Remittances and their Macroeconomic Impact

Evidence from Africa

Mthuli Ncube and Zuzana Brixiova

Key points

- Over the past decade, remittances sent to Africa through formal channels have grown rapidly, driven by increased migration and reduced transaction costs.
- In 2010 and 2011, remittances exceeded foreign direct investment and official development aid by almost 90 percent and were the fastest growing source of foreign exchange for Africa.
- Official figures do not capture the full remittance volume – unrecorded remittances, sent to the continent informally, are estimated to amount to up to 75 percent of the recorded flows.
- In Egypt, an evaluation of the impact of remittances shows that flows have had a favourable impact on the sustainability of public debt.

Introduction

After decades of slow pace, Africa's growth accelerated during 2000–2012. Currently, the continent is one of the fastest growing in the world. Concomitant with the growth take-off were changes in net private capital inflows, especially FDI, and remittances: FDI and remittance inflows tripled during 2000–2008 and continue to outperform official aid in the aftermath of the global financial crisis. This high growth, as well as rising

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FDI and remittance inflows, in addition to debt relief, contributed to reducing Africa's debt burden. In contrast to the late 1990s, many African countries today are thus characterised by low or moderate risk of debt distress. Besides favourable external conditions, improved macroeconomic policies and the business environment in Africa contributed to these positive developments.

While Africa's growth has been broad-based – with more than 60% of countries growing on average at 4% or more a year during 2000–2012 – marked differences have emerged across subgroups and countries (AfDB *et al.* 2013; see also Table 1 and Appendix 1). The drivers of growth also varied. For example, during the post-crisis recovery, growth in oil exporters, frontier markets and fragile states was mostly due to domestic demand, especially private consumption and investment (see Table 2 and Appendix 1). In contrast, external demand drove growth in these groups in the past as well as in other low-income countries after the crisis. The increased role of domestic demand, together with rising remittances thus points to the probable contribution of these transfers to Africa's recovery.

Remittances are typically defined as unrequited, non-market financial transfers between individuals living in different countries, mostly associated with migration (see, for example, Chami *et al.* 2008; Barbone *et al.* 2012).[1] Over the past decade, remittances sent to Africa and to other developing countries through formal channels grew rapidly, driven by increased migration and reduced transaction costs. Currently, remittances are the largest international flow of financial resources to Africa (AfDB *et al.* 2013). They are often the 'finance of the last resort' in low-income countries and a source of financial diversification in middle-income ones (Julca 2012). Official figures are far from capturing the full remittance volume – unrecorded remittances, sent to the continent informally, are estimated to amount to up to 75% of the recorded flows – above the global ratio (Freund & Spatafora 2005; Gupta *et al.* 2007, 2009).

The increased financial weight of remittances in external flows to Africa, and the positive role that remittances can play in Africa's development, have brought about a heightened attention to the topic among

[1] Since 2009, the IMF balance of payment records remittances as: (i) compensations of employees; that is, the gross earnings of workers residing abroad for less than 12 months, including the value of in-kind benefits; and (ii) personal transfers, which are the value of monetary transfers sent home by workers residing abroad for more than one year. The income of short-term migrants (abroad for less than 12 months) is included in the definition.

policymakers. Still, Africa has received limited attention in the recent literature on remittances, probably because of its relatively small – albeit rising – share in global remittances received. Research on the macroeconomic aspects of remittance inflow has been particularly sparse, creating a gap in the literature. Yet, for Africa's policymakers, understanding the determinants and impact of this source of foreign exchange and income is key to bringing their countries onto a path of high and inclusive growth.

This paper contributes to closing this knowledge gap and adds to the growing stream of literature on remittances and development by: (1) highlighting the recent macroeconomic trends, properties and determinants of remittance inflows to Africa; (2) pointing out the role that remittances can play in closing the resource gap in Africa; and (3) analysing the impact of remittances on debt sustainability in a selected African country (Egypt). By focusing on the external balance and debt sustainability aspects of remittances, the paper complements the literature on the impact of remittances on income distribution and poverty reduction.

The rest of the paper is organised as follows. After this introduction, the next section examines trends, properties and the macroeconomic determinants of remittances to Africa. After that, we examine the impact of remittances on external balance and debt sustainability, and conclude with policy recommendations.

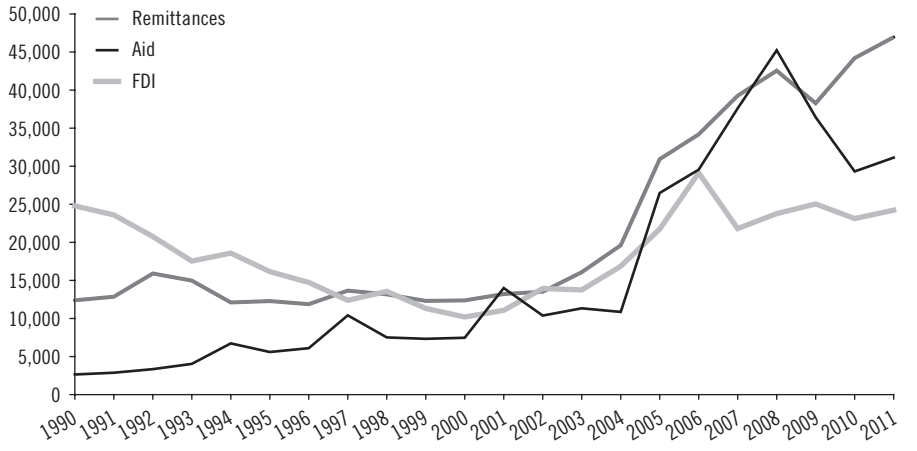
Remittances to Africa: trends, properties and macroeconomic determinants

