Macroeconomic effects of international remittances: The case of developing economies

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A B S T R A C T

Over the past few decades international workers' remittances have significantly contributed to the foreign exchange reserves of the developing countries. While these household level remittance flows have often been associated with poverty alleviation, positive welfare gains and even as an alternate source of development finance, a detailed study of the effects of these flows on a remittance-dependent small developing economy, however shows counterintuitive results. The paper applies the Dutch Disease theory to explain the effects of remittances on the economy and introduces a micro–macro framework to establish channels of transmission of remittances through the economy. The paper shows that international remittances, by altering the household budget constraint, have a direct impact on the micro level household decision making, primarily with respect to the consumption and labor supply decisions. These when aggregated give rise to significant adjustments in the macro level production functions and consumption behaviors, leading to a decline in the output, particularly of the trading sector and an adverse impact on the external sector of the economy.

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1. Introduction

The past few decades has witnessed a surge in international capital flows into the developing countries. This has motivated extensive research on examining the impact of these flows on these economies. While on the one hand these flows aid in economic advancement through cushioning balance of payment deficits, they also impart a sense of dependency in the economies, making them vulnerable to external shocks and crises.

The studies on international capital flows often adopt a broad macroeconomic framework to explain the economic consequences of these flows on the recipient economies. Reinhart and Reinhart (2008) study the impact of capital inflow ‘bonanzas’ in both advanced and emerging economies during 1980–2007 for 181 countries and 1960–2007 for a subset of 66 economies from all regions. They found that such ‘bonanzas’ in developing countries are often associated with pro-cyclical fiscal policies and attempts to curb or avoid an exchange rate appreciation, and very likely contributing to economic vulnerability. In all the cases exchange rate appreciation turns out to be the most prominent outcome of international capital flows. High levels of capital inflows result in higher levels of domestic absorption, which bring about an appreciation in the exchange rates (Athukorala and Rajapatirana, 2003).

One of the important sources of foreign exchange for the developing countries is the International Workers' Remittances. In the last two decades international remittances to the developing countries have increased by more than 300%. While the earlier literature on remittances mostly looked at the social development and welfare improvement effects of remittances, given its large scale, studies are now more focussed on the macroeconomic impact of these flows. This has paved the way for extensive research on the macroeconomic implications of remittances. In recent times, given the magnitude of remittances received by the developing countries vis-a-vis the GDP of the countries, researchers are skeptical about the developmental impact of remittances. The increasing magnitude of remittances causes a boom in the foreign exchange receipts of the country, which is similar to the ‘resource boom’ phenomena, giving rise to ‘Dutch Disease’ type of effects, i.e., increased remittances leading to real exchange rate appreciation, causing the tradable sector of the economy to collapse and hence resulting in a loss of external competitiveness of the country.

This paper uses the premises of the ‘Dutch Disease’ Theory and situates itself in the context of developing countries. However, instead of looking at the direct implications of international remittances on the real exchange rate adjustments, the paper establishes the macroeconomic channels through which the effects of remittances get transmitted through the economy. Such an approach is essential while studying the impact of remittances precisely because remittances are household level flows. The macroeconomic effects of remittances primarily stem from two micro-decision making processes. Firstly, on the demand side remittances have a direct impact on the households' consumption behavior and, secondly, on the supply side they alter the labor supply decision of the households. Thus the paper explains the two channels of remittance transmission, i.e., the consumption channel...
and the labor channel, and eventually their impact on the economic
growth.

The analysis is divided in two parts. In the first part develops a
general equilibrium model in the static framework to explain the
transmission process and derives comparative statics for the decision
variables with respect to a change in remittance inflows. In the sec-
ond part the paper converts the static model into a dynamic model
by constructing a dynamic stochastic general equilibrium (DGSE)
model of the transmission mechanism and solves it for a small open
remittance-dependent economy. The simulation results indicate that
remittances give rise to Dutch Disease type of effect through two
channels – the consumption channel and the inter-sectoral labor
adjustment channel. In an economy with two-sectors, traded and non-
traded, an increase in remittances leads to an increase in the
consumption levels in both the sectors, this leads to an increase in
the relative price of the non-traded sector, thus causing the labor to
reallocate from the traded sector into the non-traded sector. This
eventually leads to a fall in the output of the traded sector, causing
the traded sector to contract and thus the country losing its external
competitiveness.

The paper is organized in seven sections. Section 2 explains the
concept of resource boom and Dutch Disease in the context of
international remittance flows. Section 3 provides the theoretical
background of the model and explains the channels of transmissions
in a static framework. Section 4 formulates the model in the dynamic
framework and constructs a DGSE model, which is then simulated for
the Bangladesh economy. The choice of Bangladesh as a reference
country is motivated by two factors. Firstly, being one of the top ten
remittance receiving countries, it fits into our framework of a small
open economy, with remittances as an important source of foreign
exchange transfers. Secondly, apart from being a small economy,
Bangladesh economy is also quite homogenous in terms of the
industries. This makes it possible to distinctly divide the economy
into traded and non-traded sectors, and increases the generalizability
of the model across all developing countries with similar dependence
on remittances. Section 5 highlights the role of international
remittances in Bangladesh economy. Section 6 then estimates the
model using Bayesian calibration method and generates the impulse
response functions of the macro parameters to a shock in the
remittances. Section 7 summarizes the paper and highlights the policy
conclusions for managing and absorbing international remittance
flows.

