

MIGRANT REMITTANCES AS A SOURCE OF FINANCING FOR ENTREPRENEURSHIP

1. INTRODUCTION

Transforming the remittances and savings of labour migrants into a source of financing for entrepreneurship and other development projects is the focus of many governments' policies in migrant-sending countries. Unilateral transfers from overseas play an increasingly important role in the economies of transition and developing countries. To take the case of Uzbekistan, labour migrants' remittances and savings facilitated the development of the country's financial sector by prompting the development of sophisticated money-transfer operators, but the degree to which these flows finance the needs of business enterprises is unclear.

The direction of the link between migrant remittances and entrepreneurship is a priori unpredictable, as remittances may ease capital constraints that households willing to start a family business face and facilitate entrepreneurship, or remittances could be used for purposes like purchasing consumption goods, real estate, or leisure, which may not affect entrepreneurship positively.

The purpose of this research is to determine the relationship between remittance inflows from labour migrants and family business ownership in Uzbekistan. Put another way, the research seeks to shed light on the effect of labour migrants' remittances and savings on entrepreneurship. Although entrepreneurship and the policies that support it may not always benefit development and growth (Naude, 2010), some empirical evidence indicates that increased entrepreneurial activity reduces unemployment (Thurik, Carree, Van Stel, & Audretsch, 2008). Thus, small businesses become central to job creation and economic growth when they are supported by well-informed policies.

Access to finance remains one of the most daunting obstacles to the growth of micro, small, and medium-sized enterprises (MSMEs) in the developing world. Most businesses in countries surveyed for the World Bank's *Enterprise Surveys* list financing as one of the three main obstacles to growth.

Uzbekistan is in a unique situation as regards its access to finance, as the Business Environment and Enterprise Performance Survey (BEEPS) IV, conducted in 2008–2009, ranked the country last among transition countries in terms of the percentage of firms that used banks to finance investments. As Figures 1 and 2 illustrate, BEEP IV found just fewer than 10 per cent of firms reported having a bank loan or line of credit. However, in the next wave of BEEPS, BEEPS V, which was conducted in 2013-14, this share increased to more than 25 per cent (EBRD, 2015). Remittances to Uzbekistan also increased substantially during the period between BEEPS IV and BEEPS V. From 2006 until the 2014 economic downturn in Russia, recorded remittances from Russia to Uzbekistan increased by double digit rates exceeding 6.6 billion US dollars (approximately 12 per cent of Uzbekistan’s GDP) in 2013 (Central Bank of Russia, 2015). Part of this increase in recorded remittances was due to decreased transfer fees; another contributing factor was an increase in the number of labour migrants (Kakhkharov, Akimov, & Rohde, 2017).

Estimates show that, if remittances from countries other than Russia are taken into account, the total income of the Uzbek economy from labour migration may have been as much as \$8 billion in 2014, which is almost half the country’s export volume and several times the volume of foreign direct investment (FDI) into the country that year. Remittances’ share of GDP also increased substantially during this period. The increase in the proportion of firms that use bank loans is in line with empirical research that has shown the positive impact of remittances on financial development and credit creation (Aggarwal, Demirgüç-Kunt, & Pería, 2011; Kakhkharov, 2014).

Figure 1 about here

Figure 2 about here

The rapidly expanding body of research on how remittances facilitate entrepreneurship in countries that send migrant labour is equivocal. A number of studies have been pessimistic about the effects of remittance flows on the households’ investments in small business (Amuedo-Dorantes & Pozo, 2006a; Ang, Jha, & Sugiyarto, 2009). Investigating the impact of migration and remittances in rural

Ecuador, Vasco (2011) found that neither remittances nor migration has a positive influence on the odds of the household's owning a business. However, Amuedo-Dorantes and Pozo (2006a) found that households that already own a business may be more likely to receive remittances from overseas than are those that do not.

By contrast, many studies that have considered the case of Mexico have observed that remittances are important sources of financing for microenterprises (Lopez-Cordova & Olmedo, 2006; Massey & Parrado, 1998; Woodruff & Zenteno, 2007). A similar phenomenon was found in El Salvador, where the effect of remittances was especially strong in rural areas and among women (Acosta, 2007). Funkhouser (1992) identified a small positive impact of remittances on self-employment in Nicaragua.

The present research uses survey data on household remittances to test the likelihood that households that receive remittances own family businesses. The study compares remittance-recipient households with other households, taking their income levels into account.

This paper makes three primary contributions to the scholarly discourse on the relationship between migrant remittances and entrepreneurship.

First, the paper's investigation of households that receive remittances and those that do not based on their income levels and using data from household surveys concludes that financial constraints are one of the biggest obstacles to the development of entrepreneurial activities among remittance-receiving households in Uzbekistan. The remittance-recipient households at higher income brackets, which are assumed to have accumulated greater savings than those at lower income brackets have, are more likely to own a family business. Whereas households that receive remittances and are at the lower end of income spectrum are not statistically significantly different from households that are also at the lower end of the income spectrum and do not receive remittances. This finding resonates with previous research that has shown that savings and credit constraints are important factors in returning migrants' establishing a family business (Ilahi, 1999; Mesnard, 2004). McCormick and Wahba (2001) contributed the additional insight that savings are actually more important than human capital for the likelihood of entrepreneurship

among illiterate Egyptian migrants, whereas both savings and human capital matter for educated migrants. However, the present research focuses on household entrepreneurship, which is intuitively much more important for the sending economies than return migration is because not all migrants return and not all return migrants become entrepreneurs, whereas households are important parts of migrant-sending economies. Moreover, focusing on households also allows us to control for other factors that may influence the decision to start a business, such as social capital, human capital, and internally available funds. While the importance of human capital and physical capital is clear, the role of social capital may require some elaboration. Social capital is defined as “networks together with shared norms, values and understandings that facilitate co-operation within or among groups” (Côté & Healy, 2001, page 1). Sociologists have asserted that having friends, relatives, and acquaintances who are engaged in entrepreneurship increases the likelihood that an individual will also become an entrepreneur (Greve & Salaff, 2003). Moreover, network diversity has the largest positive effect on the performance of small firms (Stam, Arzlanian, & Elfring, 2014). Since return migrants may lose their social capital during their migration, controlling for it in studying return migrants’ entrepreneurship is problematic.

