MIGRATION, REMITTANCES AND GENDER ATTITUDES

DIMITRIOS MINOS, EVGENIA PASSARI

ABSTRACT. Financial remittances have become the most important source of external financing in low and middle-income countries, excluding China, surpassing the value of foreign direct investment and official development aid. As the decision to temporarily migrate and send remittances is a hugely gendered process, we explore the link between the inflow of remittances and their role in improving female welfare in recipient countries. To mitigate reverse causality and omitted variable considerations, we build a gravity model using the Natural Disaster Database of CRED to determine the immigrants' propensity to migrate. We then confirm that the inflow of remittances correlates with decreases in gender inequality in the recipient economy, controlling for a number of confounding factors. Potential mechanisms that we explore include increased female decision-making power within the household, as women take control of the family budget, and the concept of "social remittances" that implies that remitters absorb skills, societal norms, ideology, knowledge, and customs from the destination countries and transfer them to their country of origin. Exploiting the bilateral nature of our 130-country panel, we find support for the "social remittance" hypothesis as the correlation between money received and improvement in female welfare is mainly driven by remittances sent from countries with high gender scores. To push on causality, we exploit a longitudinal household survey that follows around 6,500 households in Bangladesh and contains information on remittances, remitters' destination countries, their economic and social background, as well as spending and decision-making patterns within the household before and after migration. Exploiting two international bilateral labor agreements signed by Bangladesh as pull factors for external migration we provide further support to the "social remittance" channel.

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December 2023. D. Minos: King's College, Bush House, 30 Aldwych, London, WC2B 4BG, UK (e-mail: dimitrios.minos@kcl.ac.uk). E. Passari: Université Paris-Dauphine, PSL and CEPR. DRM Finance, Université Paris Dauphine, Place du Maréchal de Lattre de Tassigny, 75775 Paris, France (e-mail: evgenia.passari@dauphine.psl.eu). The authors thank Johannes Boehm, Sergei Guriev, Marina-Selini Katsaiti, Elias Papaioannou, Dimitris Papanikolaou, Hélène Rey, Seyhun Orcan Sakalli, Abu Siddique, Sophie Wade, Dimitrios Xefteris and the participants of the Bordeaux Conference on Development Economics 2020, IMAEF 2022, CRETE 2022, Dauphine Research Days 2022, KBS Research Day 2022, the Department of Economics of University of Turku, the Department of Economics of University of Bath, the Department of Economics of Kingston University and the Department of Economics of University of Cyprus for comments and discussions.

1. Introduction

The number of international migrants has grown overtime. Between 2000 and 2019, the onset of the COVID-19 pandemic, the figure has increased by 50 percent to reach 272 million people (United Nations Department of Economic Social Affairs (2019)). Remittances, defined as "money transfers by migrants to their relatives or other persons in countries of origin" are a by-product of these migration decisions (Lopez-Ekra et al. (2011)). In 2022, officially recorded remittances received by developing nations reached $794 billion (The World Bank, 2023). During the past years, remittances have remarkably become the most important source of external financing in low and middle-income countries, excluding China, surpassing the value of foreign direct investment and official development aid.

The decision to migrate and send or receive remittances is a hugely gendered process. Gender determines who migrates, where the immigrants migrate to, the opportunities and networks they have access to once they arrive and the magnitude of remittances they send. Although remittances are known to improve the economic situation of the recipients (Yang (2011); Mobarak et al. (2023)), it remains largely unclear how they impact the welfare of the women who are left behind in the migrant's country of origin.

The aim of this paper is to explore the role of financial remittances in improving female welfare in the recipient countries and to shed light on the channels through which they operate. The main focus of our analysis is on lower income countries that seem to rely more on remittances and also exhibit relatively higher gender inequality. To massage empirical challenges posed by reverse causality and endogeneity, we proceed with a two-stage estimation. In the first stage, we exploit exogenous sources of variation to determine the likelihood of individuals to migrate and remit using World Bank data. In the second stage, we confirm that the inflow of remittances can indeed reduce gender inequality in the recipient country. We then exploit the bilateral nature of the remittance data collected from the World Bank to explore potential mechanisms which include the introduction of societal norms, ideology, knowledge, and customs from the destination countries and their transfer to the countries of origin, a process that we call "social remittances".

To push on causality, we exploit a longitudinal household survey from Bangladesh, between 2012 and 2018, that tracks 6,500 households and contains information on remittances, remitters' destination countries, their economic and social background, as well as beliefs about spending and women's decision-making power within the household before and after migration. However, as migrants do not often freely choose or get accepted in their preferred destination, we additionally exploit exogenous sources of variation that potentially dictate migration decisions. Specifically, we seek plausibly exogenous pull factors that could attract migrants to specific destinations through exceptional employment opportunities they provide. For instance, the Bangladeshi government occasionally enters into bilateral agreements with other countries to send workers for a limited amount of time (ILO

2018). Two of these agreements were with Malaysia and Saudi Arabia and attracted thousands of Bangladeshi low-skilled workers to these destinations after 2015. As the agreements were reached between the two last waves of the Bangladeshi household survey they serve as pull factors towards international destinations with different gender norms compared to Bangladesh.

Our results point to a strong negative relationship between the flow of remittances and gender inequality in the recipient country, controlling for a large set of potential confounding factors. By exploiting the bilateral nature of the data we find support for a "social remittance" channel; the correlation between money received and improvement in female welfare is mainly driven by remittances sent from countries with high gender scores. When we consider remittances that originate from high-income economies with low-gender scores – predominantly oil producing countries with high gender inequality – they do not tend to reduce gender inequality as much, although there seems to be a modest financial effect, potentially due to the alleviation of financial constraints within the migrant's household. We interpret this result as an indication that importing norms can have an non-trivial effect on the improvement of female welfare in the recipient countries, over and above the impact of the received financial flows.

