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The Impact of Skill Mismatch among Migrants on Remittance Behaviour

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SEDAP Research Paper No. 242

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THE IMPACT OF SKILL MISMATCH AMONG MIGRANTS ON REMITTANCE BEHAVIOUR

James Ted McDonald* and M. Rebecca Valenzuela**

This paper considers the issue of skill mismatch among immigrants and its impact on their remittance behaviour using cross-sectional data from two linked surveys in the Philippines: the Survey on Overseas Filipinos (SOF) and the Family Income and Expenditure Survey (FIES) for the years 1997, 2000, and 2003. Our main hypothesis is that skills mismatch - broadly defined here as the over-qualification of migrants in terms of educational attainment relative to occupation in their destination country - is prevalent among skilled migrants and exerts a downward pressure on the level of international remittances received by the sending economies. Accordingly, a high incidence of skill mismatch implies that the remittances expatriated would be significantly less compared to conditions of no skills mismatch. We find evidence of substantial skill mismatch, particularly among highly educated women, but there is also systematic variation in the incidence of skill mismatch by family characteristics and host country. In terms of remittances, we find that for women, higher education levels are associated with lower incidence of remittances but larger amounts remitted. However, negative skill mismatch leads to men and women both being more likely to remit money, but for women the amount is significantly less than it otherwise would have been.

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Résumé

Ce document examine la question de l'inadéquation des compétences des immigrants et de son impact sur leurs comportements à l'égard des envois de fonds en se basant sur des données transversales provenant de deux enquêtes liées des Philippines : le *Survey on Overseas Filipinos* (SOF) et le *Family Income and Expenditure Survey* (FIES) couvrant les années 1997, 2000 et 2003. Notre hypothèse centrale est que l'inadéquation des compétences – définie ici de façon générale par la surqualification des immigrants en terme d'éducation relatif à leur occupation dans leur pays d'accueil – est prépondérante au sein des immigrants qualifiés et exerce une pression négative sur les transferts de fonds vers leurs pays d'origines. Par conséquent, une forte incidence de l'inadéquation des compétences implique que les expatriations de fonds seront significativement moindres comparés à une situation de concomitance des compétences. Nous avons trouvé des éléments de preuve indiquant la prépondérance de l'inadéquation des compétences, particulièrement parmi les femmes hautement qualifiées, mais son incidence dépend systématiquement des caractéristiques familiales et du pays d'accueil. En ce qui concerne les transferts de fonds, nous observons une plus faible incidence à envoyer des fonds parmi les femmes hautement qualifiées mais, les montants envoyés sont plus élevés.

Toutefois, l'inadéquation de compétences réduit l'incidence des transferts de fonds tant parmi les hommes que parmi les femmes, mais chez les femmes le montant des transferts est significativement moins élevé qu'il aurait été en absence d'inadéquation des compétences.

1. Introduction

The volume and value of international remittances have grown rapidly over the last ten years and remittance income has become a major source of income for an ever-increasing number of households in developing countries. In South Africa, for example, Maitra and Ray (2003) find that overall poverty rates increase from 46% to 53% if remittances are excluded in the calculation of household incomes of South African families. Yang and Martinez (2006) also show that a 10% increase in remittance receipts of households in the Philippines leads to a 2.8% reduction in the household's likelihood of being in poverty. Some contemporary studies have shown that migrants in general achieve significantly better long-term economic outcomes for themselves and their immediate families, and they can support their households of origin through well-targeted financial remittances and investments[1] The effects of remittances are however not limited to the migrant-sending households alone, but extend to entire communities. The spill-over effects of remittances include providing liquidity for small enterprises and investments (Woodruff and Zenteno, 2001) and facilitating the development of formal credit markets by stimulating the expansion of banking systems to under-serviced rural areas. International remittances have also been used by national governments to overcome capital constraints to finance public works projects [see Reichert 1981; Massey et al 1987; Goldring 1990]. Properly mobilized remittances have contributed to increased investment in basic

[1] See, for example, Adams, 2007; Acosta and Fajnzylber and Lopez, 2008

infrastructure such agricultural investment[2], schooling and education[3], housing[4]; they are also a major source of funds for those in microfinance[5]. International remittances have also been shown to have a poverty-reducing effect (see for example Adams (2006) Mora and Taylor (2004), Cordova (2005)) and are now considered the a more reliable and stable source of development finance compared to private capital flows such as portfolio investment and bank credit[6]. Skilled migrants, in particular, are now viewed as agents of change and development; and several studies show remittances be facilitators for upgraded/increased home country skills levels, increased capital flow, increased knowledge diffusion and some positive incentive effects of migration prospects on human capital formation at home.[7]

In view of this, various governments have moved to formally integrate the international migration of its skilled workers in its national development plans as a key strategy for national income growth and development. The Philippines in particular has a well established network of public and private agencies that

[2]See Adams (1998) for Pakistan; Taylor, Rozelle and de Brauw (1999) for China.

[3] Cox-Edwards and Ureta (2003) find receipt of remittances lead to significant improvements in child schooling in El Salvador; and Broucher, Stark & Taylor (2005)

[4] A significant, though generally smaller, part of remittance are devoted to savings and investment - for land and buildings in Pakistan and Egypt [Alderman (1996) & Adams (1991,1998)] and for housing in Western Samoa and Tonga [Brown 1997]. See also Osili (2001).

[5] Several studies show remittances are relied on for the capitalization of migrant-own businesses. See Taylor (1996), Massey et al (1987), Cornelius (1990), Escobar & Martinez (1990) for examples in Mexico.

[6] This appears to be the consensus of researchers from multilateral agencies like the World Bank (see Maimbo and Ratha (2005)and Ozden and Schiff (2006)).

[7] see for example Stark, 1991; Stark, Stark, Helmenstein and Prskawetz 1997, 1998; Docquier, Lohest and Marfouk 2007.

facilitate worker outflows, as do other countries such as India and Mexico[8]. Such policies are primarily motivated by the prospect of increased incomes through the money remittances that are expected to flow back after migration. Partly as a result, a recent study by the World Bank shows that among developing countries in 2000, the Philippines had the highest emigration stocks of university-educated expatriates in high-income economies (1,126,260 people), followed by India (1,037,626) and Mexico (922,964) (Kuznetsov, 2006, Solimano 2005). These same three countries also receive the highest amount of international remittances (World Bank, 2006)[9]

Given the importance of remittances, it is notable that there is relatively little attention given to the issue of underemployment or skill mismatch among migrant remitters and the impact that this has on remittance behaviour. The implication of skill mismatch among remitters is that if a significant number of skilled migrants end up in overseas jobs considered to be below their level of skills or qualifications, they would then tend of earn less and therefore are able to remit less than they otherwise could. It should be noted that the actual impact on remittance behaviour remains an empirical question, since the immigrant may work additional hours or additional low skill jobs in order to compensate. There will also be significant losses in terms of the underutilized skills that could have been used for more productive activities in the country of origin. And from the

[8] See 2004 Philippine Development Plan, NEDA; see Khadria (2006) for discussion on India migration trends and policies; see Torres and Kuznetsov (2006) for the Mexican case; Stalhl and Appleyard (2007) discuss migration policies in the Pacific Islands.

