GLOBAL ECONOMIC AND FINANCIAL CRISIS: EXPLORING THE TRANSMISSION CHANNELS AND IMPACTS ON SUB-SAHARAN AFRICAN ECONOMIES

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Abstract

Over the past decade sub-Saharan African countries have made remarkable gains in promoting growth alongside economic stability. However, with the outbreak of the financial and economic crisis in advanced economies, will these hard-won economic gains in the region be threatened? In this paper, we seek to provide an overview of how sub-Saharan African countries are exposed to the crisis through both financial and real transmission channels, and to critically assess the impact of the crisis on different economies. To accomplish this task, we first provide an overview of the recent economic development of sub-Saharan African countries, and a brief discussion of the sources and the development of the crisis. We then proceed to explore the direct financial transmission channels of the crisis and their impacts on sub-Saharan African countries. In addition, we explore the indirect real transmission channels of the crisis and how the sub-Saharan African economies are impacted by them. Thereafter, we identify a couple of policy implications.

Keywords: Global Financial and Economic Crisis, Transmission Mechanisms, Sub-Saharan Africa
JEL Classification: F02, G01, G15

1. INTRODUCTION

The global economic and financial crisis that started with the bursting of the housing bubbles in the United States led to general concern about credit quality in the advanced economies, unanticipated contagion to other financial assets and a sharp retrenchment of credit to various sectors and economic agents. The crisis affected advanced economies, emerging markets and developing countries in very different ways (see Chudik and Fratzscher, 2011). Advanced economies were first hit mainly by the systemic banking crisis in the United States and Europe. Emerging markets with well-developed financial systems were initially mostly affected by cross-border financial linkages through capital flows and exchange rates. In developing countries of which most of the sub-Saharan African countries belong to, the effects on real factors such as trade, tourism, workers' remittances, and official development assistance dominated.

The previous studies have mainly focused on the effects of the financial crisis on the advanced and emerging market economies (see, for instance, Dooley and Hutchison, 2009; Claessens et al., 2010). Even though there are studies exploring the impacts of the financial crisis on the sub-Saharan African economies, some of the impacts are reported based on the estimated or expected data during the period of the crisis [see, for example, Massa and Velde, 2008; African Development Bank (ADB), 2009; Arief et al., 2009]. Hence, there is still room for further study of the financial crisis, especially from the perspective of developing economies with the recent data obtained from various reliable sources. Our aim is to therefore explore the direct financial transmission and indirect real channels of the financial crisis and to explore its effect on sub-Saharan African countries. Over the past decade, sub-Saharan Africa has made remarkable gains in promoting growth with economic stability. Real GDP growth averaged 5.9 percent over the period of 2004 to 2008; inflation had fallen to single-digit levels before the fuel and food prices shock of 2008 and reserves were accumulated [see International Monetary Fund (IMF), 2009a]. These positive developments relied on effective economic policies, a favourable external environment, debt relief and foreign aid. However, these hard-won economic gains are being threatened. Relatively weak financial linkages with advanced economies have not shielded African countries from the global economic storm. Demand for African exports has fallen, commodity prices have declined and workers' remittance flows are weakening. The tightening of global credit conditions is reducing foreign direct investment and reversing portfolio flows, making trade finance more costly. The economic slowdown also increases credit risk and non-performing assets, weakening the balance sheets of financial institutions and corporations.

In the next section, an overview of how sub-Saharan African countries are exposed to the crisis through the direct financial transmission channels is provided, with the critical assessment on the impacts on different economies. Section 3 explores the indirect real transmission channel of the crisis and how the sub-Saharan African economies are impacted by it. Inter alia, these two sections provide detailed exploration of the spillover effects of the crisis on the sub-Saharan African countries, in addition to identifying their sources. Since the financial systems in the sub-Saharan African countries are so heterogeneous, their exposure to the crisis varies greatly. The focus is therefore more on highlighting those countries being mostly affected by a particular channel. The last section provide a conclusion as well as point out some policy implications.

2. DIRECT TRANSMISSION CHANNELS

When the financial crisis broke out in 2007, there was a general perception that sub-Saharan African countries would only be affected in a limited extent, due to the limited exposure to the developed financial systems in the United States and other European countries (see ADB, 2009). Indeed, African countries have been adversely affected by the crisis in both direct and indirect ways. In this section, we explore three direct transmission channels due to the direct exposure to the international financial systems. They include the effects through capital markets, banking sector, and private capital flows.

2.1. Capital markets

Before we explore the effects of the capital markets on sub-Saharan African countries, it is important to know that these countries are so heterogeneous that their exposure to the crisis varies greatly. In terms of financial depth and the degree of capital and financial market development, there are three distinct groups. These are: emerging market group, frontier market group, and financially developing group[3] (see IMF, 2009a). In this section, we are going to discuss the impacts of the crisis on the sub-Saharan Africa through channels of stock market, bonds market and foreign exchange market in turn.

