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# REMITTANCES IN THE PHILIPPINES: THE IMPACT OF REMITTANCE TAXES

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**A consulting report conducted for Western Union by:**

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**Abstract**

This report extends our previous study on the economic impact of remittances in the Philippines, to compute the effects of remittance taxes upon a recipient economy. This report uses quantitative economic techniques, such as CGE modeling, to quantify how remittance taxes impact incomes, wages, and employment. The Philippines is used as an example case for this exercise.



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## **BACKGROUND AND SUMMARY OF RESULTS**

In an earlier report, we explained how quantitative techniques can be used to model how remittances impact a country's economy, and whether all members of the country benefit from remittances. This report is a short extension that explains how taxes would impact the level of formal and informal remittances, and the welfare of the recipients.

In the previous study, we found that the benefits of remittances were larger than the costs, at least in the short and medium term. Good policies that encourage capital accumulation and labor productivity could be used to leverage the potential benefits of remittances, whereas poor policymaking can have the opposite effect, allowing remittances to increase prices and discourage capital accumulation.

An important policy for remittances is taxation. For many countries, the option to tax inward remittance flows is attractive, as a short-term supply of funds. Remittances are known to be relatively stable over time, which makes them an attractive potential tax base.

The key challenge to remittance taxation is the existence of informal alternatives for money transfers. Before the internet and global wire networks, remittances were transmitted through informal channels, such as the *Hawala* system. These informal systems continue to be used today, depending on the price and convenience of formal alternatives.

By increasing the price of formal remittances, these taxes will shift remittances back into informal trade systems that were used earlier. This shift will reduce the tax yields anticipated by the government, and reduces the ability to estimate remittance activity. The total loss in remittances will be a combination of diverted funds from formal channels, plus an overall reduction in transfers as the average price increases. The level of change will depend upon how easily households can substitute informal methods for formal ones, and the rate of tax applied.

### ***Results***

We find that while remittance taxes may seem attractive as a fast and stable source of government funds, they would generate substantial distortions by encouraging parties to return to the old methods of informal Halawa-type transfers.

Under our central assumption, a 5 percent tax on formal remittance transfers in the Philippines would cause total remittance inflows to decline by 9.9 percent. Formal transfers would fall by 17.7 percent while informal transfers rise by 21.6 percent. The general equilibrium model calculates that the tax yield would be relatively high, at 82 percent of the intended revenues, but that each Peso of additional revenue gained, would cost 2.57 Pesos of lost income for the private sector.

It should also be noted that explicit taxation is not the only policy that can discourage official remittance flows. Policy restrictions imposed within the *source country* can also discourage formal remittances in favor of informal channels. For example, the United States congress has considered a bill that would prohibit transfer services, such as Western Union, from transmitting funds unless the sending party can render valid, US government-issued identification. This measure is under

consideration as part of an immigration deterrence strategy. Such actions are likely to incur similar distortions as a remittance tax, but worse, they would yield no revenues for the recipient country, or the source country.

## **OVERVIEW OF REMITTANCE LITERATURE**

The role that remittances and household transfers play in poverty alleviation, economic growth and development receives considerable attention among development economists and international research agencies. The size and depth of remittances has grown eight times faster than the world economy since 2000, a clear sign that migration and international money transfers have become a clear manifestation of globalization.

However, there is significant controversy among researchers about how these remittances have impacted the families who receive them and how they impact the overall economy. Few people contest the fact that money transfers help to smooth consumption for families who receive them and that these transfers have helped to alleviate poverty among the poorest recipients.

The overall effect is less clear from a macroeconomic standpoint. For small and poor countries, these transfers represent a welcome inflow of hard currency. In Tajikistan, for example, remittances represent 50 percent of the nation's GDP and 90 percent of their foreign reserves. This stabilizes the country's currency and helps the government to maintain lower interest rates—both of which are essential elements to promote business investment.

Economics researchers are becoming more skeptical about the size of benefits over time as cross-sectional data have shown a weak relationship between the size of international remittances and the rate of economic growth for a developing economy. A study from 2009 by Barajas et al. collected data for a large cross section of developing countries, then compared their GDP performance against the size of remittances into the country. They find that remittances cannot be linked to the rate of growth and that often the long-term rate of growth is lower for countries with larger remittances. Importantly, the researchers acknowledge the fact that worker migration is larger for those countries that are growing slowly, simply because ambitious workers will seek out the highest returns for their time and effort. This creates an important endogeneity between remittances and slow growth. It is unclear whether remittances lead to slower growth, or if slow growth has encouraged emigration, causing larger remittances.

