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Are remittances inducing laziness in households?: a reexamination of the evidence

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This study reexamines the available evidence on the often-repeated claim that international migration of a household member and the resulting remittances typically lead to laziness in the receiving households. The study finds, after replicating previous studies and testing the claim using more recent data, that there is in fact weak or no evidence to support such claim.

JEL classification: F22, F24, J22
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1. Introduction

Over the years, the volume of studies on the economic impact of overseas migration and remittances on the Philippine economy and the welfare of Philippine households has grown almost in tandem with the scale of overseas migration and remittances themselves.The studies cover a broad range of topics, touching on the effect on poverty and inequality, household consumption and investment, education and employment, as well as more macroeconomic concerns, such as the exchange rate, gross domestic product (GDP) growth, and overall investment growth.

On employment, the most typical finding is that migration and remittances cause recipients to be less active participants in the labor market—what has been called the "complacency effect" or "leisure effect"

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of remittances (Rodriguez and Tiongson [2001]; Pernia [2008]; Cabegin [2006]; Tullao, Cortez, and See [2004]). If one imagines a balance sheet recording the pluses and minuses of migration, then, if true, this represents a significant negative entry in the balance sheet, a sign that migration is indeed causing serious social problems.

Overseas migration certainly has had and continues to have both positive and negative economic and social impacts. For the purpose of formulating state policy on migration, however, it is important to examine these effects rigorously because the stakes are very high. (In recent years total remittances to the country have amounted to more than 10 percent of GDP and, according to the National Statistics Office's household surveys, about a quarter of all households in the country receive some amount of remittances from abroad.) There is need to guard against the danger of, on the one hand, overstating the benefits of overseas migration and, on the other hand, exaggerating its harm.

This paper critically reviews the studies that have been the bases for the claim that overseas migration and remittances have been inducing laziness in recipient households, through a close reading of these studies, and, when feasible, through replications of their results. This paper finds that, in fact, there is no evidence that laziness has ensued from remittances or the overseas migration of a family member.

2. Replicating previous studies

Studies on the household-employment effect of migration and remittances typically claim that they cause recipients to be less active in the labor market. For instance, Rodriguez and Tiongson [2001] argue that having an overseas worker in the household reduces the labor supply of the nonmigrants in the household, cutting labor participation by as much as 18.5 percentage points for men and 18.1 percentage points for women, depending on the characteristics of the overseas worker.[2] The study's results were obtained from a probit regression, separately for men and women, of labor participation of nonmigrant individuals against their own and family characteristics, family wealth or nonlabor income, presence of an overseas worker in the family dummy, and the characteristics of the overseas worker

[2] They defined an active labor participant as one who is in paid work either as a wage and salary worker or as a self-employed worker. Unpaid family workers and the unemployed are thus not included as active labor participants.

interacted with the dummy for overseas worker. More precisely, in their formulation:

$$L_{ij} = \alpha + \beta_1 I_i + \beta_2 F_j + \beta_3 Y_j + \beta_4 M_j + \beta_5 M_j Z^{M_j} + \varepsilon_i \ , \qquad L_{ij} = 0,1$$

L_{ij} = indicator of labor participation of individual i from household j

I_i = individual i's characteristics (operationally, education, marital status, and age)

F_i = family attributes (age composition of family)

Y_j = wealth or nonlabor income of household (remittances and imputed rent)

M_j = dummy for having an overseas worker

Z^{M_j} = characteristics of overseas worker (sex, education, whether or not part of nuclear family)

Tullao, Cortez, and See [2004] find from cross-tabulations using the Family Income and Expenditures Survey (FIES) that households with remittance income have lower labor force participation and employment rates compared to households not receiving remittance income.The authors ascribe this to an increase in the reservation wage and reduced self-reliance of individuals coming from remittance-receiving households. Pernia [2008], using the 2003 FIES, reports a similar finding—that remittances reduce the share of employed persons in the household. He obtained this result from a regression of the proportion employed in the households against a dummy variable for households receiving remittances, adjusted household income (adjusted by deducting overseas remittances), education of household head, dependency ratio, and the income class classification of the households. Rodriguez and Tiongson [2001] differ from Tullao, Cortez, and See [2004] and Pernia [2008] in their interpretation of the finding, seeing it as a benefit of overseas work (consumption of more leisure) whereas the latter two view it as a loss in productivity.

Here, we argue that the inferences of Rodriguez and Tiongson [2001], Tullao, Cortez, and See [2004], and Pernia [2006] are invalid because the data sets they used are biased toward showing the finding they report—that the receipt of remittances or having an overseas worker in a household reduces the labor supply of other household members.

The bias results from removing from one group (households with overseas workers or households receiving remittances) the person that

is often the most able and skilled worker and the one with the highest incentive to work—the overseas worker himself/herself—while keeping the same type of person in the control group (households without overseas workers or not receiving remittances).This stacks the comparison in favor of the latter group in terms of labor participation.[3] Consider the following thought experiment: (a) form two groups of randomly selected households; (b) systematically remove from the first group one employed household member; (c) then compare the two groups in terms of labor participation. The outcome would be surprising if it *did not* turn out that the first group had lower labor participation.A fairer comparison would involve comparing the two groups after including the overseas worker among the members of the first group, or, alternatively, removing a person comparable to the overseas worker in profile from the second group prior to the comparison.

In addition, if one assumes that labor supply decisions are made collectively at the household level, or that individuals make their labor supply decisions conditional on the labor supply decisions of other household members, it is even clearer that a household should be counted as one unit, implying that excluding overseas Filipino workers (OFWs) from the comparison involves comparing whole units (non-OFW households) against fractions of a unit (OFW households with OFW excluded).