The paper’s second contribution is the finding that households that receive remittances are more likely than others to start businesses when the receipt of remittances interacts with household income level. More specifically, at the higher income brackets, households that receive remittances are more likely to have a family business than are non-recipient households while controlling for a host of other factors that influence entrepreneurship decisions, including the number of migrants in a household. This result is the evidence that at least part of the remittance flows is not fungible, as most of the remittance literature assumes, but are directed to entrepreneurship. While targeted use of remittances was found in the literature on household expenditure (De & Ratha, 2012), to the best of the author’s knowledge, this is one of the first papers finding the evidence that remittances are directed and, possibly monitored by senders to make sure that these flows are invested in entrepreneurship.

Finally, the paper contextualizes for the first time the inquiry into the link between remittances and entrepreneurship in the Central Asian and Uzbekistan setting. The region (and the country) is understudied, despite its unique transition experience, mainly because of the lack of data (Brück et al., 2014). Prevalence of South-South temporary migration is the main feature of the migration processes in Uzbekistan and the region, and since many Central Asian countries share the same cultural, religious, and economic characteristics, the paper's findings are likely to be valid at the regional level.

This research also has important policy implications. Remittances have the potential to be a vital investment source for MSMEs if they augmented with bank credit and/or an increase in the amount of remittances. The study's analyses of household survey data and broader socio-economic context indicate that, to increase the positive effect of remittances, policymakers should consider strategies to reform the banking sector to boost its role in financing micro- and small businesses, encourage migrants' families to invest remittances into MSMEs by educating them on how to run a business, and improve the business environment.

The rest of the paper is organized as follows. Section 2 reviews the literature on the topic. Section 3 describes the context in which remittances are received in Uzbekistan. Section 4 introduces the data and the research methodology. Section 5 presents the analysis of the empirical observations, and section 6 draws conclusions and discusses policy implications.

2. LITERATURE ON MIGRATION, REMITTANCES, AND ENTREPRENEURSHIP

Small businesses face significant financial constraints even under the best of circumstances. Evidence suggests that even in mature economies, the formation and survival of small firms often depends on owners relaxing capital constraints by injecting their personal funds (Blanchflower & Oswald, 1998; Holtz-Eakin, Joulfaian, & Rosen, 1994a, 1994b). Entrepreneurs in developing countries confront

much less efficient credit markets; evidence from World Bank (WorldBank, 2012) indicates that access to credit is a major concern for about one-third of surveyed enterprises in the developing world.

The challenges that Central Asia and Uzbekistan face are not related only to financing, as many issues are related to institutional governance, such as the government's effectiveness, regulatory quality, the rule of law, corruption, and the peculiarities of the legacy of the Soviet period that influence decisions to pursue entrepreneurship. Central Asian countries rank among the lowest in the world in the World Bank indicators of the quality of governance. These institutional obstacles and high transaction costs severely restrict entrepreneurs' and MSMEs' access to borrowing in Central Asia (Özcan, 2016). In some countries in the region, such as Kazakhstan and Kyrgyzstan, the state coercion and weaknesses in law enforcement gave the way to alternative self-governing institutions (Özcan, 2016). Surveys also show high levels of self-employment and informal sector employment in the region (Mirkasimov & Ahunov, 2017). However, research in Kyrgyzstan based on an original survey indicates that entrepreneurship may grow even in such unfavourable circumstances (Spector, 2018). It appears that economic growth in Central Asia was facilitated primarily by new enterprises, not the old state-owned companies (Anderson & Pomfret, 2003).

Interpreting the impact of remittances on entrepreneurship and business creation in Uzbekistan requires understanding the broader issues related to economic development, household economic activities, labour markets, entrepreneurial trends (including gender issues), and the setting (rural vs urban), all of which influence entrepreneurial activities. Central Asian republics started from similar initial conditions, on the ruins of the former Soviet Union. Unlike the Baltic states, however, these republics were not prepared for the rapid dissolution of the USSR (Pomfret, 2006). In fact, it could be argued that a sizeable part of these countries' population became involuntary entrepreneurs just to sustain their families after the Soviet Union' collapse. Since most migrants from Central Asia are male, and women are left behind, the impact of remittances on entrepreneurship in the region cannot be understood properly without addressing the gender aspects of entrepreneurship in the aftermath of the Soviet era.

Welter and Smallbone (2008, page 505) asserted that “the process of transformation towards market economies deprived a majority of women in the former Soviet states of their paid jobs, as well as most of the social security provided under socialism.” Empirical research shows that informal institutions like codes of behaviour and cultural influences shaped the prevailing forms of female entrepreneurship in Uzbekistan (Welter & Smallbone, 2008). These cultural norms reinforced the traditional role of women in Uzbek society. Therefore, whilst economic necessity contributes to women’s being pushed into self-employment and business ownership, resource constraints, traditional norms, and other institutional restrictions may limit their business endeavours to comparatively simple activities. As a result, a large part of women-owned businesses are home-based or subsistence activities because of the need to combine family responsibilities with generating income for the household (Welter & Smallbone, 2008). The prevalence of these semi-formal and informal forms of business may be the reason that entrepreneurship levels were under-reported in the survey data that this paper uses.