The results from the longitudinal household survey carried in Bangladesh lend further support to the country-level analysis; an increase in the flow of remittances correlates with an improvement in the position of women in the Bangladeshi households. However, above and beyond the level of remittances it matters if the flow comes from a country with a better gender score compared to Bangladesh. When we zoom into the comparable sub-sample of the households of married male migrants who went to either Saudi Arabia or Malaysia, the coefficient of the triple interaction term reveals an increase in decision making power for the spouse that was left behind in Bangladesh if the migrant husband went to Malaysia and the opposite effect if the migrant husband went to Saudi Arabia.

Our work contributes to the literature that studies the link between financial remittances and gender inequality. A significant part of these studies has a theoretical focus and uses findings from case studies of specific countries (De la Brièrre et al. (2002); Antman (2012); Torero and Viceisza (2009); Mobarak et al. (2023)). We attempt to (i) paint a global picture when it comes to the correlation patterns between remittance flows and gender outcomes and (ii) massage endogeneity considerations and expand on already established findings by highlighting and exploring potential mechanisms.

We also contribute to the substantial amount of empirical work that looks at the wider implications of remittance flows for emerging economies (Giuliano and Ruiz-Arranz (2011); Bollard et al. (2009); Ahmed (2013); Mobarak et al. (2023)) by specifically assessing their impact on female welfare through a wide range of gender outcomes. As the complex mechanisms through which the flow of remittances operates remain unclear and might extend beyond the alleviation of financial constraints, our work assesses additional potential channels. Studies advocate that the migration process and the transfer of remittances can empower women to acquire new roles as providers and economic decision makers

that break down patriarchal ideas (Ramírez et al. (2005); Lopez-Ekra et al. (2011)). Other work suggests that it is not the financial nature of remittances, but the flow of ideas, norms and behaviors as a type of "social remittance" that matters the most (Levitt (1998)). Both explanations seem plausible, but empirical evidence remains scarce. Our study highlights the significance of incorporating norms from the remittances' sender economy as migrants gain exposure to new values and ideas pertaining to the position of women in the society.

The remainder of the paper is structured as follows: Section 2 describes our empirical strategy and data and Section 3 presents the results of our estimations. Section 4 discusses the analysis of the household-level data from Bangladesh. Section 5 concludes.

2. Remittances and Gender Norms

2.1. **Country-level Analysis.**

2.1.1. *Data Description.* The main variable of interest is the Gender Inequality Index (GII) developed by the United Nations Development Program (UNDP). This is a worldwide measure of gender inequality measured from 1995 onward. The GII was recorded in 5-year intervals between 1995 - 2010, then recorded annually from 2010 to date. For this reason, we only use the data from 2010 onward. The GII is a composite measure that reflects 'gender-based disadvantages' in three areas: reproductive health, empowerment and economic status. The index ranges continuously from 0 (where women and men have equality) to 1 (where women fare poorly compared to men). We are aware of the indices limitations, as it is unlikely to be a complete measure of gender inequality because it fails to take account of the full breadth of disparities between genders. Nevertheless, it is widely available for a large set of countries.

At the same time, financial remittances are also hard to measure with precision, because, often, sums of money are transferred through a variety of formal or informal channels. Formal channels include money transfer operators, banks, credit unions and post offices (Ramírez et al. (2005)). Informal channels may be operated by "non-financial firms or brokers with a physical presence" in remittance-sending and receiving communities (Yang (2011)). Other informal methods include migrants carrying money themselves or sending it through another person travelling between the countries (Ramírez et al. (2005)). The formal transfer of remittances is accounted for in national accounts; however, informal transfers are not, and it is estimated that if informal transfers were accounted for, estimates of remittances could double. Nevertheless, the World Bank has recently constructed a database using both formal sources and approximations to estimate the total flow of remittances between countries. Data are available on an annual basis between 2010 and 2018. We employ this source of bilateral data to pair countries as recipient-sender, which leads to a dataset containing roughly 360,000 observations. However, since several pairs of countries do not seem to be connected through migration we

treat them as missing and only consider pairs of countries where remittances actually flow from one to the other.

The rest of the control variables stem from the World Bank Indicators and are meant to capture a variety of socioeconomic characteristics in each country. These include GDP per capita, the share of rural population, school enrollment, population density, religion and the KOF Index of Globalization.

2.1.2. *Instrumental Variables Estimation.* The decision to migrate and remit is a complex process. Many factors are involved, thus rendering the measurement of the net effect of remittances an ambitious endeavor. We expect reverse causality and omitted variable considerations to confound a simple OLS estimation (Azizi (2018);). To address these issues we proceed in two steps. The first step is to exploit exogenous sources of variation that can approximate the flow of remittances and are not directly correlated with gender inequality. To this end, we construct a type of gravity model (Lewer and Van den Berg (2009)) using the Natural Disaster Database constructed by the Centre for Research on the Epidemiology of Disasters (CRED) to determine the propensity to migrate and the ability to remit.