To pursue the point further, we recreate the regression of Rodriguez and Tiongson [2001] for two cases: first, where the data are not adjusted for the bias claimed here; and second, where we attempt to correct for the bias. The data set we use is the merged 1991 FIES and the January 1992 Labor Force Survey (LFS), which were undertaken in the same period for mostly the same households. Rodriguez and Tiongson [2001] reported using the merged 1991 FIES, the October 1991 LFS, and the October 1991 Survey of Overseas Workers (SOW, old name of the Survey of Overseas Filipinos) and limited themselves to the Metro Manila respondents because of the "computational costs of matching three surveys". In our case, we found no need to utilize the SOW because the variables Rodriguez and Tiongson [2001] used in their regression are derivable from the LFS. Using the January 1992 LFS has the further advantage of automatic matching of households with the 1991 FIES, rather than manual matching that appears to be what Rodriguez and Tiongson [2001] carried out. To facilitate comparison with their results, we first look at a sample limited to Metro Manila, but then later

[3] Not a comparison of apples to oranges exactly but more like a comparison of an apple against a fraction of an apple as to which one is heavier.

extend to the entire 1991 FIES-LFS matched sample covering the entire Philippines.[4] The variable definitions are in Annex Table 1.

Table 1 shows the means of the variables and the results of estimating the probit model (separately for men and women) of Rodriguez and Tiongson [2001] using our data set. The first four columns after the variable contain the results for men, while the next four contain the results for women. Annex Table 2 reproduces the original table of Rodriguez and Tiongson [2001] for comparison. As can be seen, the means of the variables are roughly the same in the two tables, although as should be expected, paid labor participation is higher in Rodriguez and Tiongson [2001] because of the longer employment reference period. The coefficient estimates for the control variables (under the headings Individual Characteristics, Nonmigrant Family Composition, and Nonlabor Income) are also roughly comparable.

Table 1. Probability of paid labor participation among nonmigrants: men and women 15-64 years old in Metro Manila, 1991 'Mismatched' sample, four migrant-related variables

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects
Participation (previous week)	63.4%				43.2%			
No. of nonmigrant individuals	6276				7167			
Constant		-4.353	*0.00*			-3.182	*0.00*	
Individual characteristics								
Complete high school	28.8%	0.171	*0.00*	6.0	28.4%	0.023	*0.58*	0.9
Incomplete college	24.3%	-0.144	*0.01*	-5.2	19.5%	-0.322	*0.00*	-12.2
College graduate	14.9%	0.327	*0.00*	11.0	17.5%	0.589	*0.00*	23.2
Head	45.2%	0.591	*0.00*	20.7	9.0%	0.007	*0.91*	0.3
Married	53.4%	0.374	*0.00*	13.4	52.0%	-0.614	*0.00*	-23.6
Age	32.1	0.255	*0.00*	9.1	32.2	0.181	*0.00*	7.1

[4] Another difference with Rodriguez and Tiongson [2001] is the use here of *past week* employment information rather than *past quarter*, which is what they used. Rodriguez and Tiongson [2001] made use of the variable *class of worker* to reclassify unpaid family workers as "not part of the paid labor force". But the latter variable in the 1991 LFS pertains only to *past week* and not *past quarter* employment. Thus, for consistency as to the reference period of the variables used, we just use *past week* employment information.

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects
Age squared/100	12.0	-0.329	*0.00*	-11.8	12.0	-0.224	*0.00*	-8.7
Nonmigrant family composition								
Children (0-14 years)	1.8	0.024	*0.05*	0.9	1.8	-0.025	*0.02*	-1.0
Adult women (15-64 years)	2.1	0.027	*0.10*	1.0	2.6	0.066	*0.00*	2.6
Adult men (15-64 years)	2.5	0.002	*0.90*	0.1	1.9	-0.036	*0.01*	-1.4
Seniors (over 64 years)	0.1	-0.145	*0.00*	-5.2	0.2	0.105	*0.01*	4.1
Migrant-related characteristics								
If family has 1 or more migrants	9.7%	-0.139	*0.43*	-5.1	12.1%	-0.008	*0.96*	-0.3
If migrant is male	6.1%	0.215	*0.09*	7.4	9.7%	-0.130	*0.28*	-5.0
If migrant belongs to nuclear family	8.0%	-0.269	*0.10*	-10.0	10.3%	-0.087	*0.54*	-3.3
If migrant has tertiary education	3.1%	-0.106	*0.42*	-3.9	4.4%	0.172	*0.08*	6.8
Nonlabor income:								
Remittances within HH	2.6	-0.012	*0.00*	-0.4	4.0	-0.003	*0.08*	-0.1
Imputed rent	5.2	-0.002	*0.43*	-0.1	7.4	0.009	*0.00*	0.4
Wald's chi-squared		1999.6	*0.00*			952.6	0.00	

Notes:
1. Probability weights were applied to account for the sampling design of the FIES.
2. Robust standard errors were estimated.
Sources: FIES 1991 and January 1992 LFS.

The key variables of interest for us, however, are the four under the heading migrant-related characteristics. There is a dummy variable for the presence of at least one overseas worker (migrant dummy), an interaction of the migrant dummy with a dummy for male sex (male migrant dummy), an interaction of the migrant dummy with a dummy for whether the overseas worker belongs to the nuclear family (nuclear migrant dummy), and an interaction of the overseas worker dummy with whether the overseas worker finished tertiary education (tertiary migrant).

Table 1 shows that in the case of men, two migrant-related variables are borderline significant at the 10 percent level—the male migrant dummy and the nuclear migrant dummy. Having an overseas worker who is a member of the nuclear family decreases by 10 percentage points the probability of paid labor participation by nonmigrant household members,

whereas having a male OFW increases it by 7.4 percentage points.[5] A male nonmigrant who lives in a household with a male overseas worker belonging to the nuclear family has its probability of participation reduced by 2.6 percentage points. In the case of women, the only variable that is significant at the 10 percent level is the tertiary migrant dummy and it raises rather than reduces the probability of participation. The results are thus not as clear-cut as in Rodriguez and Tiongson [2001].

One can argue, however, that having too many migrant-related variables in the regression possibly dilutes the impact of having an overseas worker in the household, especially given that these variables are correlated. To test this conjecture, we carry out the regression keeping only the migrant dummy among the four original migrant-related variables. This step allows us to get the average effect of having an overseas worker, rather than make fine distinctions based on the overseas worker's characteristics. The results are in Table 2 and are in line with the original results of Rodriguez and Tiongson [2001]. The migrant dummy is significant at the 5 percent level and has a negative coefficient in the regressions for both men and women. Having an overseas worker in the household reduces by 9.4 percentage points the probability of paid labor participation by nonmigrant men, and by 4.5 percentage points the probability of paid labor participation by nonmigrant women.