## **METHODOLOGY**

The Business Research Division of the Leeds School of Business at the University of Colorado Boulder provided consulting services to Western Union to provide a more concrete, quantified example of how remittances impact a recipient economy when considering both the recipients, as well as the welfare of nonrecipients. To do this, we employ two types of quantitative analysis: input-output modeling, and general equilibrium modeling.

## **Input-Output Modeling<sup>1</sup>**

Input-output (I-O) modeling is a simple and convenient way to describe how external spending flows through an economy. Those flows are then tied to employment/output ratios in order to provide a number for the total employment effects generated by external spending. I-O modeling has been used for more than 50 years to characterize spending impacts, and it is well documented.

In an I-O framework, a national input-output table is used to show where household spending flows. This spending will be split between local services, locally produced goods, imported goods, and savings. The input-output table reveals how much each category receives. Spending on local goods and services contributes to local output and employment; this is called the “direct effect” of household spending. But in addition, there is an indirect effect caused by follow-on spending by the recipients and employees.

Local shop owners and factory employees receive a portion of the original spending, and they go on to spend money as well, leading to a follow-on effect called the “indirect effect.” When combined, the direct and indirect effect represent the total effect of how an external source of funds is spent by households in the recipient economy. Output to employment ratios are then used to calculate the number of jobs that would be created by the additional production in the economy.

This I-O approach is a convenient and simple method to estimate the basic employment and output effects that would be created by remittances flowing into a country. But for many important facets of economic life, such as wages, real incomes, consumer prices and household welfare, and taxation, a more sophisticated approach is needed.

## **CGE Modeling**

Computable general equilibrium (CGE) modeling is more difficult and more complicated than I-O modeling, but in return for the added complexity, CGE models provide information about key economic behavioral impacts. The most obvious is price impacts that cannot be determined using I-O models.

A CGE model is used in this report to determine the effect of remittances upon wages and household welfare, especially in the presence of taxation. As discussed in the literature section, remittances tend to reduce labor force participation among recipients. A pessimistic view is that potential workers decide to simply remain home rather than work. A more realistic view is that remittance recipients who are young use the funds to stop working and attend school, or to spend more time raising their children. Older workers may stop working and instead depend upon remittances as a supplement to their pensions. In either case, this reduces the total labor supply and exerts upward pressure on wages for the entire market. Higher wages are good for workers, but also make production more costly and will make some exporters less competitive, on the margin. Complex interactions such as these can only be determined using a general equilibrium model.

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<sup>1</sup>A full technical description of input-output modeling is provided in Annex B.

CGE models are also the best tool for tax and policy analysis. In this case, the model is used to assess the impact of government taxation of remittances. Because they are a steady source of foreign exchange, foreign remittances are an attractive potential tax revenue source. However, because several alternatives to formal remittance channels exist, even a small tax can potentially lead the remittance market into informal channels that are untaxed. The CGE model is used to assess how large the diversion would be and the likely tax-yield that governments may expect from such a tax.

Finally, the CGE model can be used to assess how remittances ultimately impact household welfare—both for recipient households and nonrecipient households. Welfare, or consumption, is ultimately the benchmark that should be used to measure how government policies and global trends impact a country’s people. GDP and employment are useful but incomplete indicators of household welfare itself. The welfare impact of Western Union remittances in the Philippines is computed using the Remittance-CGE (R-CGE) model developed specifically for this purpose.

Complete documentation of the CGE model and of the input-output coefficients used for this report are both included as annexes at the end of the report.

**OVERVIEW: REMITTANCES AND THE PHILIPPINES**

Any interested reader of this report would know that global migration, and the corresponding global remittance flows, have grown dramatically since the 1990s.

**Figure 1 : Worldwide Remittances Compared to Foreign Direct Investment (FDI) and International Development Assistance (1990–2009)**

