



Contents lists available at ScienceDirect

## International Review of Economics and Finance

journal homepage: [www.elsevier.com/locate/iref](http://www.elsevier.com/locate/iref)

## Financial flows and per capita income in developing countries

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## ARTICLE INFO

## Article history:

Received 29 April 2013

Received in revised form 16 October 2014

Accepted 16 October 2014

Available online 27 October 2014

## JEL classification:

F21

G15

O15

O23

## Keywords:

FDI

Remittances

Official development aid

Developing countries

Panel data analysis

## ABSTRACT

Using country level panel data over the period 1970–2011, this paper evaluates the direct as well as indirect impact of three types of financial flows (foreign direct investment, remittances and official development aid) on the per capita income of a group of low and middle income countries. The empirical results suggest that the direct effect of official development aid in developing countries is mostly negative. This conclusion also holds when the sample is divided into different regions. All three estimation techniques used (i.e., Ordinary Least Squares, panel fixed effects and system Generalised Method of Moments) yield broadly similar results. We find that official development aid and government spending are complementary and hence, depending on the level of effectiveness of government spending programs, official development aid can have an indirect positive impact on income per capita. On the other hand, both remittances and foreign direct investment appear to have a direct positive and statistically significant effect on per capita income.

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## 1. Introduction

Weak institutions, lack of appropriate infrastructure and capital are among a number of problems faced by developing countries which account for widespread poverty and poor living standards. International financial flows into developing countries are an important source of funds through which these constraints can be reduced to some extent. These flows include inward foreign direct investment (FDI), remittance inflows and official development aid (ODA) receipts. An increase in international financial flows into developing countries can promote economic growth and increase per capita income through a number of channels. Financial flows augment domestic savings, enhance domestic productivity through the transfer of managerial skills and technological know-how, promote financial development, and contribute towards the development of physical infrastructure. The surge in financial flows into the developing countries, due to the increased pace of globalization, has spurred growth in some countries but not in others. This has given rise to debate among economists as to the benefits of these flows for developing nations. Accordingly, the main aim of this paper is to investigate specifically the effects of FDI, remittances and ODA on the per capita incomes of a group of low and middle income economies.

While a number of studies have examined the impact of FDI, remittances and ODA separately on economic growth, few studies have focused on the impact of all three sources of foreign funds. Therefore the present study contributes to the literature by examining

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the impact of all three flows on per capita income. While all three types of flows have the potential to increase per-capita income and promote economic growth, they differ in nature (Ghosh, 2006). ODA is an official flow transacted by source and host governments. FDI mostly involves the movement of private sector capital across international boundaries, which creates jobs in host economies, whereas remittances are private transfers received by households. Accordingly, FDI and ODA have the potential to increase per-capita income primarily through the supply side. In other words, FDI and ODA can increase the effectiveness of government spending, institutional quality, and the stock of human capital.<sup>2</sup> On the other hand, remittances have the potential to increase per-capita income through the demand side—i.e., by increasing household income and access to finance. The existing literature suggests that remittances promote growth in developing countries with better institutions (Catrinescu, Leon-Ledesma, Piracha, & Quillin, 2009) and promote financial literacy (Brown, Carmignani, & Fayad, 2011). Therefore, a second contribution of this paper is to examine how the effectiveness of government spending (Roberts, 2003), institutional quality (Burnside & Dollar, 2000), financial sector development (Cooray, 2012; Giuliano & Ruiz-Arranz, 2009) and human capital (Cooray, 2012) influence the impact of financial flows on the per capita income of the group of countries examined.<sup>3</sup>

An examination of the data for 2010, as shown in Fig. 1, suggests that international financial flows vary considerably across geographical regions. Sub-Saharan Africa is the largest recipient of ODA. The proportion of ODA going to Europe and Central Asia, East Asia and the Pacific is very small in comparison. In recent years, remittances have become an important source of foreign exchange to a number of developing countries. Remittances inflow into developing countries increased from US\$81.3 billion in 2000 to US\$325.5 billion in 2010 (MRFB, 2011). As shown in Fig. 1, South Asia is the largest recipient of remittances. Recent decades have also witnessed a rapid increase in foreign direct investment (FDI) inflows to developing countries. The developing economies of Asia alone have experienced an increase in inward FDI from US\$100 billion in 2002 to US\$423 billion in 2011 (UNCTAD, 2012). The regions receiving the largest proportion of FDI are (i) the Middle East and North Africa and (ii) Europe and Central Asia. Given this significant variation in the distribution of financial flows across regions, a third contribution of this paper is to investigate the effect of these flows on per capita income at a regional level.

