Capital Markets, Temporary Migration and Entrepreneurship: Evidence from Bangladesh

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ABSTRACT

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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. Our 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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1 Introduction

Self-employment and entrepreneurial activities create opportunities for better jobs and higher incomes, leading to overall growth and development in the wider economy (World Bank 2012). In the case of low-income countries, these jobs contribute to the transition out of low-paying and low-productivity agricultural employment and are an important path out of poverty for a large share of the population (Gindling and Newhouse 2014; Beck, Demirgüç-Kunt, and Levine 2007). Yet, many potential entrepreneurs cannot obtain the needed capital to pursue profitable investment opportunities, resulting in constrained income levels for themselves and their workers as well as lower pace of economic development for the country (De Gregorio and Guidotti 1995; Beck, Demirgüç-Kunt, and Maksimovic 2005).

This paper provides empirical evidence on how temporary international migration from lower- to higher-income countries is used as an *intermediate* step by lower-skilled entrepreneurs to overcome financial constraints. Figure 1 visually presents this relationship. Higher salaried jobs in these destinations enable migrant workers to accumulate savings at a faster rate and use them to overcome domestic credit constraints to self-employment and entrepreneurial investments when they return home (McCormick and Wahba 2001; Wahba and Zenou 2012; Mahé 2019; Dustmann and Kirchkamp 2002; Yang 2008; Khanna et al. 2020; Batista et al. 2017; Wahba 2014). Once these increased income gains due to entrepreneurial and self-employment activities are taken into account, the benefit-to-cost ratio of temporary migration turns decidedly more positive.[1]

Our analysis utilizes a newly collected dataset with detailed information on the economic decisions and activities of 5,000 temporary migrants who had returned to Bangladesh at the time of the survey. The dataset is unique in providing the complete labor market trajectories of the respondents, including their economic activities and outcomes before migration, their expectations prior to departure about earnings and savings prospects abroad, detailed migration expenditures, sources of income and savings, and employment histories at the foreign destination. Most importantly, we link these trajectories with migrants' economic activities and earnings *after* their return, showing how savings from temporary migration are used to finance self-employment and entrepreneurial investments.

International migration for employment itself shares many common economic features with classical entrepreneurial investments. Temporary migration typically requires considerable upfront investments and costs to cover the expenses and fees, with the promise of

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[1]The definition of temporary migration used throughout this paper follows and refers to international migration episodes in which the migrant ultimately returns home. This includes migration episodes that were planned as temporary from the outset as well as moves which were intended to be permanent but turned out to be temporary, ex-post. (For further discussion, see Bossavie and Özden (2023)).

Figure 1: Missing capital markets, temporary migration and entrepreneurship
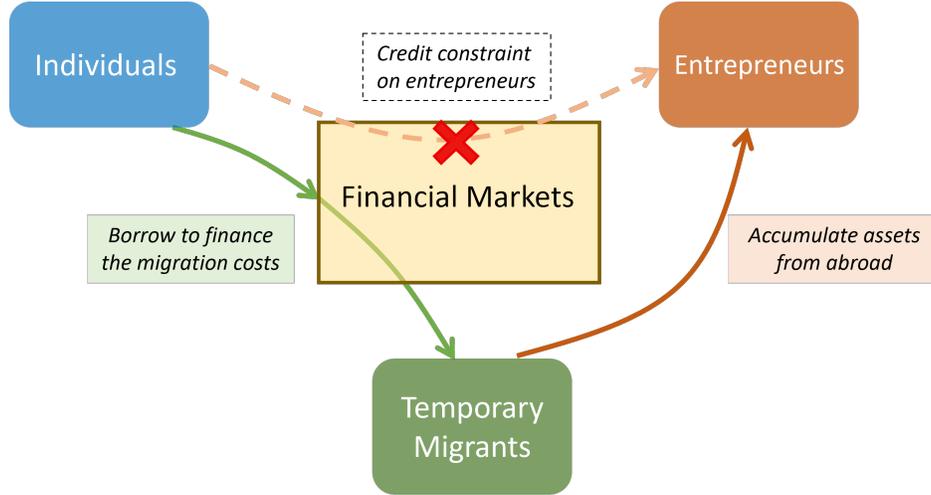
high returns afterwards. At the same time, international migration carries significant risks. Earnings potential abroad may be misjudged or the migrants may be forced return home unexpectedly and prematurely, before a savings target is reached. Although almost all migrants from Bangladesh depart for their destinations with valid work contracts and visas, actual earnings may differ from their 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, as shown in the paper, premature job dismissal is quite common and leads to immediate expulsion from the host country since the visas are dependent on contracts.

As part of our empirical analysis, we provide a detailed account of the actual financial costs and benefits of migration, and show how international temporary migration can be analyzed as a risky entrepreneurial investment. We calculate monetary rates of return to this investment, accounting for the opportunity cost of migration in terms of forgone expected domestic earnings, as well as additional economic gains when foreign savings are invested in business creation after having returned to the home country. Related to these calculations, our data suggest that migrants are particularly optimistic about their earnings potential abroad, very similar to the excessive optimism documented for entrepreneurs in many different contexts (Dushnitsky 2010; Garud et al. 2014).

Our paper primarily contributes to the literature on international labor migration and its impact on economic development in lower-income origin countries. The vast majority of studies in this literature focus on current or short-term benefits of migration realized *during the migration episode*, mainly through remittances sent back home. Examples include increased consumption or education expenditures, improved labor and healthcare outcomes

for family members, especially children.[2] In contrast, this paper takes a more dynamic perspective, analyzing how migration impacts self-employment and entrepreneurial investment behaviour *after return*. We show that temporary international migration is a risky investment that can yield large monetary returns. As such, it contributes to the structural transformation of developing economies by enabling low-income credit constrained households to start non-agricultural enterprises. This is a non-trivial contribution to business and employment creation in Bangladesh, with 33 percent of new businesses being created by former migrants. Our paper thus contributes to the broader economic development literature by showing that temporary migration acts as a vector of structural transformation by enabling poorer households who would otherwise remain engaged in agriculture or similar low-skilled informal employment.

Several studies have established that self-employment rates are particularly high among former international migrants in various countries. Ilahi (1999) shows this for Pakistan. Mc-Cormick 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. Mesnard (2004) investigates the relationship between migration and investments for Tunisia; Yang (2006), Yang (2008), and Khanna et al. (2020) for the Philippines; Woodruff and Zenteno (2007) for Mexico; and Batista et al. (2017) for Mozambique.[3] Conversely, the recent contribution by Giambra and McKenzie (2021) finds that self-employed individuals are less likely to migrate, using data from seven developing economies. In other words, people with access to enough financial resources to start a business, do not need to migrate. On the theoretical level, 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 and detailed evidence on the relationship between temporary migration and post-migration economic activity. First, it shows that 50 percent of self-employed returning migrants state remittances and repatriated savings as their primary source of financing when setting up their businesses. Second, the data available to prior contributions on the topic only include limited information about either outcomes during migration, the cost of migrating, or migrants' activities after return. When temporary migrants are surveyed in their home country, available data rarely include even basic information on past migration episodes such as duration of stays or earnings overseas. They also lack detailed information on migration costs. While migration costs may be ignored in a few settings where they are low, they cannot be neglected in the case of migra-

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[2]See, for example, Mobarak et al. (2023) for such a study in the context of Bangladesh.
[3]See also Wahba (2014), Rapoport and Docquier (2006) and Naudé et al. (2017) for related surveys.

tion from South Asian countries to the Persian Gulf. In these corridors, upfront expenses often equal three years of origin country earnings or a year's salary when working abroad, and therefore are a major determinant of the ultimate net benefits of migration (Ahmed and Bossavie 2022). This data limitation in prior work prevents an in-depth examination of the relationship between different types of credit constraints faced by poor households and their temporary migration and entrepreneurship decisions. In contrast, our novel dataset includes very detailed information about the parameters of the migration experience (migration costs, earnings overseas, duration of stay, unexpected vs planned return) and the full employment history of temporary migrants. These data allow us to closely examine the relationship between temporary migration and entrepreneurship after return and to precisely estimate the net monetary returns to temporary migration overseas. Our paper thus offers, for the first time, a detailed account of the financial costs and returns to temporary migration as a risky investment. Hence we are able to analyze how international migration shares many common features with classical entrepreneurial investments as it requires the payment of a considerable upfront cost, generates high returns, and is risky.

The focus on temporary international migration, as opposed to internal seasonal migration, is motivated by two observations. First is the large income gains enabled by international migration compared to internal moves (Mobarak et al. 2023; Bryan et al. 2014). Second, as a result of these income gains, the rapid increase in temporary low-skill migration especially from East and South Asian countries to the Persian Gulf countries. Bangladesh is not unique in terms of the importance of international temporary migration for the overall economy. For countries like India, Pakistan, Sri Lanka, Nepal and the Philippines, temporary migration is a life changing event for many millions of low income individuals.

Our paper also relates to the literature on access to finance for entrepreneurship in developing economies, and its linkages to economic development. The literature has singled out financial constraints as one decisive factor for business creation in high-income countries, like the U.S. (Evans and Jovanovic 1989; Hurst and Lusardi 2004; Kerr and Nanda 2015). Much less evidence, however, exists in developing countries where current evidence is mostly restricted to the link between access to finance and firm growth (Beck, Demirgüç-Kunt, and Maksimovic 2005; Beck, Demirgüç-Kunt, and Levine 2007). These papers show that greater access to finance disproportionately hurts poorer households. Our paper shows that temporary migration enables such poorer households to overcome barriers they face in domestic credit markets to grasp the economic and welfare benefits associated with entrepreneurship.

Why is self-employment such an attractive option for low-skilled workers? Even though self-employment is argued to be 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, non-agricultural self-employment often generates higher income, as shown for a large set of developing economies (Gindling and Newhouse 2014). 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.[4]

The ability to borrow for migration, but not for self-employment, is a critical feature of our analysis. This difference, at first, may seem puzzling. Two factors explain this observation. First, it is significantly less risky for lenders to finance migration expenses than it is to finance a business 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 net monetary wage actually paid (as opposed to benefits in-kind that may be subtracted) or the 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 their families—effectively guaranteeing that they will return home. In contrast, earnings from self-employment are riskier and less easily verifiable. 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 missing capital markets and 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.