According to the World Bank’s national accounts data, agriculture accounts for approximately 17.32 per cent of Uzbekistan’s GDP and employs about 26 per cent of the labour force. World Bank estimates that 63.52 per cent of the population lives in rural areas. After the collapse of the USSR, Uzbekistan embarked on a new path of reorganizing agricultural production that involved dismantling all of the state and collective farms and replacing them with agricultural production cooperatives called *shirkats*, farmers called *fermer hojaliklari*, and peasant households called *dehqan* as the new production units. As a result, while all land remains the property of the state, farmers have emerged as dominant lease holders, although only 5-10 per cent of rural households are farmers (Veldwisch & Spoor, 2008). The rest of the households in rural Uzbekistan are *dehqans*. These small production units at the household level have small plots that produce barely enough agricultural output to feed an average family. This situation has given rise to neo-patrimonial relationships between *fermer hojaliklari* and *dehqans*. Many *dehqan* households also engage in non-agricultural economic activities, including labour and trade migration and small-scale entrepreneurship (Veldwisch & Bock, 2011). The migration processes have

also resulted in the feminization of agriculture (Trevisani, 2006), as male members of the household migrate, leaving female members to handle the farming.

The theoretical foundation of the nexus between remittances and entrepreneurship is the New Economics of Labour Migration (NELM), developed by Stark (1991) and others. This theory links remittance behaviour to migration decisions. According to the NELM, migration decisions are a collective choice or a family strategy which aims not only to maximize income, but also to minimize risks, diversify income earnings, and relax financial constraints through remittances. The NELM framework offers an important insight into the migration decision by linking labour migration decisions with public policy and capital market failures in migrant-sending countries. In making the decision that a family member will migrate, households design their own strategies to cope with the absence of adequate credit, insurance instruments, and public protection. Remittances from a family member abroad provide an additional source of funding, insurance in case the main source of the family's income falters, and financial protection "for a rainy day." As such, migration can be viewed as a risk-mitigation strategy for households that have insufficient income otherwise. The NELM has proven to be an innovative, realistic, useful framework, with the result that it has been widely applied in recent migration studies.

Critics of the NELM highlight its shortcomings, which are chiefly associated with its strong assumption that households act rationally and its neglect of the role of informal institutions (community, extended family, informal associations, etc.) as noneconomic determinants of human behaviour (Aslan, 2011; Hagen-Zanker, 2010). In the context of Uzbekistan and Central Asia, these informal institutions and social networks seem to play a significant role in migration and remittance decisions.

Most of the empirical literature on migration and entrepreneurship focuses on migrants who return to their home countries (Rappoport & Docquier, 2006), perhaps because the return migration channel is quantitatively easier to measure than the remittances channel. Another reason may have to do with data constraints; while the data sets on returned migrants are comparatively rich, household surveys often provide insufficient information on wealth distribution prior to self-employment and do not always

track the exact uses of remittances properly. Rappoport and Docquier (2006) also argue that, while the relative importance of self-employment is a distinctive feature of the labour force of most developing countries, evidence suggests that the credit market only plays a minor role in financing investments in small businesses. For example, Mesnard (2004) indicates that, during the 1980s, 87 per cent of the entrepreneurial projects started by Tunisian returned migrants were financed in full through savings accumulated while they were abroad, with only 13 per cent receiving complementary financing from governmental programs and none relying on private bank credit. For their part, Dustmann and Kirchkamp (2002) show that only 1.2 per cent of Turkish return migrants who were self-employed in 1988 used bank credits as a major source of financing for their start-up costs. Therefore, in many cases return migrants in Uzbekistan and households receive remittances have to rely on their own funds. One of the causes of this situation is that, as Ruziev and Midmore (2014) noted, many people in Uzbekistan are considered “unbankable” by the formal financial system because of the high transaction costs that are usually associated with the typically small size of loans, high perceived risks, low profit margins, and lack of traditional collateral. It is therefore clear that for many prospective entrepreneurs in Central Asia’s developing countries, temporary migration is the means for developing their own enterprises. Uzbek migrants who do start their own MSMEs usually limit themselves to small retail outlets, buying an apartment and renting it out, opening a small internet cafe, running a restaurant, or buying a car to drive as a taxi (Marat, 2009). As a matter of fact, in another Central Asian country (Tajikistan), Clément (2011), using propensity score matching methods, fails to find any evidence of remittances having a positive impact on households’ investment expenditures.

Another reason that many Uzbek migrants fail to become successful entrepreneurs could be that most spend their hard-earned income on lavish cultural ceremonies, such as weddings (Irnazarov, 2015). Responses to a small-scale survey that Juraev (2012) conducted in Moscow and UNDP-sponsored surveys in Uzbekistan (UNDP, 2008) indicate that many Uzbek workers overseas joined the ranks of labour migrants in order to raise funds for a wedding.

Focusing on remittance behaviour's impact on households' business investments, Amuedo-Dorantes and Pozo (2006b) measured the insurance motive by looking at what remittances are used for and distinguishing between self-insurance and family insurance. If remittances are sent in response to income risks in the host economy and are used for consumption, the migrant sends them to the family as part of a co-insurance agreement. If they are used for asset accumulation instead, the family invests them for the migrant, so remittances are sent for self-insurance. In essence, they are like savings. The authors' findings show that migrants with greater income risk remit more and that different types of migrants use different insurance methods. As shown in the next section, migrants from Uzbekistan and Central Asia in general encounter significant income risks and are expected to remit a large part of their earnings.

Focusing on the impact of access to remittances on capital investment in micro-enterprises in Mexico, Woodruff and Zenteno (2007) find that remittances are responsible for more than a quarter of the capital invested in micro-enterprises in urban Mexico. The authors estimate that in ten Mexican states with the highest rates of migration to the United States, more than 40 per cent of the capital invested in microenterprises is associated with remittances. Brown (1997) finds that those Pacific island migrants who intend to return home send more remittances, for example, for investment in their assets at home. In Central Asia and Uzbekistan, labour migration is predominantly seasonal, and migrants typically expect to return home at the season's end, which may encourage migrants and their families to invest remittances in MSMEs. McCormick and Wahba (2001) using probit model, document that the number and duration of their overseas stays positively influence the probability that literate Egyptian migrants become entrepreneurs. Among illiterate Egyptian migrants, savings alone increases the probability of engagement in entrepreneurship. This result suggests that skill acquisition is more closely related to subsequent entrepreneurship activity upon return than accumulating funds is.

