

The Transfer of the Remittance Fee from the Migrant to the Household

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Abstract

This paper discusses the problem of increasing remittances. It is often argued that the remittance fee needs to be lowered to increase remittances. We show that remittances become larger by increasing the receiving fee whereas they become larger by reducing the sending fee. We also show that, by transferring the sending fee from the migrant to the household, remittances become larger than those without transfer. It is shown that for this purpose the home country's government can collect the sending fee from the household as taxes, and to pay it to the migrant as a subsidy.

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1. Introduction

In this paper, we discuss the problem of increasing the amount of remittances, assuming a simplified economy in which a representative migrant working in the host country sends part of his wages to a representative household in the home country as remittances. We are going to show that the home country can realize a larger amount of remittances by transferring the remittance fee from the migrant to the household.

Today, the amount of remittances is increasing very rapidly, and numerous studies have been conducted on remittances. Among them, the motives for, and the use of, remittances have been most contentious. Debates on these issues are not likely to be conclusive.¹

In spite of this, remittances have become one of the most important sources of external financing for many developing countries. According to Ratha (2005), remittance flows rank

¹ Many researchers argue for various motives. In addition to altruism and self-interest, motives such as co-insurance between migrants and households, or repayment of a loan from their families, are also considered to explain the reasons for sending remittances. Different motives are, of course, not mutually exclusive. See Lucas and Stark (1985), Rapoport and Docquier (2006), and Ruiz and Vargas-Silva (2009) for the motives for sending remittances. There are two major arguments regarding the use of remittances. One group of studies, e.g., Durand et al. (1996), Taylor (1999), Woodruff and Zenteno (2001), argues that a significant part of remittances is used for investment and development purposes. Another group of studies, e.g., Massey and Parrado (1994), Koc and Onan (2004), Semyonov and Gorodzeisky (2008), argues that most of remittances are used for consumption and non-development purposes.

behind foreign direct investment (FDI) as a source of external funding for developing countries. Remittances contribute substantially to the development of the economy and the alleviation of poverty. They are used as capital for investment. They are also an important source of funds for low-income households. Many households often depend on them to cover day-to-day living expenses and to provide a cushion against emergencies. We can infer from these facts that remittances have positive effects on the home country of migrants.²

Accordingly, many developing countries are actually attempting to increase remittances, and international organizations such as the World Bank are also promoting remittances.³

There is widespread recognition that in order to increase remittances we should lower the remittance fee. According to Ratha (2005), the average cost of transferring remittances is in the range of 9.5 per cent, and this is due to weakness in the financial sector. To increase remittances, Ratha (2005) argued that the financial sector should be strengthened. Specific

² However, remittances may also have some unpleasant consequences. For example, remittances may impair the household's incentive to work (Amuedo-Dorantes and Pozo, 2006). Negative outcomes also arise from asymmetric information about the household's effort between migrants and households (Chami et al., 2005), or from the presence of moral hazard (Naiditch and Vranceanu, 2009).

³ This does not mean that increasing the amount of remittances is not without problems. There are people who abuse remittances. Remittances may be larger because of increases in money laundering and terrorism financing. In addition, increases in informal remittances will prevent the deepening of the home country's financial system.

policy recommendations for increasing remittances were provided by Ratha and Riedberg (2005). De Luna Martínez (2005) argued that both remittance-sending and remittance-receiving countries must make efforts to reduce the remittance fee, and that co-ordination for this purpose between the authorities of these countries is necessary. Brown (2006) and Carling (2008) also advocated fee reduction. Freund and Spatafora (2008) empirically confirmed the negative effects of the remittance cost on the amount of remittances. Moreover, faced with the declining estimates on remittance flows to developing countries in 2009, Ratha stated in the press release of the World Bank (2009) that reducing remittance fees and developing innovative tools to leverage remittances for financial inclusion and capital market access are necessary as a part of our response to the financial crisis.

Remittance fees are usually classified into two kinds; fees that migrants must pay for sending remittances and the fees that households must pay for receiving remittances. These fees are likely to have different effects on remittances, depending on the relationship between migrants and households.

