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Who Migrates Overseas and Is It Worth Their While?

An Assessment of Household Survey Data from Bangladesh

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Abstract

The paper assesses the costs and household level benefits of migrating overseas from Bangladesh. The authors survey households who have had overseas migrants to assess their characteristics compared to non-migrants. They also compute various types of migration and remittance related transaction costs and discuss the channels by which overseas migration is financed, remittances sent and the constraints faced by the poorest. Using the Propensity Score Matching method, the paper finds that overseas migration conveys substantial benefits to families as measured by household consumption, use of modern agricultural inputs, and level of household savings. The authors also offer some possible policy directions to strengthen the returns from migration as well as reduce some of the costs.

This paper—a product of the Poverty Reduction Group, Poverty Reduction and Economic Management Network —is part of a larger effort in the group to examine the distributional impacts of migration. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at msharma5@worldbank.org and hzaman@worldbank.org. This work was initiated when the authors were respectively at the International Food Policy Research Institute and the South Asia region of the World Bank

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Key words: Bangladesh, migration costs, remittance impact, propensity score matching

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1.0 Introduction

In Bangladesh, international migration has become an increasingly important avenue for employment and poverty reduction. In 2008 around 5.8 million workers were employed overseas, remittance flows amounted to around 10% of GDP and Bangladesh is now among the top ten remittance-receiving countries globally (World Bank 2008a). Almost two-thirds of Bangladesh's remittances originate from the Middle East, followed by the United States. Returns to overseas employment are relatively high because of wage differentials even after adjusting for differences in cost of living. As a result, migrants are able to finance not only essential current consumption but also investments that contribute to permanent income gains for household members who remain at home inside Bangladesh.

But to what extent is this potential realized? And, by whom? Typically, the upfront cost of securing employment abroad is high. A significant portion of the international migration from Bangladesh is in the form of short-term, non-permanent migration, and potential migrants are recruited by private recruitment firms who supply labor to businesses in the Persian Gulf region or South East Asia under an explicit time-bound contract. The burden of financing agent fees, air fare, visa fees and other costs can be considerable for the poor. Further, it may well be that recruiters, who bear the responsibility for guaranteeing a smooth supply of adequately skilled and reliable workers, choose to minimize information asymmetries and moral hazard by recruiting within narrow social or community networks where information flows are better and labor contracts are easier to monitor and enforce. This is related to why the distribution of remittances is geographically skewed. The more prosperous regions in the Eastern part of the country have significantly more households receiving remittances than households residing in

the Western part. For instance 25% of households in Chittagong division and 16% in Sylhet division receive remittances, while less than 5% did in Khulna, Rajshahi and Barisal division (World Bank 2008b). If the poorest groups are excluded from such networks due to their lack of social capital, or by virtue of the fact they live in regions which are not connected to these migration corridors, they are also likely to be excluded from taking advantage of global labor market *despite* the skill match.

Even when international employment has been secured, there remain several potential problems regarding transfer of remittance from the migrant to his/her household back home. Factors such as access and transaction costs related to receiving remittances through the banking system have led to the use of informal transfer channels known locally as the 'hundi' system.

Despite the significance of remittances in the Bangladeshi economy, there is little empirical work on the challenges that the poor face in taking advantage of globalizing labor markets. Very little information is collected about how households actually go about interacting with labor market operators in securing overseas employment or the level of transaction costs involved in processing remittance receipts. Further, typically, data in household surveys is collected only on current migrants, those who are currently overseas. When a significant part of international migration is temporary and strictly under time bound contracts, there is a great amount of flux, and ignoring returnee migrants introduces a significant bias in assessing the effects of migration.

The study aims to make a modest contribution to filling this knowledge gap by using household survey data to (i) identify the characteristics of households who choose to migrate, (ii) assess migration related costs as well as remittance transfer channels and (iii) assess the impact of migration on household welfare. The rest of the paper is organized as follows. Section 2.0

discusses the data and methodology used in the paper and Section 3.0 presents the findings on the characteristics of households who migrate. Section 4.0 describes the costs of the migration process, sources of financing as well as the process of remittance transfer. Section 5.0 discusses the results from the multivariate analysis of the impact of migration. Conclusions and policy implications are made in Section 6.0.

2.0. Data

Ideally we would have preferred to address our study objectives using a nationally representative sample of migrant and non-migrant households. However, because the most recent Bangladesh Household Income and Expenditure Survey conducted by the Bangladesh Bureau of Statistics contained no information on transactions involved in either securing overseas employment and or accessing remittance services, we could not use this survey for the purposes of our work. As a result, we designed and fielded a migration-focused survey in 2007. Given budgetary constraints and considering that one of our key objectives was to get detailed information on various components of transactions costs, we selected several communities in Bangladesh that had higher than average rates of migration and drew a sample of households from these. Thus, while the sampling framework used is not representative of the entire population of Bangladesh, it provides a fairly representative picture of the migration process and remittance-related transactions in areas where international migration is highly prevalent. The sampling method used is described below.

In the initial design phase of this survey, key informant interviews were administered to travel agents and private manpower exporting agencies in Dhaka in order to identify districts that had higher than average rates of migration. These interviews identified 32 such districts. In the next step, 10 districts were randomly chosen from this list and one *upazila* (sub-district) was

subsequently - and randomly - selected from each of the 10 districts. Key informant interviews were then conducted in each of the selected *upazilas* to rank *unions* (the lowest administrative tier) within that *upazila* on the basis of estimated migration rates. Based on this, two *unions* in each *upazila* that had the highest migration rates in that *upazila* were chosen. Once this was done, another set of key informant interviews were undertaken in each *union* to identify the village within the *union* that had the highest migrant prevalence. This village was then chosen for the final survey. All in all, twenty villages in ten districts were chosen and Table 1 provides the list of these villages.