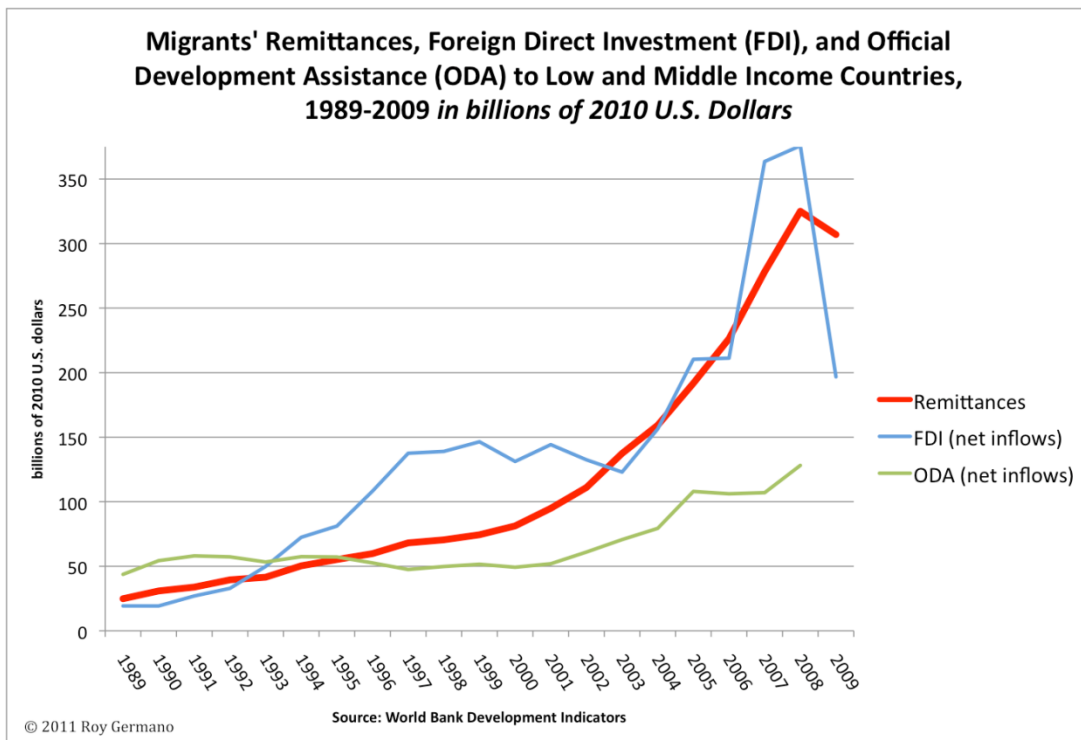


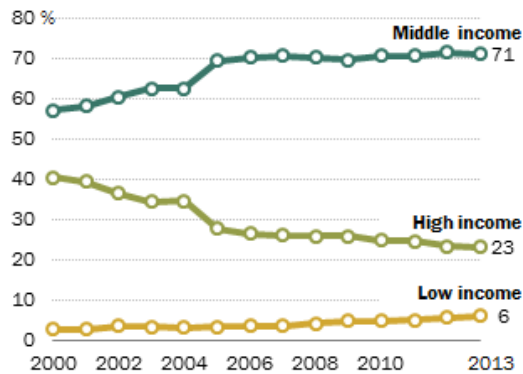
Figure 1 shows how remittance flows have become the second-largest, and most stable, source of foreign currency and development assistance worldwide. This is different from the world in 1990, when international development funds were the world's largest source of aid. Official development assistance was twice as large as either remittances or foreign direct investment (FDI) at that time.

However, as trade, the Internet and globalization evolved, development assistance was quickly outpaced by FDI flows and remittances. While FDI flows are large, they are also volatile. FDI inflows can grow or decline sharply year to year based upon financial markets. Remittances are shown to be far more stable. While they can grow or shrink, the rate of change is less volatile than for FDI.

**Figure 2: Recipients of Remittance Flows: 2000–2013**

**Remittances Increasingly Sent to Middle-Income Nations**

*% of total world remittances by receiving countries*



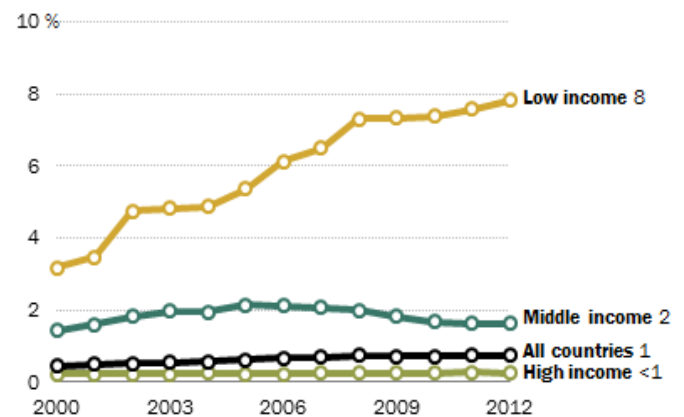
Note: Based on 137 countries with data for all years, which account for 93% of remittances in 2013.

Source: World Bank

PEW RESEARCH CENTER

**Remittances as Share of GDP**

*% of receiving countries' GDP*



Note: Includes 137 countries with data for all years.

Source: World Bank

PEW RESEARCH CENTER

By tracing the source and destination of remittances worldwide, the PEW Research Center found that most remittances flow to middle-income countries, defined as countries with per capita national income between \$1,036 and \$12,615 in 2012 dollars. Seventy-one percent of funds flow to middle-income countries compared to 23 percent for high-income countries and just 6 percent for low-income countries.