Stock market developments serve as an important transmission channel of the global financial crisis to the economies. In general, the crisis is associated with increased price volatility, decline in stock market indices, decline in initial public offerings, wealth losses, and the so called "second round" effect on financial systems (see IMF, 2009a, 2009b; Aryeetey and Ackah, 2011). In the case of sub-Saharan African countries, the stock markets across the region experienced a sharp correction due to the crisis. According to the Overseas Development Institute (ODI) (2010), the stock market indices for Ghana, Nigeria, Uganda and Zambia declined dramatically during the period of 2008 to 2009, after two years of double digit returns in the stock markets. In particular, the stock market indices of Egypt and Nigeria dropped by about 67 percent during March 2008 to March 2009 (see Aryeetey and Ackah, 2011). IMF (2009a) also reported that stocks indices for Botswana, Kenya, Namibia, Nigeria, South Africa, Uganda and Zambia registered large declines in dollar terms in 2008. Only three markets, namely, Ghana, Malawi and Tanzania, closed in 2008 with positive returns. Furthermore, the unfavourable performance of stock markets might also undermine the performance of large domestic institutional investors like pension funds and life insurance companies. Nevertheless, the impact of the stock market declines on wealth has been limited, largely because of the relatively small size of stock markets. In addition, the impact of the stock market declines on the financial system has also been limited, mainly due to the prudent regulations which limit the direct exposure of banks to equities. Only a few countries including Kenya, Nigeria, South Africa and Uganda that the banking sectors have been affected by the stock market declines (IMF, 2009a).

In bonds markets, several sub-Saharan African countries came under intense pressure as the liquidity in global credit markets declined. For instance, Nigeria, South Africa, Uganda and Zambia registered significant outflows from their domestic debt markets. In addition, unfavourable capital market condition also led several countries to postpone their bond issuance plans (see Aryeetey and Ackah, 2011). For example, Kenya, Uganda and Tanzania postponed their bond issuance plans due to the increased risk premia resulted from the financial crisis (Kasekende et al., 2009). In the case of South Africa, although she did not heavily rely on international borrowing, she was affected by the increase in sovereign spreads. Such increase reflected the investor liquidity needs and flights to higher quality assets (IMF, 2009a). Table 1 shows the issuance of international bonds in sub-Saharan African countries during the period of 2004 to 2008.

Table 1. Issuance of international bonds in sub-Saharan Africa, 2004-08 (millions of US dollars)

	2004	2005	2006	2007	2008
Total	1,697	2,681	4,899	12,396	1,533
Gabon	0	0	0	0	0
Ghana	0	0	0	950	0
Nigeria	0	0	0	525	0
Seychelles	0	0	200	107	0
South Africa	1,697	2,681	4,699	9,814	1,533

Source: IMF (2009a)

On the foreign exchange markets, the exchange rate in the region[4] was under pressure due to the portfolio outflows triggered by increased risk aversion and deleveraging, sharp declines in foreign direct investment, and the unwinding of commodity trade. In particular, the currencies of the relatively open economies such as Kenya, Mauritius, South Africa, Uganda and Zambia came under some pressure and depreciated against the dollar (see IMF, 2009a; 2009b). Such exchange rate depreciation pressure and volatility had been persistent for some

[3] Emerging market group only consists of South Africa. Frontier market countries include Botswana, Cape Verde, Mauritius, Namibia, Seychelles, Ghana, Kenya, Mozambique, Nigeria, Tanzania, Uganda and Zambia. Financially developing countries include Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Dem. Rep. of, Congo, Rep. of, Côte d'lvoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Niger, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Swaziland, Togo, Zimbabwe.

4 CFA zone countries have been insulated due to their pegged regime and more restrictive capital account framework.

time because of various factors. They included the highly uncertain pace of global recovery, geographical rebalancing of trade flows, and volatility in the exchange rates of the main currencies. As a result of the continued exchange rate volatility, it posted particular challenges for countries seeking to integrate with international capital markets. Literature suggests that financial integration may act as a catalyst for economic growth, which facilitates more rapid investment in infrastructure and private sector development, enhances competition, and encourages foreign direct investment and technology transfer (see for example, Eichengreen et al, 1998; Agénor, 2003). However, increased exchange rate volatility could hinder financial integration, skewing capital flows from longer-term to short-term investment, thereby affecting economic growth in the region.

2.2. Banking sector

Banking sector is generally considered to be a major channel through which the direct impacts of the financial and economic crisis would be transmitted through the cross-border activities between banks. The crisis could cause a decline in international bank lending, which might lead to bank failures and credit tightening (Aryeetey and Ackah, 2011).