[Insert Table 1]

A complete census was implemented in these twenty villages. The census team visited every household in the village and collected information on the demographic profile of households, ownership of farm and non-farm business, and migration status of each household member in the past ten years. In all, 6,282 households were covered by the census survey.

Households that reported having members either currently overseas or having members that had returned from temporary international migration in the last ten years were classified as migrant households. The census thus provides an estimate of the prevalence of international migration using this broader definition. In some parts of the analysis, such as the determinants of migration section, we separate current and previous migrants. The number of households chosen for the detailed household survey was set at 25 per village. Since migrant households were only a small fraction of the total number of households, migrant households were oversampled in order to ascertain that they were adequately represented in the household survey. Hence, in each community, one half of the household survey respondents were drawn randomly from among migrant households and the other half from non-migrant households. The household survey was

thus administered to a total of 500 households, out of which 251 were migrant households and 249 were non-migrant households[i].

Finally, in the analysis presented in the following sections, the 20 villages sampled are classified into three broad regional groups based on the migration corridors identified in the first stage key informants interviews conducted in Dhaka. In particular, our interviews with manpower contracting agencies had indicated that the two principal hubs for recruiting and supplying temporary workers to the Middle East were located in the urban centers of Dhaka and Chittagong. In order to discern variations, if any, in migration-related transactions by these hubs, communities in the districts of Dhaka, Mymensingh, Madaripur, Barisal and Narail were grouped under the "Dhaka corridor" while communities in the districts of Chittagong, Comilla, and Noakhali were grouped under the "Chittagong corridor." Villages outside Dhaka and Chittagong divisions were part of the third group, which included villages in Sylhet from where most migrants to the UK originate.

3.0. Characteristics of migrant households

The census in the 20 selected communities suggests that 11% of households had members who had migrated abroad in the last 10 years. Since the communities within the *upazilas* were purposively sampled on the basis of higher-than-average rates of migration, computed migration prevalence rates cannot be generalized at the district or even the *upazila* level.

Table 2 provides basic demographic characteristics of migrants from the census of the 20 villages. While the paper focuses on international migrants, the census data provides an opportunity to compare domestic with international migrants as well. Our data shows that the

average age of international migrants (31) is generally higher than domestic migrants (25). While all migrants are most likely to be males, international migrants are more likely to be so. Women make up less than 10 percent of international migrants while nearly a quarter of domestic migrants are women. However, the proportion of women migrants is higher among current migrants compared to past migrants. Current migrants are somewhat better educated (by about an extra year) compared with past migrants. Notably, there are no significant differences in education levels between domestic and international migrants which are closely linked with the fact that the majority of Bangladeshi migrants overseas, particularly in the Middle East, are low-skilled manual workers. The average duration of a migration episode was about six years in case of international migrants and about five years in the case of domestic migrants. Finally, the most common destination in international migration was Saudi Arabia (42 percent), followed by United Arab Emirates (16 percent), UK (10 percent), and Kuwait (10 percent). The most common destination for domestic migrants was the Dhaka metropolitan area (61 percent). Moreover, domestic migrants were more likely to go to other smaller urban centers (18 percent) than to Chittagong (13 percent).

[Insert Table 2]

In order to assess the relative importance of the different factors affecting migration we estimated two equations: a probit equation that relates migration status to individual, household, and location characteristics, and a conditional logit equation that relates migration status to individual characteristics after sweeping out household-level fixed effects. The dependent variable in both equations was specified to be a binary variable that takes the value of one for international migrants and zero otherwise. In one specification, only current migrants were considered; that is, the dependent variable equaled one only for individuals that were currently

migrating. In a second specification, migration was defined to include current as well as past migration. The results are reported in Table 3 and generally confirm inferences from Table 2. However, there are a few new insights. First, both age and education bear a non-linear relationship with the probability of migrating internationally in all the specifications. The probability of migrating first increases with both age and education and then declines beyond a threshold value. In the probit equation, for example, probability of migrating declines after around age 44 and after nine years of education. The latter confirms the anecdotal impression that temporary migration out of Bangladesh is mostly that of unskilled or semi-skilled labor. Gibson et al (2008) find a similar age pattern for migrant applicants from Tonga to New Zealand. Second, controlling for everything else, land ownership has a positive effect on probability to migrate. It is noted that landownership in the Bangladesh proxies wealth and because international migration requires large upfront expenses (discussed in Section 4), relatively wealthier households who are better able to finance such expenses are more likely to migrate. On the other hand, households that own non-farm businesses are less likely to migrate. One can speculate that business owners gainfully employ members of their households whereby their earnings are such that the incentives to migrate are low. On the other hand landowners employ manual laborers and family members seek higher returns abroad.

[Insert Table 3]

4.0 The migration process and remittance channels

4.1 Costs associated with overseas migration

This section focuses on the sub-sample of international migrant households that were randomly selected for the more intensive household survey. It provides an assessment of several migration-related transactions and also the manner in which remittance is received and used by households. Except when otherwise stated, a migrant household is defined as one that has at least one member currently migrating to another country *and*/*or* has at least one member that migrated abroad in the last 10 years but has since then returned and is currently living with the household[ii].