Considering the link between remittances and entrepreneurship in the Philippines, Reyes et al. (2013) find that the factors that inhibit recipients of remittances from engaging in entrepreneurial activity include the number of dependents, food expenditures, wage level, other salaries earned in the household,

and construction of shelter. Other factors include age, number of those in the household with a job, and the specific occupations of household members. Highly educated migrants also tend to have higher entrepreneurial income than less educated migrants do, and households that have household members who are professionals or technicians are likely to have higher income from entrepreneurial activity. Most of these variables are included in the empirical estimations of this research.

Finally, there is a strand of literature on the effects of migration and remittances that documents a decrease in the labour supply and an increase in leisure among migrant-sending and remittance-receiving households (Chami, Jahjah, & Fullenkamp, 2003; Ruiz & Vargas-Silva, 2009), which impacts investment in entrepreneurship negatively. Nevertheless, Yang (2008) reports that income effects matter most. For example, favourable exchange rate shocks in the Philippines increased the number of hours worked in self-employment and increased migrants' households' entry into relatively capital-intensive enterprises at the end of the 1990s.

3. BACKGROUND: THE UZBEKISTAN CONTEXT

With a population of about 30 million people, Uzbekistan is the most populous country in Central Asia and one of the leading sources of migrants in the post-Soviet area. Russia is the main destination for the majority of Uzbek labour migrants. According to Russia's Federal Migration Service (FMS), the number of Uzbek labourers in Russia peaked in 2014 at about 2.7 million, but because of the fall in oil prices and the devaluation of the Russian rouble, the number had decreased to about 1.8 million by 2016. Since Russia is characterized by economic instability due limited diversification of economy, weak rule of law, large shadow economies, widespread xenophobia, and weak civil society (Urinboyev, 2018), the migrants from Uzbekistan and Central Asia face high income risks. Despite the slump, in the Commonwealth of Independent States (CIS), Uzbekistan's emigrant population is the largest in the CIS in absolute numbers, and the country is the top recipient of remittances sent from Russia (Central Bank of

Russia, 2015). Most Uzbek labourers migrate because of limited job opportunities in Uzbekistan and a large wage differential between that available at home and that in destination countries, so the number of families that depend on remittances is large (Kakhkharov & Akimov, 2015).

The World Bank report indicates that, among the working-age population in Uzbekistan, one in five men is an international migrant. Among the youth, the migration rates are particularly high—one in three men between the ages of 20 and 24 is a migrant. By comparison, the migration rates for the female population are not as high as those for the male population (Ajwad et al., 2014).

The survey data used in this paper shows that entrepreneurship in Uzbekistan is dominated by micro-enterprises that specialise in services. Thirty-four per cent of the labour force is self-employed, with many employed in small and informal businesses. The performance of the education system in Uzbekistan as it relates to the country's labour market must be evaluated equivocally, as access to general education is good, with a literacy rate of almost 100 per cent, but preschool and tertiary school coverage is low (Ajwad et al., 2014). Therefore, majority of migrants from Uzbekistan work in 3D jobs (dirty, dangerous and demeaning) jobs which do not require tertiary education.

Data from the World Bank/ German Agency for International Development (GIZ) survey is used to compare migrant workers from Uzbekistan with non-migrants. Table 1 shows differences between non-migrants and migrants in terms of age, gender and marital status. The average age of migrants is lower than the average age of all respondents, which confirms that primarily people in their 20s and 30s migrate for employment. Eighty-six per cent of migrants are male, and 61 per cent are married.

Table 1 about here

Table 2 compares the education and language skills of migrants with those of non-migrants. Nine per cent of migrants have only a basic education, compared with 15 per cent for non-migrants, and 79 per cent of migrants have either secondary education or a secondary-specialized education, while 73 per cent of non-migrants do. Only 7 per cent of migrants have higher education, while 10 per cent of non-migrants do. Finally, knowledge of the Russian language and the decision to migrate to one of the Russian-

speaking countries appear to be positively correlated since 51 per cent of migrants speak Russian fluently or well compared to only 33 per cent of non-migrants.

Table 2 about here

Therefore, the typical Uzbek migrant is about thirty years old, evaluates his or her Russian language skills comparatively high, has a secondary or secondary-specialized education, is married, and is male. On average, the Uzbek migrant saw his relatives eight month previously, which suggests that migration is becoming less seasonal.

To sum up, the livelihoods of a large portion of the Uzbek population depend on remittances from migrant labour, so a rigorous study that focuses on the impact of this phenomenon on household entrepreneurship can be useful to policy-making. This paper uses unique household-level survey data collected by the GIZ and the World Bank to define this important impact.

4. DATA AND METHODOLOGY

4.1 Data.

This research uses data from a survey of the jobs, skills, and migration of citizens in Uzbekistan, the “Uzbekistan Jobs, Skills, and Migration Survey,” to explore the link between remittances and investment in entrepreneurship. The survey was developed and conducted jointly by the World Bank and the GIZ in 2013-2014. The survey collected comprehensive information that is not typically captured by traditional household surveys and is representative at the national, regional (Oblast), and urban/rural levels. Two instruments were employed in the survey: a core questionnaire and a skills questionnaire. The sample size of the core questionnaire was 1,500 households with a total of 8,622 individuals. One adult individual per household was randomly selected to take the skills questionnaire, so the skills questionnaire sample consisted of 1,500 individuals.

1. Core questionnaire. The core questionnaire contained modules on ten topics: education, employment, migration, health expenditures, remittances, government transfers, financial services, subjective poverty, housing conditions, and household expenditures.

2. Skills questionnaire. The skills questionnaire contained modules on labour and work expectations, migration and preparation for migration, language skills, and technical skill training. This part of the survey tested a respondent's cognitive and non-cognitive ability.