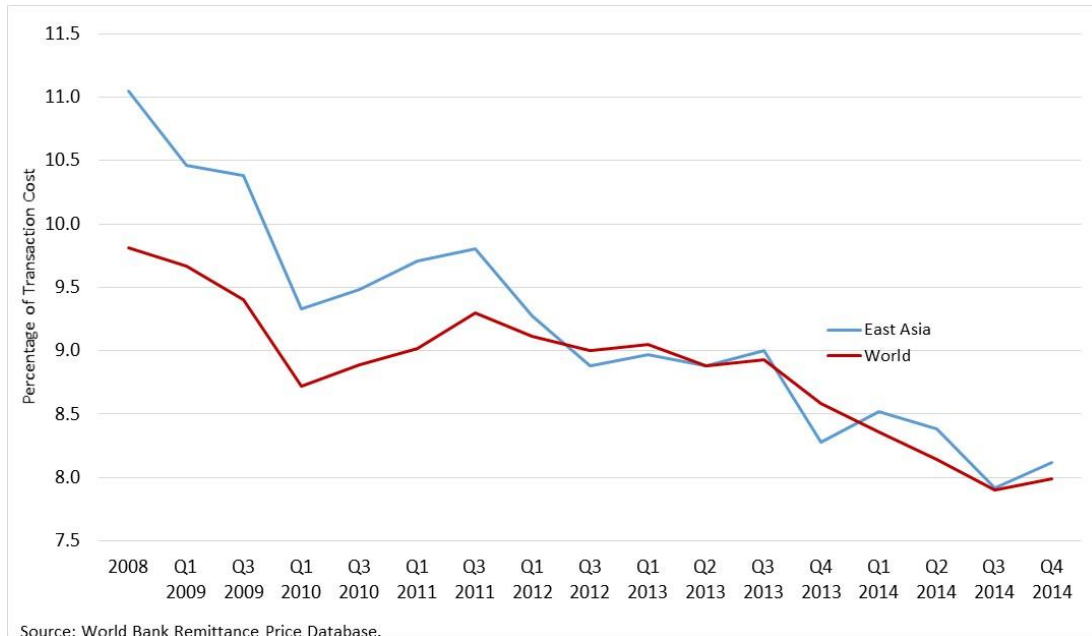
Although only 6 percent of remittances flow to low-income countries, these remittances often represent a large share of GDP for those countries. Overall, remittances were equal to 8 percent of total GDP for low-income countries compared to only 2 percent for middle-income and less than 1 percent for high-income countries. Remittances grew from just 3 percent of GDP for low-income countries in 2000 to 8 percent in 2012.



## Remittance Service Prices

The World Bank notes in its September 2014 *Remittance Prices Worldwide* issue<sup>2</sup> that the general trend worldwide is toward lower official transmission rates. The global average transmission rate fell below 8 percent for the first time in Q4 2014, to 7.9 percent. This compares to a rate of 8.93 percent in Q3 2013. As the rate of formal services declines, senders will increasingly utilize formal mechanisms, due to higher convenience and security, compared to informal channels.

**Figure 3: Weighted Average Cost of Remittances: Worldwide and for East Asia (2008–2014)**



**Figure 3** highlights the rapid decline in average remittance prices. The chart shows the world average remittance price as it declines from 9.8 percent of the transaction cost to less than 8 percent. The average remittance cost has declined more dramatically specifically for East Asia, where the Philippines is located. In this region, average formal remittance prices were above 11 percent in 2008 before falling to below 8 percent in 2014. This is a reduction of 3 percent, or about 27 percent over six years.

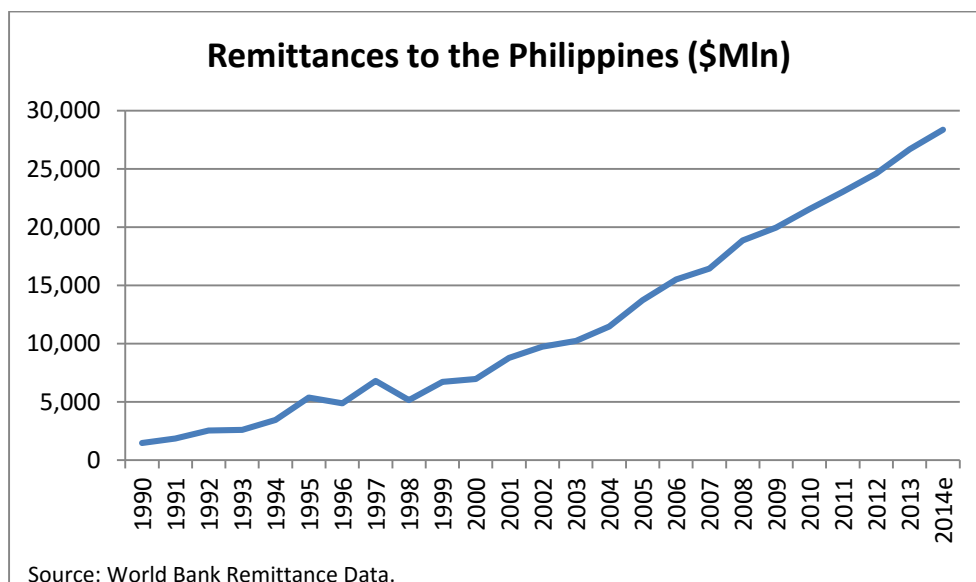
<sup>2</sup>See <http://remittanceprices.worldbank.org/> for the latest issue of the World Bank publication.