Trends

Among various international flows of financial resources, remittances are particularly important because of their volume, relative stability and special characteristics. While FDI inflows to Africa have declined after the global financial crisis, remittances had rebounded already in 2010. In 2010 and 2011, they exceeded FDI and official development aid (ODA) by almost 90%, thus being the fastest-growing source of foreign exchange for Africa (Figure 1).[2]

[2] Figure 1 is based on 29 African countries with a complete record for remittances over the whole sample period 1990–2011, including Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Ethiopia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Togo and Tunisia.

Figure 1: Remittance, FDI and aid flows to 29 African countries (million constant US$)*



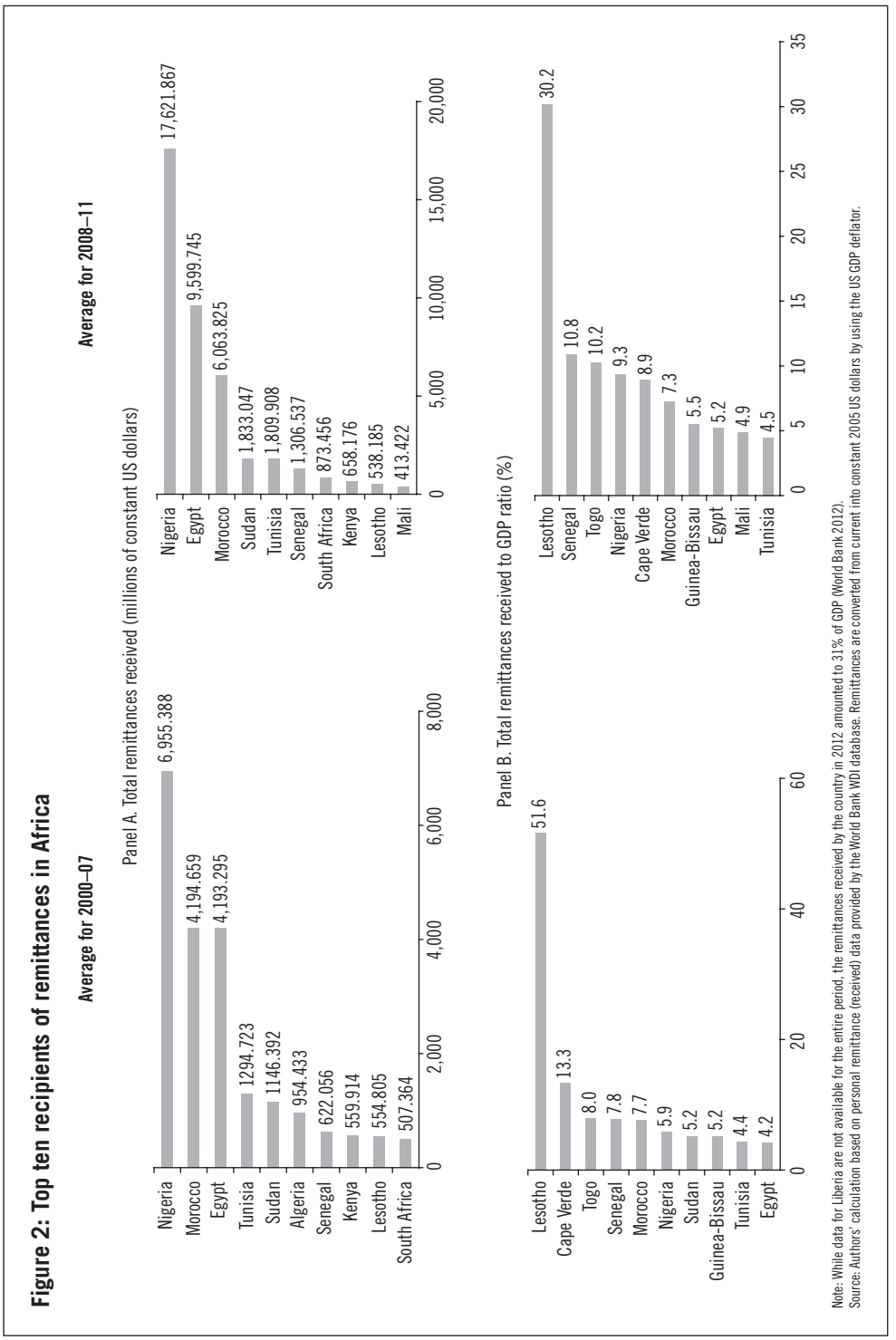
Note: * Total remittances to all African countries amounted to about current US$60 billion (AfDB *et al.* 2013).
Source: Authors' calculation based on private remittance (received), net official development assistance and official aid (received) and foreign direct investment (net inflows) data by the World Bank WDI database. Data are converted from current US dollars into constant 2005 US dollars (in millions) by using the US GDP deflator.