[9] Remittances constituted 13% of Philippine GDP in 2006, a substantial figure but still significantly lower comparable figures for countries such as Moldova (36.2%), Lesotho (24.5%) and Honduras (25.6%).

point of view of the individual migrant, there will lower returns to investments in education and health; individual can also suffer social and psychological losses (loss of self-worth/self-confidence; lower job-satisfaction; etc).

This paper focuses on the labour market outcomes and remittance behavior of Philippine workers abroad in order to address the following question: what is the extent of mismatch between Philippine workers' educational qualifications and occupation of employment in the host country, and how does such a mismatch affect remittance behavior? Our main hypothesis is that skill mismatch has a significant downward effect on (the level) of international remittances received by sending/developing economies compared to what it would have been. That is, if migrants were employed in occupations they have trained to work for, then remittances received by sending economies are likely to be higher. There is also less wastage in the allocation of resources devoted to education by sending economies.[10]

The outline for the paper is as follows. The next two sections provide an overview of the relevant literature. Section 4 sets out the conceptual model and defines the explanatory variables used in the analysis. It also defines the measures of skill mismatch used in the paper. Section 5 reviews the data sets used and discusses some methodological issues related to those data sets. This section also sets out the empirical approach for the paper including model

[10] Though the impact of remittances on recipient households is not the focus of this research, two recent studies have used microdata to examine the impact of remittances on households in the Philippines. Yang (2005) studied the effect of remittances on investments in education and entrepreneurial activities, and Tabuga (2007) examined the general relationship between remittances and household expenditures.

specification and discussion of endogeneity issues. Section 6 presents some descriptive statistics on the extent of skill mismatch and remittance behaviour, while Section 7 presents the main regression results. Section 8 concludes with a review of the main results and directions for future research.

2. Skill Mismatch Among Migrants

There are two kinds of skill mismatch. Over-education refers to the situation where a job holder has a higher level of qualification than what the job requires. Under-education on the other hand is the case where the incumbent worker is doing a job that would require a new recruit to have a higher qualification than currently held by the incumbent. Hartog (2006) and McGuiness (2006) review trends in skill mismatch and analyze the effects on labour market outcomes such as earnings. The literature on immigrants and skill mismatch has consistently shown that migrants tend to be over-qualified for the jobs they hold in the host countries. Recent studies on this issue include Ferrer and Riddell (2008) and Reitz (2001) for Canada, Green et al. (2007) for Australia, Mattoo (2005) and Friedberg (2000) for the US, and Miller (2008) for the UK. Green et al. (2007) also find that the extent of over-education is greater for immigrants from non-English speaking backgrounds. Recent research on job durations indicate that these mismatch situations tend to persist over time for migrants (Clark 2008).

A number of alternative reasons can be advanced to explain the high occurrence of skills mismatch among migrants. The first theory is that individuals with the same labour market qualifications are not homogenous, differing both in

the perceived quality of the qualifications and in productivity characteristics unobserved to the researcher. In the context of migrants, skill mismatch results because the local labour market provides little or no recognition of qualifications or work experience acquired overseas and it is highly unlikely that similarly educated workers in the labour market are perfect substitutes (Welch 1979; Card and Lemieux 2001; Borjas 2003). There also appears evidence that significant differences exist in the occupational attainment of immigrants with similar educational backgrounds from different countries. For example, a World Bank study by Mattoo, et. al. (2005) show that in the US, educated migrants from Latin America and Eastern Europe are more likely to obtain unskilled jobs than similar immigrants from Asia and other industrial countries. Related to this, the licensing and certification process of many highly skilled occupations required by government or licensing boards can be complicated, time-consuming and expensive.

Another explanation of imperfect skill-to-job matching that follows from the job allocation/competition theory (Thurow, 1979; Sattinger, 1993) is that mismatch is caused by a lack of information on the part of job seekers or by the presence of rigidities in the labour market (Green and MacIntosh 2007). Lack of information implies that job seekers do not find the most appropriate jobs for their skills, while rigidities are factors that prevent them from accepting the most appropriate jobs. For migrants, lack of information can come in the form of absence of appropriate job network links (which can take time to acquire/develop) or just having limited information on job availability. Rigidities on

the other hand come in the form of personal or family situations: for a migrant couple, for example, the tendency is for the main income earner to have an appropriate (matched) job, while the secondary income earner takes on a job that he or she may be over-qualified. The presence of young children in the migrant family may also cause one of the partners to take on a part-time job or a job that he/she may be over-qualified in exchange for more flexible work hours, or closer proximity to home[11].

3. Skill Mismatch and Remittances

The connection between skill mismatch among migrants and their remittance behaviour has not been the subject of much research. The need to understand it has however increased in recently years for at least three reasons: (i) increased promotion of skilled migrations by both host and source countries, (ii) persistent 'over-qualification' of migrants in host country occupations, and (iii) increased government dependence on international remittances. There is common belief that skilled migrants will typically earn more, and therefore remit more (World Bank 2003, 2006), relieving foreign exchange constraints at home and thus fostering growth. This belief has led to the somewhat logical, but largely untested conclusion that higher levels of skilled migration imply higher levels of national income via those international remittances. This has also led many low-

[11] Such rigidities result in common migrant family arrangements where the young child/children are left in the home country for caring by relatives, while migrant parents find full-time employment in the host countries (this brings us to literature about transnational families – this is beyond the scope of this study)

income governments in high-unemployment economies towards labour policies that promote skilled migration, with the expectation that national incomes from international remittances will be boosted as a result.

Using national level figures on incomes, remittances and stock of migrants, Faini (2007) finds that skilled migration is unlikely to boost the flow of remittances to the source country. He finds no evidence that skilled migrants are more likely to remit more, but as this remains a largely empirical question, he is unable to test this it with his data. His results are however consistent with earlier work of Rodriguez and Horton (1994) which shows that the education level of migrants has no impact on the amount of remittances. Similarly, Funkhouser (1995) finds that higher levels of educational attainment among immigrants from Central America are negatively correlated with the incidence of remitting, but among migrants who do remit, those with higher levels of education send more. As well, Massey and Basem (1992) find that human capital factors are not correlated with the decision to remit among immigrants from Mexico, but are correlated with the amount remitted.