## Remittances to the Philippines

Remittance inflows to the Philippines have grown from \$1.46 billion in 1990 to \$26.7 billion in 2013, and are expected to be \$28.4 billion in 2014.<sup>3</sup> Remittances were equal to 9.3 percent of national GDP in 2013. The Philippines registered the third-highest total remittances in the world in 2012 according to the IMF. Total official remittances (classified by the IMF as BPM6) were \$26 billion. Only China and India, with much larger populations, had higher total remittance levels.

Remittances are well known to be a key component of the Philippine economy. The country actively encourages international migratory work, and the government has a national agency dedicated to the support and facilitation of international migratory work and incomes.<sup>4</sup>

**Figure 4: Remittances Inflows to the Philippines - Growing from US\$1.4 Billion in 1990 to US\$28.4 Billion in 2014.**



These figures represent officially transmitted remittances only. According to a report by the Asian Bankers Association and the Central Bank of the Philippines, informal remittances may contribute another 30–40 percent of foreign currency flows into the country, above the level of official transfers.

The Central Bank and other bankers dislike any proliferation of informal remittance agents who transfer funds through informal channels for lower fees than formal banks and transmission services

<sup>3</sup>Source: World Bank Remittance Data – Inflows, published October 2014, <http://go.worldbank.org/092X1CHHD0>.

<sup>4</sup>The office is called the Overseas Employment Administration.

can charge. However, informal transmissions may begin to slow as the cost of formal remittance costs declines.

### Western Union Facilitated Remittances in the Philippines

Western Union is the largest single remittance entity in the Philippines. Approximately 8,500 Western Union offices are located across the country. Table 1 compares total remittances in 2012 with remittances provided by Western Union.

**Table 1: Summary of National Remittances and Western Union’s Share of the Total (2012)**

Indicator	Amount	Units
Total remittances (USD)	26,000	Millions of USD
Total remittances (PHP)	1,092,000	Millions of PHP
Western Union Remittances:	4,700	Millions of USD
Western Union Remittances:	197,400	Millions of PHP
# of WU Affiliates:	8,500	Outlets, Nationwide
Gross national Income	10,564,886	Millions of PHP

Internal data provided by Western Union reveal that more than one-half million U.S. dollars are remitted through each office each year (\$552,941 in 2012 according to the data). This flow of income equals 1.9 percent of total gross national income in the country.

**Table 2: Western Union and Overall Role of Remittances on Gross National Income (2012)**

Indicator	Amount	Units
Average Remittance per WU Office:	552,941	U.S. Dollar (USD)
Average Remittance per WU Office:	23,223,529	Philippine Peso (PHP)
Total WU Remittances (Mln PHP)	197,400	Millions of PHP
WU Remittance share of GNI	1.9%	Percent
All remittance share of GNI	10.3%	Percent

Source: World Bank Remittances Group, Western Union proprietary information.

### THE ECONOMIC IMPACT OF REMITTANCES IN THE PHILIPPINES

The complex interaction between remittances and economic welfare can be sorted out using I-O and CGE modeling techniques. In this section, we quantify the impact of remittances, particularly Western Union remittances, on employment, wages, incomes, and welfare for the Philippines. The estimates are made at the national level.<sup>5</sup> The CGE model is also used to calculate what would

<sup>5</sup>Regional and local level effects are possible in some cases, provided sufficient local area data is available.

happen if the Philippine government decided to apply a tax on formal remittance transmissions. First, the section begins by calculating the employment impacts.

**Summary of Impacts**

The impact of spending that was facilitated through remittances handled by Western Union affiliates can be summarized using employment and output types of impacts. A full description of how remittances manifest themselves in the economy is available in our previous report. Below, three tables summarize the effects.

Based upon spending patterns and a Philipino Input-Output model, it was found that on-average, each Western Union affiliate facilitates money transfers that go on to finance 85 full time positions.

The average contribution of 85 jobs by each Western Union affiliate can be combined to find the total contribution of Western Union remittances for employment nationwide. At the end of 2012, approximately 8,500 affiliate offices were operating in the Philippines, which transmitted almost 25 percent of all remittances for the country and for which the subsequent spending by recipients generated approximately 720,825 full-time jobs in the country.