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[4]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.

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 share that is similar in other low and middle-income countries, but only at around 15 percent in high-income countries (Gindling and Newhouse 2014). A very large share of the working-age population is low-skilled with very low share of tertiary or even high-school education (Farole et al. 2017; Barro and Lee 2013). Non-farm entrepreneurs, who make up half of all self-employed workers in Bangladesh, are, on average, older and more educated than workers in other types of employment, a pattern which is found also 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 the self-employed have no employees, 17 percent employ between 2 and 4 individuals, and the remaining 3 percent have 5 or more individuals working for them. Overall, micro-enterprises 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 levels as Bangladesh. Finally, 33 percent of new businesses are created by former migrants.[5]

Formal domestic employment opportunities are limited in Bangladesh, as it is also the case 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 2022). The incidence of emigration is also high in

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[5]We calculate this number by combining HIES 2016/17 and RMS 2018/19 data: There are 15% of return migrants out of all working age males in Bangladesh. The self-employment rate among non-migrants is 18% as shown in Table 2, whereas the number is 51% for returnees. The share of businesses created by return migrants then is calculated as $33\% = \frac{15\% \times 51\%}{85\% \times 18\% + 15\% \times 51\%}$.

relative terms. About 15 percent or one-in-seven of the total working-age male population is currently or was in the past employed overseas as of 2018. In terms of flows, 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. 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.[6]

Migration from Bangladesh is highly concentrated in two destination regions and a few destination countries within them: over 90 percent of migrants from Bangladesh go to either the oil-exporting countries of Gulf Cooperation Council (GCC) or Southeast Asia, according to both the Household Income and Expenditure Survey (HIES) and the Bangladesh Return Migrant Survey (BRMS). The top five destination countries in the BRMS sample are Saudi Arabia, UAE, Oman, Malaysia, and Qatar, which together account for 83 percent of returning temporary migrants. Table 1 describes migration patterns of workers from Bangladesh across destinations, including age at departure, duration of stay, whether the return was planned or not, migration costs, as well as migrants' observable characteristics. The most striking difference observed is for the average duration of stay across destinations: the average duration of stay is about 10 years in Saudi Arabia compared to only 3.7 years in Qatar. This is primarily driven by differences in regulation of stay in destination countries.

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 Persian Gulf and Southeast Asian countries 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. They must therefore ultimately return home. Furthermore, low-skilled 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.[7]

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[6]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 2022).

[7]In addition to the high levels of international migration from Bangladesh, internal rural-urban migration

Table 1: Characteristics of return migrants in Bangladesh by past destination

	Saudi Arabia	UAE	Oman	Malaysia	Qatar	Others	Total
Age at departure	29.4	27.6	29.8	27.8	28.9	28.9	28.7
Departure at age<25	31.5%	36.8%	29.9%	36.1%	31.0%	30.2%	32.9%
Years of education	6.6	6.5	5.9	6.4	6.9	7.0	6.5
Education: Primary and below	40.2%	40.8%	47.0%	40.4%	36.0%	36.1%	40.4%
Unexpected return	21.8%	22.3%	30.4%	21.4%	33.0%	25.4%	24.4%
Duration: less than 5 years	31.7%	47.5%	69.6%	41.3%	79.9%	62.3%	50.4%
Duration: 5-10 years	20.3%	36.7%	23.9%	29.6%	14.2%	21.1%	25.7%
Duration: 10+ years	47.9%	15.8%	6.4%	29.1%	5.9%	16.6%	23.9%
Duration	9.9	6.3	4.3	6.9	3.7	5.5	6.7
Annual wage abroad (2010$)	5,321	4,497	7,164	4,801	3,743	6,129	5,355
Migration cost (2010$)	4,873	4,092	3,519	3,645	3,893	4,612	4,218
Self-employed after return	72.9%	63.9%	58.6%	65.7%	57.7%	68.0%	66.0%
Share in the sample	24.9%	23.3%	14.3%	14.1%	6.3%	17.1%	100%

Note: The sample is restricted to men 18-59 years old.
Source: Data on return migrants are from the Bangladesh Return Migrant Survey (BRMS) 2018/19.

2.2 Data

Our main data source is a new and unique nationally representative survey among recent returnees to Bangladesh. The Bangladesh Return Migrant Survey (BRMS) was specifically developed to analyze the relationship between workers' situation before, during and after their migration episodes. A special module focused on the economic activities of the migrants after their return, including entrepreneurship. The 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.[8] It 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 con-

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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.

[8]Eligibility for the BRMS was restricted to migrants who had returned since 2010. This restriction was put in place to reduce possible selection and memory recall 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.

tracts. The 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.[9]

The data set has several features that enable us to study the role of temporary migration in overcoming underdeveloped capital markets for the purpose of entreprenurial activities. 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 in 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.

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 nationally representative sample of over 46,000 Bangladeshi households. These include labor market outcomes, including entrepreneurship activities, which are recorded in a comparable way as in the BRMS.

The BRMS survey sampling was designed to be nationality representative of rural and semi-urban areas of Bangladesh. To provide some reassurance about the representativeness of the BRMS, we compare the regions of origin and destination countries of return migrants from the BRMS with those of current migrants from the HIES, another nationally representative data source, as well as with administrative data from the Bangladeshi Bureau of Manpower, Employment and Training (BMET). The later dataset contains records of the universe of temporary migrants from Bangladesh and includes basic information on region of origin as well as destination countries. As shown in the Tables A3 and A4 , the distribution of the geographical origin of migrants as well as their destination countries is overall very similar in the BRMS and the BMET data. One exception is the share of migrants who went to the UAE which is distinct between the BRMS and HIES. However, the BRMS data we collected are closer than the HIES to the administrative BMET data.

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[9]Bangladesh consists of eight divisions which are divided into 64 administrative districts, namely zilas.

2.3 Descriptive Statistics

We first examine potential differences in the characteristics of return international migrants and non-migrants in Bangladesh, as those may differ in ways that also affect occupational choice, irrespective of the migration experience. Table 2 reports the results of a detailed comparison of the observable characteristics of non-migrants, current migrants (those still overseas at the time of the survey) and return migrants using the BRMS and HEIS data.[10] As shown in the table, migrants are virtually all males, as discussed in Section 2.1. For this reason, we restrict our subsequent analysis to males only. Male migrants have, on average, attained higher levels of schooling than non-migrants: the average number of years of schooling is 7.3 among current migrants and 5.6 for non-migrants. Specifically, male migrants are significantly less likely to be illiterate compared to non-migrants. As shown in Figure A5, however, the relationship between educational attainment and propensity to migrate overseas is non-monotonic: the propensity to migrate among male workers first increases with educational attainment up to secondary schooling level, and then decreases for individuals who reached tertiary education.[11] Finally, as evidenced in many migrant sending countries, temporary migrants disproportionately come from specific areas of Bangladesh: workers from the Chittagong division are vastly over-represented among migrants (22 percent of working-age individuals versus 45 percent of migrants), while workers from the Rangpur division are strongly underrepresented among migrants. We therefore observe some systematic differences in observable characteristics between migrants and non-migrants, as expected given international evidence on the topic. However, as shown in the remainder of the paper, our key results are robust to controlling for differences in observable characteristics between migrants and non-migrants, including geographical origin and educational attainment.

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[10]For comparison purposes, the HIES sample is restricted to rural and semi-ruban areas, as the BRMS survey covers only those areas

[11]This pattern may reflect barriers to migrating among the poorest and lower-educated segment of the population, together with lower returns to temporary migration for tertiary-educated workers, as the vast majority of the demand for migrant labor in the main destinations is in low-skilled, blue-collar jobs.

Table 2: Characteristics of working-age individuals in Bangladesh by past migration status

| | HIES | | BRMS | | HIES | | BRMS |
	Non-migrants	Current migrants	Return migrants		Non-migrants	Current migrants	Return migrants
Male (full sample)	0.49	0.96	0.96	*Employment status*			
Rural	0.95	0.99	0.99	Waged	0.66		0.34
Age (mean)	36.7	34.4	37.9	Self-employed	0.34		0.66
Age at departure (mean)		28.3	28.5	in agriculture sector	0.17		0.16
Age category				in non-agriculture sector	0.18		0.51
20-24	0.14	0.12	0.03	without employees	0.34		0.62
25-34	0.31	0.40	0.35	with employees	0.01		0.04
35-44	0.27	0.33	0.39	*Industry employed*			
45-54	0.20	0.13	0.20	Agriculture	0.38		0.26
55-59	0.07	0.02	0.03	Manufacturing	0.16		0.02
Years of education (mean)	5.5	7.4	6.5	Construction	0.07		0.10
Education level				Retail/Hotel/Restaurant	0.14		0.42
Illiterate	0.32	0.08	0.16	Others	0.25		0.20
Primary	0.26	0.26	0.24	Duration of stay at destination (years)		6.1	6.5
Lower secondary	0.21	0.38	0.36	*Destination countries*			
Upper secondary & above	0.22	0.28	0.24	Saudi Arabia		0.25	0.24
Geographic distribution of origin				UAE		0.13	0.23
Dhaka & Mymensingh	0.26	0.31	0.28	Malaysia		0.17	0.14
Chittagong	0.16	0.36	0.42	Oman		0.11	0.14
Khulna	0.16	0.10	0.10	Qatar		0.08	0.06
Rajshahi	0.13	0.05	0.05	Others		0.26	0.17
Rangpur	0.13	0.01	0.03				
Sylhet	0.07	0.10	0.09				
Barisal	0.10	0.06	0.04				

Note: The sample is restricted to males aged 18-59 expect for the Male variable. Statistics are for rural and semi-urban areas.
Employment status and industry employed of return migrants are for the period after returning to Bangladesh.
Source: Non-migrants and current migrants data are from the Household Income and Expenditure Survey (HIES) 2016/17, while data on return migrants are from the Bangladesh Return Migrant Survey (BRMS) 2018/19.

