm formal	0.615*** (0.169)	0.265** (0.089)	0.663*** (0.167)	0.218* (0.087)
HOH characteristics				
Urban Hukou	0.068 (0.133)	0.153** (0.062)	0.087 (0.132)	0.291* (0.140)
Mandarin fluent	0.200 (0.124)	0.067 (0.100)	0.146 (0.124)	0.006 (0.099)
Political connection	0.297* (0.134)	0.214* (0.087)	0.320* (0.133)	0.173* (0.085)
Senior education	– 0.135 (0.417)	0.288** (0.101)	– 0.022 (0.422)	0.372* (0.177)
Male	– 0.654 (0.383)	0.234 (0.287)	– 0.577 (0.379)	0.107 (0.281)
Location dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Adj. R^2	0.104	0.106	0.142	0.171
Num. obs.	417	405	417	405

*** $p < 0.001$; ** $p < 0.01$;* $p < 0.05$

In Table 6, interaction terms are created by ethnicity and initial access to finance (both formal and informal). The idea here is to test whether minority-run

businesses are less successful than Han-run businesses given similar reliance on initial financing to start the business. Note that the results on the individual

Table 6 Comparing enterprise performance outcomes by ethnicity and access to finance

	Dependent variable is firm profits (ln)							
	Initial formal finance				Initial informal finance			
	Micro-(1)	SME (2)	Micro-(3)	SME (4)	Micro-(5)	SME (6)	Micro-(7)	SME (8)
Initial formal finance								
× Han majority	-0.275 (0.284)	0.169 (0.221)						
Initial formal finance								
× Han (Ref.)								
× Hui			0.414 (0.447)	0.829** (0.344)				
× Miao			0.046 (0.043)	-0.525 (0.456)				
× Dong			-0.758 (0.666)	-0.133 (0.534)				
× "Other" minority			0.212 (0.376)	-0.590* (0.279)				
Initial informal finance								
× Han majority					0.355 (0.213)	0.331 (0.183)		
Initial informal finance								
× Han (Ref.)								
× Hui							-0.456 (0.305)	-0.519*** (0.180)
× Uyghur							-0.449 (0.404)	-0.407 (0.339)
× Miao							-0.525 (0.430)	-0.386 (0.227)
× Dong							-0.079 (0.321)	-0.344 (0.283)
× "Other" minority							-0.233 (0.225)	0.014 (0.044)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.095	0.107	0.137	0.216	0.103	0.113	0.138	0.197
Num. obs.	409	403	409	403	409	403	409	403

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

effects remain qualitatively unchanged from Table 5; therefore, only the results on the interaction terms are reported. The results show that in general, given the

initial use of finance, either formal or informal, there are no statistically significant differences in the performance outcomes between Han- and minority-run businesses.

The results remain similar when comparing Han-run businesses to each specific ethnic minority grouping, although the coefficient on Hui-run businesses is statistically significant.

The combined results in Tables 4, 5, and 6 show that some ethnic minorities, mainly Uyghurs, have less access to finance, either formal or informal, to start a new business and are less profitable than Han-run businesses. Although given similar access to initial financing, the performance gap between Han- and minority-run businesses disappears. The findings imply that removing the more extreme barriers to financing for some of the ethnic minorities will help to promote their business performance. To be sure, the positive correlation, however, may alternatively be partly due to potentially successful minority-run business ventures being more likely to generate startup capital than business ventures that are viewed as being potentially less successful.

6 Conclusion

Access to external financing is a major obstacle for starting a new business, especially in transitioning economies, often times leading to a liquidity crisis. The lack of development in the formal markets forces many would-be entrepreneurs to turn to informal financial intermediaries in order to obtain the necessary liquidity to transition into self-employment. Disadvantaged ethnic minorities, in particular, tend to have lower access to external financing due to discriminatory lending and other barriers, which in turn, has been shown in countries like the USA to result in lower subsequent performance for minority-run businesses. Drawing on this literature and applying it to the Chinese context, this paper provides the first attempt to compare ethnic-based differences in access to external financing used to start a new business, and the implications of relying on that initial finance for post-entry performance.

The key findings are as follows. First, Han households are more likely to operate a SME and to rely on initial formal financing compared to ethnic minorities, although the findings are driven, in part, by the strong negative association specifically with Uyghur households. Moreover, Uyghur households are less likely to rely on informal finance to start a new business

relative to Han households, while the opposite is true for other ethnic minority groups. In line with other studies that emphasize ethnic heterogeneity (Maurer-Fazio et al. 2007; MacDonald and Hasmath 2015), the results indicate that certain minority groups, e.g., Uyghurs, tend to face more extreme financing constraints compared to the Han majority, while other ethnic minorities, e.g., Hui, may face fewer financial constraints.

The second main finding of the paper is that Han-operated businesses perform better than minority-operated businesses, although given similar access to external financing the performance gap disappears. Based on the results, a main determinant that explains the gap between Han- and minority-run business performance is due to uneven access to external financing. New policies that focus on extending financing opportunities to would-be entrepreneurs, especially to certain minority groups like Uyghurs, may help to spur ethnic minority entrepreneurship and close the Han-minority business performance gap.

While this paper presents the first step in studying the linkages between ethnicity, entrepreneurship, and finance, future research can be extended in two ways. First, as additional data becomes available, it will be critical to distinguish whether ethnic-based differences in reliance on initial financing is due to lending discrimination, selection effects (e.g., lower application rates among ethnic minorities), or a combination of both. Second, an important distinction in entrepreneurship research in the developing world considers whether transition into self-employment is driven by choice or necessity (Fields 2012; Poschke 2013). In line with this research, it is potentially important for future research to consider ethnic differences for entrepreneurial households that choose self-employment to capitalize on opportunities for profitable arbitrage versus those that are forced into self-employment.

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Appendix: Summary statistics

Table 7 Summary statistics

	Mean	SD
Panel A: All households		
Entrepreneur	0.147	0.354
Han majority	0.566	0.496
Urban Hukou	0.881	0.324
Mandarin fluent	0.570	0.495
Political connection	0.381	0.486
Age	46.753	11.815
Senior education	0.073	0.260
Male	0.774	0.418
Durable goods	1,496.880	5,565.281
Gift	320.230	1,729.425
Family size	3.410	1.107
Panel B: Only households with an enterprise		
Firm profits	32,038.760	37,754.170
Han majority	0.602	0.490
Initial formal finance	0.195	0.396
Initial informal finance	0.476	0.500
SME	0.459	0.498
Firm age	8.198	6.771
Urban Hukou	0.772	0.419
Mandarin fluent	0.481	0.500
Political connection	0.187	0.390
Age	45.187	10.580
Senior education	0.023	0.149
Male	0.791	0.406

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

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