4.2 Methodology

The empirical framework of this research project aims to estimate the probability that households receiving remittances engage in entrepreneurship by jointly and interactively examining the influence of remittances and income levels of households, while controlling for a host of other factors deemed to be relevant to business ownership decision. A positive relationship between households that receive remittances and the probability to start a family business expected partly due to the effects of “mental accounting” on entrepreneurship. “Mental accounting” refers individuals' inclination to separate their money into different accounts based on miscellaneous criteria, including the source of the money and the intended use for each account. In other words, households may earmark remittances for investment in entrepreneurial activities. Regression (1) is used to estimate the likelihood that remittances from abroad lead to investments in family business in Uzbekistan:

$$Family\ Business_i = \alpha + \beta * Remittances_i * Income_i + \theta X_i + \epsilon_i, \quad (1)$$

where:

$$Family\ Business_i = \begin{cases} 1 & \text{if } Family\ Business_i > 0 \\ 0 & \text{otherwise} \end{cases}$$

X_i is the vector of the household and community characteristics of the i th household that may affect the entrepreneurial decision; $Remittances$ is a dummy variable that equals 1 if a household has access to money/remittances from abroad and 0 otherwise; $Income$ is the total annual income of a

household in Uzbek soums; ϵ_i is the error term; and the coefficient β measures the average impact of the remittances' interaction with income.

X_i includes such household and community characteristics as whether it is in an urban or rural area of residence, the number of household members who were abroad at the time of the survey, the number of members in the household, the number of adult men, the number of children under age fifteen, the number of dependents over the age of sixty-five, and the gender, age, marital status, and educational attainment of the head of household. This extensive set of household and community characteristics may affect the household's entrepreneurial decisions and are frequently used in the literature on the link between remittances/migration and business ownership in other countries (Amuedo-Dorantes & Pozo, 2006a; Batista, McIndoe Calder, & Vicente, 2013; Black & Castaldo, 2009; Démurger & Xu, 2011; Gubert & Nordman, 2011; Hamdouch & Wahba, 2015; Thomas & Inkpen, 2013; Wahba & Zenou, 2012). The impact of remittances on entrepreneurship is estimated using probit model regressions.

At first glance, it appears that the number of households that invest in an enterprise or farm is negligible. According to GIZ/World Bank survey respondents' subjective self-assessments, only a small percentage of households that receive remittances invest in a micro-business, as 449 of 1,500 households indicated that they receive remittances, and only 33 (7.4%) mentioned investing them in an enterprise or a farm.

However, 355 households (and 136 remittance-receiving households) said that a member of the household works as an "unpaid worker in a family business." This apparent disparity is probably due to the difference in the questions: one asks if anyone invested in a business, and the other asks if anyone works as an unpaid worker in a family business. Since, as discussed above, many businesses are home-based subsistence informal or semi-formal enterprises involving women in many cases, the respondents may not perceive it as a business. Another reason for the disparity could be that households systematically underreport remittances, income, and business ownership in household surveys (Shonkwiler, Grigorian, & Melkonyan, 2011). In Uzbekistan and Central Asia, this underreporting may be especially common

because respondents could be afraid of repercussions from divulging precise information about their incomes or businesses (Özcan, 2016). Therefore, the binary variable *Family Business* is constructed from question 6_1 of the survey asking about employment status of the household members. The households which reported a family member working for a family business are assumed to have a family business.

A major source of endogeneity in modelling the relationship between remittances and entrepreneurship is that remittances may be endogenous to business ownership. Since business ownership may make a household less dependent on remittances by increasing their income, the households that own a business may get few or no remittances (Amuedo-Dorantes & Pozo, 2006a). However, the interaction of remittances with household income eases these endogeneity concerns. Moreover, controlling for the head of household's educational attainment and the number of adult men in the household also captures the family's income-earning potential. The number of adult men and family members also account for differences in social capital – as the greater number of these expands the connections and network of a household. Other variables that contribute to the relaxation of concerns about endogeneity and are included in this model are dichotomous variables that encapsulate the head of household's gender and marital status, as households that are headed by women and unmarried people are more likely to face poverty and to receive monetary transfers from overseas family members. In addition, including the number family members under age fifteen and over age sixty-five allows the estimations to control for economic dependency, which also influences business decisions (Démurger & Xu, 2011).

The probit regressions undertaken in this research also control for the number of household members that were working overseas at the time of the survey, as the number of such migrants is likely to influence business ownership. Having more migrants in the family could bring the experience, skills (Démurger & Xu, 2011; McCormick & Wahba, 2001), and capital (Wahba & Zenou, 2012) needed to start a business. Finally, the dummy variable *Urban* is also included in the estimations to capture the effect of access to the banks and money-transfer operators that entrepreneurs and remittance recipients need. Table 3 provides descriptive statistics of the variables used in the probit model.

Table 3 about here

5. EMPIRICAL FINDINGS, ANALYSIS AND INTERPRETATION

This section presents the results of estimating the empirical models, followed by analysis and interpretation. Table 4 presents the estimates of four binary probit models, which show the consistency of these estimates across various specifications. Model 1 presents results accounting for differences which may influence economic situation of a household. Model 2 introduces the number of migrants to the estimations to control for experience and additional savings that these migrants may bring. Model 3 adds the difference between an urban and a rural setting. Finally, Model 4 incorporates characteristics of the head of the household which may influence business ownership, including education attainment, marital status, age and gender. The dependent variable is a dummy variable which takes the value of 1 for households that own a family business and 0 otherwise.

As expected, the estimation results show that the household's size increases the likelihood that the family owns a business, a result which is in accordance with other studies in this research area (Batista et al., 2013; Thomas & Inkpen, 2013). Running a family business, especially in rural areas, may require help of other family members and social capital, so the more family members, the better. In three of the four models, the coefficient for the number of children is negative and borderline significant, which is similar to findings of research in the Dominican Republic (Amuedo-Dorantes & Pozo, 2006a). Caring for children often distracts household members from participating in a family business, which may explain why this effect is negative. The probit estimations also show that being in a rural area has a strong and statistically significant positive impact on the probability of owning a family business, which is in line with findings of Gubert and Nordman (2011); Ilahi (1999), and Thomas and Inkpen (2013). As Ilahi (1999) explains, urban areas offer better access to waged employment, which increases the opportunity cost of entrepreneurship.