4. Conceptual Framework

Following Menjivar, et. al. (1998), broad factors determining remittance behaviour include financial capacity, family obligations, characteristics of migration, organizational involvement in the migration, and country of origin. Houle and Schellenberg (2008) review the literature on the determinants of remittance behaviour and identify a range of important factors within this broad

framework. The financial capacity to remit is a function of the demographic and socio-economic characteristics of the remitter – including his or her gender, age, marital status and education level. Full-time employment is also an important determinant of remittance behavior (Menjivar, et. al., 1998, Brown and Poirine, 2005) although labour market outcomes at the time remittances are made are likely to be endogenous. A typical finding in the literature is that the flow of remittances tends to decline with the length of the migrants stay (Lucas and Stark 1985).

Obligations to the remitter's family encompass a range of factors to do with the demographics of the family, such as the age, gender and marital status of the household head, the presence of children, and the position of the remitter in the family.[12] As suggested by Houle and Schallenberg (2008) the financial circumstances of the family are also likely to be important determinants of remittance behaviour. Acosta, et al. (2008) find that the (non-remittance) household income of families receiving remittance income in Central and South America are significant determinants of remittance behaviour, though even the direction of effect varies across countries.

The third main set of factors affecting remittance behaviour relates to the characteristics of migration, specifically the reason for migration and an intention to return to the home country. For example, Brown and Poirine (2005) find that the likelihood of remitting and the amounts remitted are both significantly associated with intentions to return to the home country. Factors reflecting

[12] The presence of family in the home country has been found to be an important determinant of remittances – see for example, Vanwey (2004), Funkhouser (1995), and Menjivar et al. (1998).

intention to return home include the position of the remitter in the home country household and the legal status of the remitter in the host country – for example, temporary worker or permanent resident.

The fourth main determinant of remittances outlined in Menjivar (1998) is organizational involvement. For example, Orozco (2002) suggests that hometown associations formed in host countries might coordinate the support of remitters for both relatives and their local communities.

The fifth main determinant relates to characteristics of the home and host countries, such as general economic conditions, exchange rates, immigration policy with regard to temporary workers, and the methods and expense of remitting money. As well, region of origin within the source country may also be important since they may proxy for community connections, local economic conditions, and other region-specific factors relevant to the individual's decision to remit. Pernia (2006) finds that migrants who originate from poorer regions of the Philippines remit significantly higher amounts on average compared to those from the richer regions.

5. Data and Methodology

Data for this analysis come from two linked household surveys - the Family Income and Expenditure Survey (FIES) and the Survey of Overseas Filipinos (SOF), both collected by the National Statistics Office of the Philippines. The FIES is a nationwide survey of households in the Philippines, conducted every three years. It collects a comprehensive range of household information on the

demographic structure, income, and expenses of the household, and detailed information on the socio-economic characteristics of the household head. The survey involves an interview of a nationally representative sample of households. The Survey on Overseas Filipinos (SOF) is a survey administered each year to households reporting in the Philippine monthly Labor Force Survey as having a household member who has travelled overseas for work within the last 5 years. Personal identifiers allow these data to be linked by individual and household. For the current paper, the focus is on the remittance behaviour of Overseas Filipinos Workers (OFWs) who reported working abroad in the six months prior to the relevant October Labor Force Survey. OFWs include overseas contract workers who were temporarily out of the country during the reference period to fulfill an overseas contract for a specific length of time as well as workers presently at home but on vacation as of the survey. Other included categories of OFWs are those individuals with valid working visas or work permits, as well as people holding other types of non-immigrant visas but who are employed and working full-time during the reference period. Permanent emigrants from the Philippines and those individuals on official government missions are not considered to be OFWs.

In order to focus attention specifically on temporary workers, we restrict the sample to include only those individuals who report working abroad on a temporary work contract. This restriction is more likely to exclude individuals living abroad for other reasons, such as international students, as well as individuals who may be on a legal path to permanent residency. The education,

work and remittance decisions of these latter groups are likely to differ from the decisions of temporary workers.

The SOF collects data on a range of characteristics of OFWs including demographic and socio-economic characteristics, work experience, visa category, relationship to household head, and the amount and mode of remittances in the last six months. Three cross-sectional waves of data from the linked 1997, 2000 and 2003 FIES/SOF datasets are combined to generate the sample for this paper. Since the SOF sample is not limited to those OFWs who remit money back to the Philippines, there are two main questions of interest: what are the characteristics of those who do choose to remit money, and if they do, what are the factors associated with the amount of money remitted. This information comes from the responses of the individual OFW and not the household, though it should be noted that the FIES household dataset also contains data on income received from abroad as remittances. For this paper, data on remittances are in terms of Philippine pesos remitted during the six months prior to the survey date and are adjusted for inflation.

One of the main issues of interest in this paper is the relationship between skill mismatch and remittance behaviour. While a range of measures of an individual's skill level are possible, education is most often the metric used since it is considered to be intrinsic to the individual and time-invariant, assuming that the individual has completed his or her intended course of study (Manacorda and Petrongolo, 1999). In their studies of skilled migrants, Docquier and Marfouck (2004) and Faini (2007) define skilled workers as those migrants who have

completed tertiary education.[13] There are also a number of ways to measure the extent of a mismatch between education (as a measure of skills) and employment. Hartog (2000) identifies three main approaches to measuring the required schooling associated with a particular occupation: 1) job analysis, which involves a systematic evaluation of the education level required for an occupational classification; 2) worker self-assessment, whereby the worker specifies the education required for the job; and 3) realized matches, in which required education is derived from what workers in particular occupations usually have obtained in the way of educational qualifications. Hartog also notes that in empirical analyses, results do not appear to be very sensitive to the choice of method.

Skill mismatch in this paper is identified using the first method. In determining the educational requirements of particular occupations, guidance is taken from the Canadian National Occupational Classification coding system (HRSDC, 2008), which at its broadest level identifies four occupation skill levels and the educational qualifications required for each. Professional and managerial/administrative occupations require a degree; technical, trades and plant/machine operator occupations require some form of post-secondary education; moderately skilled occupations such as clerks and bookkeepers require a high school degree or 3-4 years of high school plus work experience; and low skilled occupations such as labourers, shop assistants and agricultural

[13] Other possible classifications for skill are available in the SOF data, such as a person's 'usual' occupation prior to moving out of the Philippines. However, usual occupation reflects job and employer characteristics in addition to the individual's skill level. In addition, in the SOF datasets, information on usual occupation is missing or not applicable for approximately 30% of the sample.

workers require less than the threshold for moderately skilled occupations.[14] In the empirical analysis, alternative measurements of skill mismatch are employed but they are all variants of the scales presented above.