The idea is that when natural disasters occur in the sender economy, economic activity is hampered (Yang (2008)) so that many migrants in these affected countries are likely to experience an economic shock affecting their ability to remit or would simply deter eager individuals to migrate to that particular country at this point in time. This is a plausibly exogenous source of variation that affects the ability to remit in a specific country at a specific point in time. The first stage estimation is complemented with variables likely to be associated with the decision to choose a destination, migrate and remit (i.e. affecting the flow of remittances from a specific sender to the recipient country). A vibrant economy is arguably more attractive as it presents more employment opportunities, therefore we consider the GDP of the destination country. Moreover, the physical distance between origin and destination may play a role as there are substantial costs attached to the relocation process. For the same reasons we include a contiguous border and common language as factors important to gravity. In addition, we also consider the population size in both countries. Finally, the presence of compatriots in the potential destination may play a role, as individuals may seek to take advantage of existing social networks that will aid them and further minimize the costs (Lewer and Van den Berg (2009)). To add a dynamic element in the first stage we consider the effect of a natural disaster with a 1-year lag. Our results are robust to the introduction of different lag structures or simply omitting them altogether. We then estimate and predict the following equation to determine the propensity to migrate to a certain destination and ability to remit using all pairs of countries:

$$Remit_{ij}^{t} = NatDis_{j}^{t-1} + GDPpc_{j}^{t-1} + Dist_{ij} + Bord_{ij} + Lang_{ij} + MigSt_{ij}^{2000} + Pop_{i}^{t-1} + Pop_{j}^{t-1} + T^{t} \quad (1)$$

Where $Remit_{ij}^{t}$ is the natural logarithm of the flow of remittances to country i from country j in US$, $NatDis_{i}^{t}$ accounts for the occurrence and severity of a natural disaster in the sender country j in year $t-1$ as measured by the number of people affected. $GDPpc_{j}^{t}$ measures the size of the economy of the potential destination country j in year t, whereas $Dist_{ij}$ is the weighted physical distance between two countries, that also considers common language and a contiguous border. Further, the variable $MigSt_{ij}^{2000}$ accounts for the presence of a migrant community from country i in country j already existing in the year 2000. This ensures that the size of the community is unrelated to events occurring 10 years later. Finally, we add year dummies T^{t} aiming at capturing worldwide phenomena that might occur in a year and could influence migration decisions or the ability to remit. Estimating this equation with OLS and obtaining the linear prediction would give us in a sense the likelihood (or a score) that an individual from country i might migrate to country j in year t and remit.

The estimation results in Column 1 of Table 1 reveal that all coefficients display the expected sign and are highly significant at the 1% level. The F-statistic at 367.47 further confirms the strength of the instrument. The R^2 indicates that the model can explain a substantial part of the variation (0.4555) of the flow of remittances between countries j and i. We are therefore, confident that the instrument is strong and relevant to predict the annual flow of remittances. To ensure that the prediction is exogenous, we regress it on the residual obtained from the full specification in Column 1 of Table 1. The results in Column 2 of Table 1 indicate that the two are uncorrelated, allowing us to conclude that we are able to adequately capture an exogenous part of the variation in remittances.

2.1.3. *Short- versus Long-run Effects.* The longitudinal nature of the dataset provides the opportunity to explore differences between countries or pairs of countries, as well as within single countries or pairs over time. Pooled estimations tend to neglect within variation and therefore the time component of such phenomena, rendering difficult to observe how the situation in a single country evolves. Fixed effects estimation with panel data, on the other hand, filter out the time invariant component (between variation) and only capture changes over time. Given that in our case changes may take long period of time to affect societies and that the duration of the panel may be too short, we would ideally like to explore both dimensions simultaneously. A solution to this issue is provided by Mundlak (1978).

The idea is that in a panel dataset one can add the within group means to obtain the within estimator Mundlak (1978). In practical terms this means that by creating additional regressors representing the mean over the examined time period for each country, one can capture the time invariant effects and observe changes for each country over time (within variation). Additionally, the coefficients of the means capture differences between countries (between variation), 'decomposing' the fixed effect component. An interpretation is that the within variation captures short-term effects for each country over time, whereas the between variation captures long-term or accumulated-over-time effects that reflect in differences between countries (Wooldridge (2002)). More recently Schunck and Perales (2017)

TABLE 1. Severity of natural disasters and the ability to remit

	Remittances	Residual
Severity (1-lag)	-0.0098***	
	(0.0000)	
GDP pc (Sender) (1-lag)	0.0380***	
	(0.0308)	
Distance in km	-0.3658***	
	(0.0000)	
Common Language	0.1792***	
	(0.0967)	
Contiguous Border	0.2432***	
	(0.1814)	
Population (Recipient) (1-lag)	0.2903***	
	(0.0000)	
Population (Sender) (1-lag)	0.1414***	
	(0.0000)	
Migrant Stock in 2000	0.0912***	
	(0.0000)	
Year	0.0207***	
	(0.0067)	
Linear prediction		0.0001
		(0.0003)
F-statistic	367.47	0.04
R^2	0.4555	0.0000
Observations	16156	28870

Note: Pooled estimation on bilateral remittances per capita. Coefficients are standardized. Robust standard errors clustered at the recipient-sender pair level in parentheses

expanded on this idea and created a hybrid estimation model that additionally considers variables that do not vary substantially over time (which is often the case with yearly aggregate indicators) and add a random effect component. This allows us to include time varying and time invariant components and simultaneously explore variation within- as well as between countries; put differently, the short- and long-term effects of the variable of interest. We can then partial out the within variation and focus on the long run. The model we estimate is as follows:

$$GII_{ij}^{t} = \beta_1 Remittance_{ij}^{t} + \gamma_1 \widehat{Remittance}_{ij} + \beta_2 Controls_{ij}^{t} + \gamma_2 \widehat{Controls}_{ij} + \delta u_i + \epsilon_{ij}^{t} \quad (2)$$

where β_1 captures changes over time as a result of inflows of remittances from country j to country i in year t and γ_1 captures the long-term effect of the inflow of remittances from country j to country i. As gender inequality is a complex and multidimensional phenomenon and the inflow of remittances

could impact some areas in a rather short period of time, whereas change in other areas could take longer, we aim at capturing both.

3. Results

3.1. **Baseline results.** The main focus of our analysis is on low- and middle income countries that seem to rely more on remittances and also exhibit relatively high gender inequality. We first estimate a simple Pooled OLS and a fixed effects regression before moving to Equation 2. We report the second-stage coefficients and use the linearly predicted flow of remittances to account for reverse causality. Furthermore, the unit of observation as well as the level of standard-errors clustering is a pair of sender-recipient countries.