All estimations show that neither remittances nor income increases the probability of family business ownership separately. In fact, income has a negative impact on the likelihood of engaging in business at the 10% significance level in Models 1 and 2. However, when these two income effects interact, the likelihood of owning a family business increases. This effect is significant and stable in all four models.

It should be noted that interpretation of binary outcome models becomes complicated when interaction terms are introduced. In contrast with OLS (Ordinary Least Squares) models, the marginal effects of the interaction of two variables may not be represented by the coefficients of interaction terms (Brambor, Clark, & Golder, 2006; Hoetker, 2007; Huang & Shields, 2000; Norton, Wang, & Ai, 2004). In other words, we cannot interpret a positive sign on an interaction term as meaning that there is always an enhancing relationship. Hoetker (2007) suggests using graphical presentations to illustrate the interaction effect, as they add nuance to the effect. Figure 3 presents the impact of remittances and income together for different levels of income at mean values of each control variable included in Model 4. This graph shows that, at low levels of income, receipt of remittances does not increase the probability of a households' engaging in a family business, possibly because household savings are not sufficient, and remittances must be used for necessities. This effect becomes statistically significant only at higher levels of income. In addition, a comparison of households with similar financial constraints at higher levels of income shows that remittance-recipient households are more likely to own a family business than are those that do not receive remittances. A possible explanation for this phenomenon is that savings of households are not sufficient to start a business at lower levels of income and they must be supplemented by remittances. Furthermore, remittance senders target their funds to be invested in a family business.

Table 4 about here

6. CONCLUSION

The results of the present research indicate that the impact of remittances on entrepreneurship must be studied carefully. At first sight, it appears that remittances do not increase the probability that a household will own a family business. However, probit estimations show that households that receive remittances invest in family businesses only when this inflow supplemented with sufficient income from other sources. Therefore, financial constraints, which are especially difficult to overcome in rural areas, are of paramount importance for a small business.

Another finding is that the propensity to start a family business differs between households that receive remittances and those that do not. At higher levels of income, households that receive remittances are more likely to start a business after basic consumption needs are satisfied compared to households that do not receive remittances. This finding could be a sign that remittance-senders direct their funds into business projects.

Moreover, a closer look at the reasons why remittance-receiving households do not invest may be necessary to have a comprehensive picture of the situation. As Figure 4 shows, remittance-receiving households do not invest for a number of reasons: the small size of remittances, an inadequate banking system, the presence of other pressing expenditure needs, the lack of entrepreneurial skills, and a challenging business environment. It is also stylized fact that, even if beneficiary households do not put their remittances directly into entrepreneurial ventures, the remittances still help them buy physical assets, such as cars and jewellery, which could be used as collateral with which to obtain credit in the future. Having collateral is a major part of the ability to use bank loans in the banking systems like that in Uzbekistan, where lending is mainly facilitated by collateral.

Figure 4 about here

One of the limitations of the paper is that the present paper focuses on the micro level analysis of investment behaviour of households. Since remittances are an important source of finance in Uzbekistan

and Central Asia, it would be of useful to have the macro perspective at the impact of remittances on deposits and credits in the region.

There are no easy solutions to the issues presented in this paper. However, the best way to stimulate the use of migrants' remittances and savings for the businesses that create employment may be to create an economic environment that facilitates development in general, including a favourable business climate and a functional financial system. The banking and education systems are central to this endeavour. Banking policies that focus on access to credit, and households' increased "bankability" could include creating credit instruments that are backed by remittance receipts, while an education system that tilts toward developing entrepreneurial skills at the tertiary level would help to give migrant labourers the skills they need to invest in their home economies and take better advantage of the potential benefits of remittances.

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Figures and Tables

Table 1. Age, gender and marital status: non-migrants versus migrants

	Non-migrant	Migrant	Total
Age	34.85 (14.03)	30.63 (9.80)	34.28 (13.61)
Male	0.44 (0.50)	0.86 (0.35)	0.50 (0.50)
Number of children under 15 years	0.01 (0.09)	0.00 (0.05)	0.01 (0.09)
Married (registered)	0.67 (0.47)	0.61 (0.49)	0.66 (0.47)
Divorced	0.02 (0.16)	0.02 (0.15)	0.02 (0.15)
Widow(er)	0.04 (0.19)	0.01 (0.09)	0.03 (0.18)
Lives alone but not divorced	0.00 (0.05)	0.01 (0.07)	0.00 (0.05)
Marriage not registered	0.00 (0.03)	0.00 (0.00)	0.00 (0.03)
Not married	0.25 (0.44)	0.35 (0.48)	0.27 (0.44)
Observations	5026	792	5818

Note: mean coefficients; sd in parentheses

Table 2. Education and language skills: non-migrants versus migrants

	Non- migrant	Migrant	Total
None	0.01 (0.12)	0.01 (0.08)	0.01 (0.11)
Basic (grades 5-8(9))	0.15 (0.36)	0.09 (0.28)	0.14 (0.35)
Secondary general (grades 9-10(11))	0.38 (0.48)	0.41 (0.49)	0.38 (0.49)
Secondary special	0.31 (0.46)	0.40 (0.49)	0.32 (0.47)
Secondary technical	0.04 (0.20)	0.04 (0.19)	0.04 (0.20)
Higher education	0.10 (0.30)	0.07 (0.25)	0.10 (0.30)
Graduate school/aspirantura	0.00 (0.02)	0.00 (0.00)	0.00 (0.02)
Russian – Fluent	0.12 (0.32)	0.17 (0.38)	0.13 (0.33)
Russian - Good	0.21 (0.41)	0.34 (0.47)	0.23 (0.42)
Russian – Intermediate	0.32 (0.47)	0.31 (0.46)	0.32 (0.47)
Russian – Poor	0.21 (0.33)	0.09 (0.24)	0.17 (0.32)
Russian - none	0.15 (0.35)	0.08 (0.27)	0.14 (0.35)
Observations	5026	792	5818