But as has been asserted earlier, these findings are possibly misleading because they compare two mismatched groups. Because at least one paid labor participant (the overseas worker/s) is removed from each household in the migrant household group prior to comparison, the findings follow almost by design. To show this, we again undertake the regression, but this time better matching the groups by including in the migrant households the overseas worker himself/herself and classifying him/her as a paid labor participant.[6] The results are in Table 3. The migrant dummy is not significant in the regression for men, and is highly significant but with a positive coefficient for women. Meanwhile, the table also shows that individual characteristics, family composition, and nonlabor income are important

[5] The numbers are from the column on marginal effects, which gives the change in the probability of paid labor participation as a result of a discrete change in these dummy variables.

[6] The balancing could also be done in a more ad hoc way by removing from each of the nonmigrant households one employed member. The end result would be the same, showing that paid labor participation is not lower for migrant households, whether for men or women.

determinants of participation for both men and women. Note that the same point could have been made, but less clearly, using the "better-matched" sample counterpart of Table 1.

Table 2. Probability of paid labor participation among nonmigrants: men and women 15-64 years old in Metro Manila, 1991 "Mismatched" sample, migrant presence dummy

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects
Participation (previous week)	63.4%				43.2%			
No. of nonmigrant individuals	6276				7167			
Constant		-4.355	*0.00*			-3.188	*0.00*	
Individual characteristics								
Complete high school	28.8%	0.168	*0.00*	5.9	28.4%	0.024	*0.56*	0.9
Incomplete college	24.3%	-0.145	*0.01*	-5.3	19.5%	-0.320	*0.00*	-12.1
College graduate	14.9%	0.319	*0.00*	10.8	17.5%	0.595	*0.00*	23.4
Head	45.2%	0.593	*0.00*	20.7	9.0%	-0.009	*0.89*	-0.3
Married	53.4%	0.366	*0.00*	13.1	52.0%	-0.620	*0.00*	-23.8
Age	32.1	0.255	*0.00*	9.1	32.2	0.181	*0.00*	7.1
Age squared/100	12.0	-0.329	*0.00*	-11.8	12.0	-0.224	*0.00*	-8.7
Nonmigrant family composition								
Children (0-14 years)	1.8	0.026	*0.04*	0.9	1.8	-0.025	*0.02*	-1.0
Adult women (15-64 years)	2.1	0.030	*0.07*	1.1	2.6	0.066	*0.00*	2.6
Adult men (15-64 years)	2.5	0.002	*0.92*	0.1	1.9	-0.035	*0.01*	-1.4
Seniors (over 64 years)	0.1	-0.143	*0.00*	-5.1	0.2	0.108	*0.01*	4.2
Migrant-related characteristics								
If family has 1 or more migrants	9.7%	-0.253	*0.00*	-9.4	12.1%	-0.116	*0.04*	-4.5
Nonlabor income:								
Remittances within HH	2.6	-0.012	*0.00*	-0.4	4.0	-0.003	*0.06*	-0.1
Imputed rent	5.2	-0.002	*0.43*	-0.1	7.4	0.009	*0.00*	0.4
Wald's chi-squared		1997.6	*0.00*			952.3	*0.00*	

Notes:
1. Probability weights were applied to account for the sampling design of the FIES.
2. Robust standard errors were estimated.
Sources: FIES 1991 and January 1992 LFS.

Table 3. Probability of paid labor participation among working age population including OFW: men and women 15-64 years old in Metro Manila, 1991 "Better-matched" sample, migrant presence dummy

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects
Participation (previous week)	65.3%				44.3%			
No. of individuals	6637				7309			
Constant		-4.629	*0.00*			-3.216	*0.00*	
Individual characteristics								
Complete high school	28.6%	0.164	*0.00*	5.6	28.4%	0.039	*0.34*	1.5
Incomplete college	24.7%	-0.126	*0.01*	-4.5	19.7%	-0.300	*0.00*	-11.5
College graduate	15.8%	0.333	*0.00*	10.8	17.7%	0.585	*0.00*	23.0
Head	43.0%	0.299	*0.00*	10.3	8.8%	-0.127	*0.05*	-4.9
Married	54.6%	0.473	*0.00*	16.6	52.1%	-0.633	*0.00*	-24.5
Age	32.4	0.275	*0.00*	9.6	32.2	0.185	*0.00*	7.3
Age squared/100	12.1	-0.347	*0.00*	-12.1	12.0	-0.229	*0.00*	-9.0
Family composition								
Children (0-14 years)	1.8	0.027	*0.03*	0.9	1.8	-0.028	*0.01*	-1.1
Adult women (15-64 years)	2.2	0.002	*0.88*	0.1	2.7	0.061	*0.00*	2.4
Adult men (15-64 years)	2.5	-0.011	*0.48*	-0.4	2.0	-0.044	*0.00*	-1.7
Seniors (over 64 years)	0.1	-0.200	*0.00*	-7.0	0.2	0.100	*0.01*	3.9
Migrant-related characteristics								
If family has 1 or more Migrants	14.6%	0.064	*0.30*	2.2	13.8%	0.158	*0.00*	6.2
Nonlabor income:								
Remittances within HH	3.8	-0.005	*0.01*	-0.2	4.2	-0.003	*0.06*	-0.1
Imputed rent	5.4	-0.001	*0.59*	0.0	7.4	0.009	*0.00*	0.4
Wald's chi-squared		2075.6				966.5		

Notes:
1. Probability weights were applied to account for the sampling design of the FIES.
2. Robust standard errors were estimated.
Sources: FIES 1991 and January 1992 LFS.

We also reconstruct the data set of Pernia [2008] using primarily the FIES 2003 and carry out a regression similar to his.[7] Afterward, using the same idea of "better matching" the sample as in the previous exercise, we repeat the regression using the "better matched" sample. In both cases,

[7] The particular table referred to is Table 10 of Pernia [2008], reproduced in Annex Table 3.

household employment ratio is regressed against a dummy variable for the presence of an overseas worker in the household, a dummy for when the household receives remittances but are not reported to have an overseas worker, the dependency ratio (ratio of children 0-14 to total household members), dummy variables for the different levels of education of the household head, and dummy variables for the income class of the province where the household resides.