While the total remittance inflows to Africa have been rising, the flows to individual countries, both in absolute terms and relative to GDP, have varied. In 2011 and 2012, two African countries were among the top ten remittance recipients globally: Nigeria (US$20.6 and US$21 billion, respectively) and Egypt (US$14.3 and US$21 billion, respectively). Regionally, almost 60% of remittances sent to Africa went to North African countries, especially Egypt and Morocco. Within Sub-Saharan Africa, Western Africa (Nigeria in particular) received most of the remaining remittance flows to the continent. Nigeria and Egypt together accounted for almost two-thirds of all private remittances received in Africa in 2011.[3]

When measured in terms of size of the economy, Liberia (with remittances amounting to 23% and 31% of GDP in 2011 and 2012, respectively) and Lesotho (26% and 27% of GDP) were among the top ten receiving countries globally (World Bank 2012). While volumes and shares for other countries may not be as striking, they are still substantial. Among 29 countries in our panel, eight received formal remittances amounting to 5% of GDP in the run-up to the global financial crisis, while nine received these amounts after the crisis (Figure 2).

[3] Authors' calculations based on the WDI database as of September 2013 and World Bank (2012).

Figure 2: Top ten recipients of remittances in Africa



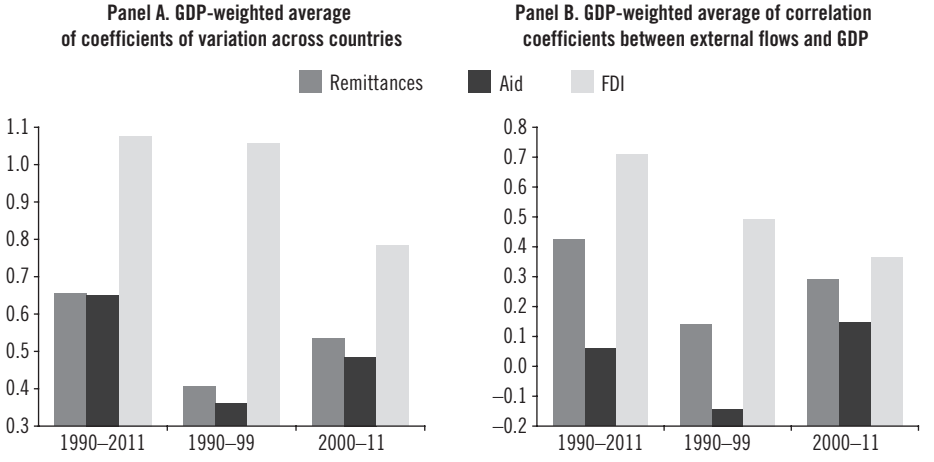
Note: While data for Liberia are not available for the entire period, the remittances received by the country in 2012 amounted to 31% of GDP (World Bank 2012).
Source: Authors' calculation based on personal remittance (received) data provided by the World Bank WDI database. Remittances are converted from current into constant 2005 US dollars by using the US GDP deflator.

Properties

Remittances are a less volatile source of foreign exchange than FDI and other private capital flows. This steadiness makes them suitable for longer-term development purposes such as securitisation of future flows and financial sector development (Ncube 2013). When well utilised, they can also positively influence credit ratings. Further, remittances are less pro-cyclical than FDI (Figure 3), even though they can transmit shocks – especially in downturns – from sending to receiving countries (Abdih *et al.* 2012; Barajas *et al.* 2012).[4]

The rapid increase and low volatility of remittance inflows to the continent notwithstanding, Africa's full potential to attract formal remittances has not been fully tapped. For example, the share of Africa in global remittances received has remained unchanged since 2000, amounting to only about 8% of the global flows – below 12% of the continent's share in world population. Still, Africa's shares of remittances received are higher than the shares of capital flows and FDI flows to Africa in the total flows

Figure 3: Volatility and cyclicality of external flows to Africa, 1990–2011



Notes: Volatility of external flows to Africa is measured by the coefficient of variation for each indicator by country. The coefficients of variation for each indicator are averaged across all sample countries with weights.

Source: Authors' calculation based on personal remittance (received), ODA and foreign direct investment (net inflows) data from the World Bank WDI database. Data are converted from current US dollars into constant 2005 US dollars (in millions) by using the US GDP deflator.

[4] As Chami *et al.* (2008) and Vargas-Silva (2008) show, the cyclicality properties of remittances vary with different types of these flows. Here we use the IMF and the World Bank definition adopted in 2009.

to developing countries. Specifically, during 2000–2011, capital flows and FDI to Africa amounted to 8% and 10% of total flows to developing and transition countries, respectively. This was below 14% of Africa's share in remittances received by developing and transition countries (Blanke *et al.* 2011; UNCTAD 2013 database).