Table 4 presents data on the primary agent facilitating migration. In little more than one half the cases (54 percent) it was friends and relatives in the destination country that played the primary role. This factor is especially strong outside Dhaka and Chittagong more likely due to the tight-knit Bangladeshi community in the United Kingdom originally from Sylhet. In about 41 percent of cases it was a Bangladesh-based agent who facilitated the migration process.

[Insert Table 4]

Employment agencies are mainly located in the Dhaka metropolis (Table 5) while, surprisingly, given the importance of remittances, the Chittagong metropolis plays a very minor role as a hub for processing overseas migration. In fact, about 40 percent of the respondents in the Chittagong region indicated that they had established contact with agents based in Dhaka. At the same time employment recruitment agencies appear to have quite a decentralized operation – in nearly half the cases the agencies were reported to have been located at the district or the village levels.

[Insert Table 5]

Table 6 provides information on the total amount of upfront fees that migrants pay to employment agencies. The total amount includes agents' fees, air travel costs, as well as costs for obtaining passport, visa, and other applicable permits. Both mean and median values are reported. Overall, the total upfront cost averaged Taka 161,345 (about US $ 2300). This is almost five times Bangladesh's per capita income of $480 (World Bank 2008b); thus, without access to credit or past savings, most of the poor would have considerable difficulty financing the needed upfront costs. The median value was significantly smaller at 120,000 Taka, indicating that some migrants are charged at a much higher rate than others, partly due to variations in air fare, visa, and work permit fees.

[Insert Table 6]

In addition to direct monetary fees paid to the agent, there is also the time cost involved in processing migration-related documents which typically require potential migrants to travel to district headquarters or even to the capital city of Dhaka. The median number of days that potential migrants spent outside of their home to complete needed paperwork was seven (Table 7), though with considerable variation across individuals, as the mean number of days was 18. The median number of months it took to complete all paper work and travel arrangements was three months (Table 7), but there were some large outliers as the mean time was over seven months. Moreover, the mean time taken to complete the necessary paperwork for migrants living outside Dhaka and Chittagong division was 12 months.

[Insert Table 7]

Given the high upfront cost of international migration, it is of interest to look at how households go about financing this expenditure. In the survey, households were asked to provide information on the two most important means by which they financed upfront costs, and, as

shown in Table 8, financing from multiple sources is clearly the norm. Over 50% of respondents said grants from family members were among the top two sources of financing, followed by using their own savings (43%). Other sources of financing include loans from friends and relatives (24%) and borrowing on market terms (16%). Around 11% of respondents claimed they had borrowed from the recruiting agency. The final set of financing strategies, with potentially adverse consequences, involves asset depletion. Around 20% of the respondents sold land and other assets, while 25% used money from mortgaging land as their top two sources of finance.

[Insert Table 8]

4.2 Remittance receipt and processing

Table 9 provides information on average size of remittance received per year and also average size of remittance received from key destinations. Remittance from current migrants is shown separately from past migrants. In the latter case, annual remittance was computed by dividing the total amount of money sent over the entire migration period by the total number of years of migration.

[Insert Table 9]

For the entire sample, the mean size of annual remittance per migrant was Taka 101,579. The median size, however, was significantly smaller at Taka 70,000. The mean size of remittance from current migrants (Taka 102,102) was similar, especially after adjusting for inflation, to that from past migrants (Taka 97,354). When average remittance size is considered by key destinations, Saudi Arabia, also the top destination country, tops the list (Taka 105,247), though remittance from Kuwait is almost similarly sized (Taka 101,705). Remittances from the

UK are the smallest averaging Taka 72,368. Finally the average frequency of remittances is about four times a year with each transaction averaging around Taka 25,000 per transfer.

Several modes were used to receive remittances (Table 10). About one-third of the remittance (34 percent) was received via a check or bank draft. Next in importance was direct deposit to the recipient's account (22 percent). The proportion of remittance transactions serviced by different financial institutions is given in Table 10. Sonali Bank and Agrani Bank are clearly the major players, accounting among them about 50 percent of all transactions. Sonali Bank has appears to be more utilized for remittance transactions in the Dhaka region, Agrani Bank in the Chittagong region and Islami Bank outside Dhaka and Chittagong. The average time taken to commute to the bank or other intermediary to collect remittances was around an hour and a half (Table 10).

[Insert Table 10]

However, not all recipients had bank accounts so that in about 16 percent of the cases, the remitted money was initially deposited into a third person's account and then delivered to the recipient. Informal channels such as personal hand delivery by friends and relatives and use of informal transfer agencies (*hundi*) is still prevalent. Almost a quarter of remittances (24 percent) were delivered through these two sources[iii].

Finally, when the respondents were asked what service they would value the most from remittance service provider, about one half of the respondents said they valued reliability and about 35 percent said they valued speed (Table 11). Lack of proximity to services was not a widely felt concern, and very few were concerned about fees charged.

[Insert Table 11]

5.0 Household level impacts of migration and remittance

5.1 Migration, remittance and household level impacts

While there have been several studies on the impact of remittance on household behavior and expenditure (Adams 1991, Adams 1998, Massey and Parrado 1994, Alderman 1996) a fully satisfactory explanation of why impact of remittance income should be any different income from other sources is generally lacking. After all, if consumption and production activities are fully separable, an extra Taka earned from fishing, for example, ought to have the same effect on household consumption as an extra Taka from remittance (Singh, Squire, and Strauss 1986).

