



## Remittance and domestic labor productivity: Evidence from remittance recipient countries



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### ABSTRACT

For countries with significant labor force like China, India, Bangladesh, Pakistan etc. any long-run growth strategy should focus on augmenting the domestic labor productivity. The advents of globalization and factor mobility have given a recipe to reap up gains from labor abundance for most of the labor abundant countries by strategically converting abundant labor into capital. However, remittance inflow may become counterproductive strategy for growth, if it is viewed within the work–leisure framework. Using heterogeneous non-stationary panel data with cross-sectional bias this empirical study explores the best-fitted estimator to explain remittance and labor productivity dynamics for 61 top remittance recipient countries of the world. Our results suggest that though remittance has a positive impact on domestic labor productivity for countries with higher size of remittance inflow and abundant labor force; however, there is new evidence that such impact diminishes after certain level. Moreover, such result does not hold for countries with higher remittance-share of GDP.

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### 1. Introduction

Since Levitt (1983) coined the term ‘globalization of the market’, it was not only Coke or Pepsi but also human kind of skilled, semi-skilled, and unskilled that irrespectively found new opportunities in new markets. Migrant workers especially from countries like Africa, Asia, Eastern Europe, Latin and Central America, and Central Asia started to move to America, Europe and Middle East for better life and opportunities. Today the size of global remittance is \$414 billion with a growth rate of 6.3% and KSA and USA alone reimburse around \$75 billion to the rest of the world as remittance payment (World Bank, 2013). According to World Bank (2013), developing countries received about 75% of global remittances and supplied 80% of the global migrant workers in 2013.

In understanding the nature, causes and consequences of remittance, though Stark (1991) posits that there exists no general theory of remittances; however, Lucas and Stark (1985), Poirine (1997) and others have nicely explain the economic reasons for such an enormous increase in the global flow of remittances. Lucas and Stark (1985) termed the motivations to remit as ‘tempered altruism’ and ‘enlightened self-interest’

phenomenon and state’....*certainly the most obvious motive for remitting is pure altruism-the care of a migrant for those left behind. Indeed, this appears to be the single notion underlying much of the remittance literature*. Besides, Lucas and Stark (1985) also suggest that migrants may have investment that is needed to be taken care of while they are away, so they will ask their family members to work as an agent, and the remittance represents both a compensation for the agents and a principal for investment need. While, Poirine (1997) considered remittances within a family loan agreement structure, a phenomenon where the family finances the migration of some of its family member. Remittance, therefore, is the installment to repay such loan.

No matter why remittance inflows, there is a wider economic and social impact of remittances on both the recipient and sending countries. Although a number of empirics over the last two decades have shed light on the impact of remittance, a very few of them have explored the possibility that remittances and domestic labor productivity may be integrated. Therefore, given the increasing size of global remittance flow, a study on remittances and labor productivity merits investigation for a number of reasons: First, literatures over the last two decades have shed light on the impact of remittance inflow by focusing on some particular areas of interest. These include remittances and financial development (Aggarwal et al., 2010; Nyamongo and Misati, 2011; Shahbaz et al., 2007), remittances and sustainable economic development like welfare effect (Adam and Page, 2005; Adams, 1993; Gupta et al., 2009; Siddiqui and Kemal, 2006); economic growth effect

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(Nyamongo et al., 2012; Taylor and Wyatt, 1996); increasing consumption effect (Quartey and Blankson, 2004); human capital formation (Edwards and Ureta, 2003; Hanson and Woodruff, 2003); remittances and education and schooling (Calero et al., 2008; Adams and Cuezuecha, 2010); remittances and Dutch disease (Acosta et al., 2009; Bourdet and Falck, 2006; Lartey et al., 2008; Vargas-Silva, 2009 etc.), remittances and real exchange behavior (Amuedo-Dorantes and Pozo, 2004; Chami et al., 2003) etc.

Studies on remittances and financial development conclude that remittances transferred through the formal financial channel affect its growth by standardizing the local banking sector up to the international standard following global practices (Aggarwal et al., 2010; Nyamongo and Misati, 2011; Shahbaz et al., 2007). Studies on remittances and socio-economic development like Gupta et al. (2009), Siddiqui and Kemal (2006), Insights (2006) and Adam and Page (2005) argued that remittances have both a welfare effect (via directly alleviating poverty of the recipient family) since the 'really deprived' householders are more likely to engage in international migration, and they end up with relatively 'better-off' position with remittances (Adams, 1993; Stark and Taylor, 1989). Adam and Page (2005) in a comprehensive study using 71 developing countries data concluded that both international migration and remittances significantly reduce the level, depth, and severity of poverty in the developing countries. Quartey and Blankson (2004) report that remittances are counter-cyclical, and very effective in maintaining a smooth household's consumption, continuous welfare especially for the most disadvantageous group of people. Gupta et al. (2009) working with Sub-Saharan African data also documents direct poverty-mitigating effect of remittance. Giuliano and Ruiz-Arranz (2009), and Jongwanich (2007) unveil that the impact of remittances is prominent in developing countries with a higher level of poverty and lower level of financial development. Besides, Edwards and Ureta (2003) and Hanson and Woodruff (2003) find evidence for 'forward' linkages between remittances and human capital formation i.e. human capital development (Calero et al., 2008; Adams and Cuezuecha, 2010) in Latin America. Nyamongo et al. (2012) document a positive economic growth effect of remittance in 36 African countries.