In Africa, as elsewhere, the development potential of remittances has so far not been fully utilised. Household surveys indicate that remittances are used mostly for basic consumption (Gupta *et al.* 2007; IOM 2010). While this contributes to poverty reduction (Adams & Page 2005),[5] the impact on building sustainable livelihoods is less clear. As households often allocate only marginal amounts to savings or investment in human and productive capital, more needs to be done so that remittances can contribute effectively to inclusive growth and development. By smoothing consumption, remittances may also reduce government incentives to collect revenues, and establish social protection systems against income shocks and poverty.

On a positive side, since remittances in Africa have been spent mostly on consumption (both domestic and imported), they have probably contributed to the increased domestic demand and Africa's growth recovery from the global financial crisis.[6] Remittances have also been shown to impact other macroeconomic outcomes beyond income distribution and consumption, including the real exchange rate and the external balance of payments. The role of remittances in debt sustainability through a broadened tax base, in fiscal consolidation and as a buffer against food price shocks, has also been studied (Combes *et al.* 2014; Gnangnon 2014).

Macroeconomic determinants

In the light of the importance of remittance inflows for African economies, policymakers need to understand the domestic factors that drive these inflows so they can create enabling framework conditions for attracting and utilising them. Yet so far, no comprehensive theory of remittance determinants has been developed (Stark 1991; Chami *et al.* 2008). Drivers of remittance inflows are complex, and combine factors from both sending and receiving countries. Moreover, factors in receiving countries can be

[5] Adams and Page (2005) found that a 10% increase in remittances from abroad per capita will lead to a 3.5% decline in the share of people living in poverty.

[6] This is consistent with findings in the literature that remittances tend to help the recipients maintain a higher level of consumption during economic adversity (Chami *et al.* 2012).

grouped further into micro-factors and macro-factors. Given this complexity, most studies have so far provided only a partial explanation and have been confined to particular geographical or socio-cultural areas (OECD 2006). The macroeconomic drivers of remittances to Africa have been particularly under-studied.

Below, we therefore examine empirically the key macroeconomic factors driving remittances from the perspective of receiving countries in Africa during 1990–2011. Specifically, we look at the following variables as potential drivers of remittance inflows: (1) GDP per capita in OECD countries; (2) domestic GDP; (3) inflation in remittance-receiving African countries and (4) nominal exchange rate depreciation in remittance-receiving African countries. Drawing on El-Sakka (2004), we adopt the following general approach to study the macroeconomic determinants of remittances received by African countries:[7] we assume that R_t, the level of remittances received by African countries at time t, is a function of (i) F_1, the non-policy variables set (e.g. income level in both sending and receiving country), and (ii) F_2, the policy variables set (e.g. inflation, exchange rate depreciation).[8]

Among non-policy variables, income levels in the host countries are expected to positively impact the remittance flows to Africa. However, the level of income in the receiving country could have either a positive or a negative impact on the inflows of remittances, depending on the motives behind their sending. Under the 'altruistic motive', the remittance inflows would rise with lower per capita income. If 'investment' or 'portfolio management' motives prevail, inflows would increase with higher per capita income. Since remittances to the home country depend also on last year's incomes, lagged GDP values are also included in the empirical analysis using regressions.

Among policy variables, inflation would impact remittance flows positively under the altruistic motive and negatively under the investment motive, as senders would be hesitant to send remittances to countries with unstable macroeconomic environments. Regarding exchange rate depreciation, remittance inflows would be impacted negatively under

[7] Micro approaches to remittance inflows look into various socio-economic factors, including age, gender, education, marital status, wage levels, per capita consumption of remitters and heads of households left at home.
[8] These variables are defined as follows: (1) remittances are defined as logarithm of total personal remittances received in 2005 US$; (2) OECD GDP per capita is logarithm of average GDP per capita in OECD countries in 2005 US$; (3) domestic GDP is logarithm of domestic GDP in 2005 US$; (4) domestic inflation is first difference of logarithms of domestic CPI; and (5) exchange rate depreciation is first difference of logarithm of official exchange rate (local currency per US$).

both altruistic and investment motives. With depreciation of local currency, remitters would send less cash under the altruistic motive because of the increased purchasing power of their foreign currency-denominated remittances. They would send fewer remittances even when motivated by investment possibilities, since depreciation may reflect weaknesses in macroeconomic policies.

Results of our pooled ordinary least squares (OLS) regressions are shown in Tables 3 and 4 in Appendix 1. They point to a statistically significant positive relationship between the level of income in receiving African countries and the remittance inflows. Specifically, the volume of remittances through formal channels increases with higher income, and vice versa. This, by itself, would indicate that the majority of remittance flows to Africa are for investment purposes rather than family support, as rising income indicates higher rates of return. However, it is also likely that countries with lower income receive a higher share of remittances via informal channels, in part because of less developed financial markets. Hence higher economic growth is conducive both for domestic mobilisation of resources, and for attracting foreign capital and capital-like flows, including remittances. In turn, these inflows are beneficial for external and fiscal balances, thus contributing to closing resource gaps (see below).

Since migrants are sensitive to failures of macroeconomic policies, inflation and depreciation of nominal exchange rate have a significant, but negative, impact on formal remittances. Inflation in particular seems to repel all forms of foreign capital, including remittances (Tables 3 and 4 in Appendix 1). A stable macroeconomic environment and consistent policies are thus essential for bringing in not only capital, but also remittance inflows. The role of remittances as a source of external balance funding, savings and investment is elaborated on below.