Table 2. African countries with concentrated foreign banking assets, 2008

Host Country	Assets Held by Foreign Banks (percent)	Largest Foreign Banks	Home Countries of the Largest Foreign Banks
Angola	68	Angolan Development Bank	Portugal
		Espiritu Santo Bank of Angola (BESA)	Portugal
		Totta Angola Bank (BTA)	Portugal
Botswana	99	Barclays Bank of Botswana	United Kingdom
		Standard Chartered Bank Botswana	United Kingdom
		First National Bank of Botswana	South Africa
Cameroon	70	BICEC	France
		Société Générale	France
		Attijariwafa Bank	Morocco
Cape Verde	74	Banco Comercial Atlantico	Portugal
		Banco Interatlantico	Portugal
		Banco Caboverdiano de negocios	Portugal
Chad	75	Société Générale Tchadienne de Banque (SGTB)	France
		Ecobank	Togo
		Commercial Bank Tchad	Cameroon
Comoros	92	Banque pour l'Industrie et le Commerce (BIC)	France
		EXIM Bank Tanzania	Tanzania
Congo, Dem. Rep. of	90	Banque Congolaise	United States
		Banque Commericale du Congo (BCDC)	Belgium
		Rawbank	Luxemburg
Congo, Republic of	57	BGFI – Congo	Gabon
		Banque Marocaine du Commerce Exterieur (BMCE)	Morocco
		Crédit Agricole	France
Côte d'Ivoire	56	Société Générale	France
		Banque Internationale pour le Commerce & l'Industrie en Côte d'Ivoire (BICICI)	Belgium
		Ecobank	Togo
Ghana	55	Barclays Bank	United Kingdom
		Standard Chartered Bank	United Kingdom
		SSB Bank	France
Lesotho	97	Standard Bank	South Africa
Madagascar	71	Mauritius Commercial Bank (MCB)	Mauritius
		Banque Malgache de L'Océan Indien (BMOI)	France
		BFV- Société Générale (SG)	France
Mauritius	72	Barclays Bank	United Kingdom
		Hong Kong and Shanghai Banking Corporation (HSBC) Mauritius Ltd.	United Kingdom
		Standard Chartered Bank	United Kingdom
Mozambique	100	Banco Internacional de Mocambique (BIM)	Portugal
		BCI-Fomento	Portugal
		Standard Bank	South Africa
Namibia	73	Standard Bank Namibia	South Africa
		First National Bank	South Africa
São Tomé and Príncipe	100	Banco Internacional de STP (BISTP)	Portugal
		Afriland First Bank	Cameroon
		Island Bank	Nigeria
Senegal	65	SGBS	France
		B.I.C.I.S.	France
		Attijariwafa Bank	Morocco
Seychelles	56	Barclays Bank	United Kingdom
		Mauritius Commercial Bank (MCB)	Mauritius
		Bank of Baroda	India
Swaziland	70	Standard Chartered Bank of Swaziland Ltd.	United Kingdom
		NedBank Swaziland Ltd.	South Africa
		First National Bank Swaziland Ltd.	South Africa
Tanzania	52	NBC Ltd.	United Kingdom
		Stanchart	United Kingdom
		Barclays Bank	United Kingdom

Source: IMF, 2009a

In the case of sub-Saharan African countries, financial institutions were relatively resilient due to a number of factors. For instance, studies suggest that most African banks had limited exposure to the sub-prime mortgage market and asset-backed securities [see Massa and Velde, 2008; United Nations Economic and Social Council/Economic Commission for Africa/African Union Commission (UNESC/ECA/AUC), 2009].

In addition, African banking systems in general had limited exposure to complex financial instruments. This resulted in fewer exposures and risks of potential losses (Aryeetey and Ackah, 2011). In fact, the banking systems in the region were characterised by abundant low-cost domestic deposits and liquidity. This allowed banks to finance themselves with domestic funds. Furthermore, the existence of capital control in several countries, such as Nigeria, Ghana, helped to moderate the direct and indirect effects of the crisis on the banking systems (IMF, 2009a).

Despite the impact of crisis on the banking sector was limited, the banks' flow of credit to the private sector declined in most countries (see Ackah et al., 2009). For example, in Ghana, there was a continuous tightening of credit conditions for enterprises since December 2008. The credit to household for property purchase also declined significantly in the last quarter of 2008 (Aryeetey and Ackah, 2011). In the case of Kenya, the growth of the banks' flow of credit to the private sector declined from 7.4 percent in the third quarter of 2008 to 2.5 percent in the last quarter of the same year (Aryeetey, 2009). The decline in credit flow to private sector appears to be quite similar for many other African countries. As a result of the credit tightening, many of the SMEs and household will be affected (Aryeetey and Ackah, 2011).

In addition, countries that have significant foreign banking ownership in the banking systems might be adversely affected by the crisis in threefold: (i) parent banks might be less willing to provide liquidity to their African subsidiaries; (ii) parent banks might be tempted to withdraw funds from their African subsidiaries in order to offset losses in home countries; and (iii) parent banks might be unwilling or unable to inject additional needed capital into African subsidiaries. All these will increase African banks' chances for bankruptcy (see Ackah et al., 2009, IMF 2009a). Table 2 shows the African countries with concentrated foreign banking assets in 2008. As indicated in Table 2, the majority of banking assets in the African banks were foreign-owned, which were vulnerable to the banking crisis experienced in their parent banks.