A recent paper by Taylor and Mora (2006) summarizes the potential effect of migration and remittance on consumption of remittance receiving households. They include (i) loss of family labor to migration reduces labor availability at home increasing the shadow wage rate of labor and shifting consumption away from home-produced foods to purchased food; (ii) migrants who go to new places, change their tastes provide households with new information that is likely to change the consumption and preference sets of households; (iii) to the extent that remittances are weakly correlated with other household incomes, remittance receipts alter the risk profile of household income and this affects consumption of risk-averse households; (iv) remittance income may be viewed as more or less transitory income compared to other incomes and this affects current household consumption even under perfect uncertainty; (v) remittances may change the intra-household dynamics and control of resources and this is likely to align household consumption more to the preference of person or persons that controls the resources. In our survey, respondents were asked whether the remittance-sending migrant put conditions on how the remittance was to be spent. Forty-three percent said that this was the case.

In addition to the above, there is also likely to be an important liquidity effect of remittance. In the last section, it was noted that average remittance receipts was around Taka 25,000 per transaction. The liquidity effects of such a large amount of cash on household consumption can be substantial, as it enables the household who otherwise have poor access to credit, to finance lumpy expenditures. Furthermore, as noted by Thaler (1990), while "rational" households might well choose to smooth consumption over the entire year, irrespective of how often the remittances were received, this is not guaranteed behavior and consumption could escalate around the time of the remittance receipt.

5.2 Estimation method

The estimation method we use in assessing the impact of migration and remittance on consumption takes into account potential endogeneity of migration status and limitations imposed by data availability. Particularly, we noted in Section 4 that household members themselves undertook the primary initiative to locate the recruitment agent and initiate the process of migration. We also noted the important role of friends and relatives in securing employment and also in financing the upfront cost associated international migration. It is thus likely that households that facilitate migration of its members may be more socially networked than those that do not. Hence, if relevant household characteristics cannot be captured by observable data, estimates of impact based on simple comparisons between migrant and non-migrant households will be biased if the same unobservable household characteristics that affect the decision to migrate also affect the outcomes considered. Using data collected on immigrants to New Zealand from Tonga, McKenzie et al (forthcoming) show that non-experimental methods all introduce some bias when estimating the impact of migration and the Propensity Score

Matching (PSM) technique (described below) provided the most accurate estimates of the impact of migration when using non-experimental design methods.

Lacking an experimental design, we used Propensity Score Matching (PSM) to construct a "control" group of non-migrant households whose characteristics very closely matched those of the migrant households. Once this was done, average consumption outcomes are compared between the two groups to derive estimates of the effects of international migration. This is further explained below.

Let Y_i^1 be the outcome of the *i*th household if it migrates and let Y_i^0 be that household's outcome if it does not. The impact of the migration is given by $\Delta = Y_i^1 - Y_i^0$. However, only Y^1 or Y^0 is realized for each household. Let *D* indicate migration status such that *D*=1 if the household has a migrant member and *D*=0 otherwise. The evaluation problem is to estimate the average impact of migration:

$$(1) \qquad E(\Delta \mid X, D=1) = E(Y^1 - Y^0 \mid X, D=1) = E(Y^1 \mid X, D=1) - E(Y^0 \mid X, D=1),$$

where *X* is a vector of control variables and subscripts have been dropped. This measure of impact is generally referred to as the "average impact of the treatment on the treated." In expression (1), $E(Y^0 \mid X, D = 1)$ is not observed. Propensity score matching provides one method for estimating this counterfactual (Rosenbaum and Rubin 1983). Let $P(X) = Pr(D = 1 \mid X)$ be the probability of having migrant family member. Propensity score matching constructs a statistical comparison group by matching observations on migrant households to observations on non-migrant households with similar values of *P(X)*. This requires two assumptions:

$$(2) \qquad E(Y^0 \mid X, D=1) = E(Y^0 \mid X, D=0), \text{ and}$$

(3) $0<P(X)<1$.

The first assumption, known as "conditional mean independence," requires that after controlling for *X*, mean outcomes for non-migrants are identical to outcomes of migrants if they had not migrated. Expression (3) assures valid matches by assuming that *P(X)* is well-defined for all values of *X*. Covariate matching methods estimate $E\left(Y^0 \mid X, D=1\right)$ by $E\left(Y^0 \mid X, D=0\right)$ using mean outcomes of comparison households matched with treatment households directly on the *X* variables. This procedure is complicated for large *X*, which is known as the "curse of dimensionality" and propensity score matching overcomes this problem. Rosenbaum and Rubin show that if outcomes are independent of program participation (in our case, migration) after conditioning on *X*, then outcomes are independent of program participation after conditioning only on *P(X)*. If (2) and (3) hold, propensity score matching provides a valid method for estimating $E\left(Y^0 \mid X, D=1\right)$ and obtaining unbiased estimates of (1).

Although it is not possible to test the assumptions in (2) and (3) on non-experimental data, Heckman, Ichimura and Todd (1997, 1998) and Heckman et al. (1998) use experimental data to identify the conditions under which propensity score matching provides reliable, low-bias estimates of program impact, as mentioned above.

In our case, we used care in selecting *X* variables whose levels had mostly been determined before migration. As we defined a migrant household as any household that had a migrating member in the last 10 years prior to the survey, we used land and asset variables which described households owned 10 years before the survey date. We were able to do this because the purchase date of assets was recorded in the survey and we chose only assets that were unlikely to be traded, determined by examining household asset sale pattern on which data was

also collected. For the same reason, household members under 10 years of age were removed from the dataset so as to reflect the demographic profile of the household 10 years ago. However, because we did not have dates on marriages of household members, we were unable to identify which of them joined the household more recently.