**Table 3: Employment Effects of Western Union Affiliate Remittances for the Philippines (2012)**

On average, ONE Western Union Affiliate finances the employment for:	<b>85</b>	<i>Full-time jobs in the local area</i>
There are	<b>8,500</b>	<i>Affiliate Offices in Philippines</i>
Combined, Western Union based remittances finance	<b>720,825</b>	<i>Full-time jobs in the Philippines</i>

Source: Based upon I-O derived employment multipliers derived by the National Economic and Development Authority (NEDA). See report for calculations.

The distribution of welfare gains was computed using the *R-CGE* model, a CGE model specifically designed to capture the effects of remittance spending for an economy. This distribution is shown in **Table 4**. The first column shows the average change in household income caused by the remittances. Remittances represent a large share of incomes for low-income deciles, even if the total remittance amount for these households is not large since base incomes are small to begin with.

**Table 4: Household Income and Welfare Effects for Remittance Recipients and Nonrecipients in the Philippines, (Western Union Remittances Only)**

Household Income Decile	Income Change (%)	Welfare Change (%)	Labor Supply (%)
1	20.1%	17.7%	-3.5%
2	17.0%	15.2%	-2.9%
3	21.0%	18.2%	-3.9%
4	14.4%	13.1%	-2.4%
5	11.5%	10.7%	-1.5%
6	3.2%	3.9%	0.6%
7	1.7%	2.1%	1.3%
8	-	0.2%	1.9%
9	-	0.0%	2.1%
10	-	-1.1%	2.5%
Average (1-6)	14.5%	13.1%	-2.3%
Average (7-10)	0.4%	0.3%	2.0%

Source: Author's estimates.

Labor Supply Elasticity 2.0

Welfare for these low-income deciles increases by less than the change in incomes; this is because prices have increased, and many recipients have shifted away from working into home-production, school, or other nonmarket activities. In decile 2, for example, average income has increased by 17.0 percent, but welfare has only increased by 15.2 percent. This reflects the price impact as the change in income is offset by slightly higher prices. At the same time, recipient households choose to work less as their income rises, further reducing real incomes and consumption.

Welfare gains grow compared to remittance income gains in middle and upper income deciles. Wage growth, as shown in Table 5 below, is larger than price increases, so that welfare can increase, even for households who receive little or no remittance incomes. The net benefit for the middle classes (deciles 6, 7, 8) lies between 0.2 percent and 3.9 percent. Only a small fraction of these gains are related to remittance income (1.7 percent to 3.2 percent) and most of the gains come from the higher wage. This higher wage entices nonremittance workers to supply slightly more labor (because wages are higher) and therefore enjoy higher incomes and welfare as a result.

The highest income decile is a net loser from national remittances. This cohort is the primary owner of capital in the country and also the owner of most factories that ship products overseas. The return to capital decreases slightly (by about 0.1 percent), caused by higher wage rates and by a stronger domestic currency, which makes Filipino exports slightly more expensive at world prices. The net impact is a 1.1 percent reduction in household welfare for the richest 10 percent of the population.

#### Labor Markets

We find that within recipient deciles the labor supply declines between 3.9 percent and 1.5 percent, depending upon the income decile and the level of remittances received. The change in labor supply

was presented in **Table 4**. Many of the recipients are in the lower income deciles, which is correlated with lower-skilled work. This is seen in the market wage rate as unskilled wages increase the most. Table 5 shows how wages are impacted by Western Union facilitated remittances.

**Table 5 : Labor Market Impacts of Western Union Remittances in the Philippines**

Labor Market	Change (%)
Unskilled Labor	5.2%
Semi-Skilled Labor	3.8%
Skilled Labor	4.9%

Source: Author estimates.

Labor supply elasticity: 2.0

Surprisingly, skilled labor wages increase slightly more than semi-skilled wages, possibly reflecting the fact that middle-income households may still have skilled labor supplies. Regardless of skill level, the clear impact is that wages increase. Higher wages are good for workers, raising household earnings for both remittance recipients and nonrecipients alike. However, as mentioned previously, the higher wages eventually increase the cost of goods and services in the economy. Finally, producers and factory owners will face higher costs as wages rise; this makes their goods less competitive on the world markets if they are exporters.

In the end, the benefits of higher incomes, increased output, and higher wages outweigh the inflationary pressures and the foreign-exchange disadvantage caused by the foreign currency inflows. This report shows that while there will always be downside risk associated with remittances, that at least for the case of the Philippines, the benefits are quantified and are found to be higher than the costs.