Defining education levels for only four broad occupational groups is substantially less detailed than what is typically done in the literature. However, unlike most previous work where all respondents are located within the same host country, our data involve the work experiences of Filipinos working in a large number of developed and developing countries. Countries may differ in the educational requirements for more narrowly defined occupations and it is not practical to gather job evaluation data for each country. Therefore our approach is to attempt to identify unambiguous instances of skill mismatch – for example by focusing on degree holders working in unskilled occupations.

The empirical strategy involves estimation of equations such as (1). For individual *i* in year *t*, the basic remittance equation is as follows:

$$R_{it} = \alpha + \beta X_{it} + \theta' M_{it} + \delta' W_{it} + \lambda' T_t + \varepsilon_{it} \qquad (1)$$

where

i = 1, ..., I individuals working abroad

t = 1997, 2000 & 2003 representing each survey year

R_{it} is the household remittance receipt from overseas (which can be zero)

X_{it} is a measure of skill mismatch

[14] In the SOF data, there is also a residual category for current occupation that includes such activities as unpaid homemakers, unemployed, those in military, and so on. However this is a very small proportion of the total, and for convenience they are grouped in with the lowest occupation skill category. Omitting them from the sample makes no difference to the results.

M_{it} is a vector of migrant characteristics

W_{it} is a vector of household characteristics

T_t is a vector of indicator variables for survey year

ε_{it} is the error term.

In the empirical analysis, household characteristics include the presence of children aged 1 or less, 7 or less, and 15 or less, the region in the Philippines in which the household resides, whether the household received dividend income during the year, whether they received pension income during the year, the education level of the household head, the marital status of the household head, and the age and gender of the household head. According to the FIES documentation, the person responding as the household head must be physically present in the household at the time of the survey. Migrant characteristics include age, gender, and marital status, educational attainment, relationship in the household in the Philippines, and country of employment abroad. Although information on other members of the same household who are working abroad is also available in the SOF data, it is not known whether they reside together. Thus, an indicator is included in the regression if a member of the same household is working in the same host country as is the main respondent.[15]

In studies of the impact of remittances on household income and expenditure (e.g., Yang, 2005; Tabuga, 2007), it is recognized that amount

[15] Around 10% of individuals in the SOF data are from Philippine households that had or have another member of the household also abroad during the relevant time period. Only one person abroad per household with individuals abroad is used in the empirical analysis.

remitted is an endogenous regressor. Similarly in equation (1) there are reasons to suspect that skill mismatch is an endogenous determinant of remittance decisions. A migrant's decision to accept or not accept a given job depends not only on his or her personal characteristics, but also on the destination country's migration policy and occupational regulation, his or her existing family network in both the home and destination countries, and community/cultural ties. Since such factors may also impact on remittance decisions directly, any measure of skill mismatch is likely to be endogenous. It is thus necessary to use instrumental variables for the indicator of skill mismatch. Valid instruments must be correlated with the endogenous regressor but uncorrelated with the outcome – in this case remittance behaviour. As potentially valid instruments, we employ a series of time- and country-specific aggregate measures of population, size and visa composition of Filipinos in the host country, investment and government spending, economic structure, and various measures of the distribution of educational attainment. The argument is that these host country characteristics should reflect the indigenous supply of skilled workers, the supply and demand of both skilled and unskilled workers, and other factors likely to affect the degree of skill mismatch. We suggest that these variables do not exert an independent effect on remittances outside of this channel, once other observable individual, household, and region of work factors are controlled for. We report tests of instrument validity and the exclusion restrictions in the results.

One additional complication with the 1997 cross section of the SOF is that a coding error in the original dataset means that a significant proportion of

individuals holding higher university degrees are classified instead as having other post-secondary qualifications. In order to address this issue, the following approach is adopted: first, a probit equation is run on available SOF data from 1998 on the subset of individuals with either a higher degree or other non-degree postsecondary education. (Note that the education distribution for the 1998 SOF is very close to the education distribution for the 2000 SOF, so we are confident using it as a proxy for 1997.) We then use the regression results to predict an education status (either higher degree or other post secondary) for relevant individuals in the 1997 wave of the SOF. The overall proportion of the sample in each category is fixed to be the same as in the 1998 SOF.

6. Descriptive statistics – skill mismatch and remittances

This section presents data on education levels, occupational distribution, and remittance behaviour of adult Filipinos aged 21-65 and working abroad. Although the SOF data purportedly exclude individuals who have emigrated from the Philippines and settled in another country, some respondents still report themselves as immigrants instead of contract workers. We limit the sample only to those individuals who report being a contract worker. Data are presented disaggregated by region of residence abroad and by gender. For illustration purposes, countries are grouped into the following six categories: 1) developed English speaking countries – the US, UK, Canada, Australia and NZ (termed ESB); 2) Western Europe; 3) East Asia; 4) Middle East; 5) Southeast Asia; and 6) all other countries. Given differences in the immigration policies among the

English speaking countries (in particular, the points systems of Canada and Australia compared to the family-based migration of the US and UK), in the econometric analysis we further differentiate among countries within broad regions.

Table 1a and 1b present data on educational attainment by region and gender. Clearly, Filipinos working abroad as surveyed by the SOF are in general highly educated, with education levels significantly higher than the Philippine average. There is also marked variation by region of employment. For men, more than 70% of workers who were in the ESB countries and Western Europe had a degree or more, including around 50% who had a higher degree. Education levels among those workers in East Asia are almost as high. The percentage of male workers with a degree or more is lower in the Middle East and Southeast Asia, but is still more than 40%. However, unlike what is the case for other regions, 40% of Filipinos in Southeast Asia have less than high school education. For women, education levels are comparable in the ESB countries but a lower percentage of women working in Western Europe and East Asia have degrees or more. Education levels among women in the Middle East and Southeast Asia are similar to those for men.

The next set of tables (Tables 2a and 2b) present the proportion of workers abroad who remit money and conditional on positive remittance, the median amount remitted. Results are decomposed by education level and region of work. In terms of the incidence of sending remittances, there are no clear patterns across education level, region, or between men and women. In most

cases, around 65%-75% of individuals send remittances, although the figures are marginally higher for men working in the Middle East. For both men and women, people working in Southeast Asia are less likely to remit money than are people working in other regions of the world. However, amounts remitted show clearer patterns – amounts remitted by men are markedly higher than those remitted by women, and are positively correlated with education level. For both men and women, the largest median amount remitted is from degree holders in the ESB countries (52,585 pesos and 36,101 pesos respectively).[16] The smallest amounts remitted are from women working in the Middle East and in Southeast Asia. To provide some context, median total family expenditure in 2003 among households in the FIES data was 79,000 pesos. Among households with a family member working abroad (that is, present in the SOF data), the median total expenditure was 169,000 pesos.