Table 4 shows the results of the regression replicating Table 10 of Pernia [2008].[8] As in the latter, according to the table, households receiving remittances, whether they are reported to have an overseas worker or not, have significantly lower employment ratio. Other things remaining the same, households with at least one overseas worker have a proportion of employed members lower by 4.3 percentage points, whereas those without any overseas worker but who receive remittances have a proportion of employed members lower by 4.6 percentage points.

Table 4. Proportion employed of total household members, excluding overseas workers among employed

Employment ratio	Coef.	Std. err.	t	P>t	[95% Conf.	Interval]
With OFW	-0.0431	0.005	-8.5	0.00	-0.0530	-0.0331
W/out OFW but with remittance	-0.0464	0.003	-17.6	0.00	-0.0516	-0.0412
HH income minus remittances	-6.56E-09	6.08E-09	-1.1	0.28	0.0000	0.0000
Dependency ratio[a]	-0.5780	0.004	-133	0.00	-0.5865	-0.5695
HS undergrad, HH head	-0.0047	0.003	-1.6	0.10	-0.0103	0.0010
HS grad, HH head	-0.0032	0.002	-1.3	0.20	-0.0080	0.0016
College undergrad, HH head	0.0026	0.003	0.8	0.42	-0.0038	0.0090
College grad, HH head	0.0070	0.004	1.8	0.07	-0.0006	0.0146
In province w/ income class 1	-0.0189	0.006	-3.1	0.00	-0.0308	-0.0071
In province w/ income class 2	-0.0107	0.007	-1.6	0.10	-0.0235	0.0021
In province w/ income class 3	-0.0381	0.007	-5.5	0.00	-0.0516	-0.0246
_cons	0.6336	0.006	100.0	0.00	0.6211	0.6460

N = 40,283; R-squared = 35.60
[a]Does not include the overseas worker in the denominator.
Sources: FIES 2003, January 2004 Labor Force Survey, and NSCB for province income class.

[8] The specific differences between this regression and the one in Pernia [2008] are the following: (a) it uses separate dummy variables for households with overseas workers and those without but receiving remittances, whereas Pernia [2008) uses only a single dummy for those receiving remittances; (b) it uses dummy variables for the distinct values of the ordinal variables in the regression (education of household head and income class of province). The qualitative results are the same, however.

However, as previously argued, that cannot be a fair comparison because the number of employed counted in the FIES fails to include the overseas worker. "Correcting" for this bias and adding the overseas worker/s to the number of employed (as well as to the total household members used in both the dependent variable and the variable dependency ratio) and once again carrying out the regression yields Table 5.[9] Here, the situation is reversed in the case of households with at least one overseas worker—they now have a proportion of employed higher by 3.5 percentage points, on average, other things remaining the same. On the other hand, the coefficient is barely changed for households without OFW but who receive remittances. But no definitive inference can be made from this because some, or maybe even many, of these households may have overseas workers but they are not recorded in the survey because they have been away for more than five years—the arbitrary cutoff set by the National Statistics Office (NSO). Because such workers cannot be identified, they cannot be used to "better match" the data in the households where they belong. Tullao, Cortez, and See [2004] use the same FIES data to compare employment rates of households receiving remittances against those not receiving remittances; the same argument can thus be made against their findings (see Ducanes and Abella [2008]).[10]

Table 5. Proportion employed of total household members, including overseas workers among employed

Employment ratio	Coef.	Std. err.	t	P>t	[95% Conf.	Interval]
With OFW	0.0352	0.004	8.0	0.00	0.0266	0.0438
W/out OFW but with remittance	-0.0465	0.003	-17.6	0.00	-0.0517	-0.0414
HH income minus remittances	-7.32E-09	6.39E-09	-1.2	0.25	-1.98E-08	5.20E-09
Dependency ratio[b]	-0.5841	0.004	-134	0.00	-0.5926	-0.5756
HS undergrad, HH head	-0.0047	0.003	-1.7	0.10	-0.0103	0.0009

[9] The information on the overseas worker is not available in the FIES itself but could be obtained by linking it to the LFS.

[10] Aguilar et al. [2009], in their ethnographic study of a Batangas village (Barangay Paraiso) where reside a cluster of families with overseas workers mainly in Italy, computed what they called the "bum rate" for the village, comparing migrant and nonmigrant households. They defined bum rate as the ratio of bums or *istambay* 18 years old and above to the total people 18 years old and above. They found the bum rate to be 8.5 percent in migrant households and 7.1 percent in nonmigrant households. However, as in the other studies cited here, the finding is driven largely by the exclusion of the overseas worker from the computation.

Employment ratio	Coef.	Std. err.	t	P>t	[95% Conf.	Interval]
HS grad, HH head	-0.0033	0.002	-1.3	0.18	-0.0080	0.0015
College undergrad, HH head	0.0024	0.003	0.7	0.46	-0.0039	0.0087
College grad, HH head	0.0069	0.004	1.8	0.08	-0.0007	0.0144
In province w/ income class 1	-0.0193	0.006	-3.2	0.00	-0.0311	-0.0076
In province w/ income class 2	-0.0112	0.006	-1.7	0.08	-0.0240	0.0015
In province w/ income class 3	-0.0381	0.007	-5.6	0.00	-0.0515	-0.0247
_cons	0.6361	0.006	100.9	0.00	0.6237	0.6484

N = 40,283; R-squared = 36.64
[b]Includes the overseas worker in the denominator.
Sources: FIES 2003 and January 2004 Labor Force Survey.

Cabegin (2006), using the linked 2003 FIES and LFS, likewise compared labor participation in migrant and nonmigrant households but focused only on the wife. She divided her data set into two groups: the first group comprising women with nonmigrant husbands, and the second group comprising women with migrant husbands. She carried out separate multinomial probit regressions for the two data sets and found that in both groups college-graduate wives were significantly more likely to be in full-time paid work (instead of non-employed) compared to noncollege-graduate wives, although the coefficient she got in the regression for the first group was slightly higher compared to the second group regression—0.9119 compared to 0.8679 (see Appendix B of her paper). She interpreted this as "indicative of a significant moral hazard problem".