### ***Impact of Remittance Taxation***

The primary focus of this report is to explain how remittance taxes would impact the flow of transfers through official and informal channels, and how that affects the recipient country. Like before, the Philippines is used as the case-study example. The effect of taxation will differ across regions, depending upon the size of formal and informal channels, and also upon the elasticity of substitution between these two modes of transfers.

Taxing remittances in the Philippines is potentially lucrative. At \$26 billion USD, even a small tax of 1 percent might yield \$260 million for federal coffers. However, the demand for formal remittance services is highly elastic, which means that taxing it may yield less revenues than expected and potentially cause large economic distortions. Demand for formal remittances is elastic because there exist numerous “informal” or unregistered remittance services. These informal channels were at one time the predominant method for remitting funds home for foreign Filipino guest workers. As globalization and the internet have lowered the cost of formal transmissions, the share of informal remittances has declined. For example, the IMF estimates that remittances through the Hawala

system has declined from over 70 percent of total private remittances in 1981, to below 20 percent by the year 2000.<sup>6</sup>

However, even a small tax on formal remittance channels has the potential to reduce demand for formal channels significantly. We consider the revenue and economic impact of a 5 percent tax placed upon remittances that were transmitted by Western Union in 2012.<sup>7</sup> Most likely, a remittance tax would encompass all of the formal remittance channels; however, for convenience, the 2012 Western Union remittances, equal to approximately \$4.7 billion USD, are considered here.

As part of the analysis, we also consider the cost of government funds (CGF). The GCF is an indicator that compares the lost income by households to the revenue gained by the tax. A perfectly efficient tax has a cost of unity (1.0). This means that households only lose one dollar of consumption for one dollar of taxation. Most taxes have a GCF that lies between 1.5 and 3.0. If the GCF equals 2.0, this means that for each dollar of tax revenues households lose two dollars of income. How is this possible? Two dollars of income can be lost because one dollar is transferred to the government, while a second dollar is lost due to economic distortions caused by the tax itself.

Finally, the tax yield is also considered. The public and most policymakers usually assume a linear relationship for tax revenues. In doing so, they presume that a 10 percent tax would yield 10 percent of the tax base. However, this is naïve thinking.

Households and companies will always reallocate production and consumption in order to avoid the tax. For a tax base with a low elasticity of demand, the yield may lie between 80 percent and 90 percent, whereas with other tax bases with a high elasticity the yield can be as low as 30 percent. This implies that a 10 percent tax may collect as little as 3 percent of the original tax base in revenues as consumption or production shifts away from the tax base.

All of these indicators are presented in

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<sup>6</sup> See *"Informal Funds Transfer Systems: An Analysis of the Informal Hawala System,"* a joint report between the IMF and the World Bank. March 21, 2003. IMF Occasional Paper #2003-222.

<sup>7</sup> Note that a 5 percent tax is large. The 5 percent rate is used to provide a clear indication of different impact types. An auxiliary experiment using a smaller 2 percent tax found similar distortionary results, but revenue yields were slightly higher.

Table 6 and

Table 7. The first table shows the impact of a 5 percent tax under a “central” assumption, that the elasticity of substitution between formal and informal remittance channels is equal to 4. The second table,

Table 7, shows the same results under the assumption that the elasticity is higher, equal to 8. A third table shows the impact if the elasticity is low, equal to 2. We believe that the true elasticity of substitution lies somewhere between 4 and 8, so the results are bound between these two tables.



**Table 6: Impact of a 5 Percent Tax upon Formal Remittance in Philippines – Central Elasticity Assumption ('000 Pesos)**

Indicator	Benchmark	Scenario	Change
Formal Remittances	157,920	129,921	-17.7%
Informal Remittances	39,480	47,988	21.6%
Total Remittances	197,400	177,909	-9.9%
Formal/Informal Elasticity		4	
Gov. Revenues (PHP '000)		6,496	
Tax Yield (%)		82%	
Change in HH Income (PHP '000)		-16,700	
GCF (Revenues / Income):		-2.57	

Source: Author calculations using R-CGE model.

The first three rows of each table show the shift between formal and informal remittance services after the tax is imposed. Notice that in both cases not only do formal remittances decline, but total remittances also decline. This reflects the fact that some senders may simply become discouraged or choose not to send any remittances due to the higher cost.

**Table 7: Impact of a 5 Percent Tax upon Formal Remittance in Philippines – High Elasticity Assumption ('000 Pesos)**

Indicator	Benchmark	Scenario	Change
Formal Remittances	157,920	106,886	-32.3%
Informal Remittances	39,480	58,330	47.7%
Total Remittances	197,400	165,216	-16.3%
Formal/Informal Elasticity		8	
Gov. Revenues (PHP '000)		5,344	
Tax Yield (%)		68%	
Change in HH Income (PHP '000)		-27,581	
GCF (Revenues / Income):		-5.16	

Source: Authors calculations using R-CGE model.

