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Evidence from Bangladesh

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Abstract

This paper examines international temporary migration as an intermediary step among aspiring entrepreneurs to accumulate the needed capital when they face credit constraints at home. The analysis is based on a representative dataset of lifetime employment histories of return migrants from Bangladesh. After establishing the credit constraints that potential entrepreneurs face, the paper shows that non-agricultural self-employment rates are significantly higher among returning migrants—over half versus around 20% of non-migrants. Most migrants transition into self-employment by using their savings from abroad as the main source of financing. The paper then offers, for the first time, a detailed account of the financial costs and benefits of international migration. The findings suggest that temporary migration can contribute to structural transformation of lower-income countries by enabling credit-constrained workers to enter into non-agricultural entrepreneurship.

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Capital Markets, Temporary Migration and Entrepreneurship: Evidence from Bangladesh*

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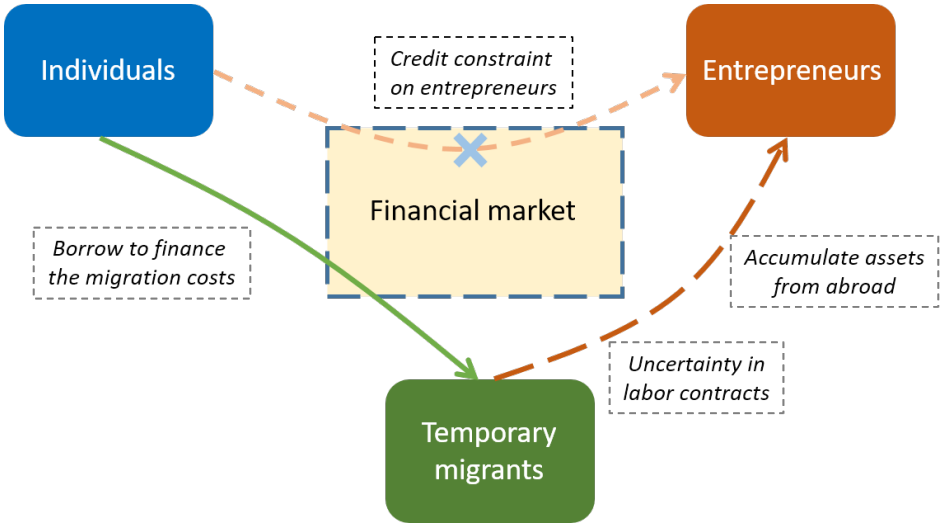
1 Introduction

Self-employment and entrepreneurial activities create opportunities for better jobs and higher incomes, leading to overall growth in the wider economy. In the case of low-income countries, they are also among the main paths out of poverty for a large share of the population. Yet, many institutional voids in financial markets, such as weak legal regimes and regulations, absence of credit information systems, or costly insolvency proceedings, lead creditors to limit loans and charge prohibitively high interest rates. As a result, many potential entrepreneurs cannot obtain the needed capital to pursue profitable investment opportunities, resulting in constrained labor market outcomes for the individuals and lower levels of economic development for the country.

One commonly observed strategy to circumvent such constraints is temporary migration to higher income countries where workers accumulate savings at a faster rate and use them when they return home for self-employment and entrepreneurial activities. This paper provides empirical evidence on how such temporary migration episodes are used as common *intermediate* steps to accumulate the required capital and overcome the institutional voids prevalent on the financial markets for entrepreneurial loans, a relation visualized in Figure 1. Our analysis utilizes a newly collected dataset with detailed information on the economic decisions and activities of 5,000 temporary migrants who returned to Bangladesh. The data are unique in providing the complete work trajectories of the respondents, including their economic activities and outcomes before migration, their expectations prior to departure about earning and saving prospects abroad, migration expenditures, sources of income and savings, and employment histories at the foreign destination. Most importantly, we link these trajectories with their economic activities and earnings after their return, showing how the savings from temporary migration finance self-employment and entrepreneurial investments.

International migration itself shares many common features with classical entrepreneurial investments. Temporary migration typically requires considerable upfront investment to cover the expenses and fees, with the promise of high returns afterwards. At the same time, migration involves risks. Earnings potential abroad may be misjudged or the migrant may be forced to return home prematurely, before a savings target is reached. Although almost all migrants from Bangladesh depart for their destinations with valid work contracts, actual earnings may differ from the initial expectations. Part of the compensation is paid in kind (such as housing or food) and the actual cost or the compensation may deviate from what the contract specifies. In addition, premature job dismissal is quite common and leads to immediate expulsion from the host country. By providing a detailed account of the actual financial costs and returns to temporary migration, we are able to show how it can

Figure 1: The institutional voids of missing capital markets, temporary migration and entrepreneurship



be analyzed as a risky business investment. Going even beyond this, our data suggest that migrants are particularly optimistic about their earnings potential abroad, in analogy to the optimism documented for entrepreneurs (Dushnitsky 2010; Garud et al. 2014).

Bangladesh is not unique in terms of the importance of temporary migration for the overall economy. Millions of mostly low-skilled workers migrate from other South Asian countries to the high-income countries in the Persian Gulf or East Asia each year. Although temporary migration involves upfront costs (such as travel expenses and intermediary fees), these are often lower than the cost of starting a small business at home and are more easily financed via loans. Migration hence is an effective strategy to address failures in the financial markets that constrain entrepreneurial investments and job creation in low-income countries.

Poorly functioning economic and legal institutions are critical impediments to creation and healthy continuation of business in many developing countries (T. Khanna and Palepu 2000; Castellacci 2015; Doh et al. 2017; Kim and Song 2017; Brenes et al. 2019). The literature has investigated the effectiveness of various response strategies by existing businesses, ranging from reputation building as an important survival strategy for family businesses (Gao et al. 2017) to the formation of larger diversified business groups (T. Khanna and Yafeh 2007).[1] Another strand of the literature has singled out financial constraints as one decisive factor for business creation in the U.S. (Evans and Jovanovic 1989; Hurst and Lusardi 2004; W. R. Kerr and Nanda 2015). Much less evidence exists about the creation

[1] Although the formation of large business groups may be a coping strategy by firms to better face environments of poor institutions, Manikandan and Ramachandran (2015) emphasize diverse portfolios and the multi-entity organizational form of business groups as an upside regardless of institutional voids.

of businesses in developing countries, and we show that migration is an important path to circumvent poorly functioning markets for investment loans. Several studies in the international migration literature have established that self-employment rates are particularly high among former migrants who have returned home. For example, McCormick and Wahba (2001), Wahba and Zenou (2012) and Mahé (2019) provide evidence from Egypt. Dustmann and Kirchkamp (2002) focus on migrants who returned from Germany to Turkey, and Brück et al. (2018) explore return migration to the Kyrgyz Republic. Several other papers aim to isolate the causal relationships between migration and financial investments. These include Mesnard (2004) for Tunisia; Yang (2006), Yang (2008), and G. Khanna et al. (2020) for the Philippines; C. Woodruff and Zenteno (2007) for Mexico; and Batista et al. (2017) for Mozambique; see also Wahba (2014), Rapoport and Docquier (2006) and Naudé et al. (2017) for related surveys.[2] Rapoport (2002) and Djajić (2010) construct analytical models that investigate the relationship between migration and self-employment under credit constraints.

Our paper goes beyond this literature in that it provides direct evidence on remittances and repatriated savings being the primary source of financing for newly set up businesses by returning migrants. Moreover, we give, for the first time, a detailed account of the financial costs and returns to temporary migration as a risky investment.

Why is self-employment, then, such an attractive option for low-skilled workers? Even though it has been argued that self-employment is a last resort for many workers in some contexts, evidence from Bangladesh indicates that the vast majority of the self-employed choose this option voluntarily (Gutierrez et al. 2019). While informal wage employment tends to be easily available for low-skilled workers, self-employment often generates higher income. Furthermore, wages of low-skilled workers start to decline at around age 45 since these jobs tend to be in physically demanding sectors (such as construction and agriculture) that become harder to fully perform for older workers. In contrast, most self-employed are able to maintain steady incomes until they retire.[3]

Ability to borrow for migration, but not for self-employment, is an important part of the puzzle in this context. Two factors can explain this observation. First, it is significantly less risky for lenders to finance migration expenses than to finance a startup. Workers going to the Persian Gulf or Southeast Asian countries need to have valid contracts that specify a wage and initial duration for their employment. Although workers face some uncertainty regarding the monetary wage actually paid (as opposed to benefits in-kind that may be subtracted) and

[2] A separate literature examines entrepreneurship among *immigrants*, see for instance Kulchina (2016), Hernandez and Kulchina (2020), Kulchina and Oxley (2020), and Agarwal et al. (2021), and the surveys by Fairlie and Lofstrom (2015), and S. P. Kerr and W. R. Kerr (2017).