Many of previous studies were implicitly referring to the sending fee. However, except for De Luna Martínez (2005), they have not clearly specified which fee should be lowered. Moreover, even if lowering the fee is the most appropriate policy, it is not easy to implement. This is not only because the home country's government cannot directly control the fee set by the private financial institutions, but also because changing the fee will affect the utility and the profits of the agents involved in sending and receiving remittances. Their interests are not always consistent.

Therefore, in this paper we explicitly distinguish between the sending fee and the

receiving fee, and we investigate how these fees affect remittances. By doing so, we try to find a way to increase the amount of remittances without affecting the utilities and the profits of the agents involved.

We find that remittances decrease with the sending fee but increase with the receiving fee. We also find that the home country can increase the amount of remittances by transferring the sending fee from the migrant to the household. Since such a transfer does not affect the interests of agents, the home country's government can realize this by collecting the sending fee from the household as taxes, and paying it to the migrant as a subsidy.

The remainder of this paper proceeds as follows. In Section 2, we model an economy consisting of a representative migrant and a representative household. In Section 3, we first consider the problem of maximizing remittances without assuming the transfer of the fees. We then consider the same problem under the transfer. In Section 4, we present concluding remarks.

2. The Model

This section models an economy in which migrants work in the host country and send remittances, and households remain in the home country and receive remittances.

The representative migrant earns income by \bar{Y}_M^* in the host country's currency. Hereafter, the uppercase letters with (without) an asterisk are expressed in the host (home) country's currency. \bar{Y}_M^* is given exogenously and does not change throughout the analysis. The representative migrant sends remittances to his household. We assume that migrants are altruistic towards households, and that at the same time they are seeking their self-interest. Accordingly, remittances are made for both altruistic and self-interest motives.

The amount of remittances R^* ($< \bar{Y}_M^*$) is determined by the representative migrant to maximize his utility.

The representative household earns income by \bar{Y}_H before receiving remittances, and spends part of the remitted money on its present consumption, and the rest on investment for the migrant's future consumption, as specified by the representative migrant.⁴ In particular, the ratio $1-k$, where k is a constant and $0 < k < 1$, of remittances after paying the receiving fee, is spent on the household's present consumption and the ratio k is spent on the migrant's investment.

Households care about the well-being of migrants, i.e. they are also altruistic towards migrants. Accordingly, as assumed in the first chapter of Stark (1995), migrants and households are mutually altruistic.

Remittances are made through formal channels, and migrants and households have to pay a fee to send and receive remittances. We denote the sending fee and the receiving fee by \bar{C}_M^* and \bar{C}_H , respectively. We give the sending fee and the receiving fee exogenously, independently of the amount of the remittances. We also give the exchange rate e , which is defined as the home country's currency price of the host country's currency, exogenously.⁵ Moreover, the exchange rate is assumed to be unique, suggesting that there

⁴ Even if the representative migrant cannot control the investment ratio precisely, and the actual investment ratio is thereby different from the specified ratio by the migrant, the main results of this paper remain unchanged.

⁵ This is a simplifying assumption. In general, remittances affect the exchange rate, and the exchange rate affects remittances. Solimano (2003) mentioned the so-called 'Dutch disease'

is no exchange spread.

From these assumptions, the income of the representative migrant after sending remittances can be represented as $\bar{Y}_M^* - R^* - \bar{C}_M^*$. The migrant spends all of this on the present consumption in the host country. Remittances after paying the receiving fee are divided into investment for the migrant's future consumption $k(eR^* - \bar{C}_H)$ and the household's present consumption $(1-k)(eR^* - \bar{C}_H)$. The household spends its earned income as well as part of remittances $\bar{Y}_H + (1-k)e(R^* - \bar{C}_H/e)$ on its present consumption.