We then examine potential differences in observable characteristics between current migrants (who are still overseas) and return migrants. As discussed in section 2.1., low-skilled migration from Bangladesh to the GCC and Southeast Asian countries is restricted to be temporary by law, and migrants cannot stay at destination without a valid employment contract. As a result, all low-skilled migrants must ultimately return and one would thus expect minimum selection among returnees. To alleviate remaining concerns about selection in return migration, we examine potential differences in the profile of migrants who are currently overseas and those who have already returned. Ideally, one would want to follow a given cohort of migrants over time and look at systematic differences between those who have already returned and those who remain overseas at a given time. Such panel data is however unavailable, and one should bear in mind that a cross-sectional comparison of current migrants and return migrants may be confounded by cohort effects. As shown in Table 2, return migrants in the BRMS, are indeed older than current migrants who have not returned (observed in the HIES). Return migrants are slighlty less educated than current migrants, although the average number of years of schooling (6.6) is closer to that of current migrants (7.3) than to non-migrants (5.6). As mentioned earlier, these differences are partly driven by cohort effects, as return migrants tend to be older, and educational attainment is higher among younger cohorts, regardless of their migration status. Age of departure and duration of stay is quite similar between current migrants and return migrants.

Table 3 then compares the labor market outcomes of return migrants (who worked overseas in the past) to those of non-migrants (who never worked overseas). First, return migrants are considerably more likely to be self-employed (without any paid employee) or an employer (with paid employees) than non-migrants. As self-employment is strongly associated with age, we examine gaps in entrepreneurship between return migrant and non-migrants by age group. As shown panel (a) of Figure 2, the gap in entrepreneurship between return migrants and non migrants is very large for all age groups, suggesting that age is not a driver of the higher rates on entrepreneurship among return migrants. In addition, and even more importantly, Panel (a) shows that that the rates of entrepreneurship of similar-aged non migrants and temporary migrants *before migration* are very similar, while the gap in entrepreneurship *post migration* is very large. This strongly indicates that the migration experience is key to fostering entrepreneurship.

Return migrants who are self-employed in Bangladesh (with or without other paid employees) also earn significantly higher incomes 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 (Panel (a) of Figure 2). This supports the claim that self-employment is indeed

13

an attractive option for return migrants. Another important point is that return migrants who become business owners also stayed longer at a destination as a migrant- and thus 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, in particular in the retail/hotel/restaurant sector. Finally, return migrants who employ other workers earn higher incomes than comparable non-migrant entrepreneurs.

Table 3: Labor market outcomes in Bangladesh by past migration experience

Employment status	Entrepreneur/Self-employed				Wage employee	
	With paid employees		Without paid employees			
Migration experience	Non-mig	Returnee	Non-mig	Returnee	Non-mig	Returnee
Percentage of employment status by migration experience	0.7%	3.8%	33.6%	62.3%	65.8%	33.9%
Duration of migration	-	7.1	-	6.6	-	5.2
Unexpected return	-	0.26	-	0.23	-	0.31
Sector: Agriculture	0.40	0.27	0.49	0.23	0.32	0.31
Sector: Manufacturing	0.16	0.03	0.08	0.003	0.20	0.04
Sector: Construction	0.08	0.14	0.01	0.02	0.10	0.25
Sector: Retail/hotel/resturaunt	0.17	0.45	0.28	0.52	0.07	0.22
Sector: Other services	0.20	0.10	0.13	0.22	0.31	0.19
Income ($)	4524	6319	1693	1753	1612	1597
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, and variables with * are restricted to non-agricultural sectors. Income is inflation-adjusted and converted to 2016 constant dollar.
Source: Non-migrant data are from Bangladesh Household Income and Expenditure Survey (HIES) 2016/17, while data on returnees are from the Bangladesh Return Migrant Survey (BRMS) 2018/19.

To complement the evidence on past migration and entrepreneurship, we directly examine the relationship between earnings and savings accumulated abroad and entrepreneurship after return, among the population of returnees. As shown in Panel (b) of Figure 2, there is a strong, positive relationship between total cumulative earnings overseas (wages earned abroad multiplied by duration of stay) and rate of entrepreneurship among return migrants. The rate of entrepreneurship among returnees with the lowest level of cumulative earnings

overseas is about 57 percent, compared to 75 percent among returnees in the top decile of cumulative earnings overseas. This evidence is highly suggestive of temporary migration and savings accumulated overseas being key determinants of entrepreneurship after return.

Figure 2: Entrepreneurship activities in Bangladesh

(a) By age and migration experience   (b) By total earnings abroad, for returnees
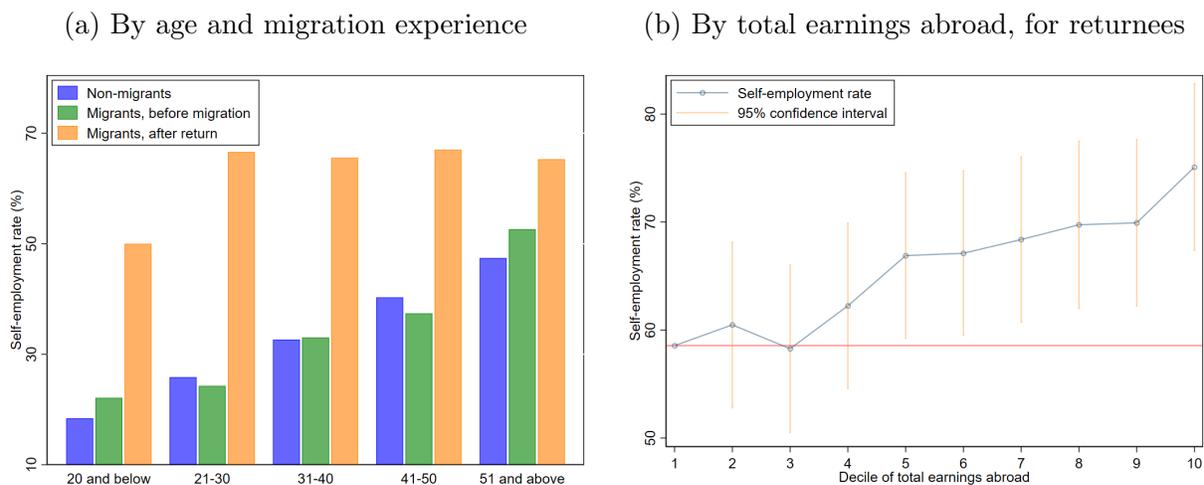
Note: In both panels, the self-employment rate is computed in the sample of employed males aged 18-59. In panel (a), for migrants before migration, the horizontal axis denotes the age at the time of departure. In panel (b), total earnings abroad are calculated as the wage rate abroad times duration of stay; the 95% confidence intervals are constructed with a regression of individual's self-employment status (0/1) on total earning decile dummies with the first decile as the base group. Migrants who returned home for less than one year are excluded from the sample, because most of them are temporarily out of labor market or in the process of finding jobs.
*Source:* Bangladesh Household Income and Expenditure Survey (HIES) 2016/2017 for non-migrants, and Bangladesh Return Migrant Survey (BRMS) 2018/19 for migrants.

Finally, we assess whether the entrepreneurial activities started by return migrants systematically differ from those operated by non-migrants. As displayed in Table 2, the share of self-employed return migrants who operate in the agricultural sector is less than half that of self-employed non-migrants (half of the latter are in the agricultural sector, compared to less than a fourth of return migrants). Instead, over half of self-employed return migrants are employed in the retail sector. This indicates that temporary migration can help the transition of Bangladeshis from the agricultural sector to the service sector, thereby contributing to the structural transformation .

3 Financial Market Imperfections and Credit Constraints

Credit constraints are among the major barriers to entrepreneurship. Such constraints tend to be strongly correlated with institutional development, and are thus more salient in low-income developing economies (Banerjee and Duflo 2014; De Mel et al. 2008). A cross-country comparison in Figure 3 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. As shown in the figure, access to entrepreneurship loans in Bangladesh is at similar levels as in other lower-middle income countries, but significantly lower than in higher-income countries. Table A1 and Figure A1 corroborate this point with more comprehensive data on firm financing from the World Bank Enterprise Surveys and World Economic Forum's Global Competitiveness Index. 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 3: Share of entrepreneurs who borrowed to start a business
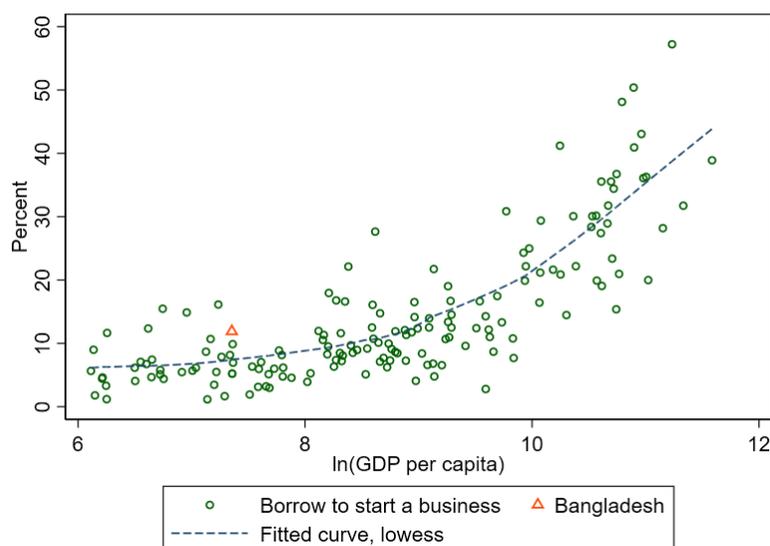
Note: The share of borrowing for starting a business is computed in the sample of males above age 15. Bangladesh ranks 73rd among 165 countries in the sample.
Source: WB Global Findex, 2017.