2.3. Private capital flows

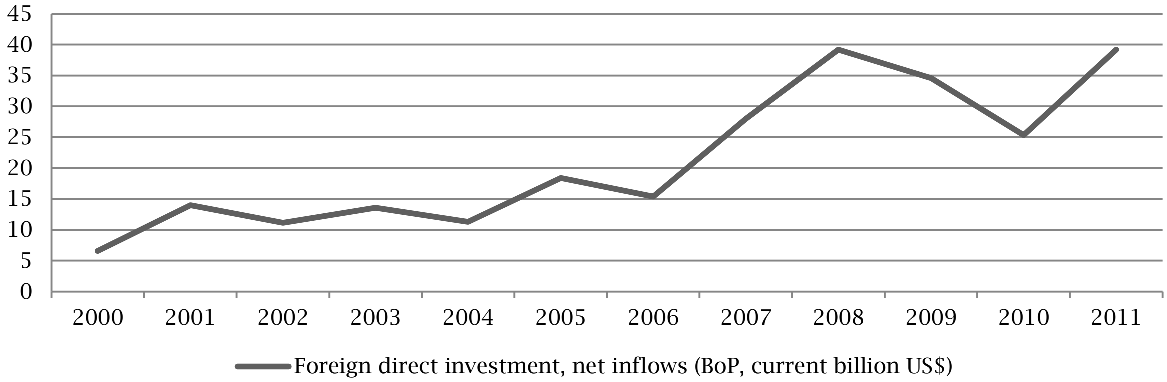
2.3.1. Foreign direct investment

Foreign direct investment (FDI) has been regarded as an important engine of economic growth in Africa recently. In particular, the FDI inflows to tourism or traditional manufacturing sectors promote domestic employment, consumption and economic growth (see Bonassi et al., 2006; Allen and Giovannetti, 2011). Unlike other developing countries, FDI to the region is unevenly distributed across countries and highly concentrated in the countries with rich natural resource endowment (Allen and Giovannetti, 2011). For instance, four resource rich countries, namely, Angola, Chad, Nigeria and Sudan had accounted for 70 percent of the total FDI during the period of 2000 to 2005 (OECD, 2008). In the early 2008, Angola, Democratic Republic of Congo, Guinea, and Nigeria, each attracted more than US$1 billion FDI inflows in their countries. However, due to the financial crisis, credit was tightened and the profits were lowered in the firms of the developed countries. As a result, they might need to downsize their investment plans and adopted a wait-and-see attitude. There were a number of cancellations and postponements in the investment in natural resources and manufacturing in the region. For example, the mining projects in the Democratic Republic of Congo and Zambia were cancelled while the mining projects in Botswana and Tanzania were postponed. Also, the refinery project in Sudan was postponed (ADB, 2010).

Despite there were a number of cancellations and postponements in the investment projects, the impact of reduced FDI in the region was mild compared with other developing countries. It was because most of the FDI inflows were concentrated in natural resource sectors. Even the new projects might be delayed but most ongoing projects would likely to be continued. It was mainly due to the consideration of sizable up-front capital investment required for such investment and losses associated with withdrawing from natural resource projects prior to their completion. As a result, the likelihood of FDI withdrawal was reduced (IMF, 2009a). Some studies even argued that financial crisis might increase FDI inflows to the region. It was because tough economic conditions might offer opportunity to buy assets at a "bargain prices". It also offered a good chance to some industries such as automotive, financial services, metal mining, and oil and gas, to increase their operation scales [see United Nations Conference on Trade and Development (UNCTAD), 2009; Allen and Giovannetti, 2011].

When we look at the net FDI inflows to the region in general, it has been increasing in absolute terms since 2000. The net inflows of FDI increased from US$6.55 billion in 2000 to US$13.98 billion in 2001. The growth momentum continued in the early 2000s. The FDI inflows increased from US$ 13.98 billion in 2001 to US$15.38 billion in 2006. In 2007, the net FDI inflows amounted to about US$28 billion, which represented a 82 percent annual growth, and they continued to grow until 2008 (WDI, 2016). The impressive growth of FDI was mainly due to the fact that investment in the region offered diversification opportunities, and relatively higher return rates than those in mature economies (Massa and Velde, 2008). When we consider the reduction of net FDI inflows to the region due to the financial crisis, the impact was relatively mild and not persistent. The net FDI inflows dropped from US$34.57 billion in 2008 to US$25.33 billion in 2009. However, it immediately increased to US$39.15 billion in 2010, which was a record high level in 2010s (WDI, 2016). Figure 1 shows the trend of net FDI inflows to sub-Saharan African countries during the period of 2000 to 2011.

Figure 1. The trend of net FDI inflows to sub-Saharan African countries, 2000 - 2011

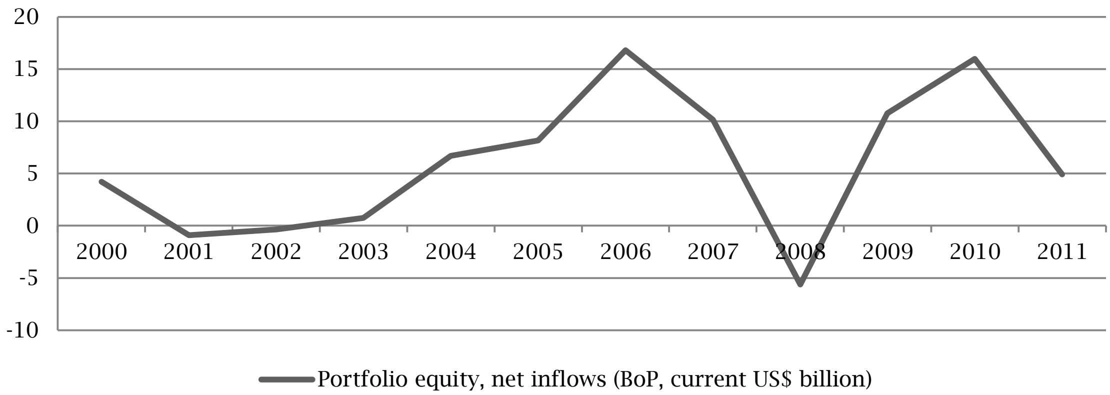


Source: Author's compilation based on WDI (2016).