[3] Self-employment options in our context primarily consist of relatively simple occupations such as owning a small store, driving a taxi, or running a small business.

duration of employment, such contracts are a strong signal to lenders that the migrant will have the requisite income to pay back the loan. Migrants cannot settle permanently in these destination countries, and they almost never migrate with family – effectively guaranteeing that they will return home. In contrast, earnings from self-employment are riskier. We show empirically that the likelihood of default on a business loan strongly exceeds the risk for migrant loans. Second, the agency problem faced by lenders is more pronounced in the case of entrepreneurship. Migrants' earnings abroad are easy to verify because of the formal nature of migration arrangements. By contrast, it is difficult for lenders to verify self-employment profits, which often have a high informal share (e.g. in small shops). The markets for migration loans and entrepreneurship loans can thus be thought of as two separate credit markets, in which interest rates on entrepreneurship loans are significantly higher, and quite often prohibitive.

The remainder of the paper is organized as follows. Section 2 describes the Bangladeshi context which shares many common features with other developing economies, and describes our rich data set. Section 3 discusses the institutional voids of limited access to credit among aspiring entrepreneurs. Section 4 analyzes the role played by temporary migration as a risky investment to overcome such institutional constraints. Section 5 concludes.

2 Context and Data

2.1 Bangladeshi Context

Bangladesh is the 8th largest country in the world in terms of population, with about 165 million people. The country experienced rapid economic growth over the past decades, with a sharp decline of the poverty rate from 43.5 percent in 1991 to 14.3 percent in 2016. Despite this rapid economic development, Bangladesh currently ranks 171 out of 225 countries in terms of GDP per capita, and is classified as a lower-middle income country.

While this paper uses Bangladesh as a case study, many aspects, in particular with respect to entrepreneurship and migration patterns, are observed in other developing countries. Self-employment is common in Bangladesh at around 40 percent of the labor force, a proportion that is similar in other low and middle-income countries, but about 15% in high income countries (Gindling and Newhouse 2014). A very large share of the working-age people are low-skilled compared to international standards (Farole et al. 2017; Barro and Lee 2013), although non-farm entrepreneurs, who make up half of all self-employed workers in Bangladesh, are on average more educated than workers in other types of employment. Non-farm entrepreneurs are also older on average, and the rate of self-employment is increasing

in age, a finding which also holds in other developing economies (Gindling and Newhouse 2014). Over half of the non-farm self-employment activities are in the retail sector, and about a quarter in other service activities. Most non-farm self-employment activities are small-scale family-run enterprises, with an average of two people working in them. About 80 percent of enterprises only have the owner working in them, 17 percent employ between 2 and 4 individuals, and the remaining 3 percent have 5 or more individuals working in them. Overall, microenterprises account for over 99 percent of private sector establishments in the country. Gindling and Newhouse (2014) report similar patterns regarding the small scale of entrepreneurship activities in a large sample of developing countries with similar income patterns.

Domestic employment opportunities are limited in Bangladesh, as in many developing countries (Farole et al. 2017). As a result, many workers migrate to higher-income countries to access higher-paying employment opportunities. Bangladesh ranked 5th worldwide in the number of citizens overseas, with an estimated 7.8 million people in 2018 (Ahmed and Bossavie 2021). The incidence of emigration is also high in relative terms. About 15 percent of the total working-age male population (ages 15-64) was currently or in the past employed overseas as of 2018.[4] Oil-exporting GCC countries are by far the main destinations for these temporary migrants, followed by Southeast Asian countries such as Malaysia and Singapore. More than 750,000 workers have emigrated annually (pre-COVID), and the magnitude of migration outflows has risen steadily with labor demand in these destinations over the last two decades.

Migration from Bangladesh is largely temporary, which is the case in many migration corridors (Dustmann and Görlach 2016). The temporary nature of migration is imposed by the laws in the destination countries in the Persian Gulf and East Asia where acquisition of citizenship or permanent residency is effectively impossible, irrespective of migrants' occupation, education, nationality, or duration of stay (Wahba 2015; Fargues 2011; Fargues and De Bel-Air 2015). Valid employment contracts are typically for a fixed duration of time and tied to a specific employer who can extend the contract (Das et al. 2019). Yet, because stay inside the country is conditional on holding an employment contract, migrants cannot retire in the destination country, even if they have stayed for decades. Furthermore, low-skilled

[4]Emigration from Bangladesh is largely male-dominated. According from administrative data from the Bangladesh, Bureau of Manpower Employment and Training (BMET), women represent only 4 percent of temporary migrants from Bangladesh. Data from the World Bank Return Migrant Survey (BRMS) for Bangladesh show similar patterns. The prevalence of male labor migration is driven by the low labor-force participation of women in Bangladesh (Rahman and R. Islam 2013), combined with concentration of foreign labor demand in brawn-based occupations. In addition, there is social pressure on women to stay behind as they bear household responsibilities, and low-skilled temporary migrants are not allowed to take their families with them (Ahmed and Bossavie 2021).

migrants are almost never allowed to take their families with them. This generates additional costs and further incentives to return. Low-skilled migration from many other major migrant sending countries globally, such as India, Pakistan, Nepal, the Philippines or Egypt, shares similar features.[5]

2.2 Data

Our main data source is a new and unique nationally representative survey, called the Bangladesh Return Migrant Survey (BRMS). The survey was specifically developed to analyze the relationship between workers' situation before, during and after their migration episodes. A special module focused on economic activities of the migrants after their return, including entrepreneurship. BRMS was conducted by the World Bank in 2019 and consists of a sample of 5,000 temporary migrants who had returned to Bangladesh at the time of the survey.[6] The BRMS collected unique information on full employment histories, migration expenditures, demographic characteristics of migrants, sources of financing, and economic activities after returning to Bangladesh. It is one of the largest datasets on temporary migration conducted to date and, to the best of our knowledge, it is the first of its kind in a country from where migration is almost exclusively based on temporary contracts. BRMS is also the first comprehensive survey on temporary migrants who have returned to Bangladesh. The survey was designed for an analysis of the economic activity of recently returned, temporary migrants in rural and semi-urban areas of Bangladesh. It covers all districts in the country.[7]

The data set has several features that enable us to study the role of temporary migration in overcoming the institutional voids in underdeveloped capital markets. The survey includes detailed retrospective questions on the entire employment histories of migrants, both in Bangladesh (before and after the migration) and while they were abroad. It thus allows us to construct full employment and migration trajectories, including the destination country, dates and duration of stay, and labor market outcomes (such as wages and occupation). The survey records different cost categories of each migration episode and detailed information on the financing sources. For temporary migrants who became entrepreneurs after return, the survey includes questions on the specific activity as well as the source of financing.

[5] In addition to the high levels of international migration from Bangladesh, internal rural-urban migration is also widespread. Although transportation costs have been shown to be important (Bryan et al. 2014), the financial constraints for overseas migrants are considerably tighter, and complemented by strictly enforced legal restrictions.

[6] Eligibility for the BRMS was restricted to migrants who had returned since 2010. This restriction was put in place to reduce possible issues that might arise regarding the accuracy of migrants' recollection of past migration experiences, and, at the same time, to allow for some variability in the timing of return of the migrants.

[7] Bangladesh consists of eight divisions which are divided into 64 administrative districts.

Because the BRMS only covers households with return migrants, we complement it with a nationally-representative survey carried out in Bangladesh: the Household Income and Expenditure Survey (HIES, 2016-2017 wave). This survey collected detailed data on the socio-economic characteristics and outcomes of all members in a representative sample of Bangladeshi households. These include labor market outcomes, including entrepreneurship activities, which are recorded in a similar way to the BRMS.

2.3 Descriptive Statistics

Table 1 summarizes the outcomes of return migrants (who worked overseas in the past) compared to non-migrants (who never worked overseas). First, return migrants are considerably more likely to be self-employed (without paid employee) or employer (with paid employees) than non-migrants. Return migrants who are self-employed (with or without other paid employees) also earn significantly more on average than returnees who are wage employees. Since entrepreneurs are on average older than wage workers, we also compare the earnings gap by age: the income gap between entrepreneurs and wage employees is observed at all ages (Figure A3). This suggests that self-employment is indeed an attractive option for return migrants to Bangladesh. Return migrants who become business owners also stayed longer at a destination - and presumably accumulated more savings - compared to those who become wage employees. Relative to return migrants who are wage workers and to non-migrant entrepreneurs, return migrants who are business owners are disproportionately concentrated in the service sector, and in particular in the retail/hotel/restaurant sector. Finally, return migrants who employ other workers generate higher incomes than comparable non-migrant entrepreneurs.