In Column 1 of Table 2 we employ no controls except for the Gender Inequality Index of the sender country. The results indicate that there is a strong negative relationship between the flow of remittances and gender inequality in the recipient country. This relationship holds when including the full set of controls in Column 2. Column 3 includes only pairs of countries where the sender is a country that exhibits good gender norms, which arguably is an indication of more equal societies, whereas Column 4 only considers high income countries with worse gender records (one standard deviation below the median), which are predominantly oil producing countries with lower gender outcomes. Comparing the β coefficient for remittances between these columns reveals that remittances coming from countries with low gender inequality are negatively correlated with the Gender Inequality Index of the recipient country, whereas this is not true for financial flows coming from other high-income countries with higher Gender Inequality. This could be an indication that there is more to the story that highlights the importance of the financial channel of remittances in the improvement of female welfare. Where the financial flow is coming from seems to also matter for female outcomes, making a case for a "social remittances" hypothesis.

In Table 3 we use the Hybrid estimation proposed by Schunck and Perales (2017) to simultaneously account for the within and between variation. The results indicate that long-term higher flows of remittances may reduce gender inequality in the recipient country. Once again, the origin country of remittances seems to matter.

Next, we split our sample differently. We are interested in investigating the role of remittances in countries that exhibit relatively high gender inequality. Not all low- and middle income countries exhibit high gender inequality and such disparities do not only exist in the poorest countries of our sample. For this purpose, we now focus on a sample of countries where the GII is above 0.5, which indicates high levels of gender disparities. The picture we obtain is similar in all Columns. In Columns 3 and 4, we, again, differentiate between sender countries based on their gender norms. Remittances flowing over longer periods from countries with good gender profiles seem to have a strong effect. The coefficient itself is substantially larger compared to the one for the full sample of senders in Column

TABLE 2. Pooled OLS instrumenting for Remittances-Sample Cuts

	GII [1]	GII [2]	GII [3]	GII [4]
Remittances (Prediction)	-0.1778***	-0.0318**	-0.1061***	0.0113
	(0.0005)	(0.0004)	(0.0007)	(0.0010)
Controls	No	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Sample Recipient	Low/Mid	Low/Mid	Low/Mid	Low/Mid
Sample Sender	Full	Full	GII low	GII high
Clusters (Pairs)	16621	12499	2577	2508
Observations	72133	45343	8564	8433

Note: Pooled estimation instrumenting for remittances. Standardized coefficients reported. Robust standard errors clustered at the recipient-sender pair level in parentheses

TABLE 3. Hybrid estimation instrumenting for Remittances-Sample Cuts

	GII [1]	GII [2]	GII [3]	GII [4]
Remittances (Prediction)	-0.0101***	-0.0014**	-0.0072***	0.0000
	(0.0005)	(0.0003)	(0.0010)	(0.0008)
Controls	No	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Sample Recipient	Low/Mid	Low/Mid	Low/Mid	Low/Mid
Sample Sender	Full	Full	GII low	GII high
Clusters (Pairs)	16621	12499	2577	2508
Observations	72133	45343	8564	8433

Note: Hybrid estimation instrumenting for remittances. Robust standard errors clustered at the recipient-sender pair level in parentheses

2. As for low-gender senders, the coefficient is insignificant, implying that the flow of remittances from this set of countries does not necessarily promote gender equality. These findings lend some support to the "social remittances" hypothesis. It does not seem to be the financial flow itself reducing inequality in the recipient country. What seems to matter the most is the origin of financial flows. The long-term exchange with countries that exhibit good gender norms seems to also transmit values and social norms.

Next, instead of splitting the sample based on the gender score of the sender country, we simply construct dummies for countries with High- and Low Gender Inequality. In Tables 5 and 6 we present the results of the Pooled OLS and the Hybrid estimations. In Column 1 the level of remittances as predicted in the first stage is negatively correlated with the Gender Inequality Index, whereas the

TABLE 4. Hybrid estimation instrumenting for Remittances-Sample Cuts 2.0

	GII [1]	GII [2]	GII [3]	GII [4]
Remittances (Prediction)	-0.0006*	-0.0018**	-0.0043***	-0.0006
	(0.0003)	(0.0003)	(0.0010)	(0.0007)
Controls	No	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Sample Recipient	High GII	High GII	High GII	High GII
Sample Sender	Full	Full	GII low	GII high
Clusters (Pairs)	9103	6764	1356	1378
Observations	33891	19855	3728	3778

Note: Hybrid estimation instrumenting for remittances. Robust standard errors clustered at the recipient-sender pair level in parentheses

TABLE 5. Pooled OLS instrumenting for Remittances, with Interactions

	GII	GII	GII
Remittances (Pred.)	-0.0343***	-0.0294***	-0.0296***
	(0.0005)	(0.0005)	(0.0005)
Remittances (Pred.) X High Ineq	0.0057		0.0007
	(0.0005)		(0.0005)
Remittances (Pred.) X Low Ineq		-0.0212***	-0.0210***
		(0.0005)	(0.0002)
Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Sample Recipient	Low/Mid	Low/Mid	Low/Mid
Sample Sender	Full	Full	Full
Clusters (Pairs)	10817	10817	10817
Observations	40109	40109	40109

Note: Pooled OLS instrumenting for remittances. Controls include GDP p.c., Education, Urbanization, Globalization, Population Density, GII (sender), Muslim, Regional Dummies. Standardized betas reported. Robust standard errors clustered at the recipient-sender pair level in parentheses.

interaction term for these remittances stemming from a country with High Gender Inequality is insignificant. The same interaction term for remittances stemming from countries with good gender norms exhibits a negative and highly significant coefficient in Column 2. This could imply that there is an effect above and beyond the pure financial channel. Finally, we include both interaction terms in Column 3 and the picture remains largely unchanged.