Government revenues are ₱6.5 million when the elasticity equals 4, reflecting a tax yield of 82 percent. Revenues fall to ₱5.3 million when the elasticity is 8, reflecting a lower 68 percent yield.

Household income declines by ₱16.7 million when the elasticity equals 4, yielding a GCF of -2.57, which means that households lose ₱2.57 for each ₱1.0 of government funds. This cost increases to ₱5.16 if the elasticity of substitution equals 8.

Country experience has shown that the elasticity of substitution is typically low in the short run, because households cannot adjust immediately to price shocks and taxes. However, over time, the

so-called long-run elasticity can increase significantly as new services emerge that are designed to help consumers and firms to avoid the tax legally.

Finally, we consider a case where the ability to avoid formal remittance services is low. Here, an elasticity of substitution between formal and informal services is two (2). We believe this situation is unlikely, given the long history of informal remittances in most countries, but it is included as a “lower bound” for the economic cost of taxation.

**Table 8: Impact of Remittance Taxes Under Low Elasticity Assumption**

Indicator:	Benchmark	Scenario	Change
Formal Remittances	157,920	143,238	-9.3%
Informal Remittances	39,480	43,527	10.3%
Total Remittances	197,400	186,765	-5.4%
Formal/Informal Elasticity		2	
Gov. Revenues (PHP '000)		7,162	
Tax Yield (%)		91%	
Change in HH Income (PHP '000)		-9,111	
MCF (Revenues / Income):		-1.27	

Source: Authors calculations using R-CGE model.

If the elasticity of substitution is two, then the tax yield is relatively high, at 91 percent, and the cost of government funds would be low, equal to 1.27 pesos of lost income for each peso in tax revenue gained. Total remittances would only fall by 5.4 percent, and formal remittances would decline by just 9.3 percent. To be clear, this would be a “best case” scenario.

Our central assumption is that the elasticity of substitution is between 4 and 8. The true elasticity for each country depends upon the number of alternatives that exist to official (taxed) remittance methods. As more alternative finance methods exist, such as Hawala, Bitcoin, Pre-paid cards, and other methods, the elasticity of substitution will grow larger for that region.

The elasticity of substitution described here should not be confused with the price-elasticity of demand for remittances overall. The price-elasticity of demand for remittances is the change in total remittance demand compared to a unit change in price. Such an elasticity has been found to be relatively low, less than one. The elasticity of interest here, is the demand elasticity for (taxed) formal remittances only. This elasticity is much higher, because it includes *both*, the own-price elasticity of demand, *plus* the elasticity of substitution between alternative methods.

There has been a significant amount of research devoted to understand optimal pricing of payment services in general. For example, Humphrey, et. al. (World Bank, 1997), found while the overall elasticity of demand for payment services is very low ( from -0.9 to -0.26), the price-elasticity of substitution *among payment types* was very high (e.g., -4.13, as computed by the Bank of

International Settlements, 1995).<sup>8</sup> These findings suggest that a similar elasticity exists among payment types for remittance methods as well.

## Summary

Our findings suggest that while remittance taxes may appear attractive as a fast and stable source of government funds, they would generate substantial distortions, by encouraging parties to return to the old methods of informal Halawa transfers. Under our central assumption, a 5 percent tax on formal remittance transfers in the Philippines would cause total remittance inflows to decline by 9.9 percent. Formal transfers would fall by 17.7 percent while informal transfers rise by 21.6 percent. The general equilibrium model calculates that the tax yield would be relatively high, at 82 percent of the intended revenues, but that each Peso of additional revenue gained, would cost the average household 2.57 Pesos of lost income.

It should also be noted that explicit taxation is not the only policy that can discourage official remittance flows. Policy restrictions imposed within the *source country* can also discourage formal remittances in favor of informal channels. For example, the United States congress has considered a bill that would prohibit transfer services, such as Western Union, from transmitting funds unless the sending party can render valid, US government-issued identification. Such actions are likely to incur similar distortions as a remittance tax, but worse, they would yield no revenues for the recipient country, or the source country.

## REFERENCES AND ANNEX MATERIAL

Because most of the research produced in this report is documented in our previous report, the references and model documentation are omitted. Please consult our earlier work, *“Remittances in the Philippines: The Impact of Western Union Outlets”*, for a complete listing of references and model documentation.

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<sup>8</sup> See “Cost Recovery and Pricing of Payment Services: Theory, Methods, and Experience, Volume 1833,” by David B. Humphrey, Robert Keppler, Fernando Montes-Negret. World Bank Publications, 1997. Page #7, *Payment Price Elasticities*.