Migration and the Labor Market Impacts of COVID-19

Nathan Barker[*], C. Austin Davis[**], Paula López-Peña[*], Harrison Mitchell[*], A. Mushfiq Mobarak[*], Karim Naguib , Maira Emy Reimão[***], Ashish Shenoy[****] and Corey Vernot[*]

[*]Yale University
[**]American University
[***]University of Florida
[****]University of California, Davis

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Abstract

COVID-19 is spread through face-to-face contact, and migration therefore plays an outsized role in its global transmission. Effective mitigation policies include limitations on mobility. However, labor migration is a fundamental component of income for large numbers of households, especially in low- and middle-income countries. Using detailed microdata, we document how migration-dependent households have been hit with the dual shocks of higher infection prevalence and greater economic disruption as a result of COVID-19. In phone surveys conducted in Bangladesh and Nepal in April–May, 2020, we find that households with returning international migrants are twice as likely to report experiencing symptoms of COVID-19. At the same time, households that previously engaged in labor migration experience greater declines in household income and food security than those that did not. Bangladeshi households that won a visa lottery to migrate internationally in 2013 experienced sharper drops in income in May 2020 after the COVID-lockdown than lottery-losers. Food insecurity among migrant-dependent Bangladeshi rural households in April, 2020 exceeded that observed during typical agricultural lean seasons. Declines in household welfare are driven by both lower rates of migration and less remittance income from remaining migrants. These losses are not recovered in home labor markets because migrants face difficulty reintegrating. COVID-19 creates a new barrier to migrant reintegration due to stigma associated with the health risks posed by migration.

1   Introduction

COVID-19 is primarily transmitted through face-to-face contact, and migration therefore plays an outsized role in its global spread. Social distancing policies to contain the pandemic include restrictions that limit geographic mobility within countries and hence differentially restrict the income of internal rural-urban migrants. In addition, many nations have responded to the public health crisis by revoking work visas for existing labor migrants and sending foreign workers home. In this paper, we present evidence that both the public health risks of COVID-19 and the subsequent economic fallout have been particularly damaging to households that engage in labor migration, and propose policies to support them throughout the pandemic.

Households that rely on labor migration are a uniquely vulnerable group that merit policy focus in part because they make up a substantial share of the world's population. An estimated 272 million people live outside their country of birth, of which 192 million come from regions classified as "less developed" by the United Nations Department of Economic and Social Affairs (UNDESA). Just under half of these migrants take up residence in developed regions, and almost 60 million international migrants from less developed countries remain within their subregion of birth (UNDESA, 2019). International labor migration is a large component of the global economy, as direct remittances to low- and middle-income countries in 2018 reached nearly $500 billion in 2018, three times the amount of Official Development Assistance and roughly 80% as much as Foreign Direct Investment.

Internal migration is an even more prevalent phenomenon, with an estimated 763 million internal migrants worldwide, and is arguably more consequential for countries' development prospects compared to international migration. Two-thirds of all internal migration happens within developing countries, most originating in rural areas (UNDESA, 2013). We argue that poor households that engage in this form of labor migration are a particularly vulnerable class not only for their increased exposure to the virus or because of the slowdown in the local economy due to contagion mitigation policies, but also to restrictions imposed in their destination areas.

We assemble several household surveys to document how migration is a fundamental source of economic livelihood, especially in low-income countries and among the poor. Low-asset households rely heavily on frequent, short-term migration by individual members for labor income. Across a range of populations, we find migration episodes of a duration of less than twelve months to be two orders of magnitude more common than in the United States. Moreover, the recent pace of urbanization in the developing world has created a large urban population with roots outside of their city of residence. These new urbanites move between markets for work and frequently travel to reunite with family in their place of origin. Experimental evidence from Bangladesh, Kenya, Tonga and Haiti show that the economic returns to such mobility are

large: Migration produces a 50–250% increase in household earnings. However, such mobility can also be risky for public health during a pandemic.

In April and May 2020, we deployed phone interviews of representative samples of migrant and non-migrant households linked to prior field studies in Bangladesh and Nepal. We find that, in April 2020, Bangladeshi households that won a (randomized) lottery for migration work permits in Malaysia 7 years prior are earning significantly less than lottery losers, even though these lottery-winning-households had earned 18–100% more between 2013 and 2019. This differentially larger adverse economic shock for migrant families during the COVID-19 period is also observed in three other unrelated study samples in Bangladesh and Nepal. Furthermore, the substantially larger decline in earnings among domestic-migrant families leads to rates of food insecurity as much as five times greater than those faced by non-migrant households.

Data on income sources verifies that the differential economic shock experienced by migrant households comes primarily from a loss of remittance income. This loss is driven by both lower rates of migration—existing migrants are sent home from their places of work and new migrants are unable to depart—as well as decreased remittances among those migrants who remain away, as economic contraction at destination labor markets lowers opportunities for migrant workers. This implies that not only do displaced workers experience lower earnings currently (many of them having already incurred the upfront cost of migration), but also their families will remain vulnerable for a longer period. For these households that rely on migration, the decline in income they face can persist even if COVID-19 is no longer a local threat.

Our data show that these households do not make up for the remittance loss using alternative economic opportunities at their place of origin, leading them to be worse off than households that never migrated. Reintegration of migrants into the local economy is especially challenging at this time. Beyond the usual barriers (skill transferability, weaker social networks), COVID-19 introduces the additional burden of stigma, as locals fear contagion from returnees. The stigma is difficult to overcome because the fear is justified: Our data on symptoms show that that households with recent migrant returnees—especially from abroad—are more likely to display WHO/CDC COVID-19 symptoms such as dry cough than households without returnees.

Migrants and their families are therefore uniquely exposed to the fallout from the COVID-19 pandemic both in their health status and their economic well-being. They need to be a primary focus of support. Remittance income is necessary for meeting basic caloric needs for many migrant households, and neglecting this fact, especially during the agricultural lean season and other predictable times of economic distress, might create its own nutritional public health crisis. Moreover, in the absence of financial relief, the strong incentive to migrate—particularly if households are close to falling below subsistence—may hinder compliance with travel directives. If households feel they have no option but to send a migrant for income,

they may make decisions that accelerate the spread and deepening the impacts of COVID-19 both in origin and destination areas. Section 5 proposes a set of short term and medium term policy responses for this sector.

Our work complements the widely cited forecast by the World Bank (2020a) predicting a decline in global remittance income of 19.9% in 2020, with only a modest recovery of 5.2% in 2021. This forecast is constructed by interacting projections of national income in host countries with the historical relationship between income and remittances, but may be inaccurate if this relationship differs in the current economic climate due to unique features of the global pandemic.Deaton (2005) discusses other potential shortcomings of national accounts data in measuring household welfare. By contrast, we use detailed household survey data to provide direct evidence on the relationship between COVID-19 and household remittance earnings. In the two months immediately following the outbreak of the pandemic, we observe declines in remittance earnings that are substantially larger than forecasted.