Table 1: Individual outcomes in Bangladesh by current employment status and past migration experience

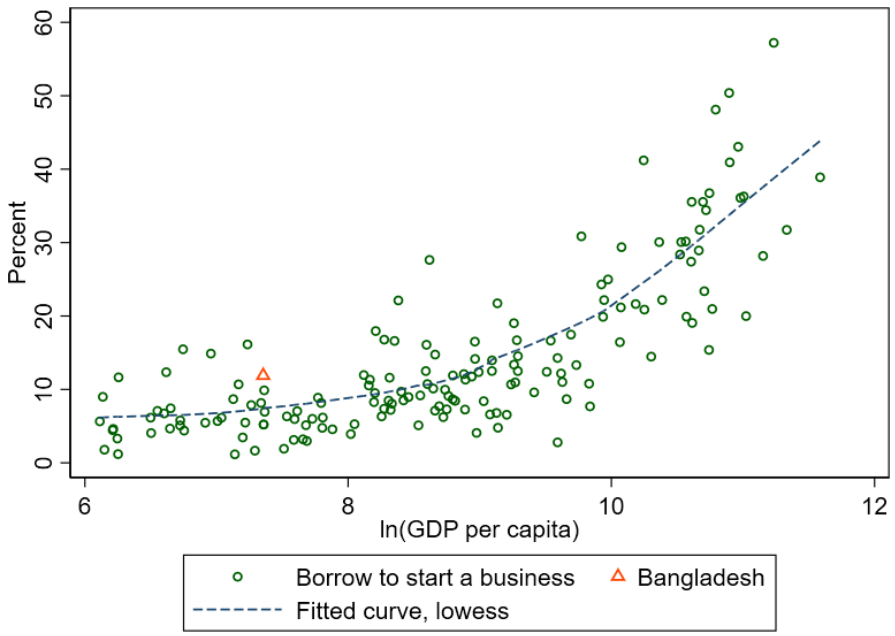
Employment status	Employer (with paid employees)		Self-employed (without paid employees)		Wage employee	
Migration experience	Non-mig	Returnee	Non-mig	Returnee	Non-mig	Returnee
Percentage of employment status by migration experience	5.5%	9.5%	22.6%	59.2%	71.9%	31.3%
Duration of migration	-	6.4	-	6.7	-	5.1
Unexpected return	-	0.24	-	0.22	-	0.30
Net revenue/Income ($)	4524	6319	1693	1753	1612	1597
Sector: Manufacture	0.25	0.02	0.14	0.005	0.30	0.06
Sector: Construction	0.04	0.09	0.02	0.02	0.14	0.35
Sector: Transportation	0.04	0.15	0.20	0.30	0.20	0.22
Sector: Retail/hotel/resturaunt	0.60	0.73	0.56	0.67	0.12	0.33
Sector: Other services	0.06	0.02	0.08	0.01	0.23	0.04
Number of employees	4.4	3.0				
Employees: 1-2	0.71	0.76				
Employees: 3-5	0.20	0.16				
Employees: 6+	0.09	0.08				

Note: The sample is restricted to males aged 18-59 who are employed in non-agricultural sectors. Net revenue and income are inflation-adjusted and converted to 2016 constant dollar.
Source: Non-migrant data is from the Household Income and Expenditure Survey 2016/17, while data on returnees is from the Bangladesh Return Migrant Survey 2018/19.

3 Credit Constraints and Institutional Voids

One major barrier to entrepreneurship is the existence of credit constraints which tend to be strongly correlated with institutional development, and are thus more salient in low-income developing economies like Bangladesh (Banerjee and Duflo 2014; De Mel et al. 2008). A cross-country comparison based on the World Bank's Global Findex database indicates a strong relationship between countries' GDP per capita and percentage of entrepreneurs that ever borrowed to start a business (Figure 2). Table A1 and Figure A1 in Appendix A corroborate this point with more detailed data on firm financing from the World Bank Enterprise Surveys and World Bank Doing Business Survey for a large subset of countries. Institutional development, broadly defined, is the most significant characteristic that explains cross-country variation in firms' financing obstacles, even after controlling for variation in income levels.

Figure 2: Share of entrepreneurs who borrowed to start a business



Note: The share of borrowing for starting a business is computed in the sample of males above age 15. Bangladesh ranks 73rd among 165 countries in the sample.
Source: WB Global Findex, 2017.

The effect of financial and legal institutional development on access to credit is especially strong for small enterprises in low-income economies (Banerjee and Duflo 2014). This is the case despite the high returns on capital that informal microenterprises earn in South

Asian countries (De Mel et al. 2008). Small firms finance a smaller share of their investment with formal sources of external finance (Beck, Demirgüç-Kunt, and Maksimovic 2008) and are more constrained in their operations and growth (Berger and Udell 1998; Galindo and Schiantarelli 2003). In line with this evidence, financial development exerts a disproportionately large positive effect on the growth of industries that are more dependent on small firms (Beck, Demirgüç-Kunt, Laeven, et al. 2006).

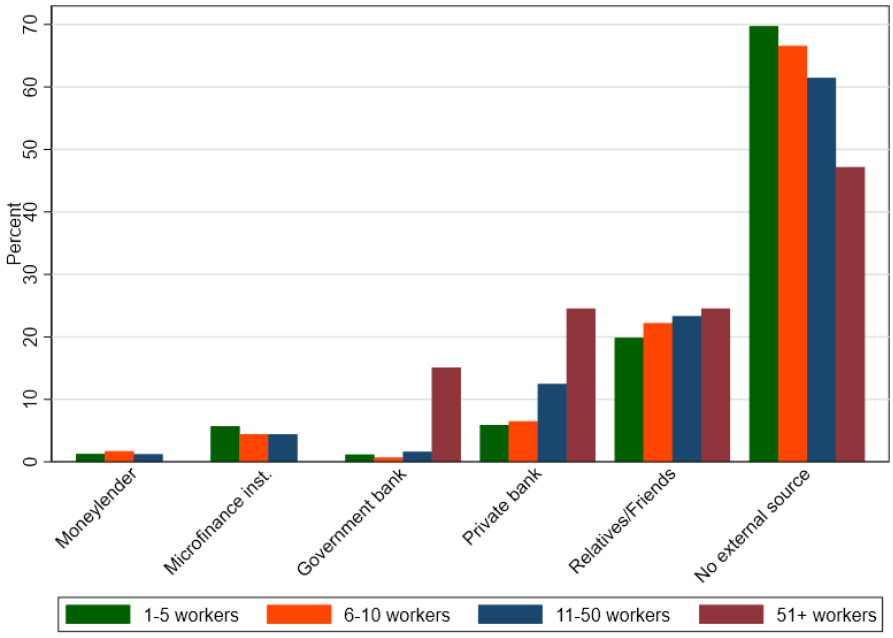
Credit constraints are particularly salient for entrepreneurship loans, for two main reasons. First, income from self-employment is hard to verify as opposed to income from wage work stated in an employment contract, increasing information asymmetries between lenders and borrowers. Second, lending for self-employment is particularly risky given the low rates of survival of small enterprises in developing economies (McKenzie and Paffhausen 2019). To mitigate this risk, lenders limit the amount of credit provided and require high levels of collateral. In this context, micro-finance institutions emerged to address low access to formal lending opportunities by low-income borrowers. However, the conditions of entrepreneurship loans provided by microfinance institutions, which are now the main source of entrepreneurship loans in Bangladesh, are also restrictive. BRAC microfinance, the main provider of microfinance in Bangladesh, requires aspiring entrepreneurs to provide collateral assets that are at least equal to the nominal amount of their loan (Battaglia et al. 2021). Microfinance and NGO institutions, charge high interest rates, averaging 22 percent, on entrepreneurship loans (A. Islam et al. 2015; Battaglia et al. 2021). Interest rates charged by informal money lenders, to which many borrowers still resort, are significantly higher than these levels (Mallick 2012).

Only a small share of entrepreneurs in Bangladesh and other developing countries finance their initial investment through credit by formal lending institutions (C. M. Woodruff and Zenteno 2001; Banerjee and Duflo 2014). For Bangladesh specifically, international surveys and prior studies suggest that only around 20 percent of enterprises had access to start up credit (Khalily et al. 2011). These figures, drawn from international surveys like Doing Business, however, mostly cover formal businesses and may thus provide an optimistic picture of access to credit in settings where many of the enterprises are informal. In areas like rural Bangladesh, many businesses are not registered with authorities and operate at a relatively low scale. Yet, in line with these international data, Figure 3 shows that the majority of businesses in Bangladesh with up to 50 employees, including informal ones, use minimal external sources of funding.[8] Figure 3 further shows that government or private banks rarely lend to these small and medium sized firm. Low access to credit is further restricted for low-

[8]Figure 3 distinguishes firms by their initial number of employees. Appendix Figure A2 displays a similar distribution when considering firms' current number of employees.

skilled entrepreneurs where earnings from wage work are low, and assets thus take longer to accumulate to finance the required startup capital.