Impact of remittances on external balance and debt sustainability

This section discusses the role of remittances as a source of funding of the external balances and, more broadly, resource gaps of the African countries. It also illustrates the impact of remittances on public debt sustainability for the case of Egypt, a country facing major public debt challenges while at the same time receiving one of the largest – and rising – volumes of remittances in Africa in recent years. Together, these perspectives

illustrate some of the impacts that remittances can have on key macroeconomic variables such as trade and current account balance, savings, investment and public debt sustainability.

Remittances and the aggregate resource gap

Given that African countries are predominantly small open economies, crucial interactions occur between the domestic economies and the continent, as well as country groups and the rest of the world. International trade plays a particularly important part in these interactions. By contributing to funding the trade balance, remittances reduce current account deficits and the need for external borrowing. They also raise the low savings rate prevailing across Africa.

The relationship between the real domestic economy and the rest of the world through trade balance can be described as:

$$S_d - I = TB = X - M \tag{1}$$

where $S_d = GDP - C = I + X - M$ is domestic saving – that is, gross domestic product net of consumption; I is investment and $TB = X - M$ is trade balance, defined as exports of goods and services minus imports. Modifying (2) so that Africa, its sub-regions or countries are linked to the rest of the world through the current account balance, yields:

$$S - I = CAB = X - M + Y_f + TR_f \tag{2}$$

where S is national savings, which comprises domestic savings S_d, net foreign factor income Y_f and net foreign transfers TR_f. Financing sources of domestic investment I consist of national savings S (including net foreign unrequited transfers and factor income) and net capital flows, which comprise foreign direct investment (FDI), portfolio equity investment and borrowing as recorded in the countries' capital and financial accounts. The trade deficit, TD, is financed by the sum of capital flows, KAB, net foreign transfers TR_f, including remittances, net foreign factor income Y_f, and the change in foreign reserves:[9]

$$TD = KAB + Y_f + TR_f + \Delta R \tag{3}$$

[9] In (3), an increase in foreign reserves is recorded as negative ΔR.

Equations (1)–(3) form a basis of Table 1, which traces domestic savings, investment, remittances, capital and other flows, and changes in reserves in Africa over time, and compares them with those in developing Asia. Table 1 highlights the rising role of remittances in national savings and as a source of external (trade) balance financing. It shows that remittances are an important source of financing for the trade balance. In fact, in the period during and after the global financial crisis, average volumes of remittances exceeded all capital flows combined, not only its individual parts such as FDI or ODA.[10]

Recent research has reiterated the importance of high savings and investment rates for growth (Commission on Growth and Development 2008).[11] However, except for oil exporters and some non-oil resource-rich countries (e.g. Botswana), many Sub-Saharan Africa countries post

Table 1: Savings, investment, external balances and remittances (% of GDP)

	1990–1999	2000–2007	2008–2011	1990–2011
Sub-Saharan Africa				
Domestic savings*	15.8	17.6	17.1	16.7
Investment	17.0	17.1	20.0	17.5
Trade balance	–1.2	0.5	–2.9	–0.9
Remittances	**1.0**	**2.3**	**2.9**	**1.8**
Factor income and other transfers	–2.1	–3.3	–1.5	–2.5
Capital flows**	3.0	2.7	2.2	2.7
Change in reserves	–0.7	–2.2	–0.6	–1.2
Developing Asia				
Domestic savings*	38.2	40.8	46.7	40.7
Investment	36.7	36.2	41.8	37.4
Trade balance	1.5	4.6	4.8	3.3
Remittances	**0.7**	**1.2**	**1.0**	**0.9**
Factor income and other transfers	–2.6	–2.4	–2.4	–2.5
Capital flows**	2.2	2.2	2.3	2.2
Change in reserves	–1.8	–5.6	–5.7	–3.9

Notes: *Domestic savings rates, excluding international transfers and factor income. **Includes errors and omissions.
Source: Authors' calculations based on the AfDB, IMF and World Bank databases

[10] Some of the offsetting impacts that contribute to widening trade and current account balances may be the increased imports financed from remittances and appreciation of real exchange rate. At the same time, remittances lower the probability of current account reversals (Bugamelli & Paterno 2009).
[11] The report found that high national savings rates – around 20–25% of GDP or above – were associated with high and sustained growth, pointing out that foreign savings (capital flows) are an imperfect substitute for national savings. Since remittances can contribute to national savings, they can raise investment and growth.

low domestic savings rates, especially in comparison to developing Asia (see Table 1, Figure 1 and Appendix 2). The rise in savings rates in Sub-Saharan Africa before the crisis notwithstanding, the rates were still almost 10 percentage points of GDP below the average of emerging and developing economies in 2008. Because of the low domestic savings rates, underdeveloped domestic financial sectors and limited access to international capital markets, Africa's investment depends on attracting foreign savings and capital. Ensuing low investment rates raise questions about the sustainability of Africa's growth.