5.3 Implementation of PSM

The implementation of the propensity score matching procedure involves several steps. We first estimate the propensity score for international migration using a probit model including both determinants of migration and factors that affect the consumption outcomes. Heckman et al. (1997, 1998) emphasize that the quality of the match can be improved by ensuring that matches are formed only where the distribution of the density of the propensity scores overlap between "treatment" and "comparison" observations, or where the propensity score densities have "common support." Common support can be improved by dropping treatment observations whose estimated propensity score is greater than the maximum or less than the minimum of the comparison group propensity scores. Similarly, comparison group observations with a propensity score below the minimum or above the maximum of the treatment observations can be dropped. A shortcoming of this approach identified by Heckman et al. (1997) is that treatment observations near these cut-off points face a potential comparison group with propensity scores that are either all lower or all higher than that of the treatment observation. To account for this problem, we modified this "min/max" approach to identifying a region of common support to include comparison group observations that had lower propensity score than the minimum propensity score of the treatment group, but were nevertheless very close to it (those that had scores above the 95^{th} percentile of the "min" group) and comparison group observations that had higher score than the maximum in the treatment group but were very close

to it (those that had scores less than 5th percentile of the "max"group). This approach resulted in a common support containing 439 observations of which 209 were migrant households and 230 non-migrant households. We also tested the "balancing properties" of the data by testing that migrant and non-migrant observations had the same distribution (mean) of propensity scores and of control variables within groupings of the ranked propensity score. All results presented are based on specifications that passed the balancing tests. Finally, we matched "treatment" and "comparison" observations by local linear matching with a tricube kernel using Stata's PSMATCH2 command[iv] (Leuven and Sianesi 2003). Standard errors of the impact estimates are estimated by bootstrap using 1000 replications for each estimate.

5.4 Impact Estimates

In order to get a sense of the principal channels by which migration and remittances could impact household welfare, survey respondents were asked what expenditure would have most likely been cut had remittance not been received (Table 12). The most commonly reported potential cut was food expenditures (43 percent) followed by cash savings (19 percent). About 10 percent reported that housing-related expenditures would be cut, and eight percent mentioned education related expenditures. Also, expenditure cuts on consumer durables were reported mainly outside Dhaka and Chittagong regions. In light of the above, impact on the following outcomes were considered (i) per capita expenditures (total, food, non-food) (ii) per capita expenditures on health and education (iii) cash savings and outstanding loans (iv) consumer durables (appliances, vehicles, jewelry, pot and pans) (v) use of high yielding variety rice (vi) land purchase.

[Insert Table 12]

The explanatory variables in the first stage probit equation (Table 13) are jointly significant at the five percent level (Chi Square=118.88, N=439). Among the variables individually significant are the amount of agricultural land, the number male and female adults in the family, and the education level of the spouse of the household head. This suggests that better off and better educated households with a lower dependency ratio are more likely to have the initial resources required to migrate.

[Insert Table 13]

Table 14 shows the mean levels of outcome variables by matched migrant and non-migrant households, their difference and the bootstrapped t-statistic. The results essentially indicate differences in outcomes between migrant and non-migrant household that had similar characteristics ten years prior to the survey. The impacts therefore are indicative of the cumulative effects of migration over the entire period. The following key results are noted:

[Insert Table 14]

First, there are statistically significant differences between mean levels of per capita total consumption, per capita food expenditure, and per capita non-food expenditure between matched migrant and non-migrant households. In all cases expenditures are significantly higher for migrant households.

Second, looking at subcomponents of food and non-food expenditure we find the per capita expenditures on meat and fish products, as well as clothing, to be significantly higher for migrant households. However, differences in health-related and education-related expenditures between the two groups are not statistically significant. This is consistent with the literature showing that the impact of remittances on educational outcomes is mixed; the increased income

relieves the budget constraint though the countervailing effect includes the impact of higher child labor on schooling (see Calero et al 2009 for a literature review).

Third, it was expected that much better liquidity status of migrant households would improve their ability to finance more lumpy expenditure, especially those related to the purchase of household appliances, vehicles such as bicycle and motorcycles, jewelry, and even items such as pots and pans. These expectations were not always borne out. No statistically significant differences were found in the case of vehicles, jewelry or pots and pans. However, there was a statistically significant difference in the case of household appliance. Per capita expenditure on appliances was Taka 81.36 higher for migrant households than for non-migrant households controlling for other factors (Taka 104.93).

Fourth, it appears that migrant households save a good part of their remittance receipts. This is consistent with survey results which indicated that increasing savings was one of the conditions most frequently imposed by migrants on the remittance receiving household. The mean level of bank savings for the migrant household was around five times more than that for non-migrants.

Fifth, outstanding loans are also significantly higher for migrant households. This may be because remittance-receiving households are more creditworthy and are therefore more active in the financial market. More likely though, is that many households finance upfront migration costs through borrowing and the higher level of outstanding debt among migrant household may represent upfront loans that have yet to be paid back in full.

Sixth, migrating households on average purchase more land compared to non-migrant households who, on average, were net sellers of land, the difference between the two was not statistically significant. However, migrant households were able to take advantage of their better

liquidity position to finance fertilizer and seeds in rice production: the amount of land under HYV rice in the *Amon* season was significantly greater for migrant households. Migrant household are less likely to own non-agricultural business than non-migrant households, though this difference is not statistically significant.

Thus, overall, we notice positive and significant impacts of migration on food and non-food consumption, household appliances, credit volumes, use of modern inputs in agriculture and savings. We, however, do not find any significant impacts on health and education expenditures or consumer durables such as vehicles or jewelry.