Figure 3: Financing sources for non-agricultural enterprises, in a national representative sample



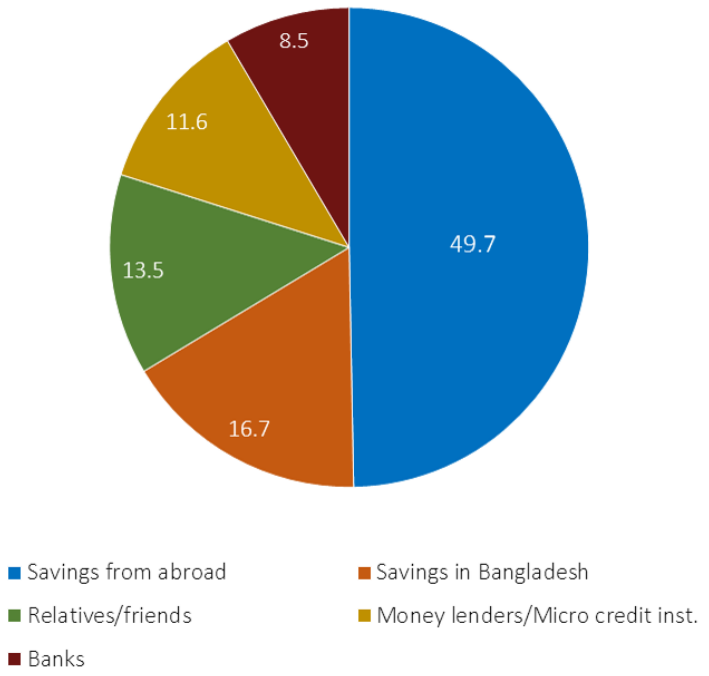
Note: The figure shows shares of firms which report ever having raised debt from the listed sources, separately by the number of workers at the time when the business was established. It is possible, but rare, for firms to finance from multiple sources.
Source: Bangladesh Formal and Informal Enterprise Survey, 2010.

Aspiring entrepreneurs in low-income countries often resort to seeking capital from friends and family to circumvent weakly developed formal capital markets (Figure 3). Furthermore, many small and medium sized enterprises create private governance systems in the form of long-term business relationships, and tight, sometimes ethnically-based, business networks to address market failures. These networks help overcome the problems of asymmetric information and weak formal contract enforcement mechanisms. As result, new entrants start out twice as large in terms of assets compared to new entrants outside such ethnic networks (Biggs and Shah 2006). These networks potentially create large heterogeneity across ethnic groups: while networks with private institutional support systems help their members overcome deficiencies in the country's institutional environment, they have a discriminatory

effect on non-members who can effectively be excluded from market exchanges.

One common strategy to circumvent the financial constraints on entrepreneurship is temporary migration to higher income labor markets where savings can be accumulated at a faster rate (Figure 1). Since directly borrowing from the formal markets to finance investments is blocked (the upper route), many individuals follow a different route. First, they borrow to migrate (the green route) and accumulate savings while abroad (the lower route). This route is also risky with its own unique set of uncertainties. In fact, Figure 4 shows that among the self-employed in the BRMS sample, almost half of the respondents list savings from abroad as the main source of funding for their businesses. This directly demonstrates the importance of temporary migration as an intermediate investment on the route to self-employment. In the next section, we quantify the risks and returns to this migration investment in more detail.

Figure 4: Primary source of finance of non-agricultural enterprises started by return migrants



Note: This figure shows the distribution of the primary source for startup funding by return migrants who own non-agricultural enterprises. Numbers are the percentage of each group in the sample. The sample is restricted to males aged 18-59.
Source: Bangladesh Return Migrant Survey 2018/19.

4 One Solution: Temporary Migration

4.1 High Costs and Returns to Migration

Temporary international migration is an expensive endeavour for which the BRMS provides a detailed breakdown for the first time. At their median values, the cost of migration exceeds (pre-departure) household income in the sample by a factor of 2.6. More than 10% of individuals require at least 10 years to raise the entire cost through their earned incomes.[9] Accordingly, credit access is critical for migration. The largest part of migration expenses, 56% is composed of the costs charged by the intermediary agencies that match workers with foreign employers.

In this section, we use the BRMS data to provide a cost-benefit analysis of temporary migration. Using a range of measures, we show that expected returns make migration a very profitable investment,[10] which enables returnees to start businesses for which local credit markets do not provide the necessary funds. Specifically, for these calculations, we use information on individuals' earnings prior to migration, their wages while abroad, the duration of stay, the share of migration costs covered by loans, as well as the saving rates observed in different locations. Table 2 presents details of this information.

First, we compute a simple earnings-to-cost ratio, which we average across N individuals j in the sample:

$$r_1 = \frac{1}{N} \sum_{j=1}^{N} \frac{W_j^a \cdot D_j}{C_j} = 9.3$$

On average, the ratio of total earnings accumulated abroad over the cost of migration, r_1, amounts to 9.3. Total foreign earnings are calculated as the time spent abroad multiplied by the average wage a migrant reports to have earned abroad. Foreign wages and migration costs imply an average break-even duration of $\frac{1}{N} \sum_{j=1}^{N} C_j / W_j^a = 1.1$ years. In our data, the median and the average duration of stay abroad are 4.7 and 6.5 years, respectively. A large majority of migrants (88%) hence earned more than their migration costs, implying a positive log earning-to-cost ratio. Panel (a) of Figure 5 shows the full distribution of this measure.

[9] Appendix Figure A4 displays the full distribution of migration costs relative to pre-migration household income.

[10] Our data in fact suggest that migrants are yet more optimistic about their foreign earnings potential. In the survey, we elicited retrospectively pre-migration expectations about wages to be earned abroad. While this is an imperfect measure of actual ex-ante expectations, the data do indicate a strong overestimation of foreign earnings: 77% of migrants in our sample expected higher earnings before migration than what they actually earned overseas, with both mean and median realized earnings falling short of the initial expectations by about 40%. This fact cannot be explained by recall bias, which would *reduce* the difference between actual earnings and the retrospectively reported expectations. Our analysis here focuses on realized earnings.

Table 2: Costs and Benefits of Migration

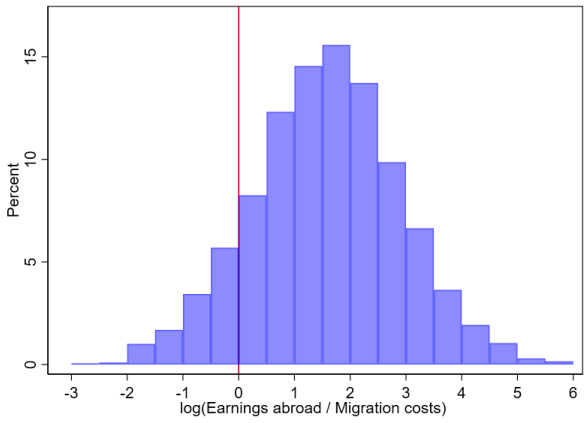
Variable		Mean	Median	S.D.
Wages abroad	W^a	5,281	3,860	4,784
Income at home before migration	W^h	1,670	1,546	1,321
Migration costs	C	4,110	3,771	2,209
Loans	L	1,735	1,123	2,064
Duration	D	6.54	4.71	5.93
Saving rate abroad	s^a	0.33	0.25	0.31
Saving rate at home	s^h	0.12	0.11	0.42

Source: Household Income and Expenditure Survey 2016/2017 for saving rate at home and Bangladesh Return Migrant Survey 2018/19 for the other variables.

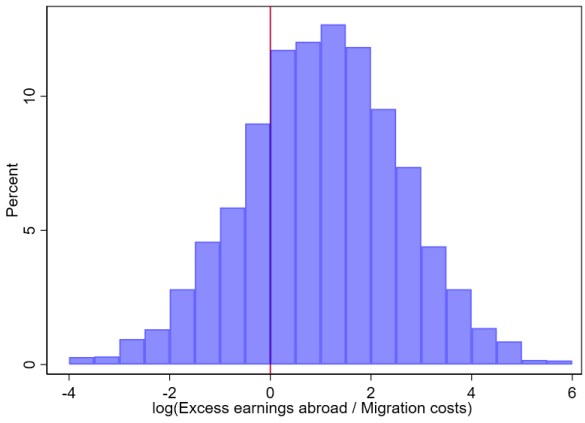
The median earning-to-cost ratio is 4.9, with a corresponding log ratio of 1.6. A sizable share of 29% have total earnings of at least tenfold the cost of migration.

Figure 5: Ratio of total earnings and excess earnings over migration costs

(a) Total earnings over migration costs



(b) Excess earnings over migration costs



Note: Panel (a) shows the distribution of the log ratio of total earnings abroad over migration costs ($r_{1j} = \frac{W_j^a \cdot D_j}{C_j}$). 88% of individuals earned total earnings abroad that exceeded the costs of migration, whose corresponding log ratios on the horizontal axis are greater than 0. Panel (b) shows the distribution of the log ratio of excess earnings abroad over migration costs ($r_{2j} = \frac{(W_j^a - W_j^h) \cdot D_j}{C_j}$). 75% of individuals had excess earnings abroad higher than the costs of migration.
Source: Bangladesh Return Migrant Survey 2018/19.

A more refined measure of rate of return accounts for home country earnings W_j^h as an opportunity cost of migration. This excess earnings-to-cost ratio is given by the following expression:

$$r_2 = \frac{1}{N}\sum_{j=1}^{N}\frac{(W_j^a - W_j^h)\cdot D_j}{C_j} = 5.8$$

On average, the new ratio of earnings abroad to cost of migration is 5.8, and thus still clearly above 1. With this measure, the break-even point for migration duration is $\frac{1}{N}\sum_{j=1}^{N} C_j/(W_j^a - W_j^h) = 2.3$ years, with a median value of 1.4. Furthermore, 75% of migrants stay at the destination for long enough to break even. Panel (b) of Figure 5 shows the full distribution of (log) excess earnings-to-cost ratio.