Tables 3a and 3b present the occupational distribution of workers abroad, grouped into the four broad occupational groups identified earlier. Given small sample sizes, statistics for workers with non-university post-secondary education are not reported in the tables. As well, the contents of some cells are suppressed because of small sample sizes. It appears that the largest degree of skill mismatch occurs in the ESB countries, with almost 35% of male degree holders and almost 50% of female degree holders employed in low skill occupations. 23% of male degree holders in the Middle East and Southeast Asia work in professional/managerial occupations, but the numbers for other regions are

[16] At an exchange rate of 40 pesos per 1USD, this is equivalent to $1315 and $903 USD.

much smaller. For each region, a majority of male degree holders are employed as technicians, in the trades or as machine operators. For women, while close to 1/3 of degree holders in the ESB countries are in highly skilled occupations, very high percentages of highly educated women in Western Europe and East Asia are employed in the low skill jobs. For the Middle East and Southeast Asia, non-trivial numbers of female degree holders are working in highly skilled occupations, but again the majority are in low skill occupations. For high school leavers, the differences between men and women are very pronounced. For men, close to or more than half of workers are employed in technical/trades/operator occupations while the rest are in low skilled occupations. For women, they are overwhelmingly located in low skilled occupations regardless of region of employment. Among those who did not finish high school, patterns are broadly similar although interestingly, significantly more than ½ of these men in the Middle East and Southeast Asia are employed in skilled occupations.

As a prelude to the econometric analysis, the final table in this section (Table 4) presents some selected results of remittance choices by education level and current occupation in the host country. Remittance incidence and median amount are shown for four groups of workers abroad (disaggregated by gender). These are: people with a degree who are working in a highly skilled occupation (professionals and managers/administrators), people with a degree who are working in a less skilled occupation, people with a degree who are working in a low skilled occupation (labourer, service worker, agricultural worker),

and for comparison, people with less than a high school degree who are working in a low skilled occupation. For men, the incidence of remittance and the amount of remittance are lower for degree holders employed in lower skilled occupations, but men working in the lowest skilled occupations still remit substantially more than men with less education in the same low skilled occupations. For women, the patterns are similar for the amounts remitted but the incidence of remittance is almost the same across education/occupation groups.

To summarize the results of this section, Philippine workers abroad tend to be relatively well educated but there are marked differences in the educational distribution of workers in the ESB countries, Western Europe and East Asia compared to the Middle East and Southeast Asia. Education level, region of work and gender all affect amounts remitted back to the Philippines, although correlations with the incidence of sending remittances are less clear. While degree holders remit the most money on average, these individuals are also very likely to be working in occupations with a lower skill requirement. In particular for women, this includes a significant proportion of individuals working in low skill jobs such as labourer and service worker. In general there are pronounced differences in education level and occupational distribution by gender and by region of employment, implying that the extent of skill mismatch depends on both individual and country characteristics. This skill mismatch appears to have a significant effect on remittance behaviour.

7. Empirical Analysis

Before presenting results on the determinants of remittances, it is instructive first to examine what factors are associated with skill mismatch among Filipino workers abroad. Of most interest is the group who are apparently in the most mismatched jobs – degree holders in low skill occupations such as labourer. To that end, we restrict the sample to degree holders and run Logit models on two binary variables – the first takes a value 1 if the individual is working in a low skilled occupation, and zero otherwise. The second takes a value 1 if the individual is working in an occupation other than professional or managerial/administrative fields, and zero otherwise. Given how different the descriptive statistics are for men and women, the models are estimated separately by gender. Explanatory variables include the range of household, household head, and individual characteristics outlined above, as well as controls for region of residence of the household in the Philippines, region of employment, and controls for survey year. Results are presented in Table 5, as odds ratios.

Two important results are consistent across the regression models – relative to an individual with an undergraduate degree (the base case), people with higher degrees are less likely to experience skill mismatch. Interestingly, holding constant own education level and other factors, the education level of the household head is also important. University-educated individuals from households where the household head also has a degree are less likely to work in a lower skilled occupation. When the household head has less than secondary school, women with degrees working abroad are more likely to work in a lower

skilled occupation. This may reflect household resources that help fund longer job search, certification of skills, or a more readily recognized or higher quality educational certification from the Philippines. Region of work is also important but results for men and women are quite different. For men, degree holders working in most regions of the world are less likely to be employed in a lower skilled job than is the case for degree holders in the USA. In particular, degree holders in the Mideast, Southeast Asia and Western Europe are significantly less likely to experience this type of skill mismatch, other things equal. In contrast, women with degrees are markedly more likely to be working in a lower skilled occupation in Canada/Australia, East Asia, and particularly Western Europe. Women with degrees working in the UK are significantly less likely to be working in low skilled occupations. It is also worth noting that the results for own education and the education of the household head are largely unaffected by the inclusion of a set of fixed effects for country of residence rather than the grouped region controls reported in Table 5.

Since a non-trivial proportion of workers do not remit money, OLS is not appropriate for estimating the amount of remittances sent home. Instead, a two-part estimation procedure is thus employed: (i) the incidence of remittances is first estimated as a binary choice model, and then (ii) the (log) level of remittances is estimated by OLS conditioning on positive remittance amounts. This two-stage approach is commonly used in the literature on health service use (see, for example, van Houtven and Norton, 2004, Escarce, 1997) and allows the direction of effect of particular regressors to differ between the

decision to remit and the amount remitted. The dependent variable for the second stage regression is the log of real non-zero remittances. In the first stage, we estimate a linear probability model for ease of interpretation of the results, although results are essentially the same if a Probit model is estimated instead. For both stages of the analysis, we use instrumental variables to control for the potential endogeneity of skill mismatch. The main indicator of skill mismatch is defined as a binary variable that takes the value 1 the individual has a university degree and is working in a relatively low-skilled occupation (sales and service worker, agricultural worker, labourer, clerk, driver) and zero otherwise.[17]

Having a child in the home-country household aged between 7 and 14 leads to more remittances and greater amounts remitted, although a very young child in the household is associated with a lower likelihood of the individual remitting money. When the household head in the Philippines is male or is widowed/separated/divorced, remittances are less frequent and for smaller amounts. If the worker is single and male, he is less likely to remit money than a married male, but if the worker is single and female, she is more likely to remit money than a married female. If the household head receives dividend income then remittance amounts are significantly lower (though the estimate is only significant at the 10% level for women). Dividend income is likely associated with greater household wealth and so perhaps a lower need to rely on remittance

[17] A variety of alternative parameterizations were tried, including a set of indicator variables for the various dimensions of skill mismatch possible – for example, degree holders working in trades or technical occupations and people with other post-secondary qualifications working in low skilled occupations. These more flexible alternatives did not yield any additional insights beyond what is reported here.

income. However, remittance amounts from men are also higher when the household head has more than a high school diploma. Education spillovers within the household may be associated with greater means to remit, just as they are associated with a reduced probability of working in a low skilled job. For women, a household head with a degree is associated with a lower incidence of remitting money.