Overall, our country level analysis seems to confirm that countries that receive more remittances see an improvement in gender norms. This descriptive finding could lend external validity to previous studies that are able to identify the causal effect of remittances in specific settings (see e.g. Mobarak et al. (2023)). Further, the source country seems to matter as well. Remittances flowing from countries

TABLE 6. Hybrid estimation instrumenting for Remittances, with Interactions

	GII	GII	GII
Remittances (Pred.)	-0.0018***	-0.0015***	-0.0296***
	(0.0004)	(0.0006)	(0.0004)
Remittances (Pred.) X High Ineq	-0.0000		0.0005
	(0.0005)		(0.0006)
Remittances (Pred.) X Low Ineq		-0.0016***	-0.0018***
		(0.0006)	(0.0006)
Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Sample Recipient	Low/Mid	Low/Mid	Low/Mid
Sample Sender	Full	Full	Full
Clusters (Pairs)	10817	10817	10817
Observations	40109	40109	40109

Note: Pooled OLS instrumenting for remittances. Controls include GDP p.c., Education, Urbanization, Globalization, Population Density, GII (sender), Muslim, Regional Dummies. Standardized betas reported. Robust standard errors clustered at the recipient-sender pair level in parentheses.

with good gender norms seem to improve the situation for women in the recipient countries above and beyond the financial flow itself.

4. PUSHING ON CAUSALITY

4.1. **The Bangladesh Integrated Household Survey.** Our country level analysis suggests that cultural or social remittances may also be driving the baseline result. The destination country of migrants seems to play a major role. To further explore this potential channel we turn to the Bangladesh Integrated Household Survey (BIHS) conducted by the IFPRI. It is a nationally representative panel survey covering about 6,500 households in 2012, 2015 and 2018. A key feature of the survey is that female respondents had a one-to-one interview with a female enumerator without any other household member being present. This survey module covers several questions related to gender norms, such as having experienced verbal or physical abuse, decision making power within the household and control over the household's budget. Further, the survey contains detailed information on migrants including their destination country and the amount they remit.

In a first exercise we employ a simple Pooled OLS and a Random effects regression in the full sample of Bangladeshi households in Table 7. In Columns 1 and 2, we observe a negative coefficient of remittances on verbal and physical abuse, with the latter exhibiting statistical significance. To account for unobserved heterogeneity we employ the Oster (2019) methodology on "selection on unobservables". We use the standard assumptions in the literature that unobservables matter as much as observables (δ=1) and we would expect the explanatory power of the model to increase by 30% (see e.g. Alesina et al. (2016), Satyanath et al. (2017) and Tabellini (2020). The coefficient we obtain is the "unbiased β" or the "true coefficient" which is negative for both specifications implying that in households that

receive more remittances, female respondents experience fewer instances of abuse. Our controls include an array of household level characteristics as well as regional and time fixed effects. The results of the random effects estimation in Columns 3 and 4 paint a similar picture. This descriptive finding suggests that households that receive more remittances may experience an alleviation of financial constraints that could have been the source of tension within the household. It may also be simply mechanical due to a household member being absent. We will revisit this potential mechanism further below.

TABLE 7. BIHPS: Baseline Abuse

	Verbal	Physical	Verbal	Physical
Remittances	-0.0084***	-0.0033***	-0.0082***	-0.0031***
	(0.0009)	(0.0005)	(0.0007)	(0.0004)
Unbiased β	-0.0008	-0.0003		
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	17206	17206	17206	17206

Note: Pooled OLS estimation in Columns 1 and 2. Random effects in Columns 3 and 4. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

Next, we turn to gender bias in spending decisions. The dependent variables are based on a set of questions around who makes the decision on how much to spend on food, health, education and clothing items. We code the variable as 1, if anyone else within the household is involved in any of these decisions and 0 if she by herself makes the decisions. The results in Table 8 indicate that in households receiving more remittances, it is likelier that the female respondent reports being the sole decision maker on the amounts spent.

TABLE 8. BIHPS: Baseline Spending Decision Bias

	Food	Health	Education	Clothing
Remittances	-0.0240***	-0.0214***	-0.0186***	-0.0210***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)
Unbiased β	-0.0237	-0.0208	-0.0176	-0.0207
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	17119	17119	17119	17119

Note: Pooled OLS estimation. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

In the next set of regressions we look at overall spending on female education and health, as well as dummies on whether the female respondent feels she has control over her life and overall life

satisfaction. Both are on a 10-point Likert scale and are coded as 1 if the response is above the median. In all specifications female welfare seems to be higher in households receiving more remittances.

TABLE 9. BIHPS: Baseline Female Welfare

	F. Education	F. Health	Control	Life
Remittances	0.0152**	0.0227***	0.0034***	0.0020**
	(0.0078)	(0.0042)	(0.0008)	(0.0009)
Unbiased β	0.0019	0.0288	0.0005	0.0006
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	17207	17207	17108	17108

Note: Pooled OLS estimation. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

A similar pattern emerges on a set of questions, where the female respondents indicate whether they themselves control the budget (i.e. hold the money) for food, medical and clothing purchases in Table 10. The variables take the value 1 if the respondent does not control the budget herself. The findings seem to confirm that decision making power for females is higher in households that receive more remittances. Since, there is a number of households that receive remittances from non-household members (other relatives or friends), we employ the same exercise while accounting for this in Table 11. The results suggest a pure financial channel, as non-migrant households receiving remittances exhibit better gender outcomes compared to households that don't receive any. Unobserved heterogeneity and omitted variables are still an issue though. Nevertheless, it also worth noting that households receiving remittances from a household member that migrated exhibit a larger coefficient. This could suggest that the absence of a household member is a potential channel worth investigating further.