Appendix Figure A2 provides additional evidence of the existence of credit constraints among lower-income households in Bangladesh. The share of households that took a loan in the last 12 months sharply increases with income in the bottom 60 percent of the income

distribution. This is highly suggestive of the existence of credit constraints among poorer households. The share of households that took a loan is then declining after the 6th income decile, which reflect richer households with higher levels of liquidity needing to rely less on loans.

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 micro-enterprises 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 extended by formal lending institutions (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 rural areas of

17

Bangladesh, many businesses are not registered with authorities and operate at a relatively low scale. Yet, in line with these international data, Figure 4 shows that the majority of businesses in Bangladesh with up to 50 employees, including informal ones, use minimal external sources of funding.[12] Figure 4 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-skilled entrepreneurs where earnings from wage work are low, and assets thus take longer to accumulate the required startup capital.

Figure 4: Financing sources for non-agricultural enterprises in Bangladesh
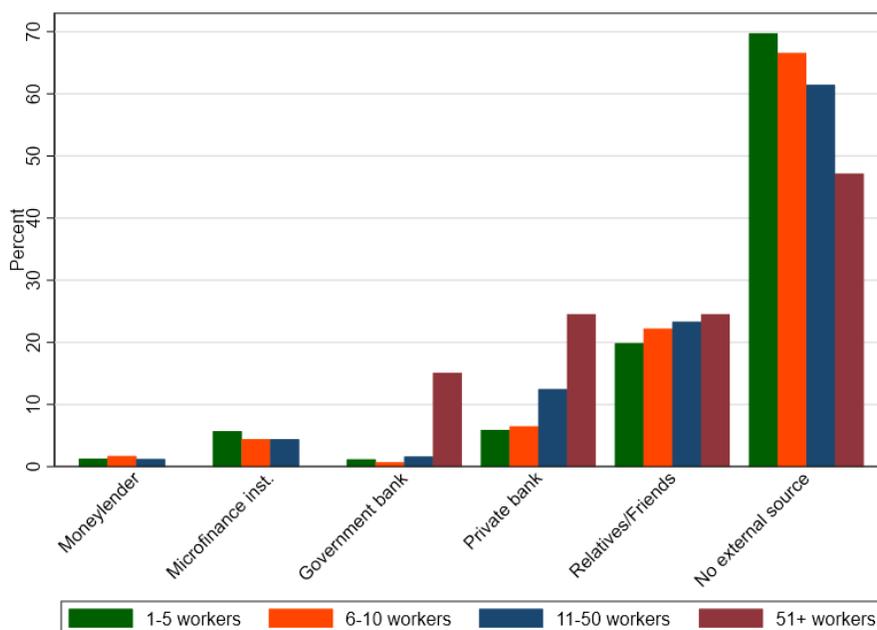
Note: The figure shows shares of firms which report ever having raised debt from the listed sources, separately by the number of workers at the time when the business was established. It is possible, but rare, for firms to finance from multiple sources.
*Source:* Bangladesh Formal and Informal Enterprise Survey, 2010.

Aspiring entrepreneurs in low-income countries often resort to seeking capital from friends and family as they might have limited access to formal capital markets (Figure 4). 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 net-

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[12]Figure 4 distinguishes firms by their initial number of employees. Appendix Figure A3 displays a similar distribution when considering firms' current number of employees.

works 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.

Figure 5: Primary source of finance of non-agricultural enterprises started by return migrants
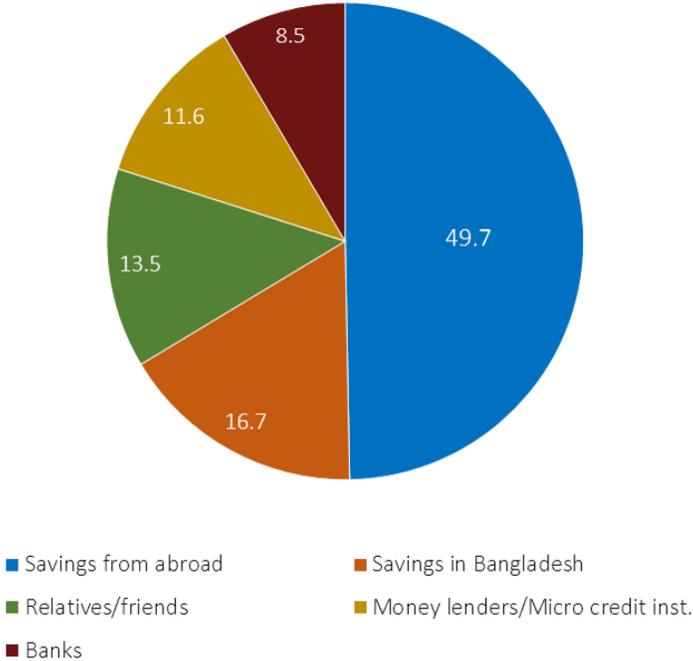
Note: This figure shows the distribution of the primary source for startup funding by return migrants who own non-agricultural enterprises. Numbers are the percentage of each group in the sample. The sample is restricted to males aged 18-59.
Source: Bangladesh Return Migrant Survey (BRMS) 2018/19.

In the face of these restrictions to borrow, temporary migration to higher income labor markets provide an opportunity since savings can be accumulated at a faster rate (Figure 1). Because direct 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. This route is also risky with its own unique set of uncertainties. In the next section, we quantify the risks and returns to this

migration investment in more detail.

Direct evidence on the link between migration and the financing of self-employment is provided in Figure 5, which 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.

A relation between credit access and emigration is observed also on a more aggregate level. In Figure 6, we plot district-level emigration rates against (a) the prevalence of borrowing, and (b) loan interest rates prevailing in each district. As the figure shows, there is a positive relationship between loan interest rates and emigration rates at the district level, whereas the correlation between the share of enterprises who are able to take a loan and emigration is negative. Both associations are statistically significant at the one percent level. This provides further descriptive evidence for credit constraints being an important determinant of emigration decisions.

Figure 6: Emigration and credit constraints in Bangladesh

(a) Emigration rate against share of enterprises starting businesses with formal borrowings (b) Emigration rate against interest rate of informal loans
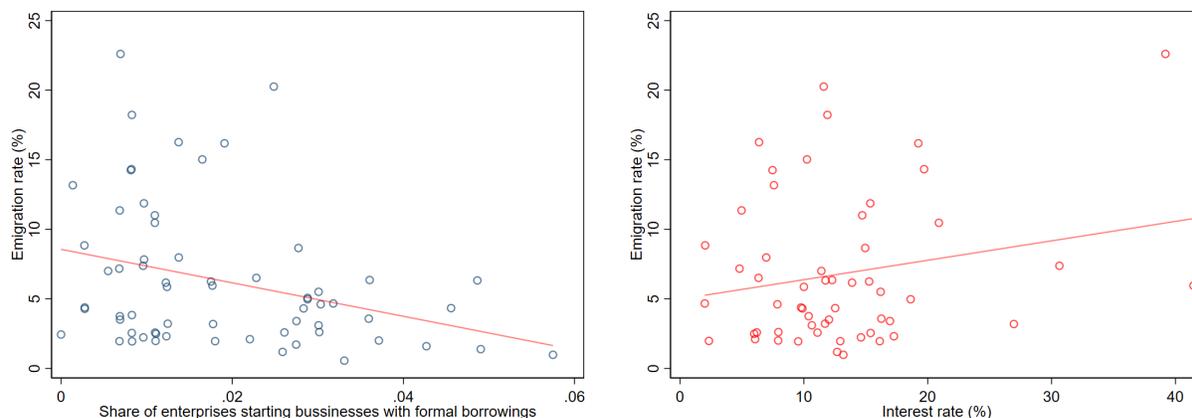
Note: In both panels, each point represents a district. Emigration rate is calculated as the share of males aged 18-59 that are current migrants or return migrants. Formal borrowings in panel (a) include: Agricultural development banks, Commercial banks, Grameen banks, other financial institutes, and NGOs/Relief agencies. And informal loans in panel (b) are loans obtained from Money lenders, Landlords, Employers, Friends, Relatives, and other informal sources.
Source: Bangladesh Household Income and Expenditure Survey (HIES) 2016/2017.

4 One Solution: Temporary Migration

4.1 High Costs and Returns to Migration

Temporary international migration is an expensive endeavour. The BRMS provides a detailed breakdown of different types of costs 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 percent of individuals require at least 10 years to raise the entire cost through their earned incomes.[13] Accordingly, credit access is critical for migration. The largest part of migration expenses, 56 percent is composed of the fees 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,[14]. This 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 4 presents details of this information, with Appendix B.1 providing additional information on the definition of each variable.

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

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[13]Appendix Figure A6 displays the full distribution of migration costs relative to pre-migration household income.

[14]Our data in fact suggest that migrants are more optimistic about their foreign earnings potential than warranted. 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 percent 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 percent. 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 4: Costs and Benefits of Migration

| Variable		Mean	Median	S.D.
Wages abroad	W^a	5,281	3,860	4,784
Earnings at home before migration (opportunity cost of migrating)	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 of stay overseas	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: Bangladesh Household Income and Expenditure Survey (HIES) 2016/2017 for saving rate at home and Bangladesh Return Migrant Survey (BRMS) 2018/19 for the other variables.

log earning-to-cost ratio. Panel (a) of Figure 7 shows the full distribution of this measure. The median earning-to-cost ratio is 4.9, with a corresponding log ratio of 1.6. A sizable share of 29 percent have total earnings of at least tenfold the cost of migration.