We add to a growing body of literature that highlights how the impacts of COVID-19 reinforce existing socioeconomic disparities. On the public health side, low-income populations have experienced greater rates of mortality due to limited access to healthcare and preexisting comorbidities (e.g. Garg et al., 2020). At a national level, less developed countries have lower total hospital capacity and can therefore adequately treat a smaller fraction of their population (Barnett-Howell and Mobarak, 2020). We document how the prevalence of short-term labor migration accelerates transmission among poor populations in developing countries, and how policies restricting movement can place additional pressure on the nutritional health of those living close to subsistence.

We illustrate how the link between earnings and mobility in developing countries exacerbates the exposure of the poorest households to this particular crisis. This channel is unique to the nature of a global pandemic, which requires limitations on mobility to slow the spread. Our research expands on existing work that finds that the greatest negative labor market impacts from COVID-19 in the United States and European Union are among industries with high concentrations of migrant labor (Garrote Sanchez et al., 2020; Fasani and Mazza, 2020; Gelatt, 2020; Kerwin et al., 2020; Borjas and Cassidy, 2020). Related research has shown a similar relationship between wealth and labor market outcomes based on how well occupations can accommodate working from home (Dingel and Neiman, 2020; Saltiel, 2020; Gottlieb et al., 2020). We add to these findings by documenting how labor market shocks are transmitted into household welfare using high quality microdata from developing countries.

In Section 2 of this paper we describe the various sources of data we use draw upon. Section 3 summarizes the mobility-related policy response to COVID-19 and describes the importance of labor migration prior to the outbreak. Section 4 presents our main findings on the heightened economic and medical impacts of the

outbreak on migrant households. We conclude in Section 5 with a discussion of potential policies targeted at aiding migrant populations.

2   Data and Methodology

We present new evidence on how COVID-19 and associated social distancing policies have differentially affected households that do and do not rely on migration income. For this, we combine newly collected phone survey data with existing household records among three populations in Bangladesh and one in Nepal. All four populations of study were selected due to their participation in prior research on migration and seasonality by the authors of this paper. Planned data collection from each of these studies was either ongoing or complete by February, 2020.

We contacted household participants from each of these samples by phone in April–May 2020 to investigate the impact of COVID-19. Our phone survey included questions about symptoms of illness, household earnings and financial distress, recent movement, and social distancing measures. The four main study samples are summarized in Table 1, with further details discussed in Appendix A.

Bangladesh–Malaysia Visa Lottery (G2G): The Government-to-Government (G2G) study consists of Bangladeshi individuals who applied for a work visa in Malaysia in 2013. Due to oversubscription, visas were awarded by lottery to 30,000 of the nearly 1.5 million applicants. A random sample of 3,512 households representing both lottery winners and losers were contacted in August–December 2020 for in-person surveying, and we reached 2,937 of these by phone. Because visas were allocated by lottery, this sample provides experimental variation in the propensity to migrate, with visa lottery winners being 58 percentage points more likely to have a household member migrate internationally in the five years following the lottery than lottery losers. Details of the original study are discussed by Shrestha et al. (2020).

Nepal Rural Communities (NPL): The Nepal Seasonality (NPL) study consists of 2,636 households sampled from the bottom half of the wealth distribution in multiple wards of the Western Terai region of Nepal. We construct a household panel from six rounds of phone surveys between August 2019 and July 2020, and the final round included additional COVID-specific questions. Migration-dependent households in this sample are defined as those that had a migrant away at any point in 2019. Details of the original study are discussed by Mobarak and Vernot.

Bangladesh Landless Agricultural Workers (NLS): The No Lean Season (NLS) study experimentally evaluates a large-scale program to offer seasonal migration loans to landless agricultural workers in Northern Bangladesh. The project made loan offers to 19,000 households in 2018, and a random sample of 8,490 eligible households drawn from both offered and unoffered villages were surveyed in March and June

2019. We contacted a random sample of 294 households from this sampling frame by phone, stratified by both treatment and prior migration status. Migration-dependence in this sample is defined as having a household member migrate temporarily in at least one of the previous three years. Details of the original study are discussed by Mobarak et al. (2020).

Bangladesh Rohingya Refugee Communities (CBPS): The Cox's Bazaar Panel Survey (CBPS) is a longitudinal study tracking 5,000 households representative of both refugee and host populations in the Cox's Bazaar district of Bangladesh, which is currently home to over 860,000 stateless Rohingya refugees from Myanmar. Researchers conducted in-person baseline surveys with study households in July 2019, and we reached a random sample of 899 study households by phone. Migration-dependent households in this sample are defined as those that had a migrant away at any point in 2019. The original data generated by this project are reported by Lopez-Pena et al., 2020).

[Table 1 about here.]

For each sample, we conduct a household-level difference-in-differences regression of income and food security on dummy indicators for migration dependence and time. In the G2G sample, this regression is identified by experimental variation in the propensity to migrate due to the visa lottery. Furthermore, in the NLS sample, we show that monthly rates of food insecurity are nearly identical in migrant and non-migrant households in 2018–2019 and the first two months of 2020, providing strong evidence for the parallel trends assumption necessary for difference-in-differences. While we lack the data to test pretrends in the other two samples, results are consistent across all groups.

We supplement the main data with a number of secondary sources to document the prominence of labor migration around the world. These sources include national surveys in Nepal, Uganda, and the United States, which are among the few nationally representative surveys we found that document short-term migration of individual household members, as well as survey data generated by several other studies on the prevalence of and returns to labor migration. Our data on migration prevalence also encompasses a surveyed of 19,396 workers at 200 spot labor markets in 9 Bangladeshi cities conducted in September 2018 in conjunction with the NLS evaluation, along with a followup phone surveys of 8,490 of these workers in April 2019. The full set of secondary data is described in Table 2.

[Table 2 about here.]

3 Background

Mobility Restrictions During COVID-19

Migrant populations warrant particular focus during this pandemic because mobility restrictions feature so prominently in public health policy. To limit personal contact, nearly every country in the world has incorporated social distancing into its COVID-19 response. Local measures include restrictions on gatherings, stay-at-home orders, mandatory curfews, and closing of non-essential businesses. Importantly, most nations have also adopted restrictions on domestic and international travel to slow the geographic diffusion of the illness. In a March 26 audit of 1,596 cross-national border crossings, the International Organization for Migration recorded that 1,372 of the crossings had imposed additional limitations on mobility. By April 17, 161 out of 190 countries had instituted federal barriers to internal mobility as a part of their pandemic response (International Monetary Fund, 2020). Early empirical evidence indicates that such activity has been successful in slowing the spread of the disease (Kraemer et al., 2020; Hsiang et al., 2020; Flaxman et al., 2020).