2.3.2. Portfolio investment

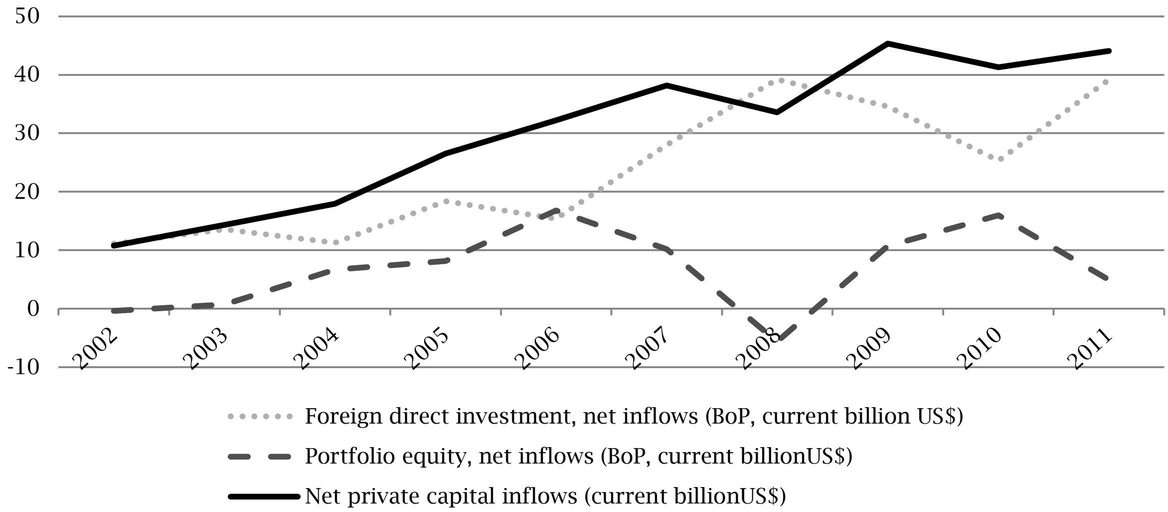
In addition to the foreign direct investment, portfolio investment to the region was adversely affected by the financial crisis. During the past decade, some stock exchanges in the region such as the ones in Ghana, Kenya, Mauritius, Nigeria and Uganda, had experienced an extraordinary performance, thereby attracting an increasing share of portfolio inflows (Massa and Velde, 2008). For instance, the net portfolio inflows to the region increased from US$4.2 billion in 2000 to US$16.81 billion in 2006 (WDI, 2016). However, the financial crisis put the portfolio investment in the region at risk due to various reasons. They included: the heightened risk aversion of investors; the tightening of global credit conditions; the deterioration of the macroeconomic environment in the region; and the increased volatility of capital markets and exchange rates. All these factors had led to a reduction of portfolio inflows to sub-Saharan Africa (Massa and Velde, 2008). The effect was more serious in the countries with developed stock market. For example, in South Africa, about US$1 billion in portfolio investment left the country during the third quarter of 2008. This situation continued to be worsening with about US$5.7 billion in portfolio investment outflows during the fourth quarter of the same year (IMF, 2009a). To provide a general picture of the region, the net portfolio investment flows reduced from US$10.17 billion in 2007 to negative US$5.63 billion in 2008 due to the financial crisis,. The good news was that the adverse effect was not persistent. In 2009, the net portfolio investment flows recovered swiftly to US$10.75 billion and later further increased to US$15.97 billion in 2010 (WDI, 2016). Figure 2 shows the trend of net portfolio inflows to sub-Saharan African countries during the period of 2000 to 2011. Figure 3 shows the trend of net FDI, net portfolio investment, and net private capital flows to sub-Saharan African countries during the period of 2000 to 2011.

Figure 2. The trend of net portfolio inflows to sub-Saharan African countries, 2000 – 2011



Source: Author's compilation based on WDI (2016).

Figure 3. The trend of net FDI, net portfolio investment, and net private capital flows to sub-Saharan African countries, 2000 - 2011



Source: Author's compilation based on WDI (2016).

3. INDIRECT REAL TRANSMISSION CHANNELS

The global economic and financial crisis has spilled over from the financial economies to the real economies, leading to serious negative impacts on the real sector of the economies. There are a number of important transmission channels which the crisis can affect sub-Saharan African countries. In the study, we mainly focus on trade, tourism, workers' remittances, and official development assistance.

3.1. Trade

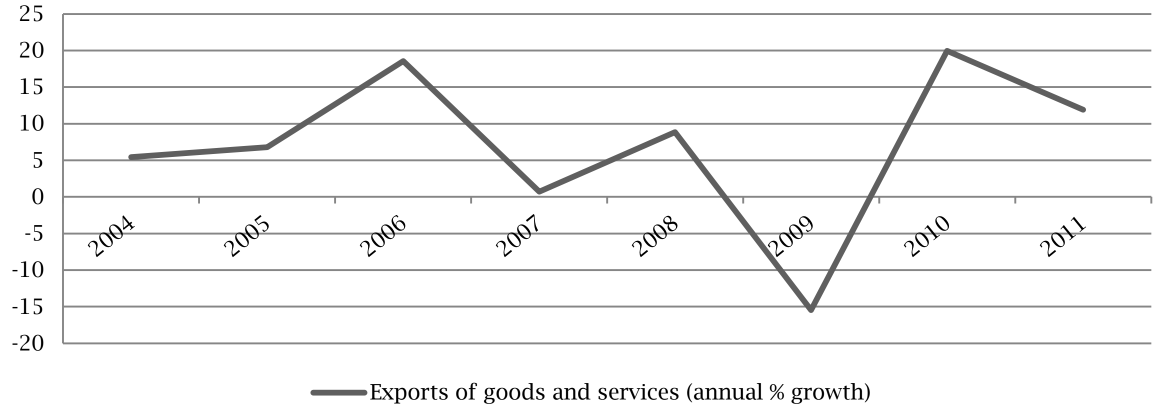
Many of the sub-Saharan African countries rely on exports markets as their engines for economic growth. Some studies suggested that trade was considered to be the most important crisis transmission for the region (see, for example, ODI, 2010; Berman and Martin, 2012). There are two mechanisms through which a financial crisis in the developed countries can affect the export of other countries. The first one is the income effect due to the sharp economic recession brought by the crisis. The second one is the disruption effect in the form of fall in trade finance (Berman and Martin, 2012). In the case of the sub-Saharan African countries, Berman and Martin (2012) found that African exports were more sensitive to large decline in income of their trading partners. They also found that the disruptive effect was more severe and long lasting for African countries than the exporters of other regions.