While there is no evidence of variation in the incidence of remittances across regions for men, women working in East Asia, the Mideast and Southeast Asia are all less likely to remit than are women working the USA. As well (and consistent with Table 4), remittance amounts from both men and women are lower from the Mideast and Southeast Asia. The magnitudes of the differences are also larger for women, with women working in the Mideast remitting 36% less and women working in Southeast Asia remitting 72% less than comparable women in the US, compared to around 18% less for men. Interestingly, exchange rate movements that increase the value of remittances to the Philippines are associated with a greater amount of remittances only from women working abroad. Put differently, if the local currency appreciates against the Peso, the value of remittances (denominated in Pesos) received by households in the Philippines from women working abroad increases, as one might expect. However, the value of remittances received from men working abroad is not significantly different. It appears that men adjust the amount of remittances denominated in local currency to reflect exchange rate changes and preserve the Peso-denominated value of remittances received in the Philippines. The

differences by gender may be a result of the different roles/responsibilities that men and women have in their respective families back home, but a more detailed examination of this exchange rate effect on men and women's remittance responses is necessary.

Our key variable of interest is the measure of skill mismatch. When a degree holder is working in a relatively low skill occupation, the incidence of remittances is higher for both men and women while the amount remitted is substantially lower for women. These results are intuitively plausible – where a worker accepts a job that is of lower skill level than his or her education would dictate, there may be a particular need for income support with the household in the Philippines. However the impact on the value of remittances is significantly lower (69% lower) for university-educated women than it would otherwise have been had the woman found employment in a higher skilled occupation. In fact, the incidence of remittance and the amount remitted of these university-educated women is close to what is predicted for women with a high school education only.[18] For men, there is no such effect on the amount remitted, so that men with university degrees are predicted to remit the same amount regardless of broad occupation group, other things equal. The implication is again that the man might be able to compensate for otherwise lower remittances through for example greater labour supply or reduced host country consumption.

[18] The magnitude of the estimated effect of skill mismatch on the decision to remit is marginally larger than the negative coefficient on having a degree. The estimated effect of skill mismatch on remittance amount is very close to the positive coefficient on having a degree.

8. Summary and Conclusions

Skills mismatch in international migration is an important issue at a number of different levels. From the point of view of the individual migrants and their families, under-utilized human capital represents significant economic and social loss. Significant economic loss occurs because the income returns to one's investment in education and training is significantly diminished via the lower paying job of the migrant. A social or psychological loss may also be associated with skills mismatch – workers tend to lose significant self-esteem, have diminished self-confidence as well as suffer some loss in social standing in their respective communities – both at home and abroad. On a larger scale, skills mismatch can also affect outcomes for the wider economy. In the Philippines for instance, the international migration of labour has officially become a major growth strategy owing to the ever-growing proportion of GDP it accounts for every year. If the incidence rate of job mismatch is high among its labour exports, the diminished levels of income from its migrant workers may translate into a lower amount of total remittances flowing into the domestic economy each year than what could be possible.

Using linked unit record datasets on expenditure and overseas work and remittance data from the Philippines, this study provides strong evidence of skills mismatch among Filipino workers working abroad on temporary work contracts. The empirical analysis reveals that significant proportions of highly educated individuals are working in low skill jobs, though there is substantial variation by gender and by country of work. After holding constant other individual and

household characteristics, skill mismatch is most pronounced for Filipino women working in East Asia, Western Europe as well as Canada/Australia. In contrast, skill mismatch for men is actually higher in the USA than most other regions of the world. As well, holding constant a worker's own education level, the education level of the household head exerts a significant influence on the likelihood of skill mismatch – specifically, the higher the education level of the household head, the lesser is the chance that a university educated worker is working in a lower skill occupation. Higher education levels of the household head might reflect job better certification of skills or a more readily recognized or higher quality educational certification from the Philippines. They may also reflect greater household resources and so less economic need, implying that individuals seeking to work abroad may be more likely to choose occupations more appropriate to their education levels.

Our econometric modeling revealed that the remittance behaviour of overseas Filipinos is driven by a number of individual, household and broader economic variables though there are marked differences in the results between men and women. A lower incidence of remittances but higher levels of remittances were significantly associated with higher levels of educational attainment of the migrant working women, while the education level of the household head affected remittance behavior of both men and women. We also found that the incidence of remittances and remittance amounts varied significantly by region of employment for women but less so for men. As well, exchange rate changes impacted on remittance amounts from women but not

from men, implying than men compensated for changes in the exchange rate in order to maintain the value of remittances back to the Philippines.

To what extent does the extent of skills mismatch affect remittance behaviour among Filipino workers? Results of our empirical analysis indicate that where there is negative skill mismatch – greater education level than is required for the job – the incidence of remittances is actually higher for both men and women. What is less clear is why this is the case. A degree holder accepting work in a low skilled occupation may signal a greater or more immediate need for remittances by the household. The amount remitted, conditional on remitting a positive amount, is significantly lower for women but not for men. Although we cannot gauge the impact of skill mismatch on worker earnings since this information is not available in the SOF, it seems reasonable to think it is almost certainly negative. For women, lower income from skill mismatch means markedly lower remittances back to the Philippines. For men, lower income from skill mismatch appears to result in compensating changes in terms of hours of work, consumption, or both in order to preserve the value of remittances back to the Philippines.

It is clear that skills mismatch is widespread among Filipinos working overseas and so the resultant economic and social losses associated with it are likely to be significant. This suggests that a policy based on encouraging remittances be accompanied by greater efforts by the Philippine government to assist in the recognition of skills by and integration of skilled labour into the economies of the main destination countries for Filipino workers intending to

work abroad. For women, skill mismatch impacts on remittance amounts directly and so the economic losses in terms of remittance flows are more transparent. However, since the estimated impact on remittances for men is actually insignificant, the true costs of skill mismatch are more complicated and may well be understated with a focus simply on remittance amounts. Instead, the losses arising from skill mismatch are more likely to be in terms of less direct measures reflecting the welfare of the individual working abroad.

