THE ROLE OF REMITTANCES ON THE BUSINESS CYCLE: THE CASE OF THE PHILIPPINES

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1. Introduction

Remittance flows to developing countries increased considerably in the last decades. According to estimates of the "Migration and Development Brief" (World Bank, 2015) remittances reached the amount of 436 billion dollars in 2014.

Their relevance has made them the subject of several studies aimed to examine the impact on the various aspects related to the process of growth of the recipient countries.

Many studies have considered the positive impact of remittances on poverty reduction (Adams and Page, 2003), on consumption, on the process of multiplication of income, on the markets expansion, on the expectations of economic agents and on investments (Glytsos, 2002; Ratha 2003; Orozco 2004; Zarate-Hoyos, 2004; Kapur, 2005; Wahaba, 2005); on capital formation (Giuliano, Ruiz-Arranz, 2005; Wahaba, 2005); on the banking and credit system (Aggarwal, Demirguc-Kunt, Martinez Peria, 2006); on growth (Faini, 2002; Chami, 2003); on human capital formation (Cox Ureta, 2003; Yang, 2006); on balance of payments (Glytsos, 2002; Oecd, 2006); on the business cycle (Agarwal, Horowitz, 2002; Osili, 2007; Kapur, 2005; Rapoport, Docquier, 2005; Julian Ruiz-Arranz, 2005) and so forth.

Several studies, however, have considered different panels of countries reaching different conclusions: some studies have emphasized the positive effects of remittances, while others have focused on the negative effects. Indeed, these conclusions cannot always be generalized.

The impact of remittances on countries’ economies depends on their specificity: their structural characteristics, the importance of migrations, the degree of commercial opening, etc. In such perspective, the present study deals with the case of the Philippines, considering the impact of remittances on the business cycle.

The choice of the Philippines is motivated by some of its characteristics that make it an interesting case study: the country presents strong migration outflows that feed relevant remittance inflows, making it the world's third largest destination of migrants transfers; the fact that the currency inflows resulting from remittances
substantially exceed those related to aids and other forms of movements of capitals; the circumstance that the country has been affected by two important crisis (the Asian crisis in 1997 and the most recent in 2008).

In particular our study, after a brief examination of the role of remittances in developing countries, will examine the relationship between migrants transfers and business cycle focusing on the main theoretical reasons that justify the sending of remittances. The analysis will be carried out, at first, according to a correlation analysis and, then, using a covariance model.

2. The relevance of remittances in developing countries

According to the IMF, remittances are the sum of “personal transfers, that consist of all current transfers in cash or in kind, made or received by resident households to or from nonresident households, and compensation of employees, that refers to the income of border, seasonal and other short term workers who are employed in an economy where they are not resident and of residents employed by nonresident entities”. However, these data underestimate the real extent of the phenomenon because, in this definition, money transfers that occur through informal channels are not included: such flows fluctuate, in many cases, between 10% and 50% percent of the total remittances of certain countries (Demaria, 2007).

In 2013 remittances to developing countries reached the amount of 420 billion dollars, with an average growth in the last eight years by more than 11%, despite the reduction in flows of about 5% recorded in 2009, caused by the extension to the world of the US financial crisis (World Bank, WDI 2014).

Considering a classification of countries in low income, low-middle income and upper middle income countries, it results (Figure 1a) that those with lower middle income are the major recipients of remittances, followed by the upper middle income countries and, finally, those with low income. This dynamic seems to reflect that of migration flows and, in particular, the well-known phenomenon of migration curve that implies the existence of a functional relationship between income level and intensity of migrations (Schiff, 1995).

In particular, the amount of the flows is lower in correspondence of lower income countries; it grows with income up to a maximum, then it starts to decrease when income grows further and it becomes very low in countries with high income levels. The underlying logic of such relationship is that migrants should be able to afford the costs of the migration, both in economic terms and in terms of greater knowledge and education. Therefore, the intensity of migration flows will be greater in countries with a medium growth rates and smaller in heavy industrialized
countries or underdeveloped ones. Obviously, this also effects the dynamics of remittances.