Due to these two transmission mechanisms, there was a sharp decline in export prices and also trade volumes. Before the outbreak of the crisis, countries whom were oil rich and agriculture net exporters benefited from increase in fuel and food prices[5]. The continuous demand for natural resources had caused the export prices and terms of trade to improve steadily throughout the region since 2003. However, the crisis and the lower global growth demand for the region's exports led to a fall in export prices. There was a sharp adjustment in prices of oil, metals and other commodities in 2008 (see World Bank, 2009). The decline in global commodity prices adversely affected those African commodity exporters. The lower prices represented a significant loss in incomes and caused a sharp deterioration in their current account positions. For example, copper price fell from US$ 90000 per metric ton in June 2008 to around US$ 30000 in December 2008. It adversely affected the terms of trade and the export earnings of major exporters such as Zambia and Democratic Republic of Congo (see Kabuya and Cassimon, 2010; Esser, 2013). Overall, the terms of trade deteriorated in 19 of 44 countries in the region between July 2008 and May 2009, with income losses of more than 10 percent of GDP in 7 of them (see IMF, 2009a).

In addition, the trade volumes were seriously affected by the crisis. As shown in figure 4, the growth in exports of goods and services in the region was positive and booming during the period of 2004 to 2008. The growth rate plunged from 9 percent in 2008 to negative 15 percent in 2009. Nevertheless, it rebounded swiftly to 20 percent in 2010 (WDI, 2016). Perhaps, based on the historical data, one can argue that the transmission through trade was important but not as long lasting as other studies suggested.

5 The group of oil-exporting countries includes Angola, Cameroon, Chad, Democratic Republic of Congo, Equatorial Guinea, Gabon and Nigeria. The group of non-oil resource-rich countries includes Botswana, Côte d'Ivoire, Guinea, Namibia, São Tomé and Príncipe, Sierra Leone, Zambia. Countries are classified as resource-rich if their primary commodity rents exceed 10 percent of GDP. The group of non-resource-rich countries are Benin, Burkina Faso, Burundi, Cape Verde, Central African Republic, Comoros, Congo, Dem. Rep. of, Ethiopia, Gambia, Ghana, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritius, Mozambique, Niger, Rwanda, Senegal, Seychelles, South Africa, Swaziland, Tanzania, Togo, Uganda and Zimbabwe.

Figure 4. Growth in exports of goods and services in sub-Saharan Africa, 2004 -2011



Source: Author's compilation based on WDI (2016).

3.2. Tourism

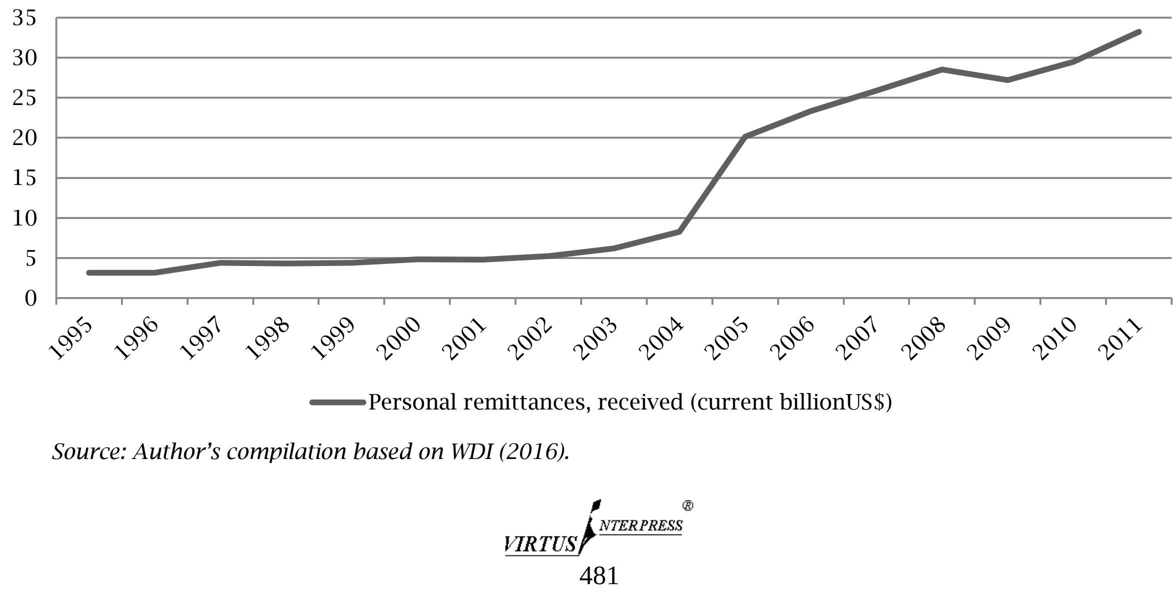
International tourism receipts are important sources of revenue to the region. They account for about 4 percent of GDP of 29 sub-Saharan African countries, such as Cape Verde, Kenya, Mauritius, Namibia, Seychelles, Tanzania, among others. Due to the financial crisis, countries which relied on tourism were negatively affected by the decline in tourists and the associated fall in foreign exchange earnings. It was evident that the growth rate of international tourist arrivals to the region declined from 7.5 percent in 2007 to 4.2 percent in 2008 [see United Nations World Tourism Organization (UNWTO), 2009a]. For example, Cape Verde and Gambia were suffered from declines in tourism receipts in the fourth quarter of 2008 and it continued in 2009 (UNWTO, 2009b). Moreover, the slowdown in tourist arrivals might spread to other related services sector such as hotels, and restaurants (Aryeetey and Ackah, 2011).