The empirical results presented in this paper are based on country level panel data over the period 1970–2011. The empirical model is estimated using three different statistical techniques: Ordinary Least Squares (OLS), panel fixed effects and panel system Generalised Method of Moments (GMM). The estimated results are tested for robustness by employing (i) additional control variables that capture a range of possible determinants of income per capita, and (ii) several interaction terms.

We find that ODA has a negative but insignificant impact on per capita income. On the other hand, both FDI and remittances are positively related to per capita income. Government spending and ODA are found to be complementary. Institutional quality, government expenditure and human capital tend to enhance the effect of FDI on income per capita. The estimated results also suggest that both financial development and human capital enhance the positive impact of remittances on income per capita.

The rest of this paper is structured as follows. Section 2 provides a brief review of the related literature. An empirical model is specified in Section 3. Section 4 contains a description of the data and methodology. Empirical results are presented in Section 5. Section 6 offers some concluding remarks.

## 2. Review of the related literature

The growth impact of financial flows (FDI, ODA and remittances) has been subject to much debate. A number of studies have shown that FDI inflows enhance economic growth and FDI-related spillovers boost productivity. Borensztein, De Gregorio, and Lee (1998) argue that countries with higher absorption capacity (as measured by a minimum threshold level of human capital) can gain greater benefits from FDI inflows. Similarly, Li and Liu (2005) conclude that FDI promotes growth in developing countries not only directly but also indirectly through its interaction with human capital. This is also supported by Kokko (1994) who argues that positive spillover effects of foreign investment on home country firms are larger (i) the higher the educational levels of the labor force, (ii) the greater the level of competition and (iii) the lower the entry requirements on foreign entrants.<sup>4</sup> Alfaro, Chanda, Kalemli-Ozan, and Sayek (2004) show that FDI contributes to growth in countries with better developed financial markets. They argue that well developed financial markets permit agents to benefit from knowledge spillovers arising from FDI. Hermes and Lensink (2003) put forward similar arguments.<sup>5</sup> They suggest that a well-developed financial system in host economies is an important prerequisite for FDI to have a positive impact on economic growth. They further argue that better developed financial systems facilitate the process of technological spillovers associated with FDI. Nair-Reichert and Weinhold (2001), employing panel data estimation methods to allow for heterogeneity across countries, find some evidence of a positive relationship between FDI and economic growth. They argue that countries with relatively more open economies derive greater benefits from FDI. This finding is also supported by Balasubramanyam, Salisu, and Dapsford (1999) who argue that trade openness is vital for FDI to have a positive effect on economic growth. However, Carkovic and Levie (2002) find that FDI does not have a robust, independent effect on economic growth.

The empirical evidence on the impact of ODA/aid on various outcome variables is found to be mixed. Doucouliagos and Paldam (2010), in a meta-analysis of the effectiveness of aid, conclude that the effect of aid on economic growth is positive but not statistically

<sup>2</sup> ODA is often earmarked for initiatives that, among other things, promote education, improve healthcare and develop infrastructure. FDI can also lead to access to new technologies and improved management skills (Kokko, 1994).

<sup>3</sup> In a different context, the role of institutional quality and financial development is also highlighted by Kirch and Terra (2012).

<sup>4</sup> A large number of studies have reported similar results. For example, see Anwar (2008), Sun (2009) and Suyanto and Salim (2013).

<sup>5</sup> Other related studies that consider aspects of financial sector include Anwar and Sun (2011), Anwar and Cooray (2012), Cakici (2012), Yalta and Yalta (2012), Gehringer (2013) and Huang, Fang and Miller (2014).

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