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Table 1a: Educational attainment, by region of employment (MEN)

	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
Less than High School	0.066	0.038	0.066	0.145	0.408	0.089
High School Graduate	0.130	0.136	0.175	0.292	0.153	0.151
Post-secondary No degree	0.029	0.026	0.027	0.061	0.025	0.043
University Degree	0.294	0.268	0.321	0.231	0.159	0.276
Higher Degree	0.481	0.527	0.411	0.270	0.255	0.441

Table 1b: Educational attainment, by region of employment (WOMEN)

	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
Less than High School	0.127	0.137	0.130	0.228	0.381	0.097
High School Graduate	0.124	0.223	0.332	0.260	0.142	0.210
Post-secondary No degree	0.019	0.029	0.038	0.029	0.088	0.048
University Degree	0.207	0.263	0.255	0.240	0.159	0.290
Higher Degree	0.522	0.349	0.244	0.243	0.230	0.355

Table 2a: Remittances by region of employment and broad education level (MEN)

Proportion sending remittances	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
University Degree	0.724	0.757	0.778	0.806	0.615	0.794
Post-secondary No degree			0.667	0.766		
High School Graduate	0.732	0.776	0.763	0.802	0.542	0.783
Less than High School	0.667	0.750	0.701	0.767	0.391	0.852
Median amount (>0)						
University Degree	52585	52423	45226	42068	43821	52585
Post-secondary No degree			27169	36101		
High School Graduate	34382	43321	36810	31941	26474	37248
Less than High School	37770	32604	36101	30151		30069

Table 2b: Remittances by region of employment and broad education level (WOMEN)

Proportion sending remittances	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
University Degree	0.617	0.729	0.719	0.719	0.523	0.750
Post-secondary No degree			0.700	0.633		
High School Graduate	0.667	0.846	0.773	0.683		0.615
Less than High School	0.674	0.667	0.717	0.630	0.628	
Median amount (>0)						
University Degree	36101	28531	25126	25126	9627	30151
Post-secondary No degree			18090	19254		
High School Graduate	26985	26293	24121	17528		
Less than High School	15644	20477	21911	17090	10830	

Table 3a: Occupation in host country, by education level and region of employment (MEN)

	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
Degree or more						
Mgr/admin	0.092		0.093	0.230	0.231	0.156
Tech/trades/plant	0.512	0.805	0.712	0.526	0.585	0.706
Clerk	0.050		0.019	0.082	0.000	
Laborer/service/ag	0.347	0.142	0.176	0.162	0.185	
High School only						
Mgr/admin				0.039		
Tech/trades/plant	0.451	0.517	0.684	0.737	0.667	0.500
Clerk				0.024		
Laborer/service/ag	0.479	0.431	0.271	0.200		0.413
Less than HS						
Mgr/admin				0.055		
Tech/trades/plant	0.361		0.627	0.747	0.375	0.741
Clerk						
Laborer/service/ag	0.611	0.688	0.328	0.186	0.609	

Table 3b: Occupation in host country, by education level and region of employment (WOMEN)

	US, UK, Canada	Western Europe	East Asia	Middle East	Southeast Asia	Other Country
Degree or more						
Mgr/admin	0.322		0.101	0.301	0.227	
Tech/trades/plant	0.095		0.149	0.094		
Clerk	0.091		0.023	0.074		
Laborer/service/ag	0.492	0.851	0.727	0.530	0.659	0.550
High School only						
Mgr/admin						
Tech/trades/plant			0.086			
Clerk			0.133	0.063		
Laborer/service/ag	0.844	0.897	0.769	0.918	0.938	0.846
Less than HS						
Mgr/admin						
Tech/trades/plant						
Clerk			0.101	0.085		
Laborer/service/ag	0.913	0.917	0.823	0.911	0.884	

Table 4: Remittances by education level and change in job status (selected results)

	Incidence of Remittance	Median amount remitted
MEN		
Degree or more		
Professional/Manager	0.791	60235
Not Professional/Manager	0.770	43821
Labour/service/agriculture	0.655	38026
Less than High School		
Labour/service/agriculture	0.574	21661
WOMEN		
Degree or more		
Professional/Manager	0.703	31989
Not Professional/Manager	0.701	25125
Labour/service/agriculture	0.699	24067
Less than High School		
Labour/service/agriculture	0.665	18864

Table 5: Determinants of loss of employment status in current occupation, degree holders (Logitistic odds ratios)

	Low skill job men		Med/low skill job men		Low skill job women		Med/low skill job Women	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value
Household head*								
No prim. school	0.957	0.851	1.395	0.282	**2.556**	**0.000**	**2.558**	**0.001**
No sec. school	0.769	0.179	1.612	0.053	1.347	0.085	**2.102**	**0.001**
High school	1		1		1		1	
Some post-sec	1.006	0.976	0.947	0.788	**0.644**	**0.018**	**0.561**	**0.011**
Degree	0.706	0.056	**0.518**	**0.000**	**0.461**	**0.000**	**0.398**	**0.000**
Single	**2.196**	**0.038**	0.839	0.738	1.458	0.246	1.316	0.430
W/S/D	1.114	0.627	1.394	0.225	1.606	0.063	1.359	0.313
Male	1.108	0.533	1.012	0.943	**2.024**	**0.003**	1.695	0.059
Age	1.001	0.862	0.990	0.238	0.998	0.778	0.985	0.076
Pension income	0.665	0.059	0.740	0.182	0.944	0.769	1.076	0.747
Dividend income	1.225	0.527	1.908	0.204	1.149	0.667	1.571	0.262
Individual								
U'grad degree	1		1		1		1	
Higher degree	**0.642**	**0.000**	**0.568**	**0.000**	0.806	0.073	**0.729**	**0.030**
Single	1.015	0.937	0.991	0.966	0.867	0.466	0.819	0.425
W/S/D	1.423	0.470	n/a		1.269	0.425	1.130	0.743
Age	1.010	0.865	**0.868**	**0.023**	**1.179**	**0.009**	1.133	0.076
Age-squared	0.999	0.491	1.001	0.071	**0.998**	**0.014**	0.998	0.068
H'hold head*	0.837	0.335	0.760	0.190	9.071	0.144	1.373	0.615
Spouse of HH	1		1		1		1	
Child of HH	**0.556**	**0.049**	1.132	0.647	0.627	0.176	**0.492**	**0.008**
Other reln to HH	0.747	0.499	0.804	0.558	0.878	0.724	0.751	0.347
Migrated together	**1.869**	**0.013**	0.816	0.534	0.743	0.227	1.420	0.290
USA	1		1		1		1	
Canada/Australia	0.765	0.510	1.255	0.742	**3.093**	**0.022**	**4.108**	**0.012**
UK/Ireland	0.359	0.124	**0.265**	**0.014**	**0.071**	**0.029**	**0.251**	**0.034**
East Asia	**0.431**	**0.000**	0.686	0.212	**4.448**	**0.000**	**5.185**	**0.000**
Mideast	**0.470**	**0.000**	**0.245**	**0.000**	1.735	0.097	1.257	0.495
Southeast Asia	**0.231**	**0.009**	**0.227**	**0.001**	1.855	0.232	1.430	0.511
Western Europe	**0.383**	**0.000**	1.523	0.275	**9.747**	**0.000**	**6.266**	**0.000**
Other country	**0.371**	**0.000**	**0.490**	**0.039**	2.161	0.129	1.358	0.573
Pseudo-Rsq	0.0668		0.1232		0.1834		0.2126	