Barriers to mobility feature prominently in social distancing efforts in our study areas of Bangladesh and Nepal. As of May 16 and May 28, respectively, both countries had implemented a variety of measures such as limiting use of public transport, requiring individuals to stay at home except for essential travel, and imposing internal movement restrictions. Additionally, Bangladesh has banned arrivals from some regions while Nepal has imposed a complete border closure (Hale et al., 2020). We describe mobility restrictions in these countries and internationally more thoroughly in Appendix B.

These policy responses and the global economic downturn have led to a mass return of migrant workers around the world. In India alone, between March and May an estimated 10 million domestic migrants returned home, and, in an operation launched in May, the Government of India brought back another 500,000 international migrants who were stranded in various destinations around the world (Roy and Agarwal, 2020; Tribune, 2020; Ministry of External Affairs). Similarly, the Government of Nepal prepared to repatriate 400,000 workers stranded by restrictions imposed in response to COVID-19. An estimated 200,000 Bangladeshis returned to their country earlier in 2020, before its borders closed, and the International Organization for Migration (IOM) Bangladesh is preparing for another wave of that magnitude once its borders reopen (IOM Bangladesh, 2020). With respect to internal migration, using our own data, we estimate that as much as one-quarter of day laborers engaged in construction jobs in major cities in Bangladesh – a population largely comprised of migrants – returned to their villages and towns of origin between 1 March

and 15 June [1,2].

There is further reason to believe that the impact of COVID-19 falls heavily on even those migrants not returning home. A number of studies document how migrant-heavy sectors in OECD countries have experienced the largest contractions since the onset of the pandemic (Garrote Sanchez et al., 2020; Fasani and Mazza, 2020; Gelatt, 2020; Kerwin et al., 2020; Borjas and Cassidy, 2020). Thus, migrant workers who remain at their destination still face diminished prospects for employment and income.

Prevalence of Short-Term Migration

While mobility restrictions and social distancing policies have been economically disruptive worldwide, their impact is especially pronounced in developing countries and among poorer populations where short-term, high-frequency migration is a fundamental component of household earnings. Panel A of Figure 1 plots the share of poor households that participate in seasonal or temporary migration episodes lasting under 12 months for several countries. The calculations in the figure draw from multiple sources of data including both targeted surveys from studies on household migration and nationally representative samples collected by national statistical offices, summarized in Table 2. Importantly, all sources of data include detailed information on episodes of short-term and circular migration and include cases where individual workers migrate while the majority of the household remains behind.

Panel A of Figure 1 illustrates three important features of short-term migration around the world. First, short-term migration is extremely common in the developing countries for which we have data. Among the countries included in Asia, Africa, and Latin America, between one fifth and one half of households have at least one member away for work for some portion of the year. By contrast, the annual rate of short-term migration in the United States is below 0.2%. The pervasiveness of short-term migration in many parts of the world calls for its explicit consideration in COVID-related policy.

Second, within developing countries, short-term migration is more concentrated among identifiable populations and regions. In particular, poorer and more rural populations engage in short-term migration at elevated rates. In Nepal, India, and Uganda, where data on short-term migration rates among the general population are available, we identify sub-populations for whom the rate of migration is up to four times higher than the national average.[3] This fact indicates that an appropriate mitigation policy requires geographic and sectoral specificity to identify and target the most affected households and regions.

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[1]This dataset is representative of day laborers who sought employment in spot markets in August 2018 across nine of the largest cities in Bangladesh.

[2]The construction sector in urban areas of Bangladesh employs 8.8% of all working males aged 10 or older (UNFPA).

[3]We lack the socioeconomic and geographic resolution to replicate this comparison in the U.S. data. However, when restricting to households where the head has less than a high-school education, the maximum monthly departure rate climbs slightly but remains below 0.3%. The rate of short-term migration is not substantially greater for any specific non-military industry or occupation.

Third, short-term migration is highly seasonal in developing countries, especially among rural populations. The first three rows of Panel A of Figure 1 report rates of departure during the peak migration season in rural Nepal, Northern Bangladesh, and Central India.[4] Peak-season migration accounts for more than half of overall short-term migration in these populations. The migration season comes at times of the year when local labor demand is predictably low. By comparison, in the United States there is no single month where migration departures exceed ten percent of the annual rate; migration is distributed far more evenly throughout the year.[5] This fact suggests that in addition to targeting specific populations, economic policies for migrant households should also be appropriately timed to specific parts of the year.

[Figure 1 about here.]

Frequent mobility is a salient feature among parts of the urban labor force in developing countries as well. The fraction of the population in low- and middle-income countries living in urban areas has grown by 25% over the last twenty years (World Bank, 2020b), leading to a swell in urban workers with roots elsewhere. These recent urban arrivals frequently move between markets to find short-term wage work, and often travel to visit extended family. In our September 2018 survey of nearly 15,000 day-wage laborers from 200 urban labor markets in Bangladesh, we find that 85% identify a different subdistrict and 79% a different district from the labor market as their native place. When following up by phone with 5,500 of them six months later, we found more than half located in a new market and 50% reported traveling to visit their native home at least once in September–December 2018. These are again the most vulnerable urban workers, rotating across markets to find day labor without a steady or guaranteed source of income.

Mobility and Household Earnings

Migrant income is a meaningful contributor to household earnings in a large number of contexts where it is prevalent. Across our samples, we observe that remittances make up a substantial fraction of total household income. Among G2G lottery winners, remittances comprised 33% of household income in 2018 for the family remaining in Bangladesh, and 63% or those in which the visa holder was still abroad. In the NLS sample, migrant earnings accounted for 18% of total earnings over a seven-month period form October 2018 to May 2019, concentrated during times of low rural earnings capacity. Among NPL households, remittances brought home by returning migrants during the October–November 2019 rice harvest accounted for 60% of household labor income in those months despite it being a time of high agricultural productivity. Remittances are integral to many households' economic calculus, so an unanticipated drop in remittance

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[4]Data from the other sources do not include information on the timing of migrant departures.
[5]Coglianese and Price (2020) provide more details on seasonality in the U.S. labor force.

income is consequential.

Experimental evidence indicates that the relationship between migration and earnings is causal, and that economic returns to migration are substantial.[6] The first two rows of Panel B in Figure 1 report results from two randomized evaluations of internal migration programs in developing countries. The first row describes a small-scale pilot of the NLS program. Estimates of the Local Average Treatment Effect (LATE) on those who migrate as a result of receiving a migration loan indicate that migration boosts a household's earnings by 50% over the following six months (Akram et al., 2017). The benefits of this income are directly observed in household food consumption, with migrant households consuming 750 more calories per person per day during the agricultural lean season (Bryan et al., 2014). The second row of Panel B in Figure 1 reports results from an experiment in Kenya providing information about urban wage rates to rural households. Baseler (2020) estimates an even larger LATE of a 263% increase in earnings among households with members experimentally induced to migrate by the information shock.