Figure 7: Ratio of total earnings and excess earnings over migration costs

(a) Total earnings over migration costs (b) Excess earnings over migration costs
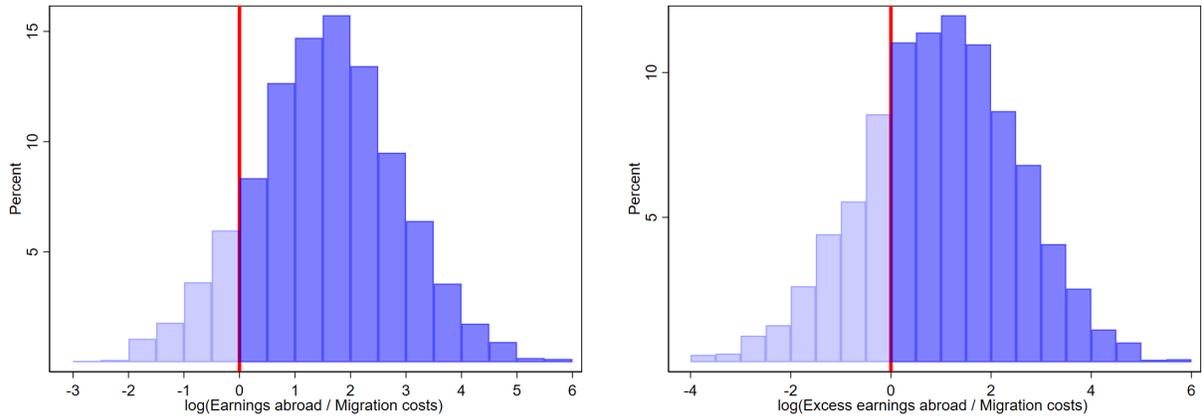
Note: Panel (a) shows the distribution of the log ratio of total earnings abroad over migration costs $(r_{1j} = \frac{W_j^a \cdot D_j}{C_j})$. 88% of individuals earned total earnings abroad that exceeded the costs of migration, whose corresponding log ratios on the horizontal axis are greater than 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 (BRMS) 2018/19.

A more refined measure of rate of return accounts for home country earnings W_j^h as an opportunity cost of migration. The opportunity costs of migrating are estimated based on the monthly labor earnings, either from self-employment or wage work, of individual migrants in Bangladesh in the months prior to migrating, as explained in more detail in Appendix B.1. 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 percent of migrants stay at the destination for long enough to break even. Panel (b) of Figure 7 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 percent of the migrants still have a longer migration duration.

The returns to the costs of temporary migration are not limited to income gains realized during the migration episode. Indeed, when temporary migration enables workers to engage in self-employment and entrepreneurship after return, their lifetime incomes 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 A4 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.

While this is, to the best of our knowledge, the most comprehensive attempt to categorize temporary migration as a risky investment by measuring risks and returns, these calculations only consider costs and benefits that are easily quantifiable and attributable to a given migration episode. They do not include social costs which are difficult to quantify and to attribute to a specific migrant. For example, we do not account for potential effects on the development of children left behind with only one or no parent, as low-skilled temporary migrants typically have to migrate without family.[15] Temporary migration may also have spillover effects on the labor market activities of household members left behind and on household production. Such impacts have been evidenced in various contexts and also tend to be context-specific, ranging from positive to negative effects on choices and outcomes of

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[15]The net effects of temporary migration on children's development are theoretically ambiguous. Empirically, several studies have attempted to estimate the net effects, but results are so far mixed and context specific (Bossavie and Özden 2023).

members left behind, primarily of females.[16]. Mixed and sometimes conflicting results may also be partly attributed to the methodological difficulties in estimating causal effects using cross-sectional data that lack information on labor market activities of household members other than the migrants themselves.
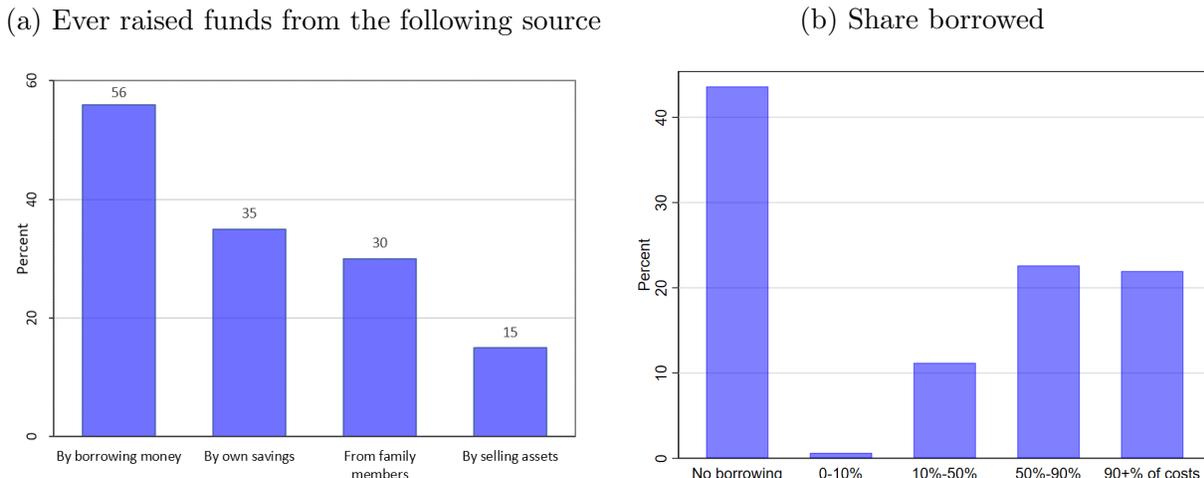
4.2 Borrowing for Migration

A large fraction of migrants finance part or all of their expenses and fees through loans. As discussed earlier, a distinctive feature of the formal and strongly regulated labor migration process 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 more 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 micro-enterprises 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 their total migration costs is 12 percent. In contrast, the estimated share of Bangladeshi micro-entrepreneurs who do not generate sufficient profits over the lifespan of their enterprise to cover initial investment costs is 60 percent.[17] Based on this evidence, the likelihood of defaulting on a loan to finance a micro-enterprise is considerably higher than for a migration loan.

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[16]See for example Mendola and Carletto (2012) in Albania, Acosta (2006) in El Salvador, Amuedo-Dorantes and Pozo (2006) in Mexico, Binzel and Assaad (2011) in Egypt and Lokshin and Glinskaya (2009) in Nepal. For a recent summary of the literature on the topic, see Bossavie and Özden (2023)

[17]We use the average annual survival rate of micro-enterprises from McKenzie and Paffhausen (2019), and average net incomes generated by household enterprises in Bangladesh from the HIES 2016/2017 to compute 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 8: 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 (BRMS) 2018/19.

In our sample, 56 percent of migrants have borrowed from relatives, friends, or financial institutions to raise the funds for migration (Panel (a) of Figure 8). On average, 42 percent of the costs are financed by loans, which implies a debt-to-equity ratio of 0.72. Panel (b) of Figure 8 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 9 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 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 10 shows these rates of return for different migration durations and different fractions of the migration cost

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Figure 9: More borrowing for higher migration costs
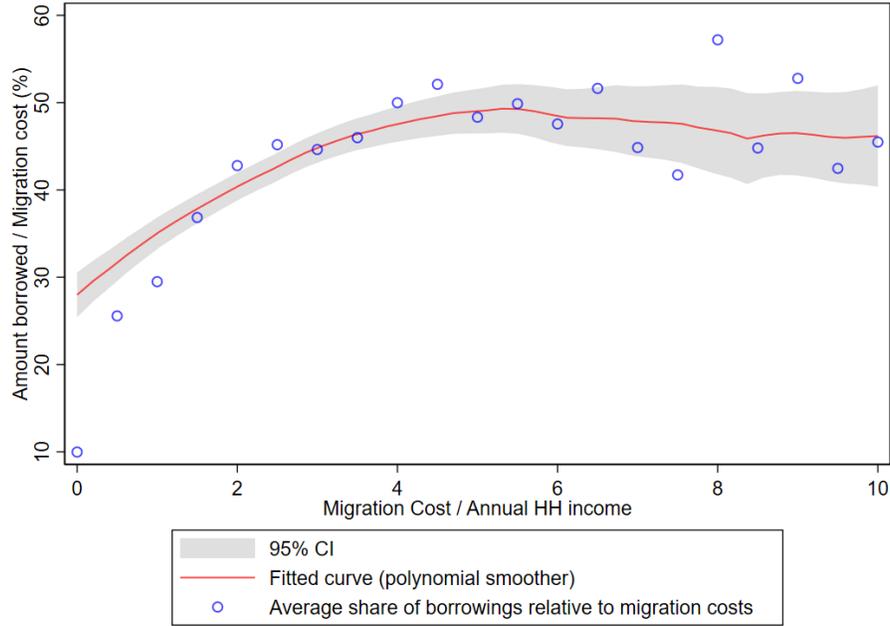
Note: The figure shows the relationship between the share of migration costs financed by borrowing on the one hand and of migration costs relative to annual household income on the other. Each point represents the average share of borrowing in an interval of the ratio of migration costs/annual household income.
Source: Bangladesh Return Migrant Survey (BRMS) 2018/19.

that have been financed on credit.[18]

Each line in Figure 10 shows the rates of return for a given range of migration durations. Migrants from Bangladesh face the very real risk of involuntarily returning 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 premature return 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

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[18]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 10: Return rate by the ratio of loans over costs
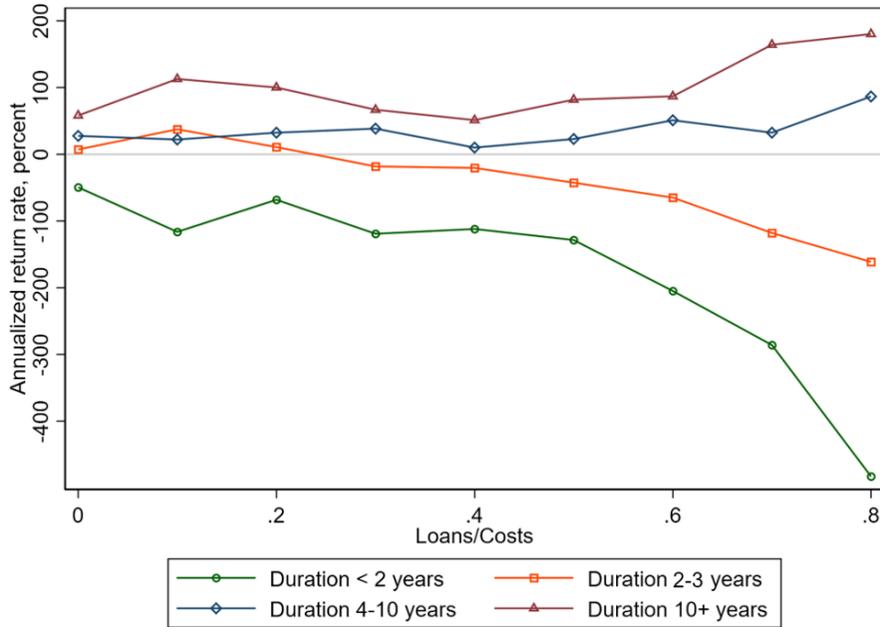
Note: Each point in the figure represents the rate of return to migration for different migration durations and borrowing shares ($R = \frac{1}{N} \sum_{j=1}^{N} \left[\frac{(W_i^a s_j^a - W_i^h s_j^h) \cdot D_j - L_j \cdot (1+i)^{d_j}}{(C_j - L_j)} - 1 \right]$). Since R goes to infinity when costs are fully financed by loans, the figure only presents the cases where loans cover up to 80% of costs.
Source: Bangladesh Return Migrant Survey (BRMS) 2018/19.

countries is strictly conditional on a valid employment contract, its termination implies that migrants must return home.