We represent the direct utility of the representative migrant V_M as follows:

$$V_M(\bar{Y}_M^* - R^* - \bar{C}_M^*, ke(R^* - \bar{C}_H/e)), V_{M1}, V_{M2} > 0, V_{M11}, V_{M22} < 0, V_{M12} > 0.$$

Present consumption and future consumption both increase the direct utility, marginal utilities are decreasing, and present consumption and future consumption are complements, in the sense that $V_{M12} > 0$.

effect. There is a tendency for the real exchange rate to appreciate in countries receiving substantial remittances. This has negative impacts on non-tradable exports and the development of the tradable goods sector. Similarly, Amuedo-Dorantes and Pozo (2004) found that remittances have the potential to appreciate the real exchange rate in the receiving economies, thereby reducing the competitiveness of their exported goods in the international economy. On the other hand, Faini (1994) showed that the real exchange rate affects the long-run desired level of workers' remittances. Yang (2008) found that, during the 1997 Asian financial crisis, the appreciation of the migrant's currency against the Philippine peso led to increases in Philippine households' remittance receipts.

On the other hand, the direct utility of the representative household V_H depends only on its present consumption.

$$V_H(\bar{Y}_H + (1-k)e(R^* - \bar{C}_H/e)), \quad V'_H > 0, \quad V''_H < 0.$$

Present consumption increases the direct utility, and the marginal utility is decreasing.

Since, as assumed already, migrants and households are mutually altruistic, the utility of the representative migrant U_M depends not only on his direct utility, but also on the utility of the representative household. Similarly, the household utility U_H depends not only on its direct utility, but also on the utility of the representative migrant. Accordingly, the utility of the representative migrant and the utility of the representative household can be expressed as follows:

$$U_M = (1 - \beta_M)V_M + \beta_M U_H, \quad (1m)$$

$$U_H = (1 - \beta_H)V_H + \beta_H U_M, \quad (1h)$$

where β_M , $0 < \beta_M < 1$, is the weight that the representative migrant places on the utility of the representative household, and β_H , $0 < \beta_H < 1$, is the weight that the representative household places on the utility of the representative migrant.

We solve Equations (1m) and (1h) for V_M and V_H .

$$U_M = (1 - \alpha_M)V_M + \alpha_M V_H, \quad (2m)$$

$$U_H = (1 - \alpha_H)V_H + \alpha_H V_M, \quad (2h)$$

where $\alpha_M = \frac{\beta_M(1 - \beta_H)}{1 - \beta_M\beta_H}$, $\alpha_H = \frac{\beta_H(1 - \beta_M)}{1 - \beta_M\beta_H}$ and $0 < \alpha_M < 1$, $0 < \alpha_H < 1$.

3. Effects of the Remittance Fee and Its Transfer

This section first examines the effects of the remittance fee on the amount of remittances

and on the interests of agents involved without assuming a transfer of the remittance fee, and then discusses the maximization of remittances under the transfer.

To begin with, we deal with the case in which migrants bear the entire fee needed to send remittances, and households bear the entire fee needed to receive remittances i.e., the case without the transfer.

As assumed already, the representative migrant determines the amount of remittances in such a manner as to maximize his utility. Making dU_M/dR^* equal to zero, we obtain,

$$-(1-\alpha_M)V_{M1} + (1-\alpha_M)V_{M2}ke + \alpha_M V_H'(1-k)e = 0 . \quad (3)$$

The second-order condition that d^2U_M/dR^{*2} is negative is satisfied.

We totally differentiate Equation (3) to derive the effects of the sending fee and the receiving fee on remittances.

$$\frac{dR^*}{d\bar{C}_M} = -\frac{A}{A+B} , \quad (4)$$

$$\frac{dR^*}{d(\bar{C}_H/e)} = \frac{B}{A+B} , \quad (5)$$

where

$$A \equiv (1-\alpha_M)V_{M11} - (1-\alpha_M)V_{M21}ke ,$$

$$B \equiv -(1-\alpha_M)V_{M12}ke + (1-\alpha_M)V_{M22}k^2e^2 + \alpha_M(1-k)^2e^2V_H'' .$$

Since $A, B < 0$, Equation (4) suggests that the amount of remittances is decreasing with the sending fee. Consequently, the sending fee should be reduced if we are to increase the amount of remittances. This result is in line with the arguments made by many researchers.