**Figure 1:** Distribution of remittances for classes of income of developing countries (b) and for geographical area (b) in 2013.

![Distribution chart](image)

Source: World Bank, World Development Indicators 2014

As shown in Figure 1b, South-East Asia was in 2013 the region that received the largest flow of remittances (more than 50% of total remittances to developing countries). Some of the major receiving countries (India, China, the Philippines, Bangladesh, Pakistan and Indonesia) are located in this area. In particular, India, China and the Philippines were, along with Mexico, the main recipients of remittances in 2013.

Since the end of the 90’s remittances have ensured to developing countries (considered as a whole), a flow of currency second only to that resulting from foreign direct investments (FDI), as shown in Figure 2. Furthermore, remittances have proved to be a stable source of foreign currency. While portfolio investments and foreign direct investments tend to grow during a positive cycle and decrease in periods of recession, migrants’ transfers react less strongly to the fluctuations of the business cycle. Visually, this effect is clearly depicted in Figure 2. It is worth noticing that, after the shock of 2008, portfolio investment and FDI have fallen sharply, while only a mild contraction in remittances has been registered.
In the group of developing countries, however, it is possible to select a subset where remittances have been the main source of foreign exchange reserves, namely: India, Philippines, Nigeria, Egypt, Pakistan, Vietnam, Ukraine, Indonesia, Morocco. In the rest of the paper we will focus our attention on the case of the Philippines.

3. The role of remittances in the Philippines

The migration phenomenon regarding the Philippines has grown strongly over the last thirty years. In 2013 nearly 6 million Filipinos, equal to 5.5% of the total population, have emigrated.

According to the 2011 Survey of Overseas Workers it is evident that migrations affect especially the younger part of the population: about 30% of the population between 25 and 40 years of age is working abroad. In addition, the percentage of high skilled workers has increased over time. In particular, in the period from 2000 to 2010 it has risen from 7% to 12%, although the majority are still low-skilled workers.

Considering the geographical composition of host countries where the remittances have been originated (Figure 3a), the USA is the main country of origin of flows (42% of total inflows), followed by the Gulf countries (16%), Europe (17%), Asia (13%) and Canada (10%) (IMF Country Reports, 2013).
The relevance of the migration phenomenon makes the Philippines the world's third largest recipient country of remittances (see, Fig. 3b); in 2014 they exceeded $28 billion, equal to 9.81% of GDP and of 23% of exports. In addition, as shown in Figure 4a, remittances are the largest source of foreign exchange, far exceeding FDI and portfolio investments.

Figure 3 – Origin countries of Filipinos’ remittances in 2011 (a) and top recipient developing countries (b). (Billions $)

![Remittances Map](image)

Source: World Bank, World Development Indicators 2014

Therefore, the migrants transfers play an important role in the process of economic growth, even though, as noted by Ang (2007), it did not affect equally all regions of the Philippines.

Our study, however, mainly focuses on the relationship between remittances and the business cycle. Our interest stems from the peculiar history of the Philippines being the country that has suffered less the effects of the 1997 Asian crisis compared to other involved economies, suggesting the possibility that the transfers of migrants may have played a stabilizing role on the business cycle.

It is worth noticing, in this regard, how the foreign exchange inflows associated with remittances helped to offset the capital outflows regarding portfolio investment and FDI, unlike what happened in other countries that suffered the same economic crisis (Fig. 4b).

Moreover, while other countries affected by the crisis (Indonesia, Malaysia, South Korea, Thailand) experienced steep capital outflows, in the Philippines such outflows were much lower (Figure 4b). This result, according to the IMF, can be attributed to the role of remittances that have anchored investors’ confidence, stabilizing the flow of capitals (IMF, 2013).
4. Remittances and business cycle in Philippines

In a study about Botswana, Lucas and Stark (1985) used a microeconomic approach to identify two main reasons justifying the flows of remittances: pure altruism, pure self-interest.