Note: mean coefficients; sd in parentheses

Table 3. Descriptive Statistics

Variable	Variable Description	Mean	Std Dev	Min	Max
Dependent Variable Family business	=1 if a household member is employed in a family business; =0 otherwise	.236	0.425	0	1
Independent Variables Remittances	=1 if the household received remittances; = 0 otherwise	.323	.468	0	1
Income	Annual income of a household in thousands of Uzbek soums	10789.42	7344.42	560	70200
Household size	Number of persons in a household	5.748	2.333	1	17
Migrants	Number of household members currently abroad	.44	.792	0	5
Adult male	Number of adult males in the household	2.061	1.121	0	6
Children	Number of children under 16 in the household	1.693	1.385	0	9
Elderly	Number of elderly (+65) dependents in a household	0.262	.552	0	3
Household head age	Age of the household head	53.083	13.371	19	98
Household head education	=1 if the household head has tertiary degree; =0 otherwise	.174	.379	0	1
Household head married	=1 if the household head is married; =0 otherwise	.759	.428	0	1
Urban	=1 if the household lives in an urban area; =0 rural	.363	.481	0	1
Household head male	=1 if the household head is male; =0 if female	.77	.421	0	1

Table 4. Probit of owning a Family Business

Variables	Model 1	Model 2	Model 3	Model 4
Remittances × Income	0.000293*** [2.58]	0.000312*** [2.71]	0.000231** [1.99]	0.000234** [2.02]
Remittances	-0.25 [1.61]	-0.21 [1.29]	-0.204 [1.2]	-0.204 [1.20]
Income	-0.00012* [1.73]	-0.000128* [1.81]	-0.00032 [0.46]	-0.000034 [0.48]
Household size	0.124*** [3]	0.126*** [3.05]	0.124*** [2.82]	0.119*** [2.58]
Adult male	0.026 [0.43]	-0.034 [0.56]	-0.017 [0.26]	-0.0057 [0.08]
Children	-0.09* [1.70]	-0.091* [1.72]	-0.096* [1.72]	-0.09 [1.55]
Elderly	0.075 [1.11]	0.071 [1.05]	0.066 [0.93]	0.058 [0.63]
Migrants		-0.068 [1.03]	-0.066 [0.92]	-0.067 [0.93]
Urban			-1.06*** [10.10]	-1.066*** [10.09]
Head of household married				0.006 [0.04]
Head of household education				0.044 [0.4]
Head of household age				0.0002 [0.04]
Head of household male				-0.060 [0.36]
Observations	1285	1285	1285	1285
Pseudo R-squared	0.04	0.04	0.12	0.12

Absolute values of z-statistic are in parenthesis. *, **, *** significant at 10%, 5%, and 1%, respectively.

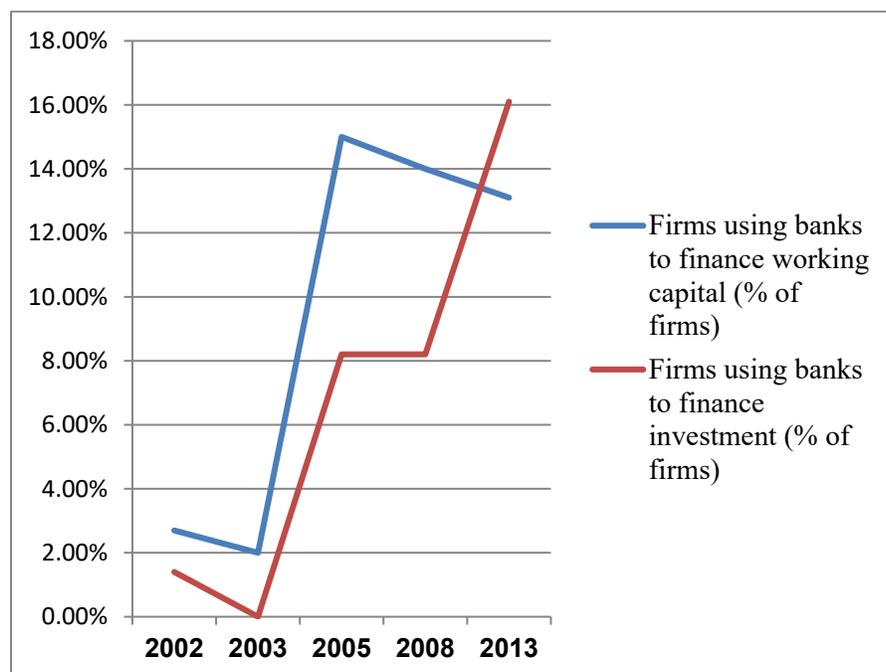


Figure 1. Firms that borrow from banks to finance working capital and investment
Source: World Bank, Enterprise Surveys (enterprisesurveys.org)