Evidence from randomized allocations of work visas points to similarly high returns to international migration. The remaining three rows of Panel B in Figure **??** report results from studies in which international work visas were allocated by lottery to potential applicants. Shrestha et al. (2020) evaluate a visa lottery in Bangladesh for work in Malaysia and find that household income doubles for households able to send a migrant due to winning the lottery. McKenzie et al. (2010) compare winners and losers of a Tongan visa lottery for migration to New Zealand, and estimate the LATE returns to migration to be 263% of household earnings. In a visa lottery that allowed Haitians to work for two to three months in the United States agricultural sector, Clemens and Postel (2017) estimate the average yearly income for households enabled to send a migrant increases by 148%, even after working for only a few months in the United States. The returns to these migration episodes, of both short and long duration, demonstrate that households increase their income by migrating in a manner not easily replicated locally.

4 Results

Effects on Income and Food Security

The health risks faced by migrant-dependent households are accompanied by heightened economic distress. We observe declines in migrant household earnings and food security caused by lower rates of migration, less remittance income from remaining migrants, and inability of return migrants to integrate into local labor markets. Our findings reveal a novel channel of exposure to the global downturn: even households

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[6]There is a large literature on non-experimental estimates of the return to migration that we omit for space. See Lagakos et al. (2020) for a summary.

and regions with low rates of infection cab be adversely affected if they are linked to impacted areas by labor migration. Economic policy during the pandemic needs to go beyond tracking infection intensity to support these populations as well.

Experimental evidence from the Bangladeshi visa lottery indicates that the COVID-19 recession has hit hardest in migrant households. In the full sample of this population, monthly household income has fallen 36% from 599 USD PPP in Spring, 2019, to 386 USD PPP in April, 2020. This decline, depicted in Panel A of Figure 2, is most pronounced among lottery winners, who are more likely to have previously depended on remittances. Declines in remittance income for lottery winners are over an order of magnitude greater than declines in total household income for non-migrant households. In absolute terms, lottery winners report lower total earnings than lottery losers after the lockdown and are 66% (four percentage points) more likely to report no income from any source in the previous month.

Loss of remittance income and limited domestic reintegration threaten the food security of already poor migrant households. Panels C and D of Figure 2 depict rates of food insecurity among households in Northern and Eastern Bangladesh, respectively. In both populations, food insecurity in April, 2020, is higher than in the same season in prior years. This rise has been concentrated among households in which a member has migrated in the recent past, with those households being far more likely than normal to report experiencing food shortages. This relationship between migration and food security exists despite the fact that the direct link between migration and COVID-19 is weaker in Northern Bangladesh as there are few return migrants from abroad. Greater reliance on migration earnings in the past increases households' exposure to the economic downturn independent of infection rates.

The scale of food shortage in the current economic climate is on par with fluctuations generated by the seasonal agricultural cycle. Figure **??** depicts monthly variation in food security among landless agricultural households in Northern Bangladesh. Self-reported household food insecurity typically reaches its maximum at almost 25% of households in this population during the lean season months of September and October, just before the main rice harvest in November and December, with a smaller spike in March just before the secondary harvest. In contrast, in 2020, 16% of poor rural households were food insecure in March and 18% in April, well above typical levels. We observe a similar pattern in Nepal, not pictured, where the lockdown coincided with the April wheat harvest. In Western Terai, food insecurity during the 2020 wheat harvest more closely resembles the July lean season than a typical harvest season.

Breaking down this pattern by migration status, the uncharacteristically high levels of food insecurity are almost entirely driven by migration-dependent households. Roughly half of households sampled in northern Bangladesh have had at least one member participate in short-term migration in one of the previous three years. Among these migration-dependent households, food insecurity has risen dramatically

following the COVID-19 lockdown and already exceeds its normal lean season peak. This fact indicates that migration-dependent households are not yet able to compensate for their lost migration earnings, and that their well-being may continue to decline as local market conditions worsen with the agricultural cycle.

[Figure 2 about here.]

Remittances and Lost Income

A similar pattern emerges among households in Western Terai, Nepal, shown in Panel B of Figure 2. Average remittance income in this population fell from 173 USD PPP per month in late 2019 to 63 USD PPP in April, 2020, with the brunt of the effect borne by households that had previously engaged in labor migration. This decrease is caused by declines in both the rate of migration as well as migrant earnings. Fewer adult males are currently away from the home (17%) than during the rice harvest in October–November (22%) that traditionally marks the trough of annual migration. Moreover, remittance income per adult away has fallen by almost half. Local wage income in rural villages has also fallen, reflecting the general economic downturn, but 61% of the total change in household labor income in this region is explained by the depressed rate of remittances.

Even these numbers may understate the full impact of COVID-19 on migration earnings. In Western Terai, remittances typically peak when migrants return to the household because the most common mode of transferring money is bringing it back by hand. Thus, we would expect to see a surge in remittance earnings around the onset of COVID-related lockdowns as migrants return uncharacteristically early. Future remittance income may fall even further below its typical level as barriers to mobility shift migration returns forward in time with migrant workers unable to travel back to their destination place of work.

[Figure 3 about here.]

Migrant Health and Stigma

The observed earnings shocks indicate that households are unable to recover lost migration income in local labor markets. In addition to typical barriers to reintegration such as skill transferability and loss of social networks, COVID-19 presents a further complication in the stigmatization of return migrants. Anecdotes abound of communities being hostile to and even barring entry for returning migrants for fear of their own health and safety (e.g. Agarwal, 2020; Janetsky, 2020). In a survey of 558 migrants returning to Bangladesh in January–March, before the peak of the COVID-19 pandemic, BRAC (2020) found 29% of returnees felt their neighbors and relatives were unsupportive and unwelcoming.

Although we cannot measure stigma directly, we document diminished participation in community activities and access to health services associated with return migration in Bangladesh. Among visa lottery entrants, winners were 25% (nine percentage points) less likely to attend Friday prayer services than lottery losers. This difference is not driven by religiosity as overall rates of prayer are equal across the two groups; the discrepancy only arises at the typical community gathering time. Migration also appears to induce exclusion from medical care in Eastern Bangladesh. 37% of households that had a member temporarily away in the previous two weeks report that patients with COVID-19 symptoms are not permitted to receive medical care, compared to 28% among households whose members did not travel. While some of this separation, especially in social activities, may be warranted given the elevated rates of illness among return migrants, it nonetheless hampers their ability to successfully reintegrate into the local community.