While wages are considerably higher abroad, so are living expenses. This implies that not all excess earnings can actually be accumulated as savings. Using observed saving rates s_j^a by immigrant workers in different locations, as well as savings rates s_j^h in Bangladesh, we can compute the excess saving-to-cost ratio as

$$r_3 = \frac{1}{N}\sum_{j=1}^{N}\frac{(W_j^a s_j^a - W_j^h s_j^h)\cdot D_j}{C_j} = 3.0.$$

For excess savings, the break-even point of duration increases to $\frac{1}{N}\sum_{j=1}^{N} C_j/(W_j^a s_j^a - W_j^h s_j^h) =$ 4.2 years. In our data, 54% of the migrants still have a longer migration duration.

The returns to investment for temporary migration are not restricted to the migration episode. Indeed, when temporary migration enables workers to engage in self-employment and entrepreneurship after return, their lifetime incomes at home significantly increase compared to a counterfactual scenario where they could not have migrated. To calculate the long-term returns to migrating, we estimate a migrant's income gains after return until retirement which can be attributed to the transition into self-employment, and compare it with the cost of migration. We approximate these long-term returns to migration as follows: first, we use the nationally representative HIES data to estimate the income trajectories for self-employed and dependently employed individuals. That is, we run an auxiliary regression

$$inc_j = SE_j \cdot \sum_{a=18}^{60} \alpha_a^{SE}\mathbf{1}[age_j = a] + \beta X_j + u_j,$$

of individual j's income on a full set of age indicators $\mathbf{1}[age_j = a]$ interacted with a dummy SE_j that takes value 1 if a respondent is self-employed, and 0 otherwise. Controls X_j include

indicators for education level, a rural or urban location, and regional (division) effects. We then take the estimated returns to self-employment, $\hat{\alpha}_a^{SE=1}$, for each age a, to compute

$$r_4 = \frac{1}{N}\sum_{j=1}^{N}\frac{SE_j \sum_{a=a_{ret}}^{60}\hat{\alpha}_a^{SE=1}}{C_j} = 2.2.$$

In this expression, a_{ret} denotes the age at the time when a migrant returns home. We evaluate r_4 only on those who were not self-employed before migration. Thus it measures how much the transition into self-employment after return contributes to earnings gains until retirement, which is assumed to be at 60 years of age. In our sample, the majority (65%) of return migrants who were economically active throughout, but were not self-employed or employers prior to migration, do become self-employed after return. Different from other contexts, where returns to experience lead to steep age profiles that would also generate a gain in incomes, Figure A3 shows that income profiles are virtually flat in our setting. Instead, the investment of savings from abroad into creating businesses leads to an average excess income after return as high as 2.2 times the cost of migration. When these long-term returns are taken into account, in addition to the returns over the migration episode itself, temporary migration becomes yet more profitable.

4.2 Borrowing for Migration

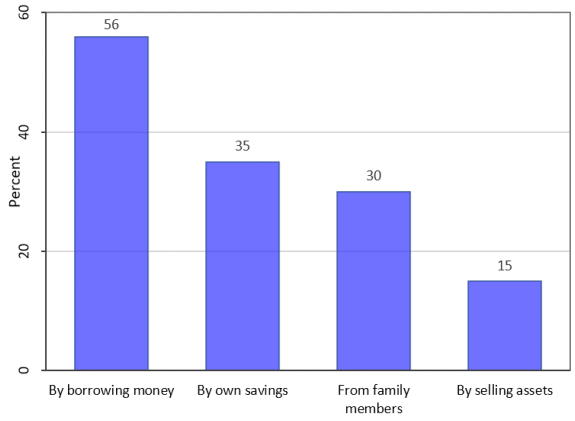
A large fraction of migrants finance part or all of their expenses and fees through loans. A distinctive feature of the formal and strongly regulated migration relative to entrepreneurial investment is that migrants have verifiable employment contracts and a higher probability of repaying their loans. Indeed, migrants cannot migrate to the GCC or East Asian countries without an employment contract with a specific employer. As a result, earnings from overseas are easily verifiable by the lender, as opposed to mostly informal earnings from self-employment. Regarding the relative riskiness of migration loans versus business startup loans, we compare the fraction of migrants who were expelled from their overseas employment before they generated enough income to cover migration costs to the fraction of microenterprises that exit their markets before generating enough profits to cover initial investment costs. According to the BRMS data, the share of temporary migrants whose total earnings overseas are lower than the total migration costs they incur is 11.9%. In contrast, the estimated share of Bangladeshi microentrepreneurs who do not generate sufficient profits over the lifespan of their enterprise to cover initial investment costs is 60.2%.[11] Based on this

[11] We use the average annual survival rate of microenterprises from McKenzie and Paffhausen (2019), and average net incomes generated by household enterprises in Bangladesh from the HIES 2016/2017 to compute

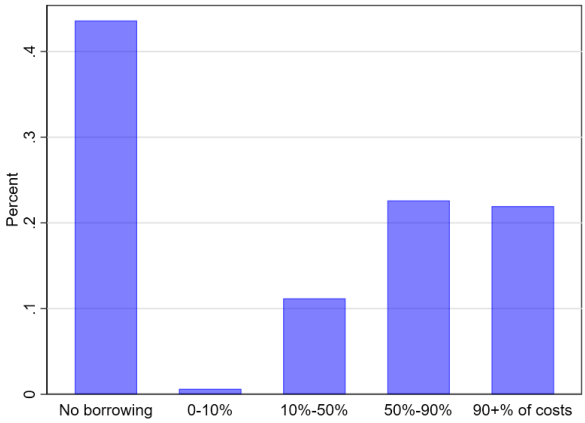
evidence, the likelihood of defaulting on a loan to finance a micro-enterprise is considerably higher than for a migration loan.

Figure 6: Financing for migration

(a) Ever raised funds from the following source



(b) Share borrowed



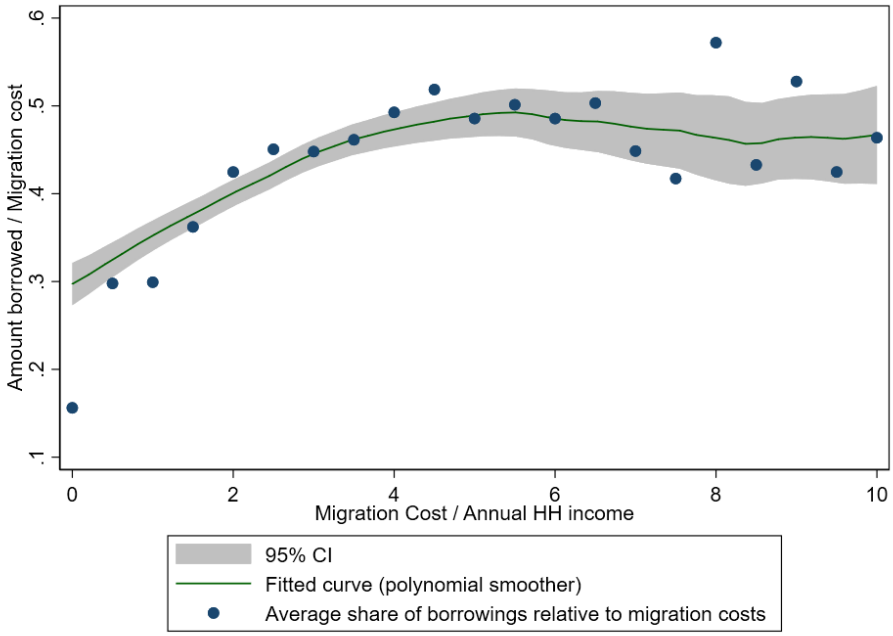
Note: Panel (a) shows the share of migrants who had ever raised funds for migration from each source. Migrants could raise funds from multiple sources as listed. Panel (b) shows the distribution of borrowings as the share of migration costs.
Source: Bangladesh Return Migrant Survey 2018/19.

In our sample, 56% of migrants have borrowed from relatives, friends, or financial institutions to raise the funds for migration (Panel (a) of Figure 6). On average, 42% of the costs are financed by loans, which implies a debt-to-equity ratio of 0.72. Panel (b) of Figure 6 displays the full distribution of the fraction of migration costs covered through loans. The need to borrow for migration depends on a household's income. As Figure 7 shows, when facing higher financial pressure, measured by the ratio of migration costs over household income, individuals tend to raise more debts for migration.

Taking "leverage" and borrowing costs into account, we can compute the rate of return to the migration endeavor. Based on Mallick (2012) and Berg et al. (2013), we assume an annual interest rate for migration loans of $i = 22\%$, which is also within the range of interest rates reported by A. Islam et al. (2015). Assuming further that loans are repaid when either migrants have accumulated enough savings or at the end of the migration spell, depending

total incomes. We then compare this to the average initial capital investment reported in the World Bank Formal and Informal Enterprise Survey for Bangladesh.