The above empirics suggest that there is a study gap in the literature in the context of the possible effect of remittances on domestic labor productivity for the recipient countries. Though Bayangos and Jansen (2011) using the experience of Philippines showed a significant positive effect of remittances on the domestic labor market and its competitiveness; however, the study does not account the effect of remittances on the labor productivity. Besides, McCormick and Wahba (2001) in their theoretical model presents a complete utility maximizing decision process to migration; however, the study failed to account the fact that an optimum decision must compensate the lost production at home due to potential high under-employment, an appreciation of the real exchange rate causing the so-called Dutch disease effect (Acosta et al., 2009; Bourdet and Falck, 2006; Lartey et al., 2008; Vargas-Silva, 2009). Furthermore, McCormick and Wahba's (2001) decision process is applicable only at microlevel, and it does not consider the impact of remittances on domestic labor productivity for the recipient countries at macrolevel.

Second, most remittance recipient countries are low and middle income countries. The use of remittances may lead to reduction of further earning requirements of the migrant's family members (Nath and Mamun, 2010). In fact, remittances are a non-wage income and a substitute for wage income. So, using a labor-leisure framework, it can be shown that with an increase in remittance receipt households substitute labor with leisure. This may lead to low domestic labor participation and employment (Airolo, 2008; Amuedo-Dorantes and Pozo, 2004; Bussolo and Medvedev, 2007; Rodriguez and Tiongson, 2001) leading to high under-employment and low labor productivity especially in labor intensive countries. Besides, there is a strong economic argument that the remittances may have a negative impact on economic growth especially when remittance inflow appreciates local currency against foreign currencies and thus reduces the international competitiveness of the

domestic products (Amuedo-Dorantes and Pozo, 2004; Chami et al., 2003). The appreciations of local currency can also lead to increased consumption of foreign goods by local consumers creating an environment where local industrial production will be replaced by the foreign products. So, remittances can reduce local productivity including the productivity of the labor force. Thus, the apparent gain from remittances may itself become counterproductive for most of the countries. We would like to test these possibilities.

Third, remittance can also generate employment domestically through the reinvestment of remittances-induced national savings, capital accumulation, and investment. So, there are direct, trickle down, and indirect benefits of remittances for many of the developing countries. Barai (2012) also points that the development impacts of remittances on economy and society are affected by the manner that remittances are used. Alternatively, remittances can optimize the existing sub-optimum labor-capital ratio; therefore, given the level or stock of technical knowledge, remittances can augment total domestic productivity including the productivity of domestic labor force. This argument is consistent with Solow's (1957) classical growth model. It is important to note that most of the remittance recipient countries share some common characteristic i.e. abundance of labor forces (i.e. India, China, Pakistan, Bangladesh, Indonesia, etc.), as well as shortage of capital; therefore, any long-run growth strategy for these countries must be based on augmenting the long-run productivity of these labor forces. Migration generally reduces the size of the labor force in the domestic market while remittances increase the capital stock of these economies. Therefore, it has the potential to convert strategically the abundant labor force into capital and optimize the suboptimal capital-labor ratio for most of these countries. Based on this argument, one can predict that remittance can significantly improve the domestic labor productivity. Moreover, most of the remittance recipient countries compete internationally against one another to take the lion share of the global size of remittances. Thus, it is natural that these competitions will lead to a type of cross-sectional dependence among them in terms of the size of remittance flow. Despite these appealing and contradictory conceptual arguments mentioned above, there is hardly any study undertaken to explore the long-run impact of remittances on domestic labor productivity in top remittance earning countries with abundant labor force. This study fills this empirical vacuum.

In the next section, we present a conceptual framework in establishing the remittance and labor productivity linkage. In Section 3, we describe our data and present the methodology consistent with the nature of data set. We present the results of remittance-labor productivity nexus under various scenarios in Section 4. Section 5 presents the summary and conclusion of our paper, while Section 6 presents the policy implication of our paper.

## 2. Conceptual framework

The influence of remittance on domestic labor productivity can be explained by the Cobb–Douglas production function,  $Y = F(K, AL)$ . Where  $Y$  = Output,  $K$  = capital stock (fixed capital formation plus remittance are regarded the proxy of capital) and  $L$  = Labor. Following Romer (2006), it is assumed that labor of these sample countries as effective labor ( $AL$ ) since most of these economies are open economies and modern technologies are readily available to improve the knowledge stock of the domestic labors. Thus, the output from per unit of the effective labor is given as:

$$\frac{Y}{AL} = F\left(\frac{K}{AL}, \frac{AL}{AL}\right) = F\left(\frac{K}{AL}, 1\right) \quad (1)$$

where  $\frac{Y}{AL}$  = output per unit of effective labor and  $\frac{K}{AL}$  capital per unit of effective labor. Let's denote  $y = \frac{Y}{AL}$ ,  $k = \frac{K}{AL}$ , and, hence it can be rewritten as  $y = f(k)$ . Moreover, output per unit of labor  $\frac{Y}{AL}$  depends on amount of

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