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The Effects of International Migration on Migrant-Source Households: Evidence from Ethiopian Diversity-Visa Lottery Migrants

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Summary. — About a million people have migrated to the US via the Diversity Visa ("DV") lottery. The DV was instituted by an Act of the United States Congress to diversify the U.S. population through a lottery made available to people from countries with historically low rates of immigration to the country. In any given year, the probability of winning the lottery is less than 1%, with millions of people from around the world competing for a maximum of 55,000 immigrant visas that can be obtained through this migration channel. Using Ethiopian DV participants, which have consistently made up between 6% and 8% of all DV immigrants, I study the causal effects of emigration on the well-being of the migrant sending families. I infer that migration contributes positively to the welfare of the source families. Overall, migration increases consumer expenditure, but has no effect on savings and business ownership of the senders. The positive treatment effects do not diminish with duration of emigration. Migrant men contribute more to the increase in their families' standard of living than their female counterparts do: while expenditure on food and energy are invariant to the migrants' gender, the gains in terms of durable ownership, access to clean water, and sanitation facilities occur almost entirely in families where the emigrants are men. I find that DV participants are favorably selected relative to the overall population.

Key words — international migration, welfare, gender, selectivity, DV lottery

1. INTRODUCTION

Remittances are arguably the principal channel through which migrant sending families benefit from emigration.[1] Yet, the net impact of migration on the sending families is unclear. In particular, when migrants move away, their remaining family members lose a share of their income, as well as in-kind contributions to household production, including the care of elderly parents and younger siblings. These losses can be particularly large if the most productive members of a family are most likely to emigrate. To the extent that there are important local externalities from human capital, and migrants tend to be relatively young and better-educated, emigration can also create wider social costs—the so-called "brain drain" phenomenon.

The theoretical literature on remittances, which outlines the mechanisms by which migration could impact the welfare of migrant senders, identifies several reasons why migrants send money to their source countries, the common reasons being altruism, exchange, inheritance, strategic, insurance, and investment. Docquier and Rapoport (2006) offer detailed analyses of these motivations and the implied mechanisms. A number of empirical studies have also identified a few factors that vary with remittances, further clarifying our understanding of the link between migration and the senders' economic outcomes. The key variables that determine the amount remitted by migrants include the sender's socio-economic background (chiefly their pre-transfer income) and the migrants' schooling and income. An unambiguously inverse relationship between the long-run income of the migrant senders and the amount of remittances they receive suggests that migrants could be altruistic or behaving strategically; whereas positive associations between remittances and the migrants' income or education are consistent with altruistic, exchange, inheritance, strategic and investment motivations (Docquier & Rapoport, 2006). Typically, observed positive relationships between migration and the senders' consumption are associated with altruistic rather than self-interested motivations. Adams (2008) argues that remittances are inversely related to the skill of migrants.

Remittance behavior is also anticipated to vary with many other factors including: whether there are multiple or single emigrants from a family (Agarwal & Horowitz, 2002), the migrant's gender, and social variables such as community membership and social prestige. Some studies have found that women remit more to their families (Kaufmann & Lindauer, 1986; Lucas & Stark, 1985), although a more recent observational study conducted on African migrants in the OECD countries appears to contradict this finding (Bollard, McKenzie, & Morten, 2010). The potential nexus between remittances and social context is still largely underexplored, but a few studies have found that social environments may influence remittances: Azam and Gubert (2002) claim that social-prestige plays a role in remittance behavior; with Massey and Basem (1992) finding that the propensity to repatriate varies with indicators for community membership.

This study explores the effects of international migration on sending households by focusing on migrants from a poor country—Ethiopia—who are essentially randomly assigned the

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possibility of migration through the United States' Diversity Visa lottery. It is the first paper—and the only one thus far to the best of my knowledge—that exploits the random nature of the DV lottery to address the selection bias issue (due to the non-randomness of migration decisions) that plagues migration studies. It uses a specially designed survey of previous DV lottery participants (winners and losers) to infer the causal effects of having a family member migrate to the US. The DV lottery, which has been in effect since 1995, has attracted tens of millions of applicants from all corners of the world. Every year, about 50,000 people (not including their immediate families) migrate to the US by winning the lottery. The majority of the DV migrants are from Africa, with anywhere between 6% and 8% consistently coming from Ethiopia.

Gibson, McKenzie, and Stillman (2011) and Gibson, McKenzie, and Stillman (2013) are the two other papers which exploit migration lotteries to New Zealand from the Pacific islands of Tonga and Samoa respectively—through schemes known as the Pacific Access Categories (PAC) and the Samoan Quota (SQ)—to study the causal impacts of migration on the sending families. Citizens of over 160 countries have consistently participated in the DV program since its inception in 1995, making it a truly global program; whereas, the PAC and SQ schemes are significantly smaller in scope, in which only the citizens of the small islands of Tonga, Samoa, Fiji, Tuvalu, and Kirbati enter lotteries for the opportunity to migrate to New Zealand.