Given the role of savings and remittances in the growth of African economies, a related issue of concern to policymakers is whether remittance inflows complement or crowd out domestic savings on the continent. While the overall literature on the topic is abundant – and findings are mixed – research on Africa is relatively scarce. Among the exceptions is Balde (2011), who examines 37 Sub-Saharan African countries during 1980–2004 and finds a strong positive relationship between remittances, foreign aid and domestic savings.[12] Policies aimed at creating financial products that would bring remittances into formal banking sectors are also likely to raise savings among the households impacted.

Remittances and debt sustainability: the case of Egypt

The increased remittance inflows have been acknowledged in the revised joint IMF–World Bank debt sustainability framework, where remittances are included in some of the key indicators such as debt-to-exports and remittances ratio (IMF and World Bank 2009). Where data permit, including remittances in the debt sustainability analysis allows countries to raise borrowing, thus helping them reach high and inclusive growth. Below, we augment GDP by remittances since remittances widen the tax base, in particular through consumption taxation.

In this section, we examine the impact of remittances on debt dynamics in Egypt, a country that receives a large – and rising – share of remittances to Africa. Egypt's fiscal challenges have intensified in the aftermath of the

[12] Reinhart and Talvi (1998) use data from 24 countries in Latin America and Asia for the period 1970–1995, and find a negative relation between foreign and domestic savings. For Africa, preliminary findings from our data indicate a positive relationship between remittances and domestic savings, with correlation coefficient of 0.481 at 3% significance level. Further research using a variety of data (e.g. country level, sub-regions) and methods is needed to facilitate evidence-based policymaking on this issue.

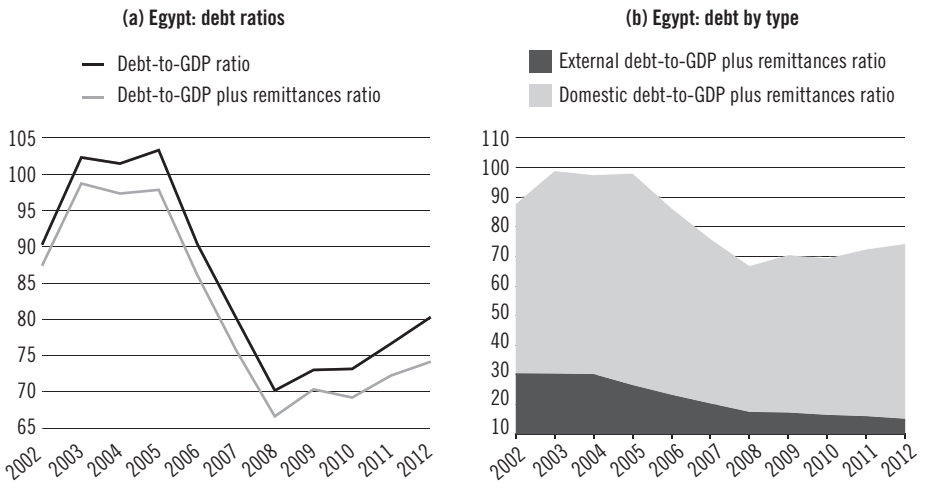
global financial crisis and the Arab Spring, leading to a re-accumulation of high public debt (Figure 4).

Besides lowering the debt ratios (Figure 4), augmenting Egypt's GDP with remittances changes debt dynamics and the primary balance needed to stabilise the debt-to-GDP plus remittances ratio. With remittances, changes in the public debt-to-GDP plus remittances ratio in Egypt over time can be decomposed into the following factors: primary balance, the interest rate, growth of GDP and growth of remittances differential (and the residual).[13]

Table 2 and Figure 5 show this decomposition for Egypt in 2002–2012.

Figure 5 illustrates the cumulative positive impact that remittances have had on debt dynamics over the past ten years. While public debt

Figure 4: Egypt: evolution of public debt (%), 2002–2012



Source: Authors' calculations based on AfDB and IMF databases

[13] More formally

$$\bar{d}_t - \bar{d}_{t-1} = \frac{r_t - [g_t + s_{t-1}(\rho_t - g_t)]}{1 + [g_t + s_{t-1}(\rho_t - g_t)]} \bar{d}_{t-1} - \bar{p}_t \quad (4)$$

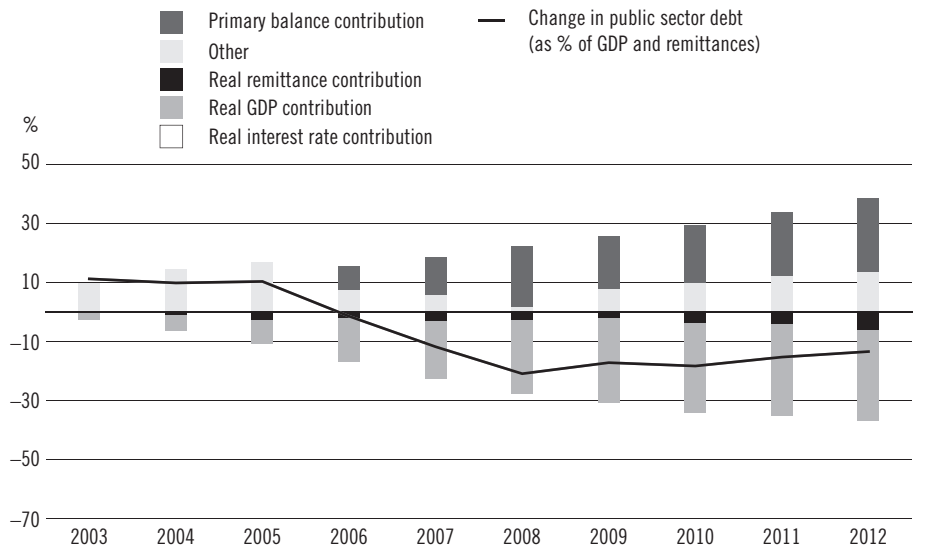
where $\bar{d}_t$ is debt-to-GDP plus remittances ratio in period t, $\bar{p}_t$ is the primary balance-to-GDP plus remittances, ρ is the real growth of remittances and s_t is the share of remittances in GDP plus remittances. This part builds on Ncube and Brixiova (2013), but see Abdih *et al.* (2009) for elaboration on this framework. The authors show that, when real remittances grow faster than real GDP, $\rho_t > g_t$, as has been the case of Egypt for most of the past ten years, the debt stabilising primary balance when remittances are included is below that without remittances.