2. Dutch Disease effects of remittances

It is often found that countries rich in natural resources are vulner-
able to macroeconomic volatility and structural change. Paradoxically,
as explained by Auty (1993), it was found that countries rich in natural
resources were unable to utilize their wealth to promote economic ac-
tivity, instead their large deposits of resources led to rent-seeking and
other unproductive activities, which along with a deficient political
system often led to a deterioration in their economic growth. This,
called the ‘Resource Curse’ thesis has been confirmed through many
studies, one notably being the study by Sachs and Warner (1995),
where they document a statistically significant, inverse association
between natural resource and growth, even after controlling for a
large number of additional variables that other studies have claimed
to be important in explaining cross-country growth.

The most direct impact of a resource boom is deindustrialization of
the traditional, export-oriented sector. One of the most prominent
examples of such a phenomenon is that of the Netherlands. Following
natural gas discovery in the Netherlands in 1959, there was a sharp
decline in the traditional manufacturing sector of that country. This
triggered a major exchange rate appreciation and the country lost
its external competitiveness. Eventually the economy went on a
slower growth trajectory. This phenomenon was termed as ‘Dutch
Disease’ by The Economist (26 Nov, 1977). One of the first studies
in this area was done by Gregory (1976) where he analyzed the effect
of the mineral boom in Australia on other export and import-
competing sectors. His study indicates that with the rapid growth of
the mineral sector, the price ratio of traded to non-traded goods
declines, thus shrinking the traded sector.

One of the first attempts to model the Dutch Disease phenomenon
was by Corden and Neary (1982). They explained the mechanics of the
Dutch Disease as occurring through two effects – the spending effect
and the resource movement effect. The model assumes an economy
which operates in two sectors – tradable (T) and the non-tradable
(NT) sectors. The T-sector further comprises the booming sector (the
natural gas sector as in the case of the Netherlands) and the lagging
sector (the manufacturing sector). Labor is assumed to be fully mobile
across both sectors while capital is sector-specific. The resource boom
causes factor income in the booming sector to rise leading to increased
demand for both T and NT commodities. The excess demand in the NT
sector gives rise to an increase in the price level. Since the price level of
the T sector is determined by the world price level, for a small open
economy it remains unchanged. This leads to an appreciation of the
real exchange rate. This is termed as the spending effect. Again, the in-
crease in the price of the NT sector pulls in more labor into the NT sec-
tor, out of the T sector. This leads to de-industrialization of the T sector,
causi ng the T sector to contract. This is the resource movement effect.

Though the Dutch Disease is associated with a boom in natural re-
sources, similar framework can be adopted to study the macroeconom-
ic impact of international remittances. It can be shown that under the
assumptions of exogenous, altruistically motivated, household level
international remittances, any increase in remittances would have an
impact similar to that of a resource boom, but through a different
mechanism. The literature on the Dutch Disease effect of remittances
is quite sparse. Most of the existing studies consider real exchange
rate appreciation as indicative of Dutch Disease and test the same in
the presence of remittance. One such study by Amuedo-Dorantes and
Pozo (2004), where they studied the impact of workers’ remittances
on the real exchange rate of 13 Latin American and Caribbean
countries, confirmed that remittances did reduce international
competitiveness through the appreciation of the real exchange rate.
Following this, many studies have shown similar findings for other re-
mittance receiving regions. Lopez et al. (2007) extended the work done
by Amuedo-Dorantes and Pozo by introducing a much larger data set of
Latin American countries and found that surges in workers’ remit-
tances do contribute to real exchange rate appreciation, taking into
account country differentials.

While the above studies empirically show the existence of Dutch
Disease due to international remittances, there is a dearth of literature
on the general equilibrium analysis of the macroeconomic implications
of remittances. Very few studies have attempted a holistic approach for
identifying the channels through which remittances affect the macro-
economic parameters. Remittances being a household level flow have
strong microeconomic foundations. Right from sending remittances
to how they are utilized locally are decisions taken by the respective
households. Thus while analyzing the macroeconomic impact of remit-
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tances, it is important to introduce these micro-foundations in the
model.

In one such study Chami et al. (2006) have adopted a unifying
framework to assess the effect of remittances on the decisions of
the economic agents and the impact of their decisions on the recipi-
ent economy at large. They construct an optimizing model and
bring in the business cycle literature to explain the effect of counter-
cyclical remittance shocks on consumption, savings and out-
put. Acosta et al. (2007) have undertaken similar analysis by using
Bayesian methods on El Salvador data and estimated the Dutch Dis-
ease effect. They examined three cases: one where remittances are
completely exogenously determined, second, where remittances are
counter-cyclical and third where remittances are endogenous. In
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