Because of their limited coverage, the PAC and the SQ studies were constrained in one major respect—in terms of their sample sizes. Whereas the current paper, the DV study, examines about 500 households (determined on the basis of power calculation) to study the impacts of migration, the PAC studies relied on sixty and eighty households in Tonga and Samoa respectively to reach their conclusions. To the extent that small sample size poses a threat to the internal validity of a research, therefore, the current study represents an improvement in the empirical literature on the impacts of international migration on the sending families.

The DV study's conclusions are also more likely to be generalizable to other pertinent contexts than the aforementioned PAC and SQ studies, given its more relevant setting. Ethiopia is the second most populous, low-income African country, with steadily increasing diaspora population in recent times. Tonga and Samoa, on the other hand, are middle income small island nations in the Pacific, with population sizes not exceeding those of small villages in Ethiopia. The various background factors in the Ethiopian context on the one hand and the Tongan and the Samoan settings on the other, which are unalike, interact differently with migration and the outcome variables of interest. Hence, to the extent that context is a relevant factor in identifying the developmental impacts of migration, the DV study can claim a more apposite setting, with more generalizable conclusions.

I find that having a family member win the lottery and migrate has significant positive effects on several dimensions of the remaining family's standard of living. Migrant sending families are better-fed, spending nearly 22% more on food (total and per-capita).[2] They also spend about 41% more on energy, reflecting their increased energy requirements for enhanced quality of life. Moreover, they possess better quality consumer durables (which include personal computers, modern cooking stoves, household furniture and home entertainment appliances) in addition to improved access to clean drinking water and sanitation facilities. They, however, have about the same savings and business ownership rates as DV losers. The positive treatment effects do not diminish as migrants spend more time abroad, at least within the first five years of their migration.

The conclusion that a typical household's consumption expenditure (particularly food) rises with emigration of an immediate family member is consistent with the proposition in the theoretical literature that migration (thus remittances) could augment the living standards of migrant-sending poor families. Recall that remittances are predicted to vary inversely with the living standards of migrant senders if migrants behave altruistically or strategically, or both, with observed positive association between migration and the senders' consumption linked with altruistic rather than self-interested motivations. The majority of the treatment households in Addis Ababa are the urban poor, whose expenditure on the necessities of life (such as food) cannot sustain the human body at a healthy level. Therefore, it would be logical if, as conjectured in the theoretical literature, the living standards of these migrant senders improved, as measured by the uptick in their consumption of food, cleaner water, and other essentials of life.

That the sender's consumption expenditure improves, while their savings and business ownership remains invariant to migration, is also consistent with the bulk of the empirical literature on migration which find in similar contexts as Ethiopia that remittance receipts are used mainly to increase household consumption, with negligible effects on physical capital accumulation (Brown & Ahlburg, 1999; Fransen & Mazzucato, 2014). Migration-related physical capital accumulation has occurred largely in middle-income developing countries (e.g., Adams, 1998; Woodruff & Zenteno, 2007), and where "institu tions…favor policies that encourage savings and investment so that at the margin, household income that exceeds [basic needs] can be saved or invested" (Catrinescu, Leon-Ledesma, & Piracha, 2009). Indeed, income levels and institutional qualities might be binding constraints limiting the effectiveness of migration (and remittances) in promoting physical capital accumulation (Adams & Cuecuecha, 2010, 2013).

Migrant men, making up slightly above 60% of all DV migrants, contribute more to increases in their families' standard of living than women migrants do. Expenditure on food and energy are invariant to the migrants' gender; whereas the gains in terms of durable ownership, access to clean water and sanitation facilities occur almost entirely in families where the emigrants are men. These findings are inconsistent with the bulk of empirical research showing that women commonly invest more in their families and communities than men do (See for instance, Thomas, 1990).

That migrant women in this context contribute less to increases in their families' standard of living is thus unexpected, and might be a potential subject of further inquiry. It is possible that women migrants might be remitting less because their labor-market outcomes in the US are inferior to those of men even after controlling for the observable determinants of wage and employment. Research has shown that there are "unexplained factors" associated with the gender-gradient of labor market outcomes (e.g., Altonji & Blank, 1999). The fact that the impacts of migration on consumption of the basic necessities of life are invariant to gender, whereas improvements in sources of drinking water and sanitation facilities take place entirely in households with male emigrants, might mean that migrant men could be getting higher-paying and/or steadier jobs than their otherwise similarly situated gender counterparts, limiting the amount of remittances sent to their families by the latter.

Ethiopian DV migrants are positively selected relative to the overall population, with DV non-applicants occupying the lowest socio-economic status of the three groups analyzed—DV