6.0 Conclusions

For the poor and unskilled in Bangladesh, globalization of labor markets provides an opportunity to improve their lives. The steady demand for low-skill labor from countries mainly in the Middle East and other countries in South East Asia means that an increasing number of Bangladeshis will continue to migrate abroad and send money to support families back home. The current global economic downturn has slowed the growth of new migrants going abroad but the flow of remittances to Bangladesh remains remarkably resilient (World Bank 2008b) and there is a clear expectation that remittances will remain important for Bangladeshis in the years ahead.

This paper suggests that international migration has conveyed substantial benefits to families left behind. Monthly per capita total expenditure is significantly higher for migrant households compared to non-migrant households. Further they appear to have built up cash reserves that can not only be used to finance investments, but also to insure themselves against unexpected negative shocks when they arise.

While the benefits of migration are quite clear, there are costs, risks and challenges particularly for the poor. The paper attempts to explore some of these issues and we offer a few modest policy directions which can be considered. Financing migration for the poor is clearly a significant constraint and risk. There are large upfront costs involved in gaining access to foreign labor markets – both monetary and time costs – which the results show lead to a higher level of indebtedness for migrant families and pose significant risks in the event that the migrant loses, or is cheated out of, a job. This is an area where innovative policy action is much needed. For a start loans for poorer households to finance migration costs are required. It is possible that these services can be better provided by micro-finance institutions, which are used to banking with the poor, as long as they are prepared to take the risks of adapting their weekly repayment model, and loan sizes, to the cash-flow needs of migrants. Second better regulation of manpower agencies and an information campaign on the costs of migration, the risks, overseas job conditions and migrant rights can also help the poor make more informed choices related to the migration process.

A second policy issue relates to the fact that migration still takes place primarily from certain regions, or "migration corridors". These regions are also the relatively prosperous ones in Bangladesh, partly due to remittance income. Hence as part of the country's efforts to make more progress in lagging regions, the government can help provide key information services about employment potential and conditions overseas in these relatively untapped regions. Moreover it can actively promote migration from lagging regions through select, time-bound subsidies, such as the pilot program the micro-finance apex body (PKSF) has instituted. A third policy issue relates to the finding that there is little difference between the education levels of domestic and international migrants, and that the large share of migrants have low skill levels.

Investments in basic education and upgrading skills levels so that Bangladeshi migrants abroad are able to take advantage of a wider set of opportunities also appears to be an important policy priority.

Table 1: Number of households covered in census in each of the survey villages

District	Upazila	Union	Village	Number of Households
Dhaka	Dohar	Moksudpur	Baniabari	200
Dhaka	Dohar	Nurisha	Choita Butar	263
Madaripur	Kalkini	Sahebrampur	Sahebrampur	286
Madaripur	Kalkini	Koyaria	Rampol	349
Mymensingh	Gaffargaon	Moshakhali	Kandi	518
Mymensingh	Gaffargaon	Panchbag	South Harina	390
Chittagong	Putia	Khorna	Khorna	294
Chittagong	Putia	Kachuai	Sujanagar	238
Comilla	Barura	North Shilmuri	Boro Vatua	285
Comilla	Barura	South Shilmuri	Akusar	226
Noakhali	Begumgonj	Mir Warishpur	Kendurbag	420
Noakhali	Begumgonj	Eklashpur	Eklashpur	381
Narail	Narail Sadar	Bhadrabila	Polaidanga	331
Narail	Narail Sadar	Chandibarpur	Ratadanga	310
Rangpur	Mithapukur	Imadpur	Sarkar Para	174
Rangpur	Mithapukur	Mirjapur	Arifpur	328
Sylhet	Bishwanathpur	Alongkari	Tengra	371
Sylhet	Bishwanathpur	Rampasha	Puran Gaon	204
Barisal	Muladi	Muladi	Dorichar Laxmipur	358
Barisal	Muladi	Kazirchar	Uttar Kazirchar	356
			Total number of households	**6,282**

Table 2: Demographic characteristics of migrants: result from the census survey

	International migrants		Domestic migrants	
	Current	**Past**	**Current**	**past**
Average age	31.35	40.33	25.42	33.81
Percentage male	90.64	95.20	77.54	75.96
Percentage who are head of household	13.30	61.92	14.50	46.47
Percent who are spouse of head of household	12.87	2.81	5.20	11.32
Percentage who are either son/daughter of household head	51.08	24.50	56.24	34.29
Percent who are sibling of household head	10.90	7.12	4.19	2.14
Percentage who are married	59.53	86.26	45.33	66.56
Average education level (in years)	6.87	5.99	6.65	5.18
Average migration duration in years		6.08		4.6
Key destinations		% of migrants		% of migrants
Saudi Arabia		42.13		
UAE		16.24		
UK		10.81		
Kuwait		10.02		
Dhaka				60.5
Other urban centers				17.53
Chittagong				12.34

Table 3. Individual- and household- level correlates of international migrant status (census survey)