Table 2: Egypt: change in public debt-to-GDP and remittances ratio (% of GDP and remittances)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Change in public sector debt	11.2	–1.4	0.5	–11.8	–10.3	–9.1	3.7	–1.1	3.0	1.9
Real interest rate contribution	0.0	–5.2	0.3	–0.3	–5.0	–4.2	–3.5	–1.6	–2.1	–1.0
Real GDP growth contribution	–2.7	–3.9	–4.1	–6.3	–5.6	–5.1	–3.0	–3.4	–1.2	–1.5
Real remittance growth contribution	**–0.2**	**–0.7**	**–1.6**	**0.5**	**–0.9**	**0.3**	**0.7**	**–1.9**	**–0.3**	**–1.9**
Primary balance contribution	4.3	3.6	3.6	4.0	2.8	3.7	3.6	3.6	4.4	4.8
Other (including exchange rate)	9.7	4.7	2.4	–9.7	–1.7	–3.9	6.0	2.1	2.2	1.5

Source: Authors' calculations based on AfDB and IMF databases.
Note: Real interest rates are estimated based on the IMF Country Report No.10/94.

Figure 5: Egypt – public debt-to-GDP + remittances dynamics, cumulative (% of GDP and remittances), 2002–2012



Source: Authors' calculations based on AfDB and IMF databases

has risen since 2008 even when remittances are included as a base of all ratios, it has done so at a lower rate than if remittances were not included in the analysis. Moreover, the level of public debt is also lower by 6 percentage points of GDP (Figure 4a). While the magnitude of the impact of rising remittances on debt dynamics has been subdued in most years, in 2012 it has exceeded that of GDP growth and (negative) real interest contributions.

It also needs to be underscored that Egypt's debt-to-GDP ratio as well as debt-to-GDP plus remittances ratio rose during 2008–2012, a rapid increase in remittances notwithstanding.[14] For the most part, this reflects a weakening fiscal and overall macroeconomic stance. The example of Egypt thus also illustrates that rising remittances can make an important contribution to a more sustainable debt path, but cannot substitute for prudent fiscal and debt management policies. Clearly, putting Egypt's debt on a sustainable footing will require fiscal adjustment. Nevertheless, such adjustment should be gradual so as to avoid 'austerity measures' and a further drop in real GDP growth and employment.

Conclusions and policy recommendations

In this paper, we have documented recent trends in remittance flows to Africa, their key macroeconomic properties, such as relatively low pro-cyclicality and volatility, and some of the determinants in receiving countries – namely growth and a stable macroeconomic environment. We then illustrated the rising role for remittances as a source of trade balance financing and their possible positive impact on public debt sustainability. Our analysis has the following policy implications:

- Since the level of income seems to be an important determinant of remittances, policymakers should strive to create an environment conducive to growth. This will then increase inflows of remittances and other foreign capital, including FDI, easing the pressure on external balance financing.

[14] Further, the country's credit rating was downgraded in 2013.

- However, African policymakers need to do more to leverage foreign savings into increased overall savings and higher investment. This is particularly important in light of the persistent evidence of the links between investment rates and growth.
- Given the low domestic savings in Africa, policymakers and the private sector should strive to incentivise receiving households to either save larger shares of their remittance income in the formal financial sector or invest it in productive capital.
- The case of Egypt shows that rising remittances can somewhat ease debt sustainability pressures. However, remittances cannot substitute for prudent fiscal policies.