In the case of pure altruism, migrants send back part of their income abroad to improve the living conditions and alleviate the economic hardship of the families left behind in their home countries.

An alternative motivation, in the case of self-interest, states that monetary transfers are dictated by their need to protect property left at home or to make investments in houses, lands or small businesses, in the perspective of their return. This case is also known as “attachment to homeland”

The prevalence of one motivation over the other plays a key role in the impact of remittances on the business cycle.

1 An intermediate situation between pure altruism and self-interest consists in enlightened self-interest. This model considers the relationship between the migrant and his family as a sort of implicit contractual agreement, where the emigration is a Pareto efficient situation and remittances are a mechanism to distribute their benefits. The model has been declined in various versions (Stark, 1991; Townsend, 1994; Poirine, 1997; Ilahi e Jafarey, 1999; Agarwal e Horowitz, 2002; Gubert, 2002, Marzovilla, Mele, 2015).
Remittances have a counter-cyclical effect if the altruistic motivation is prevailing. In particular, if their main determinant is to meet the families’ needs, they can increase in times of crisis, helping to reduce the volatility of GDP and stabilizing the cycle (Agarwal, Horowitz, 2002; Osili, 2007; Kapur, 2005; Rapoport, Docquier 2006).

Remittances can have a pro-cyclical effect if the motivation of self-interest prevails. In particular, they may increase in the favorable phases of the economic cycle, stimulated by the more optimistic expectations on the country’s economic situation, and they may decrease in those adverse, with the worsening of the expectations. Therefore, in the self-interest scenario, remittances would have a destabilizing effect, deepening of cyclical waves (Giuliano, Ruiz-Arranz, 2005).

With reference to the Philippines, Tuano-Amador et al. (2007), found a positive correlation between GDP and remittances by applying the Hodrick-Prescott filter to the historical series of the values of the GDP and remittances for the period 1989-2007 and by correlating the cyclic components of the filtered values. They obtained a correlation coefficient equal to 0.119 which seems to endorse the prevalence of a self-interest motivation w.r.t. remittances in the Philippines during the considered time frame.

**Figure 5** – *Business cycle of remittances (rem) and GDP, 1977-2013.*

Following the same approach we will apply the Hodrick-Prescott filter to the time series for the GDP and remittances in the Philippines for the 1977-2013 period, determining the correlation between the filtered values (see Fig. 5). The
annual data have been obtained from the World Bank database and have been depicted in logarithmic scale.

A correlation coefficient of 0.496 between the two time series seems to confirm the results already found by Tuano-Amador et al. (2007), suggesting the presence of a pro-cyclical effect in the Philippines during the considered time period. The overall correlation coefficient, over the time span of 36 years, is a synthesis of what seems to be different types of interdependences as displayed in Figure 5. Namely, the pro-cyclic effect is clearly marked in the first part of the graph (from the 80s to the late 90s) while the same effect does not seem to be so clear-cut in the right-hand side of the plot.

The possible change in the effect of GDP on remittances over the years should then be studied and it will be the focus of the next Section of the paper.

5. Remittances and business cycle in the Philippines: an empirical analysis

To study more in detail the effect of variations of GDP on fluctuations of remittances, a covariance model has been applied. The basic idea is that variations on GDP could influence the variations in the remittances. Such an influence can be caused either by an altruistic driver (negative correlation), implying a stabilizing effect of the remittances on the GDP, or by an individualist driver (positive correlation), implying a deepening effect on the cyclical wave. Starting from Figure 5 we have allowed for a structural break in the effect of GDP on remittance. This has been achieved introducing an interaction term in the linear model with a dummy variable which indicates whether the year the data refers to is prior or post a certain date. Various time cut-points have been considered and only the one that provided the best fitting was retained:

\[ rem_t = a + b \cdot gd_p_t \cdot I_{(cutpoint)} + \epsilon_t \]  

Where \( I_{(cutpoint)} \) is an indicator variable equal to 1 if the year is greater than “cutpoint” and zero otherwise. The model providing the best fit was the one with cutpoint=1999. The parameter estimates for such model have been displayed in Table 1, together with their estimated standard errors and p-values.