Recent migration is associated with the accelerated spread of COVID-19, indicating the need for public health resources to be directed to high-migration households and regions. Formal statistics on infection rates are unavailable in these regions, as in many parts of the world, due to limited access to health facilities and low capacity for testing. In lieu of explicit rates of infection, we rely on self-reported existence three common COVID-19 symptoms—fever, dry cough, and fatigue—as a proxy. We then relate symptom frequency to the presence of a recently returned labor migrant in the household or community.

In multiple populations in Bangladesh, we observe a correlation between returning migrants and COVID-19 symptoms. Among refugee and host communities in Cox's Bazaar, Bangladesh, the likelihood of self-reporting at least one symptom more than doubles from 16% to 33% for individuals living in a community in which a migrant has returned in the past 2 weeks. In a second sample comprising past participants in an international visa lottery from around the country, the overall reported incidence of COVID-19 symptoms is lower, with only about 7% of the population reporting any symptom. Again in this population, households that live in communities with a returning migrant in the previous month self-report at least one COVID-19 symptom twice as often as households in communities with no returning migrants. Moreover, individuals who spent at least one day away in the previous week are more likely to report COVID-19 symptoms than those that remained at home.

In a third sample with households from Northern Bangladesh, the rate of self-reported COVID-19 symptoms is 20% greater in households with a recently returning migrant than in households without one. The smaller effect of return migration in this population is likely explained in part by the fact that migrants from this region tend to remain within Bangladesh, whereas the other two samples have higher rates of international migration. Overall, the data suggest a consistent association between migration and the risk of COVID-19 illness, especially when returning form abroad.

Our findings in household surveys corroborate conclusions from two recent studies that use administra-

tive data to establish a link between migration and the spread of COVID-19 at the subnational level. Ahsan et al. (2020) construct a district-level measure of COVID-19 exposure in Bangladesh from prior international migration patterns interacted with infection intensity at the country of destination. Valsecchi (2020) generates a similar measure of exposure for regions in Italy based on internal migrants in the areas of the initial outbreak. Both studies find robust evidence that places linked to COVID-19 hotspots through migration subsequently faced more severe local contagion.

Labor migrants face a particularly high risk of exposure in their mode of transportation and destination living conditions. In a 2019 survey of 3,472 internal migrants from Northern Bangladesh, over 95% report traveling on a high-density vehicle such as a bus or train. At the destination, almost three quarters of migrants lived at the work site or at other emkployer-provided housing; 95% shared sleeping quarters with at least 3 other individuals, and 40% regularly slept in rooms with 10 or more other workers. These transportation and living arrangements impair migrants' ability to socially distance and elevate rates of contagion.

5 Discussion

In this paper we demonstrate how the importance of migration and remittances in many parts of the developing world leaves migration-dependent households uniquely vulnerable to both the public health crisis and the economic downturn caused by COVID-19. Temporary migration has been well-documented as a response to negative economic shocks (e.g. Banerjee and Duflo, 2007; Rosenzweig and Udry, 2014; Lagakos et al., 2018), and recent research has found this type of migration to be a substitute to other types of formal and informal social insurance (Munshi and Rosenzweig, 2016; Morten, 2019; Imbert and Papp, 2020a). Mobility restrictions in response to COVID-19 take away this source of income, calling for alternate forms of economic support to replace foregone earnings.

While many countries have instituted general relief policies to alleviate the strain caused by COVID-19, they are often inadequate for those most affected. For instance, the government of Bangladesh has announced transfers of BDT 2,000 (USD 24) to an estimated 4 million families whose primary worker has lost their job, in addition to fertilizer and other agricultural subsidies. While the pending stimulus package represents a significant expenditure of over 3 percent of the country's GDP, the planned transfers to landless rural households are small relative to foregone migration income. Scaled against experimental results, the government support compensates at most one month of foregone earnings from migration during a pandemic with impacts that will persist for several months, if not years.

The inadequacy of this relief can already be seen in political backlash. In the month of April, there were

147 protests spanning 43 of the 64 districts in Bangladesh calling for greater economic support to be a part of the government's COVID-19 response. Outside of the major cities of Dhaka and Chittagong, protests were most common in districts with high rates of seasonal labor migration such as Rangpur, Nilphamari, and Gaibanda.[7] As shutdowns persist and extend into the peak migration season, the pressure from vulnerable populations will only increase.

Our findings identify migrant-dependent households as an especially vulnerable population because mobility is a fundamental aspect of earnings in much of the developing world. COVID-19 itself is transmitted along migration channels, and economic displacement also follows these channels even absent the infection. Social distancing policies without accompanying financial relief targeted directly to these households will damage their earnings and risk lowering their nutritional intake below a subsistence level. Given the large returns to migration, the financial pressure may undermine public health efforts as households with few alternatives seek employment where they can find it, even possibly in violation of public health guidelines.

Policy Recommendations

Policy Analysis to Determine Vulnerability

- Track the geographical and sectoral nature of migration to identify where to target medical resources and economic relief.

- Identify both which sub-populations rely heavily on migration income and which times of year it is most important.

- Economically vulnerable populations may differ from those with high infection due to economic migration linkages.

- As economies reopen, prioritize sectors that are important to the livelihood of vulnerable populations such as labor migrants.

- Staggered reopening will generate disparities along gender and other demographic lines based on occupational safety.

Short-Term Economic Relief and Labor Market Support

- Provide direct financial support to migration-dependent households and regions in the form of cash or food aid.

[7]Source: *Thotkata*, April 29, 2020.

- Include households that have lost remittance earnings even if the primary migrant is unable to return.

- Make testing available to returning migrants so they can safely re-enter the local labor force.

- Engage in public messaging to reduce stigma around return migration and health risks.

Medium-Term Re-Entry into Labor Force

- Set safety standards and provide necessary PPE to allow safe reopening of migrant sectors.

- Promote transportation and housing options that allow for adequate social distancing.

- Make testing available to enable safe return to work.

- Offer alternative forms of employment appropriate to the skills and gender of workers unable to return.

- Negotiate requirements for return with common destination countries.

- Create facilities for testing and quarantining to satisfy host country requirements.

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A Data

The analysis in this paper primarily uses four COVID-19 specific phone surveys that sample from participants in existing studies and took place in April–May, 2020. This data is supplemented by nationally representative household surveys and by studies on the prevalence of and returns to migration to generate Figure 1.

Government-to-Government (G2G): The G2G sample, conducted in Bangladesh, consists of individuals who applied for a visa lottery in 2013, intermediated by the Government of Bangladesh, for a temporary work program in the palm sector in Malaysia. The Government of Bangladesh determined via lottery (conducted independently by the Bangladesh University of Engineering and Technology) which 30,000 individuals would receive work visas of the 1.43 million who applied. This study aims to understand the impact on households of winning the work visa lottery, and more generally, to estimate the returns to short-term international migration. Details of the evaluation are discussed by Shrestha et al. (2020).