The BRMS data includes the self-reported reason for returning, and therefore allows us to examine whether a unexpected return is associated with different migration outcomes compared to a planned return. As expected given the institutional context (low-skilled migrants can only stay at destination with a valid employment contract), the end of the employment contract is the leading reason for returning reported by migrants. We categorize as unexpected returnees return migrants who report either having returned from the destination due to visa or work permit issues or having been laid off by the employer (see Appendix Table A2). According to this criterion, unexpected returnees represent about one quarter of the sample. 24 percent of migrants report that they unexpectedly returned due to visa or contract issues. On average, those migrants who unexpectedly return early have stayed abroad for 4.8 years, 32 percent less than the average duration of 7.1 years among those who

returned either as planned or after a (potentially already extended) contract has expired. This implies a sizable loss in total earnings that can be accumulated. As expected, Panel (a) of Figure 11 shows that unexpected return is associated with early returns. About 40 percent of the migrants who stay for less than one year were those returned unexpectedly.

Table 5: Characteristics of return migrants in Bangladesh by type of return

	Unexpected return	Planned return	Difference (U-P)	P-value
Age at departure	29.2	28.6	0.6**	0.01
Years of education	6.4	6.5	-0.1	0.52
Illiterate	0.16	0.17	-0.01	0.62
Primary	0.24	0.24	0.00	0.92
Lower secondary	0.38	0.35	0.03*	0.06
Upper secondary	0.22	0.24	-0.02	0.14
Married	0.87	0.88	-0.01	0.24
Household head (=1)	0.79	0.82	-0.03**	0.02
Household size	5.01	4.89	0.11*	0.07
Duration (years)	4.8	7.1	-2.2***	0.00
Monthly wages abroad (1000 BDT)	35.3	34.8	0.5	0.60
Destination countries				
Saudi	0.23	0.27	-0.04***	0.01
UAE	0.21	0.23	-0.02	0.12
Oman	0.18	0.13	0.05***	0.00
Malaysia	0.12	0.14	-0.02**	0.10
Qatar	0.08	0.06	0.03***	0.00
Others	0.18	0.17	0.00	0.74

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

We observe little systematic difference between migrants who return unexpectedly and those who return as planned. In Table 5, we compare the observable characteristics of migrants who returned unexpectedly to those who returned as planned. We find only very minor differences in terms of age, education or wages. As shown in the lower Panel of the table, however we see that the incidence of unexpected returns varies across destinations, which may reflect differences in labor migration regulations and their enforcement across destination countries.

Unexpectedly leaving the destination country as opposed to leaving as planned impacts the rate of return to the migration endeavor, and the likelihood to start an enterprise after return. As shown in Table 6, earnings to cost, excess earnings to cost, and excess savings to

cost indicators are all significantly larger for migrants who returned as planned compared to those who returned unexpectedly. Panel (b) of Figure 11 visualizes the left shift in the distribution of excess earnings over costs for unexpected returnees compared to planned returns. Whereas slightly more than one-fifth of the latter fail to break even, that share rises to one third for migrants who returned unexpectedly. Since the ability to start entrepreneurship after return is tied to savings accumulated overseas, unexpected returns also negatively affect self-employment after return. As shown in Table 6, migrants who returned unexpectedly are less likely to become entrepreneurs back in Bangladesh: 55 percent of unexpected returnees are self-employed back in Bangladesh, compared to 64 percent of migrants who return as planned. We also compare migration and employment outcomes of migrants who returned unexpectedly and those who returned as planned in regression form conditional on observed characteristics (shown in Table A6). These regression results confirm the pattern presented in Table 6.

Table 6: Return rate of migration and employment status after migration by type of return

	Unexpected return	Planned 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 4, and measures described in the text. The comparison in regression form with controlling for individual characteristics is shown in Table A6.

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 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 seem to prevail in the context of temporary migration from Bangladesh.[19] The occupational patterns of individuals before,

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[19] 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.

Figure 11: Temporary migration outcomes by type of return

(a) Duration of stay abroad by return type   (b) Excess earning to cost ratio by return type
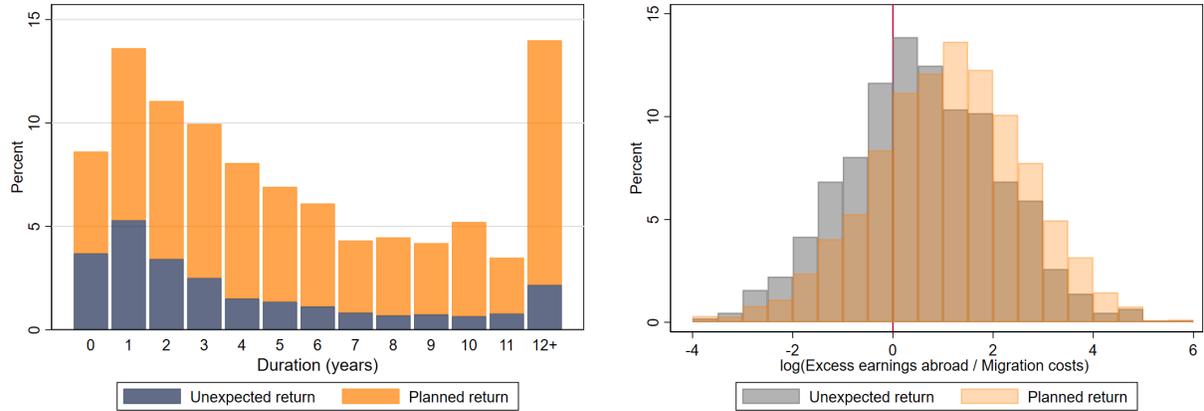
Note: Panel (a) shows the distribution of duration of stay abroad. Bars, including both unexpected return or planned return, add up to 100%. Panel (b) shows the distribution of ratio of excess earning to costs by unexpected return or planned return. The definition of excess earning to cost is the same as in Figure 7b. 67% of the individuals who return unexpectedly and 79% of the individuals who normally returned had more excess earnings than costs.
Source: Bangladesh Return Migrant Survey 2018/19.

during, and after migration instead indicate that the human capital channel is minor. Table 7 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 A5 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 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,

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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.

descriptive evidence on sectoral patterns lends little support for human capital accumulation as a driver of temporary migration from Bangladesh.

Table 7: Distribution of temporary migrants by 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 (BRMS) 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.

The evidence from Bangladesh provided in this paper demonstrates the important role played by temporary migration as a long-term investment strategy to circumvent imperfections in the domestic credit market for entrepreneurs. Our analysis shows that temporary international migration has large positive returns for a sizable share of migrants from Bangladesh. It shows that these large returns to temporary migration are often sufficient to allow temporary migrants to accumulate sufficient capital to overcome domestic credit constraints to entrepreneurship. To strengthen this point, the paper also highlights that outcomes from the migration episode, in particular the net returns from the migration experience, are closely linked to the likelihood of starting a self-employed activity after return. It establishes strong linkages between the outcomes of a migration, such as duration of stay or earnings abroad, and entrepreneurial activities after return. As such, the paper highlights that temporary migration contributes to the structural transformation in developing

economies, allowing to overcome credit constraints to non-agricultural entrepreneurship. 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. The former requires addressing structural issues in the functioning of domestic capital markets through a set of policy reforms which may take time to implement and produce expected effects. Those include, for instance, building strong and enforceable legal regimes and regulations for domestic credit markets, building credit information systems, or lowering the costs of insolvency proceedings. 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. While policy efforts are devoted to improving credit market conditions in the home country and better financial market functioning, until these come into place, temporary migration remains a viable option to improve the development and economic outcomes of poorer credit-constrained households in Bangladesh. Policies to enhance the efficiency of migration as a vehicle for self-employment include the reduction of either legal or financial barriers to migration.

Beyond a lack of efficiency in credit allocation, economic development of low-income countries may also be hampered by a scarcity of capital available. In the absence of foreign investment, migrant remittances are an important resource for capital accumulation in labor abundant countries (Rapoport and Docquier 2006) and increases the capital available to aspiring entrepreneurs. 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 percent 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.2 Other Evidence of Credit Constraints in Bangladesh

Figure A1: Ease of Access to Loans of each country against GDP per capita
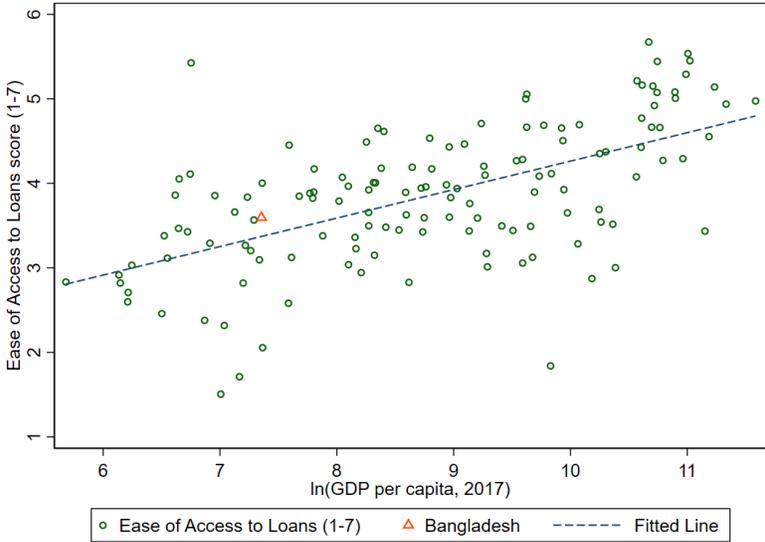
Note: The indicator Ease of Access to Loans is a continuous variable ranging from 1 to 7. Bangladesh ranks the 84th out of 136 countries in the sample.
Source: Global Competitiveness Index (GCI) 2017, by World Economic Forum.