	Probit equation		Conditional Logit equation	
	(1) Dependent variable equals 1 if individual is either current and past migrant	(2) Dependent variable equals 1 if individual is current migrant	(3) Dependent variable equals 1 if individual is either current and past migrant	(4) Dependent variable equals 1 if individual is current migrant
Age	0.158	0.194	0.367	0.457
	(26.98)**	(27.56)**	(19.19)**	(18.08)**
Age square	-0.002	-0.002	-0.004	-0.006
	(26.09)**	(26.48)**	(19.17)**	(17.64)**
Education level (years)	0.144	0.151	0.227	0.238
	(15.45)**	(14.17)**	(7.26)**	(6.74)**
Square of education level	-0.008	-0.009	-0.014	-0.015
	(11.88)**	(11.67)**	(6.65)**	(6.16)**
Dummy variable =1 if individual married	0.152	-0.002	0.348	-0.043
	(3.87)**	(0.04)	(3.09)**	(0.36)
Dummy variable = 1 if individual is sibling of household head	-0.059	-0.311	0.244	-0.152
	(0.79)	(4.04)**	(1.18)	(0.69)
Dummy variable = 1 if individual is son/daughter of household head	-0.262	-0.453	0.332	-0.131
	(4.45)**	(7.32)**	(1.79)*	(0.68)
Dummy variable = 1 if individual is spouse of household head	-0.371	-0.380	-0.763	-0.837
	(6.24)**	(6.09)**	(4.01)**	(4.14)**
Dummy variable = 1 if individual is household head	-1.118	-1.567	-1.140	-1.912
	(18.66)**	(23.61)**	(6.28)**	(9.19)**
Dummy variable = 1 if individual is male	1.655	1.691	3.256	3.144
	(32.37)**	(30.95)**	(22.26)**	(19.73)**
Amount of land owned by household 10 years before the survey date	.0004	0.0003		
	(8.22)**	(5.96)**		
Dummy variable = 1 if household is muslim	0.847	0.817		
	(8.31)**	(7.07)**		
Dummy variable = 1 household owned non-farm business 10 years before the survey	-0.249	-0.317		
	(6.53)**	(7.32)**		
Constant	-6.344	-6.714		
	(40.37)**	(37.70)**		
Observations	23305	23305	8378	7030

Asterisk (*) and double asterisk (**) denote variables significant at 5% and 10% respectively. Only population aged 15 and above were considered.

Table 4: Primary Agent facilitating international migration

	Percent of migration episodes			
	Agent based in Bangladesh	Friends and relatives in the destination country	Directly recruited by foreign employer	N
All regions	41.1	54.1	4.8	355
Dhaka region	41.2	53.5	5.4	187
Chittagong region	47.4	49.5	3.2	95
Other regions	32.9	61.6	5.5	73

Table 5: Location of employment agency

	Percent of respondents reporting				
	In own village	In an urban area in the district	Dhaka	Chittagong	Sylhet
All regions	24	26.7	41.8	2.1	0.7
Dhaka region	31.2	27.3	39	0	0
Chittagong region	17.8	35.6	40	6.7	0
Other regions	13	8.3	54.2	0	4.2

Table 6: Average agency fees per migrant (Taka)

	Mean	Median	N
All regions	161,346	120,000	322
Dhaka region	169,210	122,150	178
Chittagong region	141,059	132,750	90
Other regions	169,235	114,750	54

Table 7: Number of days and months spent out of the village to process employment contract and travel arrangements

	Mean number of days spent outside village	Median number of days spent outside village	Mean time in months taken to complete travel arrangements	Median time in months taken to complete travel arrangements	N
All regions	18.7	7	7.2	3	354
Dhaka region	19.6	7	6.6	3	186
Chittagong region	18.5	7.5	4.6	3	95
Other regions	16	7	12	3	71

Table 8: Principal methods of financing international migration

	Percent of total number of migration episodes								
	Used own cash resources	Received money from friend and relatives	Raised cash by mortgaging land	Sold land and/or other assets	Borrowed money from friend and relatives	Borrowed from commercial lender	Made financial arrangement with recruiting agency/employer	Other sources	N
Most important source									
All regions	28.3	21	15	11.9	10	5.1	4.5	4.3	353
Dhaka region	30.3	23.2	14.1	13	8.1	4.3	3.2	2.7	185
Chittagong region	27.4	21.1	16.8	7.4	14.7	4.2	5.7	3.2	95
Other regions	24.7	15.1	15.1	15.1	4.1	8.2	6.9	9.6	73
Second most important source									
All	14.6	30	10.8	8.8	15.4	11.2	6.9	1.5	260
Dhaka region	12.5	37.5	13.2	8.1	9.6	11.8	6.6	0.7	136
Chittagong region	23.7	11.8	10.5	9.2	26.3	14.5	0	2.6	76
Other regions	6.3	37.5	4.2	10.4	14.6	4.2	18.8	2.1	60

Table 9: Reported annual receipt of remittance in Taka

	All regions		Dhaka region		Chittagong region		Outlying region		
	mean	**median**	**mean**	**median**	**mean**	**median**	**mean**	**median**	**N**
All migrants	101,579	70,000	103,823	75,000	10,4016	70,000	99,433	60,000	366
Current migrants only	103,103	68,000	116,186	70,000	10,3413	70,000	97,935	55,000	269
Past migrants only	973,54	83,333	100,321	93,750	65,915	71,000	79,497	80,000	97
Mean Frequency of remittance receipts per year (from current migrants only)	4		4		5		4		

Mean size of remittance receipts from selected countries (Taka)

Saudi Arabia	105,247
Kuwait	101,705
UAE	74,878
England	72,368
Italy	91,579

Table 10: Transaction costs and process for remittance delivery

	Personal delivery by friends or relatives	Money transfer company	Direct transfer to own bank account	Transfer to a third person bank account	Check or bank draft	*Hundi*	Others	N
All regions	14.9	1.7	22.6	15.7	33.6	9.4	2.1	235

Remittance service providers (percentage recipients reporting)