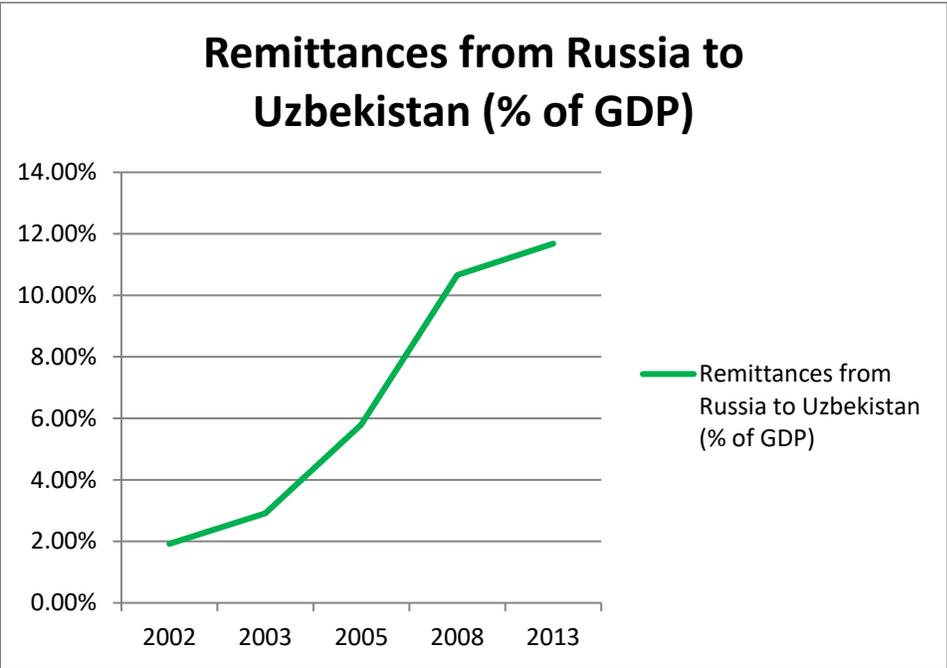


Figure 2. Remittances from Russia to Uzbekistan as % of Uzbekistan’s GDP

Source: Central Bank of Russia data on bilateral remittances

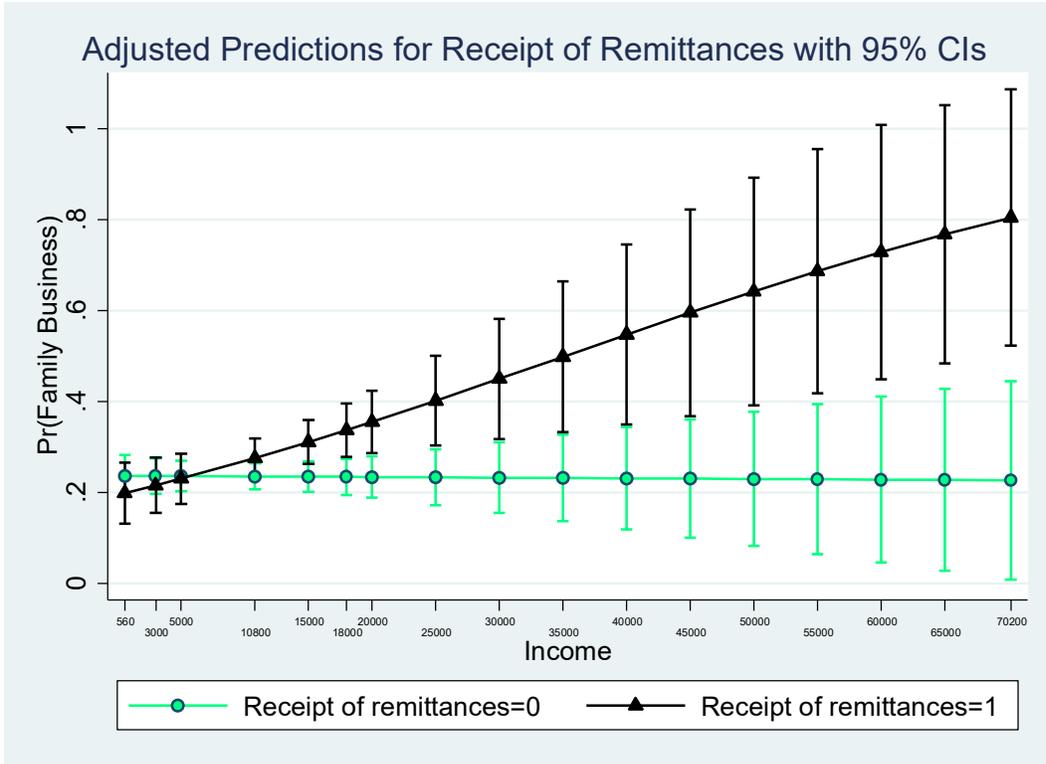


Figure 3. Interaction effects of remittances and income at marginal means of control variables.

If not investing in any business, what is the main reason not to invest?

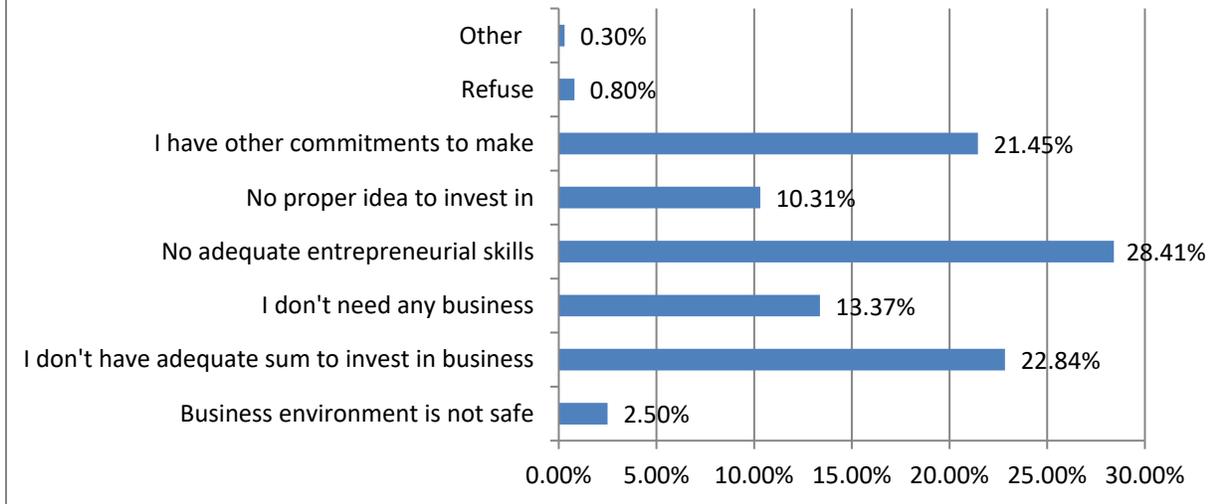


Figure 4. Reasons for not investing in entrepreneurship

Source: World Bank-GIZ "Jobs, skills, migration, consumption" survey 2013