Figure A2: Share of households in Bangladesh who took a loan in the last 12 months, by income decile
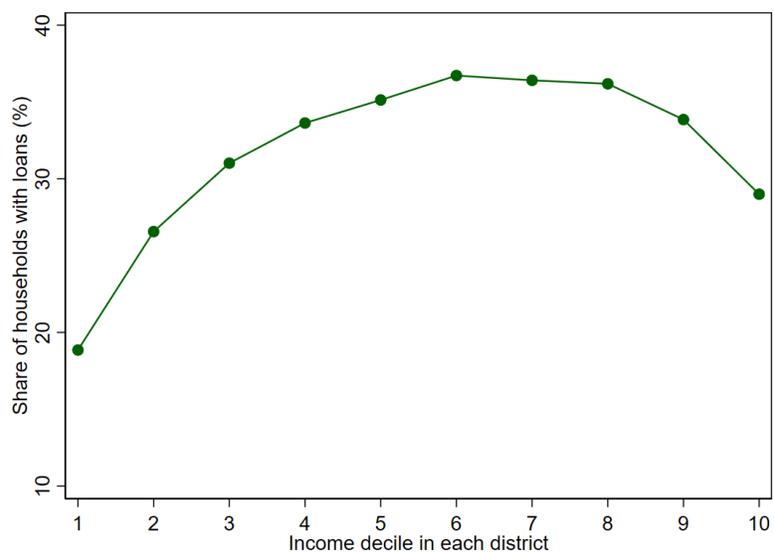
Note: Each point represents the share of households that took a loan in the last 12 months in one decile of relative income ranking in each district.
*Source:* Bangladesh Household Income and Expenditure Survey (HIES) 2016/17.

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 Surveys.

Figure A3: Main source of financing, by current firm size
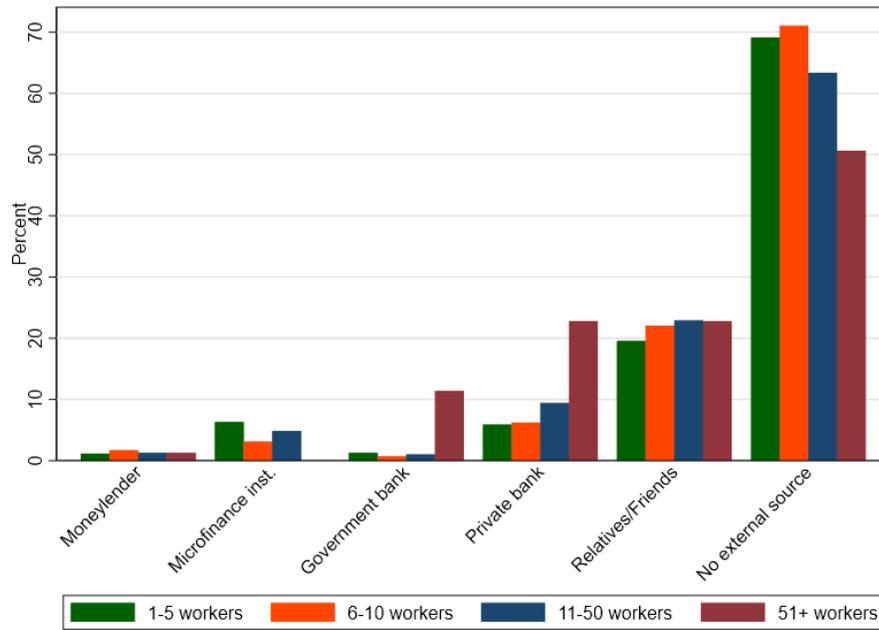
Note: The figure shows shares of firms which report ever having raised debt from the listed sources, separately by the current number of workers.
Source: Bangladesh Formal and Informal Enterprise Survey, 2010.

B   Data Appendix

B.1   Variable construction for estimation of the monetary returns to migrating

1. Wages abroad: annual wage incomes earned abroad, converted to U.S. dollars and adjusted for inflation, using 2010 as the base year.

2. Income at home before migration (opportunity costs of migration): average monthly labor income earned in Bangladesh for those who were either self-employed or wage employees in the 12 months prior to migrating, converted to U.S. dollars and adjusted for inflation, using 2010 as the base year. The calculation of earnings at home is based on monthly earnings. As workers typically migrate overseas for several years, potential fluctuations in earnings across seasons are unlikely to influence our calculations.

3. Migration costs: money spent for migration preparation, including intermediary fees paid to migration agencies, passports and visa application fees, medical examination fees, and other fees paid to Bangladesh government. Respondents were asked to report the amount spent on these individual items which were summed up to obtain total costs. The total costs are then converted to U.S. dollars and adjusted for inflation, using 2010 as the base year.

4. Loans: loans borrowed to finance migration, which equals zero if no money has been borrowed. It is converted to U.S. dollars and adjusted for inflation, using 2010 as the base year.

5. Duration: The numbers of years stayed overseas (including fractions of years) is calculated using the month and year of departure and month and year of return collected as part of the survey. The average duration of the temporary migrant contract workers in our data is about 6 years. The survey instructions explicitly asked respondents not to count separate stays overseas when migrants returned to Bangladesh only for holidays before returning to their job overseas. Therefore, the duration of stay captures the total duration of stay and work overseas until the employment contract abroad ended, including potential short returns/visit to Bangladesh for holidays of less than a month.

6. Saving rate abroad: the ratio of migrants' savings from abroad over his total earning abroad. Savings include money brought home at the time of returning and remittances sent home during migration.

7. Domestic saving rate: the ratio of annual household savings over total annual household income. The savings represent the residual amount that remains after subtracting household consumption expenditure from total household income. This is calculated from the HIES data.

B.2 Summary statistics and comparison between BRMS and national representative data

Table A2: Reasons of returning

	Reason	Number	Share	
1	End of employment contract	2,695	53.9%	
2	Expelled due to visa issues/work permit	788	15.8%	Unexpected return
3	Wage lower than expected	503	10.1%	
4	Laid off by employer	405	8.1%	Unexpected return
5	Illness	214	4.3%	
6	Family emergency	199	4.0%	
7	Job too difficult and risky	146	2.9%	
8	Accumulated enough money	30	0.6%	
9	Injury	20	0.4%	
	Total	5,000	100%	

Source: Bangladesh Return Migrant Survey (BRMS) 2018/19.

Table A3: Destination countries of migrants from Bangladesh

	BRMS 2018/19	BMET 2005-18	HIES 2016/17
Destination country	Return migrants	All migrants	Current migrants
Saudi Arabia	24.4%	19.6%	24.6%
UAE	23.3%	22.7%	13.1%
Malaysia	14.2%	9.6%	16.6%
Oman	14.3%	14.4%	11.4%
Qatar	6.5%	8.0%	7.8%
Others	17.4%	25.7%	26.5%

Source: Bangladesh Return Migrant Survey (BRMS) 2018/19 for return migrants; Bangladesh Bureau of Manpower, Employment and Training (BMET) for all registered migrants with the government between 2005 and 2018; Bangladesh Household Income and Expenditure Survey (HIES) 2016/17 for migrants working abroad at the time of the survey.

Table A4: District of origin of temporary migrants from Bangladesh

Zila	BRMS 2018/19 Return migrants	BMET 2005-18 All migrants	HIES 2016/17 Current migrants	Zila	BRMS 2018/19 Return migrants	BMET 2005-18 All migrants	HIES 2016/17 Current migrants
Cumilla	9.6%	10.8%	13.2%	Jamalpur	0.8%	0.9%	0.6%
Chattogram	7.5%	8.4%	7.3%	Rajbari	0.5%	0.8%	0.4%
Brahmanbaria	6.0%	5.4%	4.8%	Naogaon	0.9%	0.8%	0.8%
Tangail	3.6%	4.9%	4.6%	Meherpur	0.3%	0.7%	0.5%
Dhaka	4.3%	4.5%	2.4%	Sirajganj	1.1%	0.7%	0.7%
Chandpur	3.2%	4.1%	4.9%	Gopalganj	0.5%	0.6%	0.4%
Noakhali	7.3%	3.9%	5.9%	Pirojpur	1.3%	0.6%	0.5%
Munshiganj	3.7%	2.9%	2.7%	Chuadanga	0.2%	0.5%	0.5%
Narsingdi	2.0%	2.9%	3.7%	Rajshahi	0.0%	0.5%	0.0%
Feni	2.5%	2.6%	3.9%	Natore	0.4%	0.5%	0.2%
Narayanganj	1.6%	2.5%	2.3%	Netrakona	0.4%	0.5%	0.4%
Kishoreganj	1.6%	2.5%	1.9%	Magura	0.3%	0.5%	0.4%
Lakshmipur	2.1%	2.5%	2.3%	Satkhira	1.4%	0.5%	0.9%
Sylhet	3.4%	2.4%	5.2%	Bagerhat	4.3%	0.5%	0.4%
Gazipur	1.7%	2.3%	0.8%	Khulna	0.9%	0.4%	0.5%
Mymensingh	1.9%	2.2%	1.3%	Gaibandha	0.7%	0.4%	0.3%
Faridpur	1.7%	2.2%	1.9%	Barguna	0.0%	0.4%	0.5%
Manikganj	1.6%	2.1%	2.1%	Patuakhali	0.2%	0.4%	0.1%
Moulvibazar	2.0%	2.0%	2.2%	Narail	0.3%	0.4%	0.2%
Habiganj	2.7%	1.8%	1.7%	Jhalakati	0.2%	0.4%	0.4%
Barishal	1.2%	1.4%	1.1%	Rangpur	0.4%	0.3%	0.2%
Madaripur	0.9%	1.4%	1.5%	Dinajpur	0.7%	0.3%	0.1%
Sunamganj	1.3%	1.3%	2.1%	Jaipurhat	0.0%	0.3%	0.2%
Shariatpur	1.9%	1.3%	2.0%	Kurigram	0.2%	0.2%	0.1%
Bogura	1.4%	1.3%	0.9%	Sherpur	0.3%	0.2%	0.1%
Cox's Bazar	1.7%	1.2%	2.4%	Nilphamari	0.2%	0.2%	0.2%
Jashore	1.2%	1.2%	1.2%	Thakurgaon	0.0%	0.1%	0.1%
Pabna	0.9%	1.2%	0.8%	Khagrachari	0.5%	0.1%	0.1%
Kushtia	0.3%	1.1%	1.1%	Lalmonirhat	0.0%	0.1%	0.1%
Jhenaidah	0.3%	0.9%	0.5%	Panchagarh	0.4%	0.1%	0.0%
Chapai Nawabqanj	0.4%	0.9%	0.9%	Rangamati	0.0%	0.1%	0.2%
Bhola	0.8%	0.9%	0.4%	Bandarban	0.5%	0.0%	0.1%
				Total	100%	100%	100%