In 2018 the project tracked and administered surveys to lottery applicant households, including both lottery winners losers, in 49 subdistricts in the two largest divisions of Bangladesh, Chittagong and Dhaka, via an in-person survey. The population is representative of lottery applicant households in Dhaka and Chittagong Divisions; in practice this sample should roughly be thought of as middle-class Bangladeshis since the poorest households in the country are unlikely to be able to afford the expenses needed to travel abroad.

For our COVID-19 specific phone survey we attempted to contact 4,608 study participants, stratified by lottery outcome, out of which 2,937 consented to participate.

Western Terai, Nepal: Data from Nepal comes from an existing phone panel of 2,636 rural households in the districts of Kailali and Kanchanpur, two of the poorer districts in the country. This sample was constructed in June, 2019, by randomly selecting 30 wards from 17 of 20 subdistricts, and then selecting a random 90 villages from within those wards. The households surveyed come from the bottom half of the wealth distribution in these villages as estimated by a participatory wealth ranking exercise with members of the village. A substantial fraction of income for these households comes from remittances from migrants in India or elsewhere in Nepal. Initial baseline data was collected in-person in July 2019, and five rounds of phone survey data were collected between August 2019 and January 2020. Details of the planned evaluation are documented by (Mobarak and Vernot).

For our COVID-19 specific phone survey we obtained consent from 1,981 of the study participants.

No Lean Season (NLS): The NLS study consists of several rounds of data collection in Northern Bangladesh from 2008 to 2019. The study is a randomized evaluation of a short-term low-interest mi-

gration loan during the agricultural lean season for involves landless agricultural households. The first two rounds of study, from which we report estimates of the causal return to migration, included 1,900 in 2008 and 3,600 in 2014. Full details from these studies are discussed by Bryan et al. (2014) and Akram et al. (2017), respectively.

In 2017 and 2018, the loan program was expanded to a large scale with 158,014 loans made in 2017 and 143,721 in 2018. For evaluation, the project surveyed a subset of 4,428 eligible households in May 2018 and 4,324 households in June 2019. The project surveyed an additional 19,396 workers at 200 spot labor markets in 9 Bangladeshi cities in September 2018, and conducted followup phone surveys with 8,490 of them in April 2019. Unfortunately the value of the experimental variation in the large-scale implementation is limited. Details of the evaluation at scale are discussed by Mobarak et al. (2020).

For our COVID-19 specific phone survey we attempted to contact 388 study participants from the 2019 round of evaluation, stratified by prior migration experience, out of which 294 consented to participate.

Cox's Bazar Panel Survey (CBPS): The CBPS is a longitudinal study tracking over 5,000 households representative of both refugee and host populations in Cox's Bazaar district of Bangladesh, which is currently home to over 860,000 stateless Rohingya refugees from Myanmar. The study targets adults aged 15 or above and monitors living conditions in refugee camps and host communities, with baseline data collected between April and July 2019. Baseline data collection involved detailed interviews covering a wide range of topics, including detailed questions on labor market outcomes, trauma, and mental health. The data generated by this project was first reported by Lopez-Pena et al..

For our COVID-19 specific phone survey we attempted to contact 1,255 study participants, out of which 899 consented to participate. Of these, 704 surveys were a household member who had also responded to the baseline survey while the remaining 195 involved a different member of the same household.

National Survey Data: The national migration rates in Panel A of Figure 1 are calculated using nationally representative. Data for Nepal come from the 2010–2011 round of the Nepal Living Standards Survey (NLSS). Ugandan data come from the 2009 and 2011 waves of the Uganda National Panel Survey (UNPS). Migration rates in the United States are computed from the 1996, 2001, 2004, and 2008 rounds of the Survey of Income and Program Participation (SIPP).
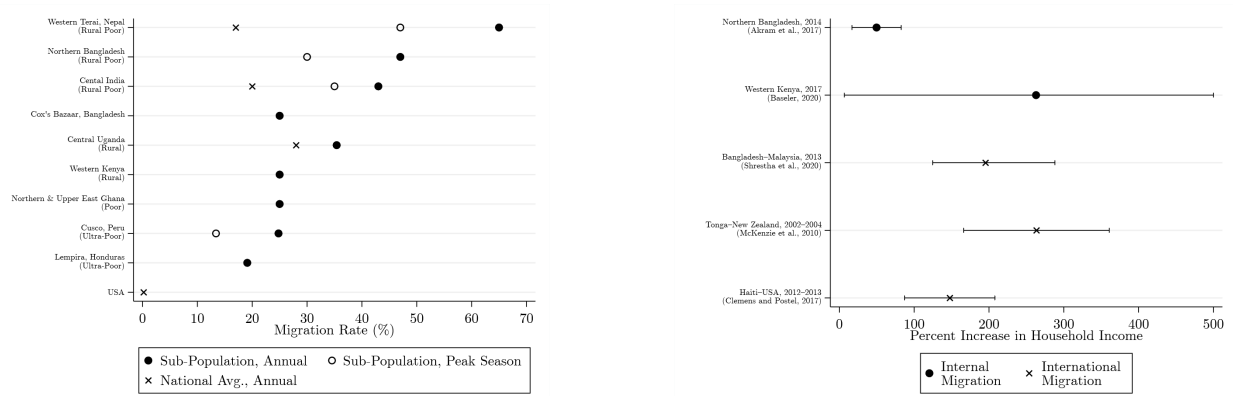
B   Mobility Restrictions

[Figure 4 about here.]

[Table 3 about here.]

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Figure 1: Role of Labor Migration in Household Earnings