In fact, it is not clear that what she obtained was evidence at all. For one, the coefficients she compared are close enough to each other that they are unlikely to be statistically significantly different. She does not, in fact, test for the significance of the difference in the coefficients. For another, it is not even obvious that the coefficients can be straightforwardly compared given that they are estimated for different samples with expectedly different control characteristics (very different predicted husband's earnings, for instance, expectedly much higher for migrant wives). Furthermore, her regression results also show that, in both samples, college-graduate wives are more likely to be in *part-time* paid work (instead of non-employed) compared to noncollege-graduate wives, with the coefficient for migrant wives (0.6710) much higher—and more likely to be statistically significantly different—than the coefficient for nonmigrant wives (0.1443). For consistency, this should have been taken as supporting evidence for the absence of moral hazard and considered together with the supposed evidence based on the coefficients on full-time paid work, but it was not.

Note that this section is not making the claim that remittances or overseas work have no effect on the labor supply of those left behind, and certainly not that these factors have intensified the labor supply of those left behind. It is merely pointing out that the often-repeated claim that migration has led to laziness among the recipients is thus far not well-founded on evidence.[11]

3. Testing laziness effect using more recent data

In the previous section, it was argued that the most frequently cited studies advancing the claim that labor supply is significantly lower in households that have overseas workers or are receiving remittances are making a comparison based on a biased sample. The chapter replicated the probit regression of Rodriguez and Tiongson [2001] for the 1991 LFS-FIES data set and found that if one used the proper sample, the results do not show lower participation rate for overseas worker households.[12] However, a more refined version of the model of Rodriguez and Tiongson [2001] can be tested.

If there is indeed a complacency effect resulting from having an overseas worker in the household, it seems reasonable to assume that such an effect would be strongest among households with overseas workers supporting them for the longest period. When a household has been receiving remittance support for only a short period—a year, for instance—or, alternatively, if its receipt of remittances is inconsistent, as would happen if its overseas workers are employed only intermittently, then one may surmise that its labor supply will be little affected, if at all. On the other hand, if the household has had an overseas worker consistently for a long enough period of time, then it is more likely for its labor supply to decline. Our data allow us to test such a hypothesis.

Following Rodriguez and Tiongson [2001], we look at paid labor participation of nonmigrant household members, this time using the July 2008 LFS combined with the 2008 Annual Poverty Indicator Survey (APIS), and also using information from the January and July 2007 LFS. See section 3.2.3 for the model specification and Annex Table 4 for the definition of the

[11] The convention or custom, however, is to assume the state of "no effect" until convincing evidence is presented to the contrary, similar to the idea of "innocent until proven guilty".

[12] The bias stems from removing from the comparison the overseas worker, an employed household member who is often the most skilled member and the one with most incentive to work. Balancing as implemented there involved removing an arbitrary employed member from households without overseas workers before comparison.

specific variables used in the regression. Data for paid labor participation, individual characteristics, family attributes, and information on overseas worker for 2008 were sourced from the July 2008 LFS. The linked 2008 APIS was the source of data for wealth and nonlabor income proxies, the linked January LFS for overseas worker information in 2006, and the July 2006 LFS for the overseas worker information in 2007.

We carry out three ways of "better matching" the sample. First, we better match the sample by removing one employed member from each of the non-OFW households prior to doing the comparison ("better-matched" sample 1). Second, we better match the sample by including the overseas workers in the sample so that the comparison is between all members of OFW households against all members of non-OFW households ("better-matched" sample 2). Under the assumption of collective labor supply of households, this seems a more evenhanded comparison vis-à-vis including all members from non-OFW households and excluding at least one (the overseas worker/s) from OFW households. Finally, we modify "better-match" sample 2 by excluding students from consideration, reasoning that studying is something positive and should not be counted as a complacency effect.

Tables 6-8 show the regression results using the various "better-matched" samples. There are three migrant-related variables in the regressions: (a) an indicator variable for whether the household of the member had an overseas worker every year from 2006 to 2008 (referred to here as long-term overseas workers as opposed to the next two, which will be called short-term overseas workers), (b) an indicator variable for whether the household of the member had an overseas worker for exactly two out of the three years from 2006 to 2008 and (c) an indicator variable for whether the household of the member had an overseas worker for exactly one out of the three years from 2006 to 2008.

Table 6 shows that under "better-matched" sample 1, there is no observed negative overseas-worker effect on the labor participation of other household members, whether for men or women, specifically, or overall. The strongly significant variables in the model are those pertaining to individual characteristics, family composition, and even the wealth proxy (in the case of women). In fact, in the case of women, labor participation is significantly higher among those belonging to households with overseas workers, whether short term or long term. Table 7, containing the results using "better-matched" sample 2, is more nuanced. It shows labor participation to be lower for men in households with overseas workers (5 percent lower both for those with overseas workers in all three years and those with overseas workers in

exactly one of the three years), although the effect is not the expected one of increasing with the tenure of the overseas worker. On the other hand, for women, labor participation is higher for those in households with overseas workers by about 7 percent regardless of overseas worker tenure. Overall, there is no negative effect; rather the opposite, as those in households with long-term overseas workers and those with overseas workers in two of the previous three years had participation rates higher by 4 percent.

Finally, Table 8 shows that if one removes students from consideration, the negative effect of long-term overseas workers on the participation of men ceases to be statistically significant, possibly indicating that members in such households, typically richer, are more able to study. The only remaining negative effect is for those in households with overseas worker away exactly in one of the previous three years.[13] For women and overall, the effect of having an overseas worker in the household is positive on labor participation, whether long term or shorter term.

4. Summary

In this study, we showed that studies on the impact on domestic employment of overseas migration and remittance, typically alleging lower labor supply in remittance-receiving households, were making "biased" comparisons—that, in fact, there is no evidence that remittances are leading to reduced labor force participation in recipient households.

This study also tested the hypothesis, using more recent data, that the presence of longer-term overseas workers in the household induces lower labor supply among the members. Using what the study called "better-matched" samples, it found no evidence of lower labor supply in OFW households overall (combining both men and women), whether with long-term or short-term overseas workers, finding the opposite in fact. Broken down by sex, however, the results consistently show higher labor participation among women in OFW households, although in some cases they also show lower labor participation among men in OFW households.