Figure 7: More borrowings for higher migration costs



Note: The figure shows the relationship between the share of migration costs financed by borrowing on the one hand and of migration costs relative to annual household income on the other. Each point represents the average share of borrowing in an interval of the ratio of migration costs/annual household income.
Source: Bangladesh Return Migrant Survey (BRMS).

on which comes first, this yields a rate of return equal to

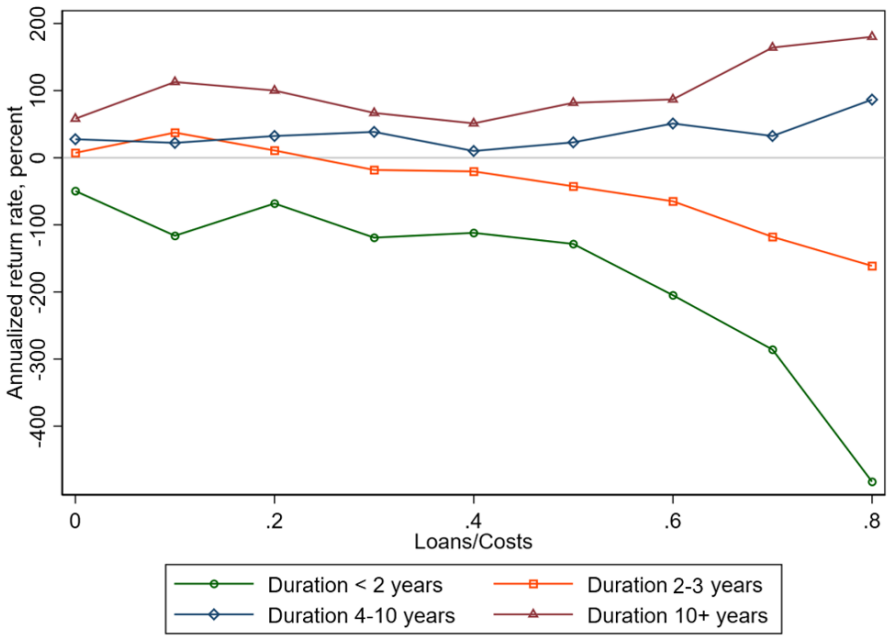
$$R = \frac{1}{N}\sum_{j=1}^{N}\left[\frac{(W_i^a s_j^a - W_i^h s_j^h)\cdot D_j - L_j\cdot(1+i)^{d_j}}{(C_j - L_j)} - 1\right],$$

where d_j denotes the time until the loan is repaid by individual j. Figure 8 shows these rates of return for different migration durations and different fractions of the migration cost that have been financed on credit.[12]

Each line in Figure 8 shows the rates of return for a given range of migration durations. Migrants from Bangladesh face the very real risk of being forced to return earlier than expected, for instance because they are laid off before their contract has expired. In this case, the rates of return to the migration investment may turn out to be negative. In what follows we provide more detailed evidence on the risk of earlier than expected return

[12]For this graph, we set d_j to the time it takes individual j to accumulate a stock of savings that covers the cost, or to the time of return, whichever is shorter.

Figure 8: Return rate by the ratio of loans over costs



Note: Each point in the figure represents the rate of return to migration for different migration durations and borrowing shares ($R = \frac{1}{N}\sum_{j=1}^{N}\left[\frac{(W_i^a s_j^a - W_i^h s_j^h)\cdot D_j - L_j\cdot(1+i)^{d_j}}{(C_j - L_j)} - 1\right]$). Since R goes to infinity when costs are fully financed by loans, the figure only presents the cases where loans cover up to 80% of costs.
Source: Bangladesh Return Migrant Survey 2018/19.

migration in our context.

4.3 Risk of Unexpected Return

Despite higher returns and a relatively well-developed market for migrant loans, migration is not without financial risks. In particular, an early cancellation or non-renewal of the employment contract with the foreign employer is a real threat. As stay in all main destination countries in our context is strictly conditional on a valid employment contract, its termination implies that migrants must return home. Among return migrants in Bangladesh, 24% of migrants report that they were forced to return due to visa or contract issues. On average, if he is forced to return, a migrant has stayed abroad for 4.8 years, 32% less than the average duration of 7.1 years among those who returned either voluntarily or after a (potentially already extended) contract has expired. This implies a sizable loss in total earnings that can be accumulated. As Panel (a) of Figure 9 shows, forced return is more prevalent among

early returnees. About 40% of the migrants who stay for less than one year were forced to return.

Being forced to leave the destination country as opposed to leaving voluntarily impacts the rate of return to the migration endeavor, and the likelihood to start entrepreneurship after return. As shown in Table 3, earnings to cost, excess earnings to cost, and excess savings to cost indicators are all significantly larger for migrants who returned voluntarily compared to those who were forced to return. Panel (b) of Figure 9 visualizes the left shift in the distribution of excess earnings over costs for forced returnees compared to voluntary returns. Whereas slightly more than one-fifth of the latter fail to break even, that share rises to one third for migrants who were forced to return. Since the ability to start entrepreneurship after return is tied to savings accumulated overseas, forced returns also negatively affect self-employment after return. As shown in Table 3, migrants who were forced to return are less likely to become entrepreneurs back in Bangladesh: 55 percent of forced returnees are self-employed back in Bangladesh, compared to 64 percent of migrants who voluntarily return.

Table 3: Return rate of migration and employment status after migration by forced return

	Forced return	Normal return
Earning-to-cost, r_1	6.5	10.3
Excess earning-to-cost, r_2	4.3	6.4
Excess saving-to-cost, r_3	2.3	3.2
Waged workers	41.5%	32.5%
Self-employed	55.0%	63.7%
Employer	3.6%	3.9%

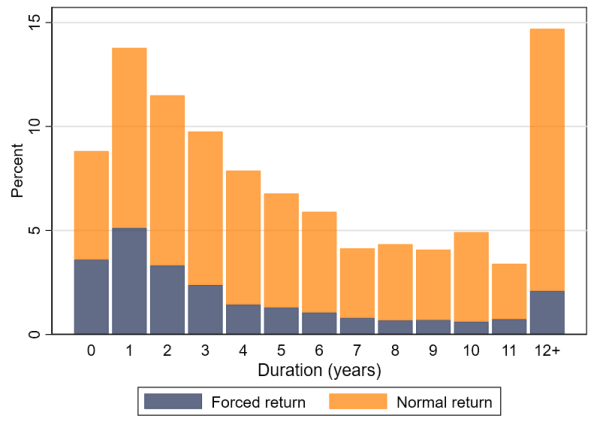
Note: Calculations based on the data summarized in Table 2, and measures described in the text.

4.4 Human Capital as an Alternative Mechanism

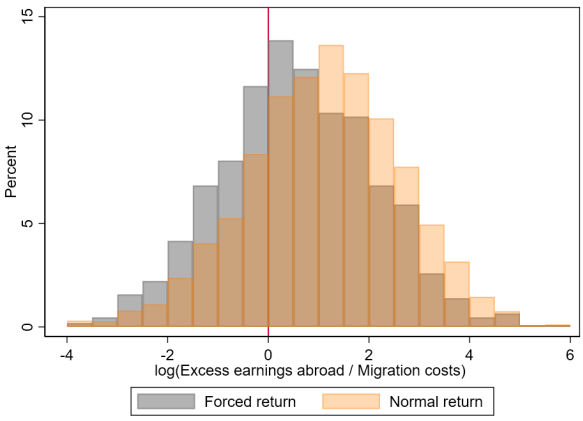
A channel other than financial wealth accumulation that could foster self-employment after return is human capital accumulation abroad. The vast majority of temporary migrants from Bangladesh are employed in brawn-based, low-skilled occupations in the construction sector overseas – primarily in construction, with a minority in service activities such as retail or transport. While studies in other contexts suggest that some workers accumulate human capital overseas which benefits them in wage employment back home, this channel does not

Figure 9: Duration of stay abroad by forced return

(a) Duration of stay abroad by forced return



(b) Excess earning to cost by forced return



Note: Panel (a) shows the distribution of duration of stay abroad. Bars, including both forced return or normal return, add up to 100%. Panel (b) shows the distribution of ratio of excess earning to costs by forced return or normal return. The definition of excess earning to cost is the same as in Figure 5b. 67% of the individuals who are forced to return and 79% of the individuals who normally returned had more excess earnings than costs.
Source: Bangladesh Return Migrant Survey 2018/19.

seem to prevail in the context of temporary migration from Bangladesh.[13] The occupational patterns of individuals before, during, and after migration instead indicate that the human capital channel is minor. Table 4 shows that two-thirds of temporary migrants in the sample were employed in the construction sector at their destination abroad. Instead, only 10 percent work in this sector after returning home. In addition, 24 percent of the returning migrants were employed in construction *prior* to their migration, suggesting that experience accumulation occurs beforehand. Likewise, only 14 percent of return migrants worked in either retail or agriculture while overseas; by contrast, more than two-thirds of migrants are employed in one of these two sectors after returning to Bangladesh. Furthermore, Appendix Table A2 shows that migrants who were employed in the construction sector overseas do not transition into that same sector at significantly higher rates after return than return migrants

[13]Human capital accumulation abroad has been pointed out as an important factor for temporary migration and post-return decisions by (McCormick and Wahba 2001) for temporary migrants from Egypt. Consistent with this, a wage premium for returning migrants has been estimated, for instance, for migrants from Hungary (Gang and Yun 2000), Albania (De Coulon and Piracha 2005), West Africa (De Vreyer et al. 2010), Mexico (Lacuesta 2010; Reinhold and Thom 2013), Romania (Ambrosini et al. 2015) and Egypt (Marchetta 2012; Wahba 2015; El-Mallakh and Wahba 2017; El-Mallakh and Wahba 2021). Choudhury (2015) finds that employees at an Indian R&D center who report to return migrant managers file disproportionately more patents.

who were employed in transport and utility sectors. Similarly, temporary migrants employed in transport and utility sectors while abroad do not disproportionately transition into that sector after return. Overall, descriptive evidence on sectoral patterns lends little support for human capital accumulation as a driver of temporary migration from Bangladesh.