TABLE 10. BIHPS: Baseline Budget Control Bias

	Food	Clothes	Medicine
Remittances	-0.0122***	-0.0104***	-0.0104***
	(0.0011)	(0.0010)	(0.0011)
Unbiased β	-0.0108	-0.0087	-0.0089
Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	17119	17119	17119

Note: Pooled OLS estimation. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

To dig deeper into potential mechanisms and increase comparability in our sample we zoom into households that had at least one migrant in either of the three waves. We include both domestic and

TABLE 11. BIHPS: Baseline Budget Control Bias and Non-Migrant Remittances

	Food	Clothes	Medicine
Remittances (Mig.)	-0.0135***	-0.0114***	-0.0112***
	(0.0017)	(0.0013)	(0.0013)
Remittances (Non-mig)	-0.0093***	-0.0082***	-0.0082***
	(0.0010)	(0.0010)	(0.0013)
Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	17119	17119	17119

Note: Pooled OLS estimation. Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

international migrants and construct a dummy for the latter. Our previous results on the effect of remittances on verbal and physical abuse appear weaker in Table 12. An interpretation could be that among all households that receive remittances, the effect is stronger if the migrant is abroad. This could imply that the absence of a male household member mechanically reduces the likelihood of females being abused [1], especially if the migrant is abroad and it is more difficult to travel back home for a short visit.

TABLE 12. BIHPS: Remittances and Migrants Abroad

	Verbal	Physical
Remittances	-0.0035*	-0.0021*
	(0.0020)	(0.0010)
Migrant Abroad	-0.0479**	-0.0278**
	(0.0195)	(0.0107)
Controls	Yes	Yes
District FE	Yes	Yes
Year FE	Yes	Yes
Observations	3008	3008

Note: Pooled OLS estimation. Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

There is some indication about the potential importance of the alleviation of financial constraints in this sub-sample as households that receive more remittances exhibit a lower bias in spending decisions (Table 13). Once more, we could be witnessing a mechanical effect as the dummy for the migrant being abroad is negative and highly significant.

We then narrow down the analysis to the households that sent at least one migrant abroad. This results in a substantially smaller sample with roughly 150-300 households having a remitting migrant

[1]For transparency, we use all of the above dependent variables for all estimations and sub-samples. We only report significant results and include the others in the Appendix

TABLE 13. BIHPS: Remittances and Migrants Abroad

	Food	Health	Education	Clothing
Remittances	-0.0089***	-0.0066***	-0.0060***	-0.0048**
	(0.0021)	(0.0019)	(0.0018)	(0.0019)
Migrant Abroad	-0.0898***	-0.1042***	-0.1012***	-0.1199***
	(0.0256)	(0.0241)	(0.0198)	(0.0245)
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2984	2984	2984	2984

Note: Pooled OLS estimation. Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

in each of the waves, yet it would increase the comparability of our sub-sample as these are households with somewhat similar characteristics. The vast majority of Bangladeshi migrants are male and usually migrate to other Muslim countries. Their preferred destinations are Saudi Arabia, the UAE, Oman, Qatar, Malaysia, Singapore and very few migrate to the US, UK and Australia. Selection may still be an issue that we attempt to address further below. Tables 14 and 15 present the results of the Pooled OLS estimations for abuse and spending decisions. The results seem to weaken a bit in terms of statistical significance, but the coefficients for the level of remittances have the expected signs and are a bit larger than before. The financial channel can still be observed. All these households have a household member that migrated and receive remittances, but those receiving more seem to fare better.

TABLE 14. BIHPS: Migrants Abroad and Abuse

	Verbal	Physical
Remittances	-0.0075*	-0.0003
	(0.0040)	(0.0000)
Unbiased β	-0.0084	-0.0003
Controls	Yes	Yes
District FE	Yes	Yes
Year FE	Yes	Yes
Observations	972	972

Note: Pooled OLS estimation. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

To further push on our hypothesis and work on comparable households, we restrict our sample to households that had at least one migrant in 2012. We then split the sample in two depending on the destination country of the migrant to compare these households on observable characteristics. Specifically, we create a dummy that takes the value 1 if the migrant went to a country that exhibits better gender norms (as measured by the country's GII) by one standard deviation compared to Bangladesh

TABLE 15. BIHPS: Migrants Abroad and Spending

	Food	Health	Education	Clothing
Remittances	-0.0094**	-0.0069	-0.0097**	-0.0076*
	(0.0041)	(0.0043)	(0.0043)	(0.0045)
Unbiased β	-0.0079	-0.0046	-0.0081	-0.0063
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	962	962	962	962

Note: Pooled OLS estimation. Unbiased β refers to Oster (2019). Controls include assets, household size, education, age, occupation and initial gender norms. Robust standard errors clustered at the district level in parentheses.

(which finds itself roughly in the middle) and 0 otherwise. We then compare households along those lines. We do not see any significant differences in terms of abuse and female liberties (initial gender norms). If anything, households in which a migrant went to a less gender friendly country are slightly richer, the migrant is in a better occupation and remits more. These initial conditions would likely work against our hypothesis.

TABLE 16. BIHPS: Balance 2012

	Gender High			Gender Low		
	Mean	SE	n	Mean	SE	n
Verbal	.1327	.0226	226	.1333	.0293	135
Physical	.0309	.0115	226	.0444	.0178	135
Family	2.5707	.1069	226	2.5259	.1358	135
Voting	1.2714	.0344	221	1.1889	.0398	127
Assets	10.5366	.0789	226	11.1559*	.0874	135
Savings	4.8846	.3188	226	5.6966	.4535	135
Education	1.4778	.0525	226	1.5111	.0663	135
Occ.	3.1150	.0622	226	3.5037*	.0688	135
Remit.	10.4233	.2132	226	11.3470*	.1477	135

Note: High (Western Europe, USA, Singapore, Australia, Malaysia), Low (Saudi Arabia, Kuwait, Qatar, Oman, UAE)

We then employ a set of regressions using the destination dummy in Table 17. The level of remittances is no longer significant, since all of these households receive a comparable level of remittances on average. The dummy for a destination country with good gender norms is negative across the board and statistically significant (albeit at the 10 % level) in Columns 1 and 2. The unbiased β that accounts for unobserved heterogeneity is negative in all four specifications implying that there is a reduction in bias if the migrant remits from a country with good gender balance.