3.3. Workers' remittances

Remittance flows to sub-Saharan Africa have experienced a significant growth recently, which serve as a powerful poverty reduction mechanism in the region. It increased from a value of US$3.2 billion in 1995 to US$25.9 billion in 2007, in which about 80 percent of its remittances came from advanced countries (see IMF, 2009a; WDI, 2016). The potential impact of the financial turmoil on remittent flows on the developing countries has been a matter of debate since the onset of the financial crisis. Some argue that the crisis would lead to a decline in the remittent flows. It is because the workers whom work in the worsening macroeconomic condition in the developed countries would find it difficult to send the same amount of money abroad. On the contrary, some argue that the crisis would lead to an increase in the remittent flows. It is because the remittance senders may try to respond to the adverse macroeconomic condition in their home countries by sending more money home (see Franke 2009; Aryeetey and Ackah, 2011).

In the case of the sub-Saharan Africa, we found that the remittance flows to the region continued to increase from US$25.9 billion in 2007 to US$28.5 billion in 2008. It only declined slightly to US$27.2 billion in 2009, and started to pick up its growth momentum in 2010. Figure 5 shows the trend of personal remittances, received (current billion US$) during the period of 1995 to 2011

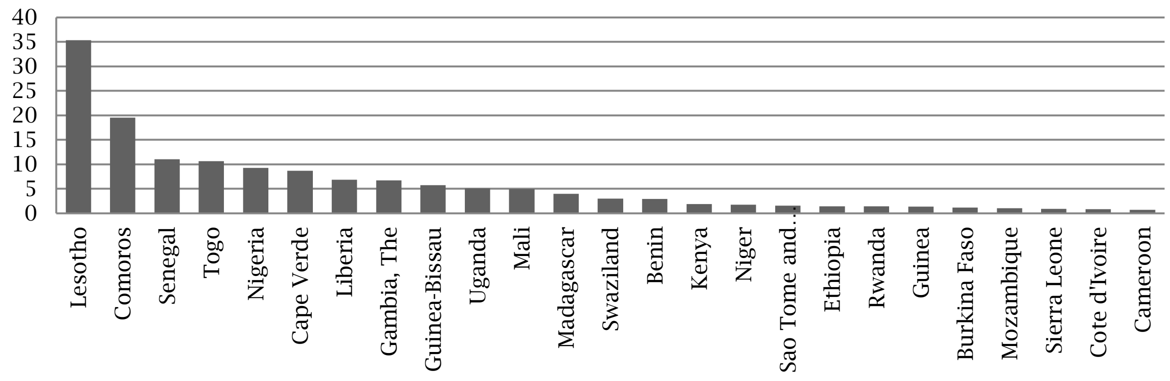
Figure 5. The trend of personal remittances, received (current billion US$), 1995-2011



Source: Author's compilation based on WDI (2016).

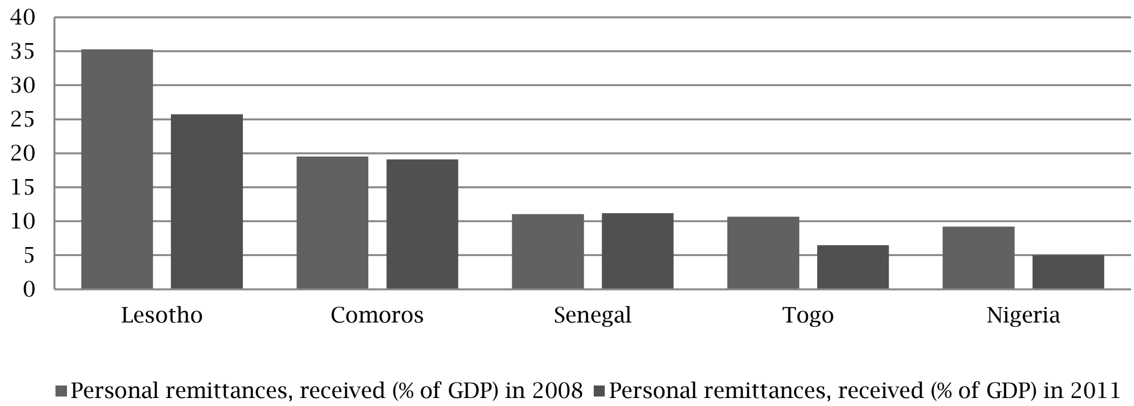
When we consider the importance of remittent inflows in sub-Saharan Africa, we find that the region is dependent on remittances. According to the calculation from the World Bank (2009), about 2.5 percent of regional GDP came from remittances. In particular, remittances accounted for more than 20 percent of GDP in Comoros and Lesotho. Also, there were ten other countries, which remittent inflows accounted for more than 5 percent of GDP. Figure 6 show top 25 recipients of personal remittances in Sub-Saharan Africa in 2008. Figure 7 shows the impact of crisis on personal remittances in top five recipients' countries. It shows that countries such as Lesotho, Togo and Nigeria were hard hit by the financial crisis through the channel of remittent inflows.