Table 4: Distribution of temporary migrants across sectors of activity

Sector	Before Migration %	During Migration %	After Return %
Agriculture	22.2	3.0	25.9
Construction	23.8	66.6	9.6
Manufacturing	2.5	5.1	1.7
Retail, Hotel, Restaurant	37.9	11.1	42.1
Transport, Utility	10.4	10.3	19.4
Other services	3.3	4.0	1.4
Total	100.0	100.0	100.0

Note: The sample is restricted to employed males aged 18-59.
Source: Bangladesh Return Migrant Survey 2018/19.

5 Conclusion

When markets for entrepreneurial loans are dysfunctional, business creation may require one or more smaller scale intermediate investments, the returns to which help cover the cost of the planned final investment. In many low income countries, one such intermediate endeavor is a temporary migration for the purpose of asset accumulation abroad. Evidence we provide from Bangladesh indeed demonstrates the important role played by temporary migration as a strategy to circumvent institutional voids on the credit market for entrepreneurs. The detour through contract migration is feasible since loans to finance migration expenses are more readily available. Yet, this route to self-employment is second best. Large efficiency gains are likely to be realized if entrepreneurial loans were more widely available and the large costs of international migration could be reduced.

While a reduction of either legal or financial barriers to migration could raise the capital stock that is available for entrepreneurial investments in a country like Bangladesh, a more direct policy intervention may target domestic credit markets. In particular weak legal regimes and regulations, the absence of credit information systems, or costly insolvency proceedings may contribute to the malfunctioning of this important sector. Agency problems faced by lenders are plausibly more important for entrepreneurial loans compared to migrant loans that are widely available in a context of regulated migration like Bangladesh.

On the other hand, economic development of low-income countries may be hampered by a scarcity of capital available, beyond any lack of efficiency in its allocation. In the absence of foreign investment, migrant remittances are an important resource for capital accumulation in labor abundant countries (Rapoport and Docquier 2006). As such, policies aiming to support temporary international migration and a repatriation of assets accumulated overseas may prove to have a strong impact on entrepreneurial investments in many low and middle income countries that are difficult to match by policies focusing on efficient loan provision alone.

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Appendix

A Ease of Credit Access in Comparison

A.1 Data source description

A.1.1 The 2010 Formal and Informal Enterprise Survey

The 2010 World Bank Informal Firm for Bangladesh was designed to capture a representative sample of informal firms in Bangladesh. The survey was conducted between March and May 2010 and covered of total of 1724 enterprises. The sample frame for these enterprises was the EGI Census of 55,817 firms in the randomly selected areas in urban parts of the 19 old districts. The sample was stratified by firm size (in terms of full-time employment) and broad industry (manufacturing, trade or services), and was chosen to be representative of firms with 3 to 99 full-time workers in these areas. Oversampling of firms with 10-99 full-time workers was done to ensure sufficient sample sizes of these firms, which are less prevalent than firms with fewer workers. In practice 20 percent of the final sample were actually of size 1 or 2 workers, and 2 percent had more than 100 workers – this likely reflects changes in firm size from the time of listing to the time of surveying, as well as seasonality in employment.

A.1.2 The Enterprise Survey

The Enterprise Survey carried out by the World Bank is a representative sample of an economy's private sector, carried out so far in over 150 countries. Enterprise Surveys are conducted across all geographic regions and cover small, medium, and large companies. The surveys are administered to a representative sample of firms in the non-agricultural formal private economy. Data is used to create indicators that benchmark the quality of the business and investment climate across countries. The objective of the survey is to obtain feedback from enterprises on the state of the private sector as well as to help in building a panel of enterprise data that will make it possible to track changes in the business environment over time, thus allowing, for example, impact assessments of reforms. Through interviews with firms in the manufacturing and services sectors, the survey assesses the constraints to private sector growth and creates statistically significant business environment indicators that are comparable across countries. The standard Enterprise Survey topics include firm characteristics, gender participation, access to finance, annual sales, costs of inputs/labor, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, capacity utilization, land and permits, taxation, informality, business-government relations, innovation and technology, and performance measures. Over 90% of the questions objectively ascertain

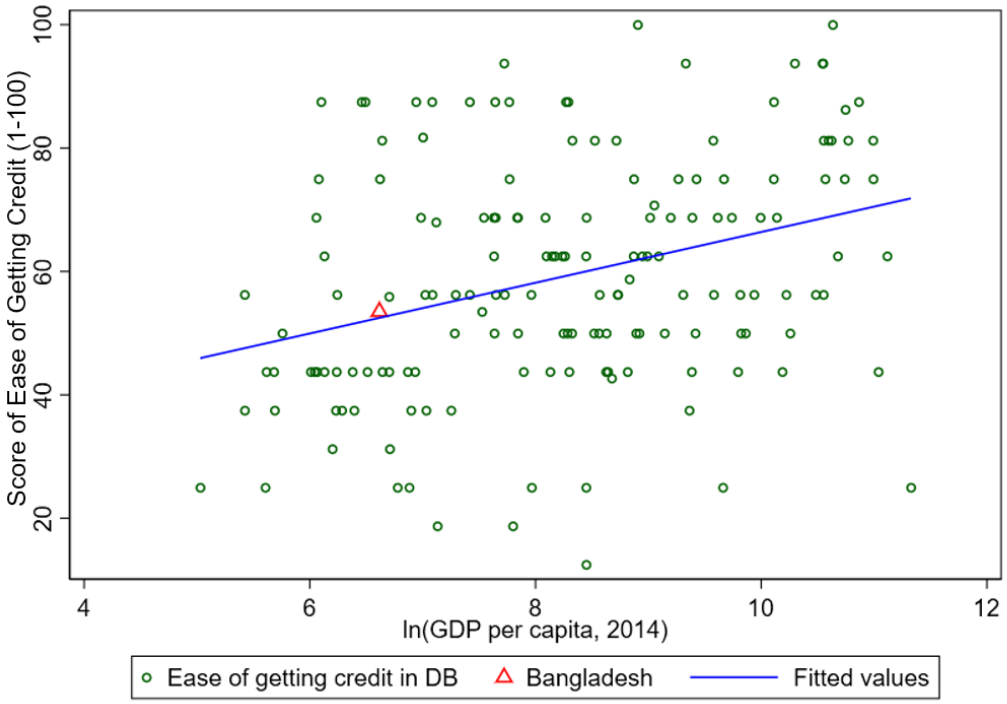
characteristics of a country's business environment. The remaining questions assess the survey respondents' opinions on what are the obstacles to firm growth and performance. The survey was conducted in Bangladesh between April 2013 and September 2013.

A.1.3 Doing Business Indicators

The indicators analyzed in Doing Business measure business regulation, the quality and strength of legal frameworks, the protection of property rights—and the effect of all these factors on businesses, especially small and medium domestic firms. First, the indicators document the complexity of regulation, such as the number of procedures to start a business or to register a transfer of commercial property. Second, they gauge the time and cost to achieve a regulatory goal or comply with regulation, such as the time and cost to enforce a contract, go through bankruptcy, or trade across borders. Third, they measure the extent of legal protections of property, for example, the protections of minority investors against looting by company directors or the range of assets that can be used as collateral according to secured transactions laws. Fourth, a set of indicators documents the tax burden on businesses. The Doing Business data are collected in a standardized way. The questionnaire uses a simple business case to ensure comparability across economies and over time—with assumptions about the legal form of the business, its size, its location and the nature of its operations. Questionnaires are administered to more than 15,000 local experts, including lawyers, business consultants, accountants, freight forwarders, government officials and other professionals routinely administering or advising on legal and regulatory requirements. The data from questionnaires are subjected to numerous rounds of verification, leading to revisions or expansions of the information collected.