However, migrant selection and their unobserved characteristics may play a role in driving these results. It may very well be the case that individuals with certain characteristics decide to go to certain countries. Even though migration is a complicated process and it is not very likely that migrants can freely choose or get accepted in their preferred destination, we nevertheless attempt to account for this by exploiting exogenous sources of variation. Specifically, we seek plausibly exogenous pull factors

TABLE 17. Migrants abroad: Destination country and spending decision bias

	Food	Health	Education	Clothing
Remittances	0.0012	0.0045	0.0040	0.0034
	(0.0047)	(0.0060)	(0.0054)	(0.0060)
Gender High	-0.0670*	-0.0639*	-0.0454	-0.0592
	(0.0366)	(0.0368)	(0.0365)	(0.0382)
Unbiased β	-0.1051	-0.0989	-0.0745	-0.0980
Household Controls	Yes	Yes	Yes	Yes
Migrant Controls	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	647	647	647	647

Note: Pooled OLS estimation for a remittance sending migrant. Controls include assets, household size, education, age, occupation, migrant characteristics and initial gender norms.

that could attract migrants to specific destinations through employment opportunities they provide. The Bangladeshi government occasionally enters into bilateral agreements with other countries to send workers for a limited amount of time (ILO 2018). Two of these agreements were with Malaysia and Saudi Arabia in late 2015. Low-skilled migrants entered an application process through local agencies. Demand was much higher that the offered visas for both destinations. Potential migrants likely applied for both as the desire to migrate is very high Mobarak et al. (2023). For Malaysia a lottery was employed to select individuals. Both agreements are monitored by the ILO, so that migrants face similar conditions in both countries. This exogenous shock is between the two last waves and could serve as a pull factor towards a destination with vastly different gender scores than Bangladesh. Indeed, we see an increase in the number of migrants to both destinations in our data between 2015 and 2018. Moreover, Malaysia exhibits a better gender score than Bangladesh and Saudi Arabia a lower one by a very similar margin. Coincidentally, these are the destinations with the two most frequent occurrences in our sample that happen to be assigned the lowest and highest gender scores respectively.

A first exercise is to look at differences in migrant- and household characteristics before migrating, including initial gender norms. We therefore focus on households where a member migrated either to Malaysia or Saudi Arabia after 2015, but was in Bangladesh during the first two waves. To deal with relatively small samples we pool both years for the balance test. We do not see any substantial differences in our outcomes pre-migration, nor do we find differences in household and migrant characteristics as well as in the amount remitted in 2018.

We then turn to the sub-sample of households with at least one migrant in ether of the three waves. In a two-way-fixed effects estimation in Table 19 we employ a triple interaction on whether the migrant left after 2015, whether the migrant is the husband and whether they went to Saudi Arabia.

TABLE 18. BIHPS: Balance Saudi Arabia and Malaysia 2012-2015

	Saudi			Malaysia		
	Mean	SE	n	Mean	SE	n
Verbal	0.2708	0.0648	48	0.2758	0.0844	29
Physical	0.1250	0.0482	48	0.1034	0.0575	29
Family Dispute	2.6458	0.1940	48	2.4482	0.2410	29
Food	0.4375	0.0723	48	0.5862	0.0930	29
Clothing	0.4375	0.0723	48	0.5862	0.0930	29
Medicine	0.4166	0.0719	48	0.5862	0.0930	29
HH Size	4.8958	0.1841	48	4.9655	0.3859	29
Assets	10.5528	0.2038	48	10.7534	0.1762	29
Savings	5.6631	0.6778	48	6.8204	0.8290	29
Mig. Education	1.7413	0.1142	48	1.5333	0.1495	29
Mig. Occ.	2.7169	0.0886	48	2.6779	0.1195	29
Mig. Age	28.2413	1.1354	48	30.4516	1.7325	29
Remittances	10.7077	0.4057	48	11.4822	0.4233	29

Note: Migrant characteristics and remittances refer to 2018. All others are averaged across previous years.

The coefficients of the triple interaction suggest an increase in gender bias, being positive and significant, suggesting than someone else –not the female spouse– controls the household budget for food, medicine and clothing. In a similar exercise we find the opposite result by assessing the triple interaction with the migrant husband now moving to Malaysia (Table 20). This suggests that the destination country matters as well. The situation of women in Bangladesh seems to improve if the migrant went to a country with better gender norms compared to Bangladesh. In Table 21, we code our variable of interest as 1 if the migrant went to Malaysia, -1 if they went to Saudi Arabia and 0 if they migrated to any other country. The results indicate that households whose remittance sending migrants went to Malaysia after 2015 see an improvement in female liberties, as measured by the female respondent herself controlling the household budget. Once again the coefficient for the level of remittances is insignificant, indicating that other channels beyond the financial one matter.

TABLE 19. Triple Diff: Saudi Arabia

	Food	Clothes	Medicine
Post 2015 X	0.2896***	0.1912*	0.2373**
Migrant Husband X Saudi Arabia	(0.1067)	(0.1037)	(0.1060)
Remittances	0.0056	0.0031	0.0041
	(0.0048)	(0.0045)	(0.0044)
Household Controls	Yes	Yes	Yes
Migrant Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	648	648	648

Note: Pooled OLS estimation. Controls include assets, household size, migrant characteristics and initial gender norms. Robust standard errors clustered at the district level in parentheses.