[13] The definition of paid labor participation used here follows Rodriguez and Tiongson [2001] who classify the unemployed as nonparticipants. This runs counter to the typical definition of labor force participation that counts both the employed and the unemployed as participants. If the unemployed are counted as labor participants, then the observed lower participation for men in OFW households disappears completely, whereas the finding of higher participation for women in OFW households remains.

Table 6. Probability of paid labor participation among non-overseas workers, 2008 "Better-matched" sample[1]

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects	Mean	Overall probit estimates	p-value	Marg. effects
Participation (previous week)	53.7%				21.3%				37.1%			
No. of nonmigrant individuals	7959				8403				16362			
Constant		-4.930	0.000			-4.588	0.000			-4.563	0.000	
Individual characteristics												
Complete high school	23.3%	-0.095	0.050	-3.8	24.0%	0.112	0.014	2.8	23.7%	0.013	0.680	0.5
Incomplete college	15.7%	-0.406	0.000	-16.1	16.0%	-0.138	0.015	-3.2	15.9%	-0.261	0.000	-9.0
College graduate	8.9%	0.032	0.640	1.3	11.1%	0.641	0.000	19.3	10.0%	0.390	0.000	14.8
Head	44.0%	0.970	0.000	36.5	6.9%	0.656	0.000	20.3	24.9%	1.709	0.000	60.7
Married	50.0%	0.431	0.000	16.9	58.4%	-0.614	0.000	-15.6	54.3%	-0.258	0.000	-9.3
Age	33.8	0.249	0.000	9.9	34.4	0.165	0.000	4.0	34.1	0.186	0.000	6.7
Age squared/100	13.7	-0.310	0.000	-12.3	13.9	-0.172	0.000	-4.2	13.8	-0.225	0.000	-8.1
Nonmigrant family composition												
Children (0-14 years)	1.7	0.036	0.005	1.4	1.8	-0.020	0.114	-0.5	1.7	-0.007	0.422	-0.2
Adult women (15-64 years)	1.7	0.081	0.000	3.2	2.1	0.114	0.000	2.8	1.9	0.101	0.000	3.7
Adult men (15-64 years)	2.4	0.060	0.001	2.4	1.8	0.162	0.000	4.0	2.1	0.174	0.000	6.3
Seniors (over 64 years)	0.2	-0.083	0.049	-3.3	0.2	0.060	0.142	1.5	0.2	0.132	0.000	4.8
Migrant-related characteristics												
HH has OFW every yr from 2006 to 2008	4.1%	0.044	0.685	1.7	4.7%	0.355	0.000	10.0	4.4%	0.162	0.033	6.0
HH has OFW in any 2 yrs from 2006 to 2008	3.5%	0.033	0.737	1.3	3.8%	0.410	0.000	11.8	3.6%	0.239	0.001	9.0
HH has OFW in any 1 yr from 2006 to 2008	6.7%	-0.064	0.387	-2.5	6.9%	0.312	0.000	8.6	6.8%	0.139	0.008	5.2
Nonlabor income:												
Remittances within HH	1.8	-0.005	0.134	-0.2	2.3	-0.001	0.727	0.0	2.1	-0.006	0.013	-0.2
Imputed rent	2.0	0.002	0.610	0.1	2.1	0.016	0.027	0.4	2.1	0.014	0.000	0.5
Wald's chi-squared		3268.1	0.000			1346.6	0.000			4759.8	0.000	

Notes:
1. Balancing here involved removing one employed member each from nonmigrant households.
2. Probability weights were applied to account for the sampling design of the FIES.
3. Robust standard errors were estimated.
Sources: July 2008 LFS, 2008 APIS, January 2007 LFS, July 2007 LFS.

Table 7. Probability of paid labor participation among potential workers including OFWs, 2008 "Better-matched" sample[2]

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects	Mean	Overall probit estimates	p-value	Marg. effects
Participation (previous week)	68.4%				41.4%				55.3%			
No. of Individuals	12328				11722				24050			
Constant		-3.438	0.000			-3.100	0.000			-3.099	0.000	
Individual characteristics												
Complete high school	24.0%	-0.035	0.362	-1.1	24.8%	0.220	0.000	8.6	24.4%	0.100	0.000	3.9
Incomplete college	14.9%	-0.348	0.000	-11.9	15.7%	0.040	0.300	1.6	15.3%	-0.128	0.000	-5.0
College graduate	9.5%	0.088	0.135	2.7	14.0%	0.692	0.000	27.1	11.7%	0.455	0.000	17.0
Head	46.6%	0.434	0.000	13.6	8.0%	0.211	0.000	8.3	27.8%	1.185	0.000	40.7
Married	54.8%	0.542	0.000	17.4	60.1%	-0.488	0.000	-18.8	57.4%	-0.109	0.000	-4.3
Age	34.4	0.224	0.000	7.2	35.3	0.166	0.000	6.4	34.8	0.171	0.000	6.7
Age squared/100	13.8	-0.281	0.000	-9.0	14.4	-0.186	0.000	-7.2	14.1	-0.213	0.000	-8.4
Nonmigrant family composition												
Children (0-14 years)	1.7	0.026	0.010	0.8	1.7	-0.026	0.004	-1.0	1.7	-0.015	0.021	-0.6
Adult Women (15-64 years)	1.6	0.000	0.977	0.0	2.0	-0.084	0.000	-3.2	1.8	-0.033	0.000	-1.3
Adult Men (15-64 years)	2.2	-0.061	0.000	-1.9	1.7	-0.004	0.738	-0.2	2.0	0.044	0.000	1.7
Seniors (over 64 years)	0.2	-0.172	0.000	-5.5	0.2	-0.055	0.058	-2.1	0.2	0.022	0.269	0.9
Migrant-related characteristics												
HH has OFW every yr from 2006 to 2008	3.8%	-0.135	0.098	-4.5	4.3%	0.177	0.011	7.0	4.1%	0.092	0.088	3.6
HH has OFW in any 2 yrs from 2006 to 2008	3.4%	-0.080	0.285	-2.6	3.8%	0.169	0.017	6.6	3.6%	0.096	0.068	3.7
HH has OFW in any 1 yr from 2006 to 2008	6.1%	-0.152	0.010	-5.1	6.7%	0.169	0.002	6.6	6.4%	0.055	0.163	2.2
Nonlabor income:												
Remittances within HH	2.0	-0.003	0.115	-0.1	2.4	-0.007	0.000	-0.3	2.2	-0.006	0.000	-0.2
Imputed rent	2.0	-0.007	0.217	-0.2	2.4	0.013	0.000	0.5	2.2	0.006	0.002	0.2
Wald's chi-squared		3377.4	0.000			1615.4	0.000			5291.2	0.000	

Notes:
1. Balancing here involved counting overseas workers among the employed members of the household.
2. Probability weights were applied to account for the sampling design of the FIES.
3. Robust standard errors were estimated.
Sources: July 2008 LFS, 2008 APIS, January 2007 LFS, July 2007 LFS.