A.2 Other Evidence of Credit Constraints in Bangladesh

Figure A1: Ease of Getting Credit (1-100)



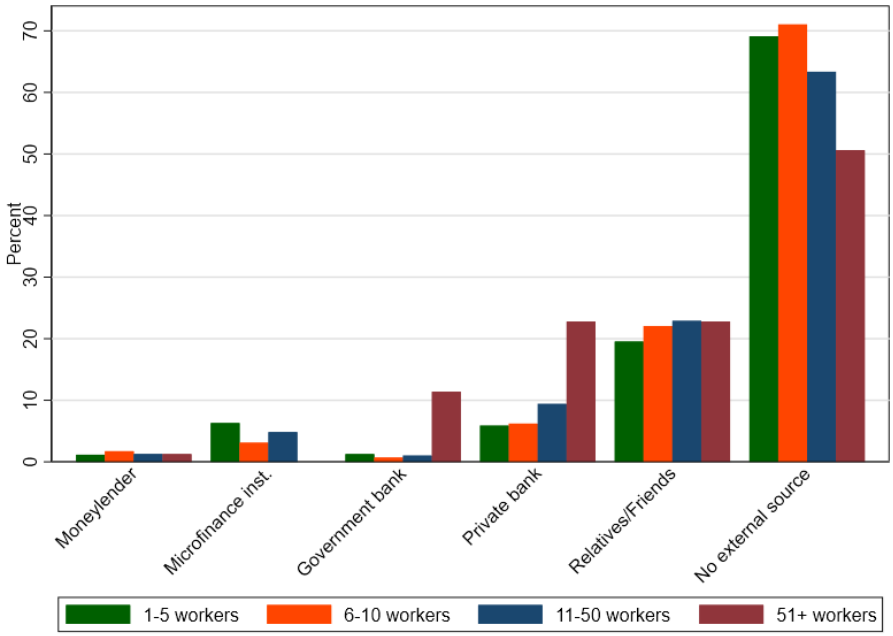
Note: Vertical axis indicates the score of Ease of Getting Credit in the Doing Business. Ease of Getting Credit is an indicator aggregating four sets of measures, namely strength of legal rights, depth of credit information, public registry coverage and private bureau coverage.
Source: World Bank Doing Business, 2014.

Table A1: Access to credit for existing firms: World Bank Enterprise Survey

Economy	Proportion of loans requiring collateral (%)	Value of collateral needed for a loan (% of the loan amount)	Percent of firms not needing a loan	Percent of firms whose recent loan application was rejected	Percent of firms using banks to finance investments
All Countries	75.7	198.7	49.1	10.4	25.0
South Asia	81.1	236	44.7	14.4	21.8
Bangladesh (2013)	**84.4**	**271.1**	**41.9**	**15.6**	**19.8**
China (2012)	77.6	197.0	45.5	6.6	14.7
India (2014)	84.7	255.1	50.1	12.9	30.3
Indonesia (2015)	80.4	241.1	42.8	0.1	36.6
Malaysia (2015)	64.7	182.6	49.3	-	35.3
Nepal (2013)	89.9	364.2	36.1	6.4	17.0
Pakistan (2013)	64.0	153.4	57	13.5	8.1
Turkey (2019)	37.9	174.5	35.7	4	28.7

Source: World Bank Enterprise Survey.

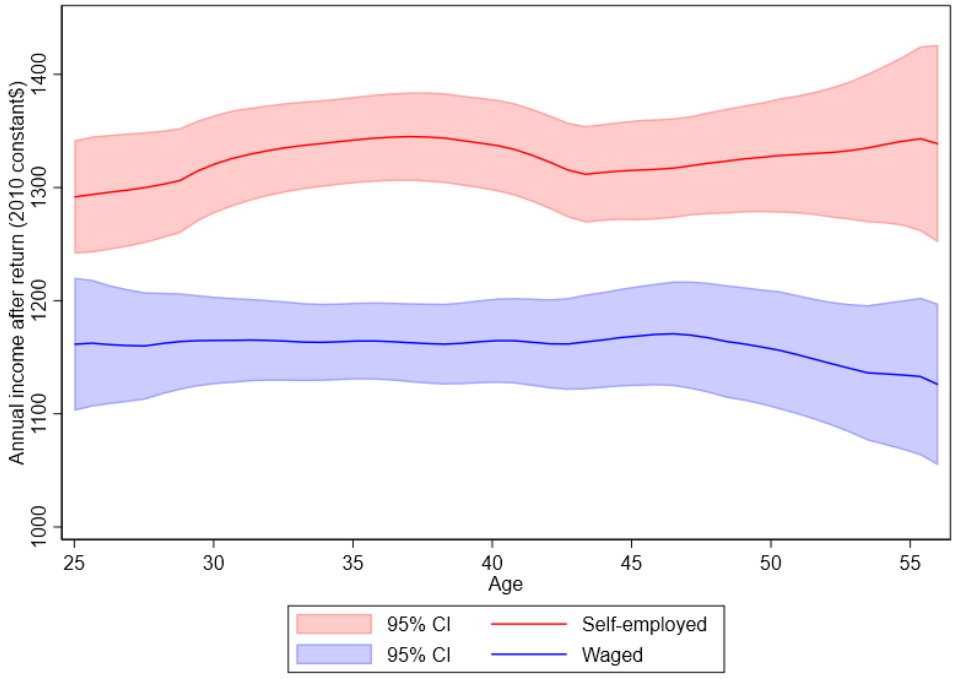
Figure A2: Main source of financing, by current firm size



Note: The figure shows shares of firms which report ever having raised debt from the listed sources, separately by the current number of workers.
Source: Formal and Informal Enterprise Survey, 2010.

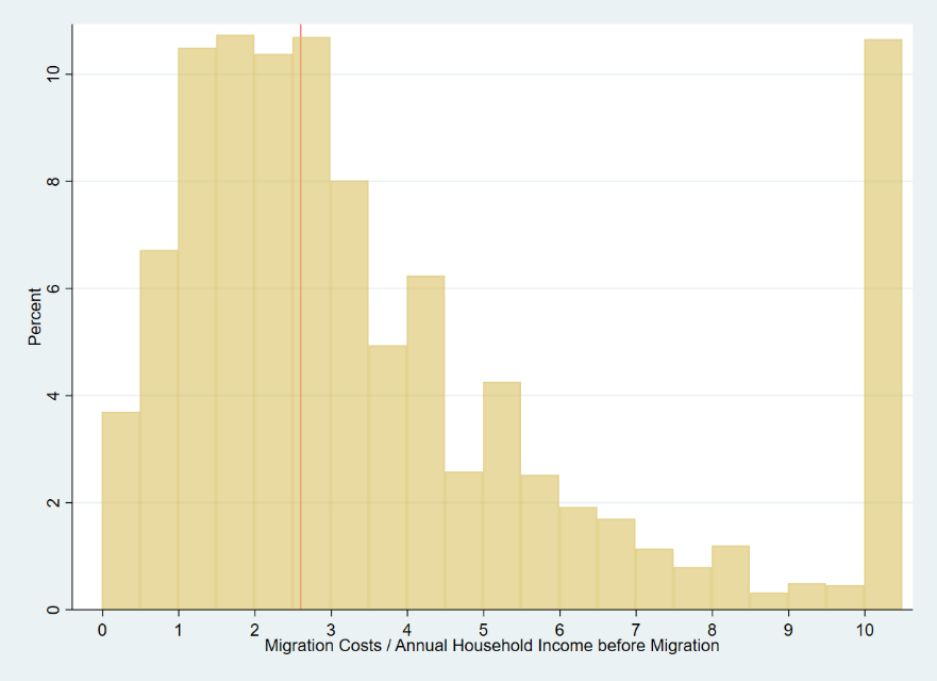
B Additional Tables and Figures

Figure A3: Earnings curve by employment status of return migrants



Note: Earnings are annual and in 2010 constant USD. The curves report average unconditional monthly wages after applying a local polynomial smooth. Due to the small number of observations in the tails, the sample is restricted to males aged 25-56.
Source: Bangladesh Return Migrant Survey 2018/19.

Figure A4: Migration costs over household income before migration



Note: This figure present the distribution of the ratio of migration costs over annual household income before migration. The median ratio (indicated as a red vertical line) is 2.6. The last bar represents the cases where migration costs are ten times or more the annual income.
Source: Bangladesh Return Migrant Survey 2018/19.

Table A2: Transitions of temporary migrants between sectors of activity during and after migration

	Sector After Return					
Sector During Migration	Agri. %	Cons., Manu. %	Rtl., Htl., Restr. %	Trans., Utility %	Other serv. %	Total %
Agriculture	34.0	11.0	39.0	15.0	1.0	100.0
Construction, Manufacturing	26.1	12.3	40.8	19.5	1.3	100.0
Retail, Hotel, Restaurant	25.3	5.5	51.4	16.2	1.6	100.0
Transport, Utility	23.7	12.0	42.5	20.7	1.2	100.0
Other services	23.7	7.6	38.9	27.5	2.3	100.0
Total	25.9	11.3	42.1	19.4	1.4	100.0

Note: Sample is restricted to employed males aged 20-59.
Source: Bangladesh Return Migrant Survey 2018/19.