Figure 6. Top 25 recipients of personal remittances in sub-Saharan Africa in 2008 (Percent of GDP)



Source: Author's compilation based on WDI (2016).

Figure 7. The impact of crisis on personal remittances in top five recipients' countries (Percent of GDP)



Source: Author's compilation based on WDI (2016)

3.4. Official development assistance

Official development assistance is another transmission channel that can affect sub-Saharan Africa. The region relies heavily on official aid flows compared with other regions. In fact, official aid flows is the largest source of external financing for the region, both in dollar amount and as a share of GDP. For example, in 2006, official aid flows to sub-Saharan African countries other than South Africa was US$37.5 billion. It accounted for 8.2 percent of GDP, compared with 1 percent of GDP for other developing countries (see Ratha et al., 2008). In the low-income sub-Saharan African countries, official aid flows accounted for an average of 70 percent of resource flows over the past decade. In the middle-income sub-Saharan African countries, it accounted for an average of 30 percent of resource flows during the same period (see Ratha et al. 2008). Therefore, many countries in the region were vulnerable to the downturn of official aid flows.

Some studies argued that the downturn of official aid flows was likely to happen after the financial crisis. It was because the developed donor countries, which experienced adverse macroeconomic conditions, need to finance billions on financial sector bailouts and their fiscal stimulus packages to sustain internal demand. As a result, they might be less likely to honor their commitments in their aid budgets to the developing countries (see Allen and Giovannetti, 2011; Esser, 2013). In the similar argument, empirical studies showed that official aid was pro-cyclical with both donor and recipient incomes (Bulíř and Hamann, 2008). In addition, Pallage and Robe (2001), in a sample of 18 donors, showed that the co-movements of total aid disbursements with donors' output were positive for almost three-quarters of donors during 1969 to 1995.

In the case of sub-Saharan Africa, poverty-reducing initiatives across the world had led to sizable aid flows during the past decade. Official aid flow to this region excluding South Africa increased from US$13.3 billion in 2000 to US$35.4 billion in 2007. Furthermore, during the 2005 Group of Eight (G-8) Summit in Gleneagles, members agreed to double annual official aid flows to Africa by 2010. As a result of the 2005 G-8 commitment, it was expected to have an increase of official aid flows to the region by approximately US$21.48 billion per year (in 2008 dollar) on top of the existing aid during the period of 2005 to 2010 (see Arief et al., 2009). However, some of the donor countries such as France, Iceland and Italy reduced official aid to the region due to the financial crisis (Arief et al., 2009). Despite the total net official development assistance by Development Assistance Committee members continue to increase in real U.S. dollar terms in 2009 and 2010, the official aid for sub-Saharan countries still fell short of the Gleneagles' target (see Arief et al., 2009; OECD-DAC, 2011).

4. CONCLUSION

The channels through which the global economic and financial turmoil affects sub-Saharan African countries can be classified into direct financial and indirect real transmission channels. Direct financial channels include the effects on capital markets (such as stock markets, bonds markets, and foreign exchange markets), banking sector, and private capital flows (such as foreign direct investment and portfolio investment). Indirect real transmission channels include effects through trade, tourism, workers' remittances, and official development assistance.

While all the sub-Saharan African countries were affected by the crisis, the magnitude of the impact varies depending on the stage of the development of financial system and the structure of the economy. It is clear that some countries were highly impacted either through real contagion or financial contagion. Generally, the countries that were strongly affected by the crisis are the net exporters and those with more financially developed markets. A key source of the crisis was regulatory failure, whereby big banks and financial institutions were allowed to undertake unreasonable risks by creating sophisticated financial instruments and products for market participants. Therefore, the central banks and various regulatory authorities must be cautious about the practices of financial institutions and intermediaries in sub-Saharan African countries. Clear rules should be provided to safeguard the effective functioning of the financial systems. To break the spillover effects and future contagion of global economic and financial crisis in the sub-Saharan African countries, it is apparent that these countries become less-dependent on key advanced and emerging market economies. While this second implication appears somewhat challenging to attain, sub-Saharan African countries may implement growth-oriented policies in order to generate growth and rein in the gains from growth. If these countries are able to plough back the gains from growth in a sustainable manner, they are bound to become less-dependent on the advanced and emerging market economies. This will subsequently help in defending these countries from external shocks such as the financial crisis. In a nutshell, we must point out that our study is exploratory in nature and may therefore not provide an accurate assessing of the impact generated by the crisis on the sub-Saharan African countries. In order to gain accurate insight, we recommend future studies to build structural models and estimated the absolute sizes of the impact of the financial crisis on these economies.

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