Source: Bangladesh Return Migrant Survey (BRMS) 2018/19 for return migrants; Bangladesh Bureau of Manpower, Employment and Training (BMET) for all registered migrants with the government between 2005 and 2018; Bangladesh Household Income and Expenditure Survey (HIES) 2016/17 for migrants working abroad at the time of the survey.

47

C   Additional Tables and Figures

Figure A4: Earnings curve by employment status of return migrants
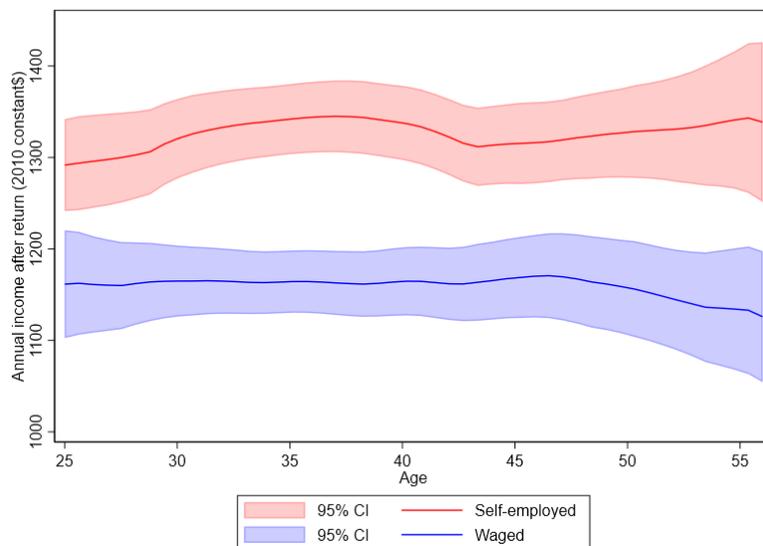
Note: Earnings are annual and in 2010 constant USD. The curves report average unconditional monthly wages after applying a local polynomial smooth. Due to the small number of observations in the tails, the sample is restricted to males aged 25-56.
*Source:* Bangladesh Return Migrant Survey (BRMS) 2018/19.

Figure A5: Emigration rate by years of education
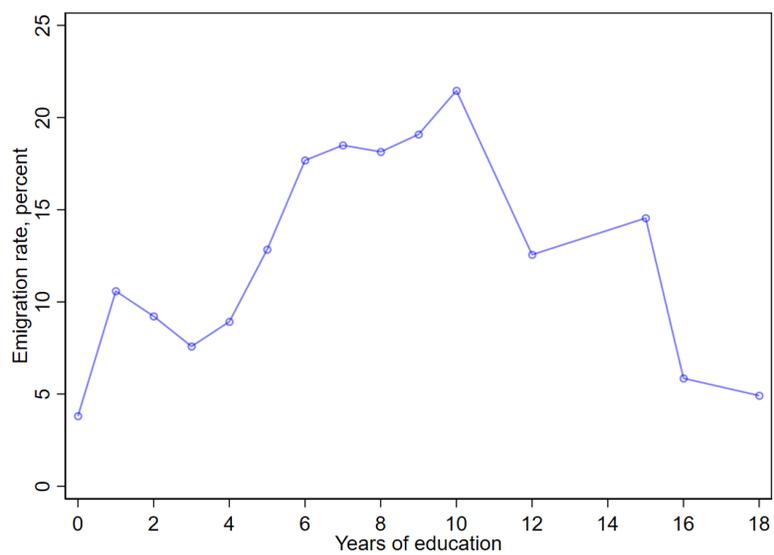
Note: The sample is restricted to males aged 22-59. Emigration rate is calculated as the share of both current migrants and return migrants in the population.
Source: Bangladesh Household Income and Expenditure Survey (HIES) 2016/17.

Figure A6: Migration costs over household income before migration
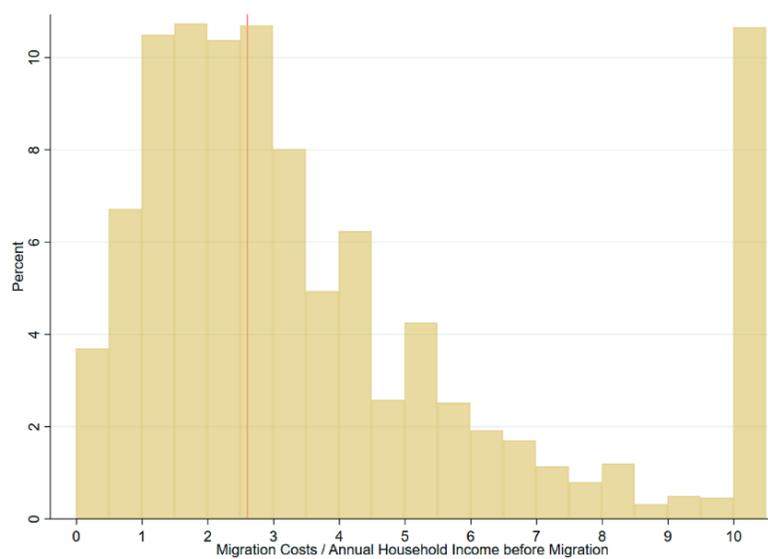
Note: This figure present the distribution of the ratio of migration costs over annual household income before migration. The median ratio (indicated as a red vertical line) is 2.6. The last bar represents the cases where migration costs are ten times or more the annual income.
Source: Bangladesh Return Migrant Survey (BRMS) 2018/19.

Table A5: 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 (BRMS) 2018/19.

Table A6: Conditional association between unexpected return and migration and labor market outcomes after return

Dependent var./category	OLS Earning-to-cost, r1 (1)	OLS Excess earning-to-cost, r2 (2)	OLS Excess saving-to-cost, r3 (3)	Multinomial logit Waged (4)	Self-employed (5)	Employer (6)
Unexpected return	-3.525***	-2.023***	-1.092***	0.076***	-0.079***	0.003
	(0.368)	(0.462)	(0.207)	(0.018)	(0.019)	(0.008)
Age at departure (18-24 as the reference group)						
Age at departure: 25-29	-1.286**	-0.870	-0.561	0.035	-0.032	-0.003
	(0.514)	(0.828)	(0.394)	(0.021)	(0.022)	(0.009)
Age at departure: 30-34	-3.175***	-1.837**	-1.123***	0.045*	-0.041	-0.004
	(0.589)	(0.863)	(0.397)	(0.026)	(0.026)	(0.010)
Age at departure: 35-39	-3.688***	-2.436***	-1.236***	0.069**	-0.045	-0.025
	(0.679)	(0.886)	(0.422)	(0.030)	(0.031)	(0.016)
Age at departure: 40+	-5.488***	-3.811***	-1.920***	0.100***	-0.120***	0.020*
	(0.706)	(0.880)	(0.420)	(0.031)	(0.032)	(0.011)
Education level (illiterate as the reference group)						
Primary (0-5)	-1.225**	-0.865	-0.539*	-0.046*	0.040	0.005
	(0.597)	(0.629)	(0.295)	(0.027)	(0.028)	(0.009)
Lower secondary (6-9)	-1.155**	-0.365	-0.296	-0.055**	0.044*	0.011
	(0.587)	(0.658)	(0.315)	(0.026)	(0.026)	(0.009)
Upper sec. & above (10+)	0.212	0.638	0.143	-0.188***	0.162***	0.026**
	(0.683)	(0.930)	(0.420)	(0.027)	(0.028)	(0.011)
Head of household	3.103***	1.892***	1.115***	-0.068**	0.013	0.055***
	(0.530)	(0.673)	(0.311)	(0.027)	(0.029)	(0.016)
Household size	-0.151	-0.136	-0.051	-0.005	-0.000	0.005***
	(0.114)	(0.147)	(0.066)	(0.005)	(0.005)	(0.002)
Married	3.370***	2.963***	1.429***	0.065**	-0.044	-0.021
	(0.566)	(0.670)	(0.312)	(0.033)	(0.033)	(0.013)
Destination FE	Yes	Yes	Yes		Yes	
Division FE	Yes	Yes	Yes		Yes	
R-squared	0.112	0.079	0.103		0.048	
Observations	4621	1807	1807		3186	

Note: Robust standard errors in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Marginal effects of Multinomial logit model are reported. Sample is restricted to males aged 18-59, and further restricted to individuals who were employed before migration for columns (2) and (3), and to individuals employed after return for columns (4) to (6). Data source: Bangladesh Return Migrant Survey (BRMS) 2018/19.