	Grameen Bank	BRAC	Sonali Bank	Agrani Bank	Janata Bank	Bangladesh Bank	Rupali Bank	Islami Bank	National	Other	N
All regions	0.6	0.6	24.2	24.7	8.4	10.1	5.1	11.8	4.5	2.2	178
Dhaka Region	1.2	1.2	34.9	19.8	4.7	18.6	7	2.3	2.3	1.2	86
Chittagong region	0	0	11.8	31.4	7.8	0	5.9	15.7	11.8	3.9	51
Other regions	0	0	17.1	26.8	17.1	4.9	0	26.8	0	2.4	41

Travel time and cost

	Average travel time (hours)	Average travel cost (Taka)	
		Mean	Median
All regions	1.3	48	50
Dhaka region	1.8	60.6	20
Chittagong region	1.1	24.4	10
Other regions	0.9	53.3	50

Table 11: Most important service valued by remittance recipients (percent recipients)

	Speed	Reliability	Proximity	Low fees	Other	N
All regions	34.8	50.6	10.2	3	1.3	236
Dhaka region	26.7	56	14.7	1.7	0.9	116
Chittagong region	40.3	48.6	5.6	4.2	1.4	72
Other regions	45.8	41.7	6.3	4.2	2.1	48

Table 12 : Expenditure types that would have been cut had remittance not been received (percent of recipient reporting)

	Cash savings	Education-related	Health related	Food consumption	Housing-related	Purchase of consumer durables	Investment in business	Livestock purchase	Others	N
All regions	19.2	8.1	3.4	43	10.2	4.3	6.4	2.3	9.1	235
Dhaka region	17.2	4.3	2.6	53.5	9.5	0.9	5.2	2.4	9.5	116
Chittagong region	29.6	14.1	5.6	38	4.3	1.4	5.6	0	12	71
Other regions	8.3	8.3	2.1	25	20.8	16.7	10.4	4.8	4.8	48

Table 13: Determinants of migration status of households

	Estimated coefficient	t-statistic	p-value
Area of homestead owned ten years ago	0.005	1.16	0.245
Area of agricultural land owned ten years ago	0.001	1.7*	0.089
Dummy variable=1 if household owned non agricultural business 10 years ago	-0.125	-0.66	0.508
Number of adult males	0.340	3.15**	0.002
Number of adult females	0.256	2.26**	0.024
Dummy variable=1 if household is female	0.786	4.33**	0
Dummy variable=1if household head is a wage laborer	-0.344	-1.4	0.162
Number of female adults with primary education	-0.128	-1.22	0.222
Number of male adults with primary education	0.093	1.02	0.306
Education level of head of household	-0.015	-0.63	0.529
Education level of spouse of head of household	0.067	2.94*	0.003
Maximum education among adults in household	0.055	1.61	0.107
Dummy variable=1if household owns fan	0.130	0.69	0.493
Dummy variable=1if household owns iron	-2.502	-2.57**	0.01
Dummy variable=1if household owns TV	0.281	1.04	0.298
Dummy variable=1if household owns sowing machine	-0.530	-0.95	0.344
Dummy variable=1if household owns pounder	0.061	0.14	0.886
Dummy variable=1if household owns fishnet	-0.906	-1.8*	0.072
Dummy variable=1if household owns plough	0.260	0.53	0.599
Distance to nearest railwaystation	-0.004	-1.3	0.195
Distance to nearest town	-0.132	-0.98	0.327
Distance to nearest bank branch	-0.001	-0.11	0.914
Dummy variable=1 if Dhaka region	-0.074	-0.38	0.701
Dummy variable=1 if Chittagong region	0.088	0.44	0.661

N=439. Asterisk (*) and double asterisk (**) denote variables significant at 5% and 10% respectively.

Table 14: Impact of migration on household level outcomes

	Matched Migrant Households	Matched non-migrant Households	Difference	t-statistic
Monthly per capita total expenditure	1981.83	1461.65	520.18	3.427**
Monthly per capita food expenditure	1050.01	769.67	280.35	4.647**
Monthly per capita non-food expenditure	931.82	691.99	239.83	2.001**
Monthly per capita expenditure on meat and fish	21.39	11.87	9.53	2.544**
Monthly per capita expenditure on clothing	290.50	175.99	114.51	5.026**
Per capita health-related expenditures	39.45	39.73	-0.28	-.0180
Per capita education-related expenditures	173.20	132.04	41.17	1.179
Proportion of households that purchased jewelry items	.13	.094	0.04	0.770
Per capita expenditures on pots and pans	0.014	0.015	-0.001	-.090
Annual expenditures on appliances	186.29	81.36	104.93	2.376**
Annual expenditures on vehicles	363.66	59.48	304.18	1.198
Cash savings in the bank	40747.97	8671.75	32076.22	2.815**
Outstanding loan	31592.84	18560.48	13032.37	1.721*
Change in agricultural land owned in the past ten years	0.001	-1.150	1.151	0.696
Amount of land under HYV *Aman* rice	18.55	7.44	11.12	2.079**
Proportion of households owning non-agricultural businesses	0.12	0.27	-0.14	0.059

Asterisk (*) and double asterisk (**) denote variables significant at 5% and 10% respectively.

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[i] Since many of the migrant households have more than one migrant in the family, the effective number of migrants covered by the survey is more than 251.

[ii] In the survey, information on each migration episode was collected separately. The number of migrants reported in this section therefore tallies with the number of migration episodes and is greater than the actual number of migrants.

[iii] The low use of money transfer companies is deceiving since these companies have increasingly tied up with commercial banks to channel remittances through them, especially in the rural areas. It is only in the urban areas that money transfer companies directly deliver remittances to recipients.

[iv] The STATA default bandwidth of 0.8 was used.