TABLE 20. Triple Diff: Malaysia

	Food	Clothes	Medicine
Post 2015 X	-0.1663	-0.2415*	-0.1835*
Migrant Husband X Malaysia	(0.1427)	(0.1351)	(0.1016)
Remittances	0.0072	0.0055	0.0058
	(0.0050)	(0.0047)	(0.0046)
Household Controls	Yes	Yes	Yes
Migrant Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	648	648	648

Note: Pooled OLS estimation. Controls include assets, household size, migrant characteristics and initial gender norms. Robust standard errors clustered at the district level in parentheses.

TABLE 21. Triple Diff: Direct Comparison

	Food	Clothes	Medicine
Post 2015 X	-0.3687*	-0.4186**	-0.4340**
Migrant Husband X (Malaysia-Saudi Arabia)	(0.2209)	(0.2132)	(0.2185)
Remittances	0.0059	0.0040	0.0047
	(0.0046)	(0.0044)	(0.0042)
Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	648	648	648

Note: Pooled OLS estimation. Controls include assets, household size, migrant characteristics and initial gender norms. Robust standard errors clustered at the district level in parentheses.

To provide a more direct comparison, we then restrict the sample to households where the migrant was still in Bangladesh in the first two waves and only migrated post-2015 to either Malaysia or Saudi Arabia. This is as close as we can get to pushing for causality. Table 22 looks at potential pre-trends in our outcome. The dummy of interest is coded as one if the migrant ended up in Saudi Arabia by 2018 and 0 if they went to Malaysia. The coefficient is negative and insignificant. This would suggest that there are no differences in previously-held attitudes; if anything, gender attitudes in households where the migrant went to Malaysia might have been worse.

We then proceed with a two-way fixed effects triple interaction estimation equivalent to the triple difference-in-difference estimation in Table 23. We interact the post-2015 dummy with a dummy on whether the migrant is the husband of the respondent and a dummy on whether they went to Saudi Arabia over Malaysia. The outcome we are assessing is whether the female respondent controls the household budget. The coefficients in the first row partial out the mechanical effect of the husband being absent regardless of the destination. This would reduce the likelihood of the female respondent reporting that someone else other than herself controls the budget. In the second row, however, the

TABLE 22. Trends 2012-2015

	Food	Clothes	Medicine
Malaysia-Saudi	-0.2697	-0.4396	-0.4138
	(0.3380)	(0.2882)	(0.2928)
Remittances	0.0109	0.0099	0.0249
	(0.0293)	(0.0195)	(0.0243)
Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	77	77	77

Note: Pooled OLS estimation. Controls include assets, household size, migrant characteristics and initial gender norms. Robust standard errors clustered at the district level in parentheses.

coefficient is positive indicating that the bias would increase if the migrant husband went to Saudi Arabia over Malaysia, i.e. a country with considerably worse gender attitudes compared to Malaysia.

TABLE 23. Triple Diff: Malaysia-Saudi Arabia

	Food	Clothes	Medicine
Post 2015 X	-0.4756*	-0.4189*	-0.4592*
Migrant Husband	(0.2629)	(0.2419)	(0.2320)
Post 2015 X	0.7153*	0.6230*	0.4524
Migrant Husband X (Malaysia-Saudi)	(0.4045)	(0.3265)	(0.3486)
Remittances	0.0153	0.0040	0.0225
	(0.0227)	(0.0044)	(0.0192)
Controls	Yes	Yes	Yes
Post 2015 X Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	162	162	162

Note: Pooled OLS estimation. Controls include assets, household size, migrant characteristics and initial gender norms. Robust standard errors clustered at the district level in parentheses.

We should note that this set of results should be treated with a bit of caution due to the relatively low number of observations in the sample. Nevertheless, we believe that we present substantial evidence that migration as a process can help improve the situation of women in the recipient countries, through the alleviation of financial constraints, the mechanical effect resulting from the absence of a household member and the experiences they make in the destination country.

5. CONCLUDING REMARKS

Remittances are becoming an increasingly important component of financial flows between countries. As such, they have the possibility to impact life and socio-economic outcomes in the recipient

countries in different ways. In this paper, we explore the within and between variation of bilateral remittance flows and argue that remittances flowing over longer periods of time correlate with lower gender inequality. However, the origin of these financial flows also matters. Remittances received from household members residing in countries with high gender scores, seem to have a stronger impact. This finding provides some first evidence that social norms and cultural diffusion are important above-and-beyond the size of financial flows received.

The channels through which financial remittances could reduce inequality are multiple and an aggregate measure such as the GII is not adequate. We show that recipients connected to countries with good gender attitudes over longer periods of time seem to improve female welfare across different dimensions.

In our household-level analysis that focuses on Bangladesh we seek to explore the mechanisms and channels that could explain this descriptive finding. Female respondents in households that receive remittances experience lower abuse, have higher decision making power within the household, are more likely to control the household budget, invest more in female health and education and exhibit overall higher life satisfaction. Among households that receive remittances it seems that households whose migrant resides in a country with better gender attitudes compared to Bangladesh see a further improvement. This becomes more apparent when we look at two bilateral agreements with Saudi Arabia and Malaysia that serve as plausibly exogenous pull factors post-2015. In a direct comparison female welfare seems to improve if the migrant went to Malaysia as opposed to Saudi Arabia, indicating that the destination country also matters through the transmission of "social" remittances.

Such findings, if validated, call for easier access to temporary migrants, improvements and monitoring of working conditions in destination countries and promotion of social norms adaptation. They, also, call for better financial infrastructures that would reduce the costs of financial remittances as the latter might provide social benefits to recipient countries, beyond the short-term consumption gains of financial inflows.

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