A. Short-Term Migration Rates

B. Experimentally Estimated Returns to Migration

A. Fraction of households with a departing migrant who returns in under 12 months. B. Point estimates of the return to migration from studies using randomization or lotteries with 90% confidence intervals as reported in the study. The 90% CI found in Baseler (2020) exceeds 500% and is truncated for display purposes. See Table 2 for details on all data sources.
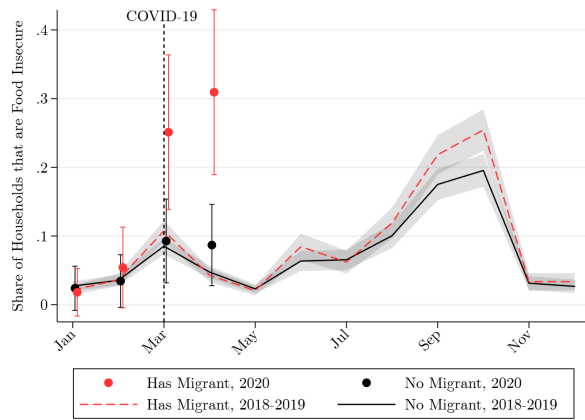
Figure 2: Impact of COVID Crises by Migrant-Sending Status
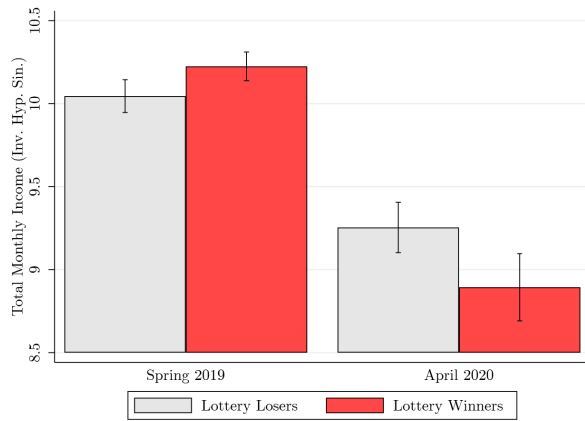
A. G2G (Income)
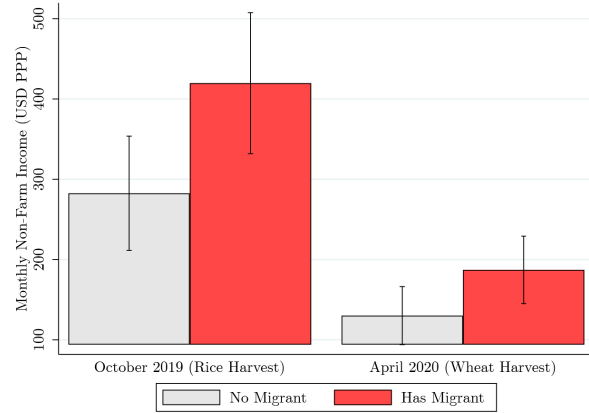
B. NPL (Income)

C. NLS (Food Insecurity)
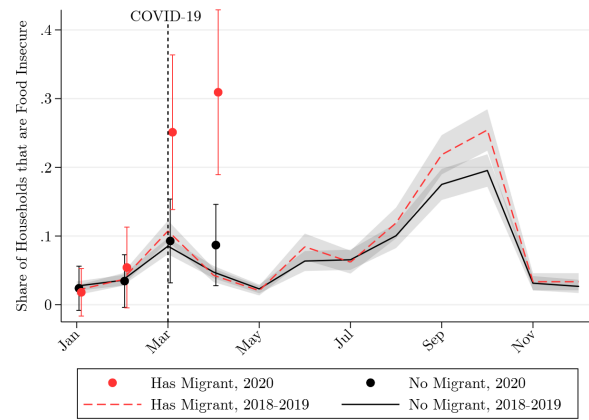

D. NPL (Food Insecurity)
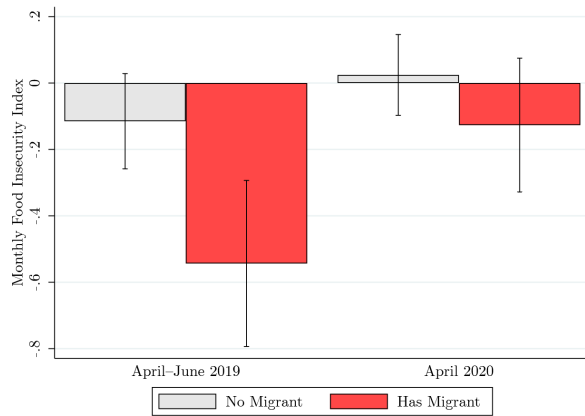
E. CBPS (Food Insecurity)

Means and 95% confidence intervals. (A) Income is the inverse hyperbolic sine transformation of monthly earnings from wages, business, remittances, capital, NGOs, friends and family, and home production. (B) Income is the sum of earnings form wages and remittances. Has Migrant indicates households that had at least one adult male migrant away during the 2019 summer or winter migration seasons. (C) Food Insecurity is the fraction of households that restricted the number or size of meals for more than half the month. Has Migrant indicates households that had at least one temporary migrant in 2016–2019. (D) Food Insecurity in 2019 is a standardized index of six questions. Food Insecurity in 2020 is the ability to buy essential items in the past 7 days. Has Migrant indicates households that received remittance income prior to 2019.
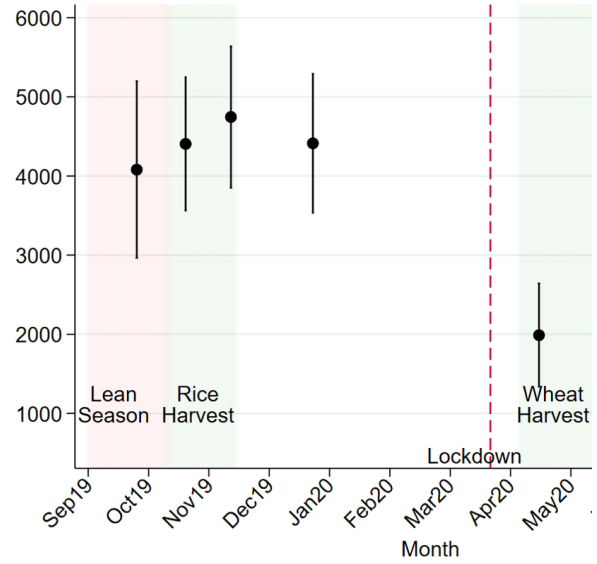
Figure 3: Decline in Remittance Earnings in Nepal
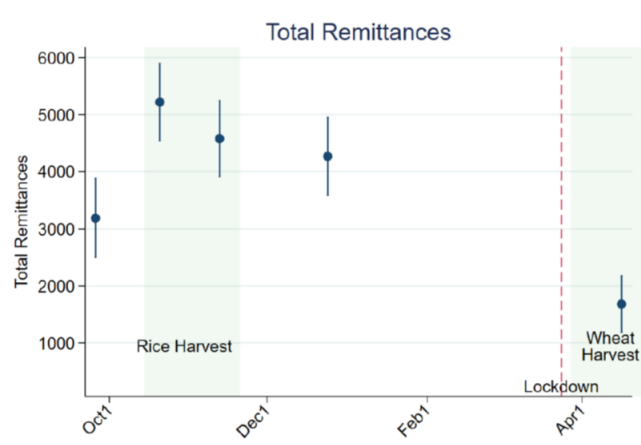
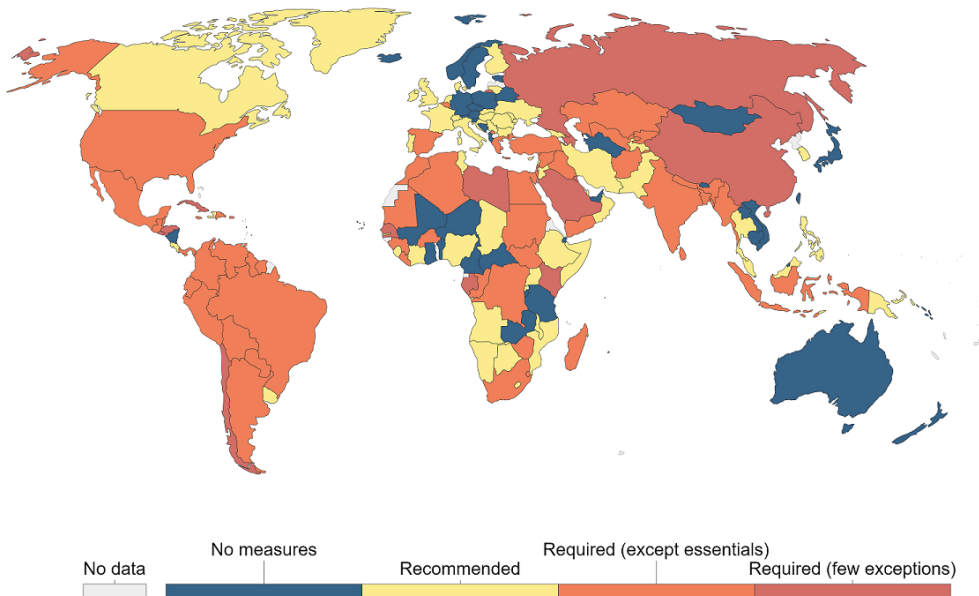