Table 8. Probability of paid labor participation among potential workers including OFWs, 2008 "Better-matched" sample[3]

	Mean	Men probit estimates	p-value	Marg. effects	Mean	Women probit estimates	p-value	Marg. effects	Mean	Overall probit estimates	p-value	Marg. effects
Participation (previous week)	77.7%				46.9%				62.7%			
No. of individuals	10753				10250				21003			
Constant		-1.788	0.000			-1.887	0.000			-1.671	0.000	
Individual characteristics												
Complete high school	25.6%	-0.094	0.016	-2.5	26.1%	0.155	0.000	6.2	25.9%	0.034	0.163	1.2
Incomplete College	12.9%	-0.194	0.000	-5.3	13.2%	0.151	0.000	6.0	13.1%	-0.001	0.986	0.0
College graduate	10.8%	0.017	0.764	0.4	15.9%	0.616	0.000	24.0	13.3%	0.373	0.000	12.9
Head	53.4%	0.553	0.000	14.3	9.1%	0.180	0.001	7.2	31.8%	1.196	0.000	37.8
Married	62.7%	0.507	0.000	13.8	68.5%	-0.534	0.000	-21.1	65.6%	-0.131	0.000	-4.8
Age	36.9	0.142	0.000	3.7	37.9	0.110	0.000	4.4	37.4	0.103	0.000	3.8
Age squared/100	15.4	-0.189	0.000	-4.9	16.1	-0.123	0.000	-4.9	15.7	-0.135	0.000	-5.0
Nonmigrant family composition												
Children (0-14 years)	1.7	0.027	0.011	0.7	1.7	-0.029	0.002	-1.2	1.7	-0.015	0.021	-0.6
Adult women (15-64 years)	1.6	0.002	0.923	0.0	1.9	-0.084	0.000	-3.3	1.8	-0.030	0.003	-1.1
Adult men (15-64 years)	2.1	-0.078	0.000	-2.0	1.7	-0.009	0.508	-0.3	1.9	0.031	0.001	1.2
Seniors (over 64 years)	0.2	-0.128	0.000	-3.3	0.2	-0.061	0.045	-2.4	0.2	0.041	0.063	1.5
Migrant-related characteristics												
HH has OFW every yr from 2006 to 2008	3.6%	-0.068	0.455	-1.8	4.2%	0.215	0.004	8.6	3.9%	0.138	0.019	5.0
HH has OFW in any 2 yrs from 2006 to 2008	3.2%	-0.010	0.907	-0.3	3.8%	0.155	0.035	6.2	3.5%	0.118	0.038	4.2
HH has OFW in any 1 yr from 2006 to 2008	5.9%	-0.128	0.044	-3.5	6.7%	0.145	0.008	5.8	6.3%	0.052	0.220	1.9
Nonlabor income:												
Remittances within HH	1.9	-0.002	0.469	0.0	2.4	-0.008	0.000	-0.3	2.1	-0.006	0.000	-0.2
Imputed rent	2.0	-0.005	0.241	-0.1	2.4	0.014	0.000	0.5	2.2	0.008	0.000	0.3
Wald's chi-squared		1649.5	0.000			857.2	0.000			2889.8	0.000	

Notes:
1. Balancing here involved counting overseas workers among the employed members of the household and removing students out of the nonparticipants (students are neither participating nor not participating).
2. Probability weights were applied to account for the sampling design of the FIES.
3. Robust standard errors were estimated.
Sources: July 2008 LFS, 2008 APIS, January 2007 LFS, July 2007 LFS.

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Annex Table 1. Definitions of variables for probit regression, following Rodriguez and Tiongson [2001]

Variables	Definition	Source
Participation (previous week)	Employed in paid work for at least one hour in previous week, dummy	LFS January 1992
Individual characteristics		
Complete high school	High school graduate, dummy	LFS January 1992
Incomplete college	College undergraduate, dummy	LFS January 1992
College graduate	College graduate, dummy	LFS January 1992
Head	Individual is household head, dummy	LFS January 1992
Married	Individual is married, dummy	LFS January 1992
Age	Age	LFS January 1992
Age squared/100	The square of age divided by 100	LFS January 1992
Nonmigrant family composition		
Children (0-14 years)	No. of children 0-14 years old among household members	LFS January 1992
Adult women (15-64 years)	No. of adult women 15-64 years old among household members, exc. migrant	LFS January 1992
Adult men (15-64 years)	No. of adult men 15-64 years old among household members, exc. migrant	LFS January 1992
Seniors (over 64 years)	No. of household member 65 and up, exc. migrant	LFS January 1992
Migrant-related characteristics		
If family has 1 or more migrants	Household has at least one overseas worker, dummy	LFS January 1992
If migrant is male	Overseas worker is male, dummy	LFS January 1992
If migrant belongs to nuclear family	Overseas worker is head, spouse of head, or child of household head	LFS January 1992
If migrant has tertiary education	Overseas worker is college graduate	LFS January 1992
Nonlabor income:		
Remittances within HH	Per capita remittances received by household (in thousand pesos)	FIES 1991
Imputed rent	Per capita imputed rent of house (in thousand pesos)	FIES 1991

Annex Table 2. Probability of labor participation among nonmigrants: men and women of working age (15-64 years), National Capital Region, Philippines, 1991 (Means and maximum likelihood estimates) (Reproduced from Rodriguez and Tiongson [2001, Table 1])