Appendix 1

Table 3: Pooled OLS regression of remittances on GDP and inflation rate

	1990–2011		1990–1999		2000–2011	
	(1)	(2)	(3)	(4)	(5)	(6)
OECD GDP per capita	1.48*** (2.67)	–3.70 (–1.25)	–2.52 (–1.12)	–5.80 (–0.61)	3.96*** (2.67)	1.45 (0.37)
Domestic GDP	0.84*** (18.11)	3.70*** (2.74)	0.89*** (10.61)	4.83*** (2.59)	0.82*** (15.15)	2.75 (1.31)
Domestic inflation	–0.84** (–1.98)	–0.99** (–2.27)	–0.92* (–1.89)	–1.02** (–2.02)	–2.32** (–2.04)	–2.43** (–2.10)
OECD GDP per capita (lagged)		4.96* (1.76)		3.14 (0.26)		2.10 (0.67)
Domestic GDP (lagged)		–2.85** (–2.10)		–3.92** (–2.10)		–1.94 (0.92)
Constant	–15.62*** (–2.68)	–13.41** (–2.24)	23.94 (1.06)	25.03 (0.69)	–40.67*** (–2.60)	–36.35** (–2.18)
Number of observations	559	559	227	227	332	332
R-squared	0.48	0.49	0.45	0.46	0.50	0.50
F-statistic	112.97 (0.00)	73.66 (0.00)	38.22 (0.00)	25.35 (0.00)	76.52 (0.00)	47.07 (0.00)

Note: The pooled country-year observations are estimated using OLS estimators with robust standard errors. *t*-statistics for the coefficients on the explanatory variables are reported in parentheses. *Significant at the 10% level; **significant at the 5% level; ***significant at the 1% level.

Table 4: Pooled OLS regression of remittances on GDP and exchange rate

	1990–2011		1990–99		2000–11	
	(1)	(2)	(3)	(4)	(5)	(6)
OECD GDP per capita	1.91***	–3.51	0.00	–7.50	3.98***	–0.17
	(3.36)	(–1.15)	(0.00)	(–0.72)	(2.71)	(–0.04)
Domestic GDP	0.89***	2.99**	0.95***	3.12*	0.84***	2.45
	(19.16)	(2.32)	(11.41)	(1.79)	(16.00)	(1.40)
Currency depreciation	–0.73*	–0.50	–0.54	–0.26	–1.62**	–1.37*
	(–1.92)	(–1.53)	(–1.39)	(–0.85)	(–2.46)	(–1.90)
OECD GDP per capita (lagged)		5.00*		8.42		3.15
		(1.73)		(0.65)		(1.00)
Domestic GDP (lagged)		–2.10		–2.16		–1.61
		(–1.64)		(–1.23)		(–0.92)
Currency depreciation		–0.66**		–0.57		–0.77
		(–1.99)		(–1.59)		(–1.13)
Constant	–21.17***	–16.87**	–3.16	–12.68	–41.63***	–31.21*
	(–3.51)	(–2.51)	(–0.14)	(–0.34)	(–2.70)	(–1.88)
Number of observations	609	580	261	227	348	332
R-squared	0.48	0.50	0.41	0.44	0.52	0.52
F-statistic	126.96	65.21	43.93	21.60	87.14	44.34
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Note: The pooled country-year observations are estimated using OLS estimators with robust standard errors. *t*-statistics for the coefficients on the explanatory variables are reported in parentheses. *Significant at the 10% level; **significant at the 5% level; and ***significant at the 1% level.

Appendix 2: Selected stylised facts

Table 5: Africa – growth rates by sub-groups (averages, in %), 2000–2012

	2000–2012	2000–2007	2008–2012
Oil exporters	6.1	7.0	4.6
Frontier markets	5.1	5.2	4.8
Fragile states	2.9	2.1	4.0
Other LICs	3.9	3.7	4.3
Africa	4.7	4.8	4.5

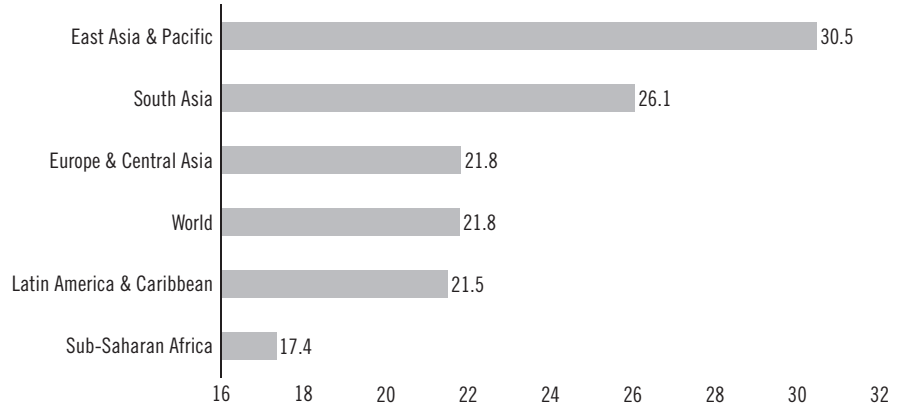
Source: Authors' calculations based on the AfDB database

Table 6: Demand changes in Africa (percentage points of GDP), 2008–2011

	Domestic demand	Consumption	Private	Government	Investment	External demand
Oil exporters	3.0	0.6	1.7	–1.0	2.4	–3.0
Frontier markets	1.4	0.8	0.7	0.1	0.6	–1.4
Fragile	2.9	0.0	1.1	–1.1	2.8	–2.9
Other	–5.3	0.8	1.7	–0.9	–6.1	5.3

Source: Authors' calculations based on the AfDB and UN database

Figure 6: Domestic saving rates, by region (% of GDP), 2001–2012



Source: Authors' calculations based on the AfDB and World Bank WDI database

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