A. Remittance Earnings
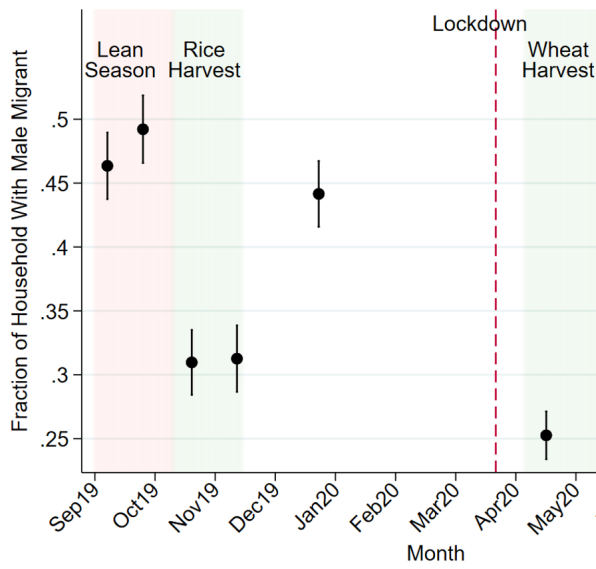
B. Fraction of Households with Men Away

C. Remittances per Migrant Away

Figure 4: Worldwide Prevalence of Mobility Restrictions

Stay-at-home requirements during the COVID-19 pandemic, Jun 5, 2020

Reproduced from Our World in Data (`https://ourworldindata.org/`)

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Table 1: Primary Data Sources

Sample	Description	Identification	Original Survey Design
G2G (2,937 HHs)	Bangladeshi participants in a 2013 visa lottery for work permits in Malaysia	Difference-in-differences pre- and post-COVID using randomized variation in propensity to migrate induced by visa lottery	In-person surveys of 3,512 households in Aug-Dec 2018 representing both lottery winners and losers
NPL (2,636 HHs)	Households in bottom 50 percentile of wealth in rural parts of Western Terai, Nepal	Difference-in-differences pre- and post-COVID between households with and without a member away in 2019	6 rounds of phone surveys between Aug 2019 and July 2020 with 2,636 rural households
NLS (294 HHs)	Landless agricultural households in Northern Bangladesh eligible for short-term migration loan	Difference-in-differences pre- and post-COVID between households with and without a member away in 2016–2019, with a long panel of pre-periods to verify parallel trends	In-person surveys of 4,324 households in March and June 2019
CBPS (899 HHs)	Rohingya refugee camps and host communities in Cox's Bazaar, Bangladesh	Difference-in-differences pre- and post-COVID between households with and without a member away in 2019	In-person surveys of 5,000 households July 2019

Table 2: Secondary Data Sources

Function	Data Source	Population	Sample
Descriptive statistics on national migration rates	Nepal Living Standards Survey (NLSS)	Nepal	5,988
	Uganda National Panel Survey (UNPS)	Uganda	1,237
	Survey of Income and Program Participation (SIPP)	United States	237,711
	Morten (2019)	Rural India	440
Descriptive statistics on migration rates in specific sub-populations	Banerjee et al. (2015)	Ultrapoor in Lempiras, Honduras	654
		Ultrapoor in Cusco, Peru	669
	Barker et al. (2020)	Rural Northern & Upper East Ghana	2,975
	Baseler (2020)	Rural Western Kenya	485
	Imbert and Papp (2020b)	Rural poor in India	2,224
	NLS market surveys by authors	Urban Bangldeshi workers (Sep 2018);	19,396
		Urban Bangladeshi workers (Apr 2019)	8,490
Descriptive statistics on migration rates during a peak migration period	Banerjee et al. (2015)	Ultrapoor in Cusco, Peru	669
	Imbert and Papp (2020b)	Rural poor in India	2,224
Estimates of the returns to migration using randomized variation	Akram et al. (2017)	Northern Bangladesh	5,792
	Baseler (2020)	Western Kenya	485
	McKenzie et al. (2010)	Tonga	198
	Shrestha et al. (2020)	Bangladesh	3,512
	Clemens and Postel (2017)	Haiti	30

Table 3: COVID-19 Government Mobility Policies in Bangladesh and Nepal

	Bangladesh as of May 16	Nepal as of May 28
School Closing	All schools closed	All schools closed
Work place closing	Closing/work from home, some sectors	Closing/work from home, some sectors
Cancel public events	Required cancelling	Required cancelling
Restrictions on gatherings	Restrictions on gatherings of 10 people or less	Restrictions on gatherings of 10 people or less
Close public transport	Require closing (or prohibit most citizens from using it)	Require closing (or prohibit most citizens from using it)
Stay home requirements	Require not leaving house with exceptions for daily exercise, grocery shopping,and 'essential' trips	Require not leaving house with exceptions for daily exercise, grocery shopping,and 'essential' trips
Domestic travel restrictions	Internal movement restrictions in place	Internal movement restrictions in place
Foreign travel restrictions	Ban arrivals from some regions	Ban on all regions or total border closure

Source: Hale et al. (2020)