Reducing the sending fee is beneficial to both the migrant and the household. This is because the income of the representative migrant after sending remittances, investment made by the representative household for the migrant's future consumption, and the income

of the representative household spent on its present consumption become larger as the sending fee decreases.⁶ This suggests that the migrant and the household will agree to reduce the sending fee.

On the other hand, reducing the sending fee is likely to have negative impacts on the sending agents in the host country because they it might reduce their profits. This suggests that the sending agents would not readily agree to reduce the sending fee, even if they were asked to do so by the home country's government.

We can infer from these considerations that even if the home country's government is able to control the sending fee directly, it will be difficult to reduce it because the interests of agents involved are not consistent.

According to Equation (5), the amount of remittances increases with the receiving fee. This can be explained as follows. With a larger receiving fee, the household's present consumption and investment for the migrant's future consumption become smaller, leading to the lower direct utilities of the household and the migrant. In order to avoid reducing the utilities, the migrant has to increase remittances. The arguments made by many researchers do not apply to the case of the receiving fee because we have to *increase* the fee to make the amount of remittances larger.

Although increasing the receiving fee may be beneficial to the paying agents in the home country, it has negative impacts on the migrant and the household. This is because remittances in terms of the home country's currency after paying the receiving fee become smaller with increases in the receiving fee, which leads to the lower amounts of investment

⁶ $d(\bar{Y}_M^* - R^* - \bar{C}_M^*)/d\bar{C}_M^* = -B/(A + B) < 0$.

made by the household for the migrant's future consumption and the present consumption by the household.⁷ Moreover, the migrant's income after sending remittances decreases with the receiving fee.⁸ These make the migrant's utility and the household's utility lower. Accordingly, migrants and households will not agree to raise the receiving fee even if the paying agents will agree to it.

Similar to the case of the sending fee, even if it is technically possible for the home country's government to manipulate the receiving fee, it cannot easily increase remittances by raising the fee because the interests of agents involved are not consistent.

We found that, by controlling the sending fee and the receiving fee in a different manner, we can increase remittances. However, we also found that, due to the conflicts of interests among agents, the home country's government cannot easily manipulate these fees. Therefore, the manipulation of remittance fees will not be practical as a mean of increasing the amount of remittances.

Then, how can we increase remittances? We now turn to the case in which the sending fee and the receiving fee can be transferred between the migrant and the household. In other words, we deal with the case in which the migrant bears part or all of the receiving fee, as well as the sending fee, or the household bears part or all of the sending fee, as well as the receiving fee.

To examine the effects of the transfer of the sending fee and the receiving fee on the amount of remittances, we assume that the representative migrant and the representative

⁷ $d[e\{R^* - (\bar{C}_H/e)\}]/d\bar{C}_H = -A/(A+B) < 0$.

⁸ $d(\bar{Y}_M^* - R^* - \bar{C}_M^*)/d\bar{C}_H = \{-B/(A+B)\}(1/e) < 0$.

household bear the ratio θ and the ratio $1-\theta$ of the total fee $\bar{C}_M^* + \bar{C}_H/e (\equiv \bar{C}^*)$, respectively, where θ is $0 \leq \theta \leq 1$.

Under this assumption, the utility of the representative migrant \tilde{U}_M under the transfer and the utility of the representative household \tilde{U}_H under the transfer are expressed as follows:

$$\tilde{U}_M = (1 - \alpha_M)\tilde{V}_M + \alpha_M\tilde{V}_H, \quad (6m)$$

$$\tilde{U}_H = (1 - \alpha_H)\tilde{V}_H + \alpha_H\tilde{V}_M, \quad (6h)$$

where

$$\tilde{V}_M = \tilde{V}_M(\bar{Y}_M^* - R^* - \theta\bar{C}^*, ke(R^* - (1-\theta)\bar{C}^*)), \quad \tilde{V}_{Mi} = V_{Mi}, \quad \tilde{V}_{Mij} = V_{Mij}, \quad i, j = 1, 2,$$

$$\tilde{V}_H = \tilde{V}_H(\bar{Y}_H + (1-k)e(R^* - (1-\theta)\bar{C}^*)), \quad \tilde{V}'_H = V'_H, \quad \tilde{V}''_H = V''_H.$$