Sample Size	2347	2319	1596	1596

The sample is restricted to adults aged between 20 and 65 who reported working in the host country on a temporary work contract and who has at least a university degree. The baseline individual has an undergraduate degree, is married, is the spouse of the household head, worked in Canada or Australia, and is from a household where the head of household finished high school. Low skill jobs include laborer, service worker, and agricultural worker. Medium/low skill jobs are low skill jobs plus clerk, technician, plant operator/driver and jobs in trades. Regressions also include controls for survey year and region of residence of the household in the Philippines.
*: Information on the head of the household relates to the person nominated as household head among those individuals resident in the house at the time of the survey.

Table 6: Determinants of the Incidence of Remittances (IV OLS) and Level of log-remittances (IV OLS conditional on positive remittance)

	Remitter men		Amount remitted men		Remitter women		Amount remitted Women	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Household								
Kids <1yr	**-0.047**	**0.029**	-0.065	0.196	-0.048	0.124	-0.024	0.761
Kids <7yrs	0.025	0.082	-0.012	0.729	-0.017	0.347	-0.081	0.058
Kids <15yrs	**0.042**	**0.007**	0.069	0.054	0.011	0.550	**0.108**	**0.009**
Household head*								
No prim. school	-0.033	0.292	-0.097	0.206	**-0.071**	**0.020**	-0.059	0.404
No sec. school	0.004	0.855	0.009	0.848	-0.028	0.243	-0.099	0.083
High school	-		-		-		-	
Some post-sec	-0.012	0.555	**0.118**	**0.014**	-0.010	0.727	-0.007	0.920
Degree	-0.022	0.293	**0.184**	**0.000**	**-0.070**	**0.042**	0.004	0.959
Single	-0.078	0.230	-0.064	0.641	0.043	0.378	0.016	0.884
W/S/D	**-0.103**	**0.000**	-0.126	0.057	-0.008	0.817	**-0.183**	**0.028**
Male	**-0.131**	**0.000**	-0.071	0.117	-0.050	0.139	**-0.176**	**0.026**
Age	0.001	0.305	0.004	0.079	0.000	0.923	-0.002	0.476
Pension income	-0.050	0.086	**0.131**	**0.046**	0.001	0.959	0.034	0.616
Dividend income	-0.003	0.942	**-0.200**	**0.022**	-0.015	0.766	-0.218	0.067
Individual								
Less than HS	n/a		n/a		n/a		n/a	
Finished HS	-		-		-		-	
Some p'sec	0.009	0.794	0.076	0.354	-0.056	0.216	0.054	0.596
Degree	-0.069	0.250	0.010	0.942	**-0.170**	**0.013**	**0.647**	**0.000**
Higher degree	-0.069	0.226	0.174	0.173	**-0.215**	**0.001**	**0.695**	**0.000**
Single	**-0.069**	**0.008**	**-0.278**	**0.000**	**0.062**	**0.038**	-0.056	0.414
W/S/D	0.076	0.284	-0.097	0.569	**0.113**	**0.002**	0.088	0.320
Age	0.004	0.598	0.034	0.054	0.012	0.191	-0.024	0.241
Age-squared	0.000	0.636	0.000	0.174	0.000	0.732	0.000	0.080
Head of H'hold*	**-0.168**	**0.000**	-0.035	0.467	**-0.386**	**0.000**	0.013	0.947
Spouse of HH	-		-		-		-	
Child of HH	-0.011	0.728	**-0.208**	**0.004**	0.008	0.826	-0.032	0.709
Other reln to HH	-0.079	0.080	**-0.231**	**0.037**	**-0.084**	**0.049**	-0.153	0.134
USA	-		-		-		-	
Canada/Austr.	0.024	0.695	**-0.385**	**0.015**	-0.029	0.678	-0.184	0.361

UK	-0.028	0.733	0.034	0.824	-0.079	0.418	-0.307	0.394
East Asia	0.056	0.077	0.024	0.757	**-0.111**	**0.042**	-0.187	0.194
Mideast	0.064	0.101	**-0.184**	**0.040**	**-0.122**	**0.021**	**-0.355**	**0.011**
Southeast Asia	0.009	0.897	-0.187	0.279	**-0.179**	**0.031**	**-0.720**	**0.000**
Western Europe	0.012	0.746	-0.070	0.427	-0.112	0.161	0.022	0.918
Other country	0.035	0.443	0.013	0.904	-0.033	0.706	0.116	0.617
Migrated together	-0.047	0.215	-0.029	0.737	-0.035	0.353	0.003	0.971
Exchange rate (x100) **	0.003	0.356	-0.002	0.777	0.002	0.613	**0.023**	**0.009**
Degree holder working in a low skill job	**0.221**	**0.048**	0.290	0.256	**0.249**	**0.003**	**-0.691**	**0.000**
Hansen's J test of instrument validity (p-value)	0.201		0.277		0.111		0.654	
Significance of instruments in first stage (p-value)	0.000		0.000		0.000		0.000	
Rsq	0.036		0.175		0.030		0.096	
Sample size	3211		2560		2569		1904	

The sample is restricted to adults aged between 20 and 65 who reported working in the host country on a temporary work contract and who has at least finished high school. The baseline individual has a high school degree, is married, is the spouse of the household head, worked in the USA and is from a household where the head of household finished high school. Low skill jobs include laborer, service worker, and agricultural worker. Medium/low skill jobs are low skill jobs plus clerk, technician, plant operator/driver and jobs in trades. Regressions also include controls for survey year and region of residence of the household in the Philippines.

*: Information on the head of the household relates to the person nominated as household head among those individuals resident in the house at the time of the survey.

**: 'Exchange rate' is the Philippine peso to host country exchange rate converted to an index where the exchange rate in December 1996 is rescaled to take the value 1 for each host country. Additional controls are included to account for the formation of the euro zone.

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