	Mean	Men probit estimates	Marg. effects	Mean	Women probit estimates	Marg. effects
Participation (previous week)	66.7%			45.6%		
No. of nonmigrant individuals	6438			7294		
Constant		-4.17[a]			-3.35[a]	
Individual characteristics		(17)			(15)	
Complete high school	29.2%	0.13[a]	4.2	28.2%	-0.07[b]	-2.6
		(0.05)			(0.04)	
Incomplete college	23.8%	-0.26[a]	-8.5	18.8%	-0.34[a]	-12.2
		(0.05)			(0.05)	
College graduate	15.3%	0.33[a]	10.7	17.5%	0.48[a]	18.1
		(0.07)			(0.05)	
Head	45.8%	0.41[a]	13.3	9.0%	0.06	2.3
		(0.08)			(0.07)	
Married	52.2%	0.53[a]	17.2	51.1%	-0.70[a]	-26.4
		(0.06)			(0.05)	
Age (years)	32.3	0.26[a]	8.5	32.5	0.19[a]	7.2
		(0.01)			(0.01)	
Age squared/100	12.2	-0.33[a]	-10.7	12.3	-0.24[a]	-9.0
		(0.01)			(0.01)	
Nonmigrant family composition						
Children (0-14 years)	1.8	0.03[b]	1.0	1.8	-0.04[a]	-1.5
		(0.01)			(0.01)	
Adult women (15-64 years)	2.1	-0.0006	0.0	2.6	0.09[a]	3.4
		(0.01)			(0.01)	
Adult men (15-64 years)	2.4	-0.02	-0.7	1.8	-0.02	-0.8
		(0.02)			(0.01)	
Seniors (over 64 years)	0.2	-0.04	-1.3	0.2	0.09[a]	3.4
		(0.05)			(0.04)	
Migrant-related characteristics						
If family has 1 or more migrants	9.0%	-0.29[a]	-9.4	11.0%	-0.48[a]	-18.1
		(0.13)			(0.13)	
If migrant is male	5.9%	0.21	6.8	8.6%	0.01	0.4
		(0.13)			(0.13)	
If migrant belongs to nuclear family	3.9%	-0.28[b]	-9.1	5.6%	0.09	3.4
		(0.13)			(0.11)	
If migrant has tertiary education	5.2%	-0.09	-2.9	6.5%	0.33[a]	12.4
		(0.13)			(0.1)	

	Mean	Men probit estimates	Marg. effects	Mean	Women probit estimates	Marg. effects
Nonlabor income:						
Remittances within HH	1.8	-0.01[a]	-0.3	2.7	-0.005[a]	-0.2
		(0.003)			(0.002)	
Imputed rent	3.3	-0.002	-0.1	4.7	0.008[a]	0.3
		(0.002)			(0.002)	
Chi-squared for covariates		2756[a]			1312[a]	

Sources: Matched Sample, SOW October 1991, LFS October 1991 and FIES 1991.
[a]Significant at 5 percent level.
[b]Significant at 10 percent level.

Annex Table 3. Proportion employed of total household members, 2003 (Reproduced from Pernia [2008, Table 10])

Employshr	Coef.	Std. Err.	t	P>|t|	95% Confidence Interval	
remitdm	-0.0659	0.003	-24.7	0.000	-0.0711	0.0607
noreminc	2.15E-08	4.54E-09	4.7	0.000	0.0000	0.0000
hheduc	-0.0010	0.000	-3.6	0.000	-0.0016	0.0005
dep_ratio	-0.1417	0.001	-102.4	0.000	-0.1444	0.1390
provcls	0.0046	0.002	2.3	0.023	0.0006	0.0086
_constant	0.5149		152.8	0.000	0.5083	0.5215

No. of obs = 42,094; R-squared = 0.2088
Note: Asterisked t-values denote significance at 10 percent level or better.
Source: FIES 2003, Bureau of Local Government Finance.

Variable definitions

Variable	Definition
employshr	ratio of employed persons to total household definition
remitdm	dummy (1 = household with remittance, 0 = otherwise)
noreminc	total household income net of remittance
hheduc	average number of years of education of household head
dep_ratio	dependency ratio (population 0-14/population 15+)
provcls	Provincial income classification (1 through 5)

Annex Table 4. Definitions of variables for probit regression

Variables	Definition	Source
Participation (previous week)	Employed in paid work for at least one hour in previous week, dummy	LFS July 2008
Individual characteristics		
Complete high school	High school graduate, dummy	LFS July 2008
Incomplete college	College undergraduate, dummy	LFS July 2008
College graduate	College graduate, dummy	LFS July 2008
Head	Individual is household head, dummy	LFS July 2008
Married	Individual is married, dummy	LFS July 2008
Age	Age	LFS July 2008
Age squared/100	The square of age divided by 100	LFS July 2008
Nonmigrant family composition		
Children (0-14 years)	No. of children 0-14 years old among household members	LFS July 2008
Adult women (15-64 years)	No. of adult women 15-64 years old among household members, exc. migrant	LFS July 2008
Adult men (15-64 years)	No. of adult men 15-64 years old among household members, exc. migrant	LFS July 2008
Seniors (over 64 years)	No. of household member 65 and up, exc. migrant	LFS July 2008
Migrant-related Characteristics		
HH has OFW every year from 2006 to 2008	Household has at least one overseas worker in all years from 2006 to 2008, dummy	LFS Jan 2007, LFS July 2007, LFS July 2008
HH has OFW in any 2 yrs from 2006 to 2008	Household has at least one overseas worker in any 2 years from 2006 to 2008, dummy	LFS Jan 2007, LFS July 2007, LFS July 2008
HH has OFW in any 1 yr from 2006 to 2008	Household has at least one overseas worker in exactly one year from 2006 to 2008, dummy	LFS Jan 2007, LFS July 2007, LFS July 2008
Nonlabor income:		
Remittances within HH	Per capita remittances received by household (in thousand pesos)	APIS 2008
Imputed rent	Per capita Imputed rent of house (in thousand pesos)	APIS 2008

Note: Except for the migrant-related variables, other variables follow the definition of Rodriguez and Tiongson [2001]