Prior to 1999 there is a pro-cyclic significant effect of GDP on remittances. Positive fluctuations in the GDP tend to produce a positive fluctuation on remittances. The presence of the interaction term suggests that such a dependence changes abruptly after 1999, maintaining almost the same strength (the variation on remittances is roughly twice that on the GDP on the log scale) but with an opposite sign.
Table 1: OLS results for model (1)

<table>
<thead>
<tr>
<th></th>
<th>estimate</th>
<th>Std. error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\hat{a}$</td>
<td>-0.002861</td>
<td>0.018294</td>
<td>0.876790</td>
</tr>
<tr>
<td>$\hat{b}$</td>
<td>2.338093</td>
<td>0.626129</td>
<td>0.000788</td>
</tr>
<tr>
<td>$I(1999)$</td>
<td>0.004881</td>
<td>0.028527</td>
<td>0.865283</td>
</tr>
<tr>
<td>$b: I(1999)$</td>
<td>-4.135377</td>
<td>2.160456</td>
<td>0.065186</td>
</tr>
</tbody>
</table>

The data suggest that the behavior of Filipino expats w.r.t. remittances has changed in the time span considered in this analysis. Namely the Filipinos have been principally driven by a self-interest motivation prior to the 1997/98 crisis. Following that date there has been a change in their behavior, and it can be noticed in the reversal of the sign of the estimate of the regression parameter. Fluctuations in remittances have had a counter cyclical effect after the crisis, suggesting an altruistic behavior and therefore a stabilizing effect on the business cycle. This evidence shows that the motivation of who sends remittances can change depending on the economic contingency.

6. Conclusions

The high volume of remittances plays a fundamental role for the Philippines economy and the underlying motivations for their sending can play a key role on their impact on the business cycle. If the altruistic motivation prevails, remittances can have a counter cyclical effect; if the self-interest motivation prevails, they can have a pro-cyclical effect.

Although the correlation analysis for the period 1977-2013 has shown the existence of a pro-cyclic effect on GDP, suggesting the idea of the prevalence of a self-interest motivation, the subsequent use of covariance model has shown, however, that the entire observational period can be divided in two different phases, in which the behaviors of migrants have changed.

Namely the Filipinos have been principally driven by a self-interest motivation prior to the 1997/98 crisis, accentuating the expansive phase of the economic cycle. During the economic crisis their behavior has shifted, resulting in more remittances during the bad phases of the economic cycle and therefore resulting in a stabilizing effect on the economy.

The main conclusion is that the reasons that prompt migrants to transfer money can change over the time and adapt to the particular moment in time, according to the economic situation of the country.
This also implies that analyzing long time spans can result in the overlooking of some interesting aspects and effects that a more refined analysis based on shorter time span would show.

References


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SUMMARY

The role of remittances on the business cycle: the case of the Philippines

This study examines the effect of remittances on the business cycle of the Philippines from 1977 to 2013. The relation between the two time series will be considered on the basis of two main theoretical justifications: pure altruism, pure self-interest.

In the case of pure altruism, migrants send part of their income abroad to improve the living conditions of the families left behind in their home countries. In the case of self-interest, monetary transfers are dictated by the need to protect property left at home or to make investments in homes, lands or small businesses, in view of an eventual return back home. The prevalence of one motivation over the other plays a key role in the impact of remittances on the business cycle. If the altruistic motivation is prevailing, remittances have a counter-cyclical effect. If the motivation of self-interest prevails remittances can have a pro-cyclical effect.

Our study, using a covariance model, comes to the conclusion that the reason that pushes migrants to send remittances may change over time according to the economic situation of their home-country and that the consideration of long periods of time, on the basis of a simple correlation analysis, can mask out the existence of different types of behaviors.

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