The representative migrant tries to maximize his utility by manipulating the amount of remittances. Making $d\tilde{U}_M/dR^*$ equal to zero, we obtain,

$$-(1 - \alpha_M)\tilde{V}_{M1} + (1 - \alpha_M)\tilde{V}_{M2}ke + \alpha_M\tilde{V}'_H(1 - k)e = 0. \quad (7)$$

The second-order condition that $d^2\tilde{U}_M/dR^{*2}$ is negative is satisfied.

Totally differentiating Equation (7), the effects of θ on remittances are derived as follows:

$$\frac{dR^*}{d\theta} = -\bar{C}^*. \quad (8)$$

According to Equation (8), the amount of remittances decreases with θ , and is thereby maximized when θ is equal to zero, i.e. when the migrant does not pay the sending fee and the household pays both the sending and the receiving fees. The reason can be understood by remembering that under no transfer, the amount of remittances decreases with the sending fee and increases with the receiving fee (see Equations 4 and 5). We can realize this

by transferring the sending fee from the migrant to the household.

When there is no transfer, the representative migrant pays the sending fee, which is equal to $\bar{C}_M^*/(\bar{C}_M^* + \bar{C}_H/e)$ of the total fee. Accordingly, θ is positive under no transfer. However, if we allow for the transfer, as mentioned, remittances become larger by making θ equal to zero. Therefore, the amount of remittances is larger with the transfer than without any transfer.

The home country's government may be able to realize such a transfer by collecting the sending fee from the household as taxes, and paying it to the migrant as a subsidy. By doing so, we can make the household bear the sending fee and the receiving fee. However, if anyone involved in the transfer would lower the utility or the profits, the government could not realize such a transfer.

Under the transfer, even if the total fee is shared in the different ratios, the income of the representative migrant after sending remittances does not change, and remittances after paying the fee do not change. Accordingly, the migrant's utility and the household's utility do not depend on the way the total fee is shared by these agents. Moreover, the sending agents are able to collect the same amount of the fee as under no transfer, and the paying agents are also able to collect the same amount of the fee as under no transfer. As a result, no one will disagree to the transfer of the sending fee from the migrant to the household through taxes and a subsidy.

Therefore, we can conclude that the home country's government can realize a transfer of the sending fee from the migrant to the household by collecting the sending fee from the household as taxes, and paying it to the migrant as a subsidy, and by doing so, we can attain the larger amount of remittances.

Summarizing the results derived in this section, reducing the fee does not necessarily increase the amount of remittances. The sending fee and the receiving fee have opposite effects on the amount of remittances. Moreover, manipulation of each fee has different impacts on the interests of agents involved in sending and receiving remittances. Accordingly, even if the home country's government is able to control the fees perfectly, it will be difficult to manipulate them to increase remittances. However, by transferring the sending fee from the migrant to the household through taxes and a subsidy, we can increase the amount of remittances without manipulating the fees and thereby without affecting the interests of all agents.

4. Concluding Remarks

We showed that, by transferring the sending fee from the migrant to the household, the home country can receive a larger amount of remittances. Since such a transfer does not change the utilities and the profits of agents involved, it is feasible for the home country's government to impose taxes on the household to collect the sending fee, and to pay it to the migrant as a subsidy to implement the transfer.

Many researchers argue that the remittance fee should be lowered. However, they are not distinguishing between the sending fee and the receiving fee explicitly. According to our investigation, to increase remittances, we have to manipulate the sending fee and the receiving fee in a different manner. However, in actual economies, the home country's government cannot control these fees perfectly. Moreover, as our model predicts, changing the fees really has conflicting impacts on the interests of agents. These considerations suggest that transferring the sending fee from the migrant to the household is more effective

than manipulating the fees to increase remittances.

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