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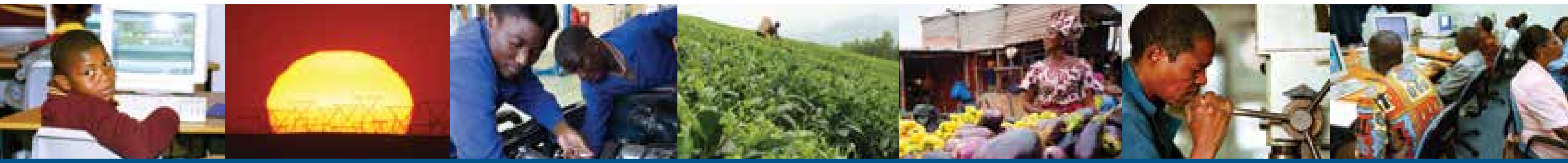

DE-RISKING, RENMINBI INTERNATIONALIZATION, AND REGIONAL INTEGRATION

TRENDS IN AFRICAN PAYMENT FLOWS

Amadou Sy and Tao Wang

B | Africa Growth Initiative
at BROOKINGS

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INTRODUCTION AND POLICY RECOMMENDATIONS

This paper takes a close look at sub-Saharan Africa's (SSA) trade and payment integration with the rest of the world as well as its regional integration. Using a unique dataset of cross-border payments (MT 103 messages from the Society for Worldwide Interbank Financial Telecommunication, SWIFT) as well as bilateral trade data from the International Monetary Fund (IMF) (Direction of Trade Statistics-DOTS) from 2003 to 2014, we find a number of stylized facts:

- **Euro-SSA corridor:** The 2008 global financial crisis has led to significantly lower payments from the eurozone area, suggesting that in addition to spillover effects from reduced economic activity and banks' compliance with new financial regulations, European banks may have engaged in de-risking activities with respect to their African counterparts. Global financial regulation and the associated adjustment of global banks can, therefore, have important unintended consequences on African economies.

- **U.S.-SSA corridor:** The U.S. is SSA's largest counterpart when it comes to payments transactions, and U.S. dollar-denominated transactions dominate payments with SSA. While many goods such as commodities are traded in the U.S. dollar, having the U.S. as the "middle man" between African countries and the rest of the world can be costly in terms of transaction costs and exposes African countries to de-risking from global banks and to the consequences of U.S. sanctions on third-party countries.

- **China-SSA corridor:** Although China has become SSA's largest trading partner, China accounts for a negligible share of cross-border payments. Whereas China accounts for 15.8 percent of SSA's trade with the rest of the world, 70.9 percent of this trade is denominated in U.S. dollars while the renminbi accounts for only 1.2 percent of Sino-African transactions. However, in its payment flows with SSA, China relies more than other countries on trade finance tools such as letters of credit and documentary collections (MT400 and MT700). Although such tools help mitigate risks for exporters, they are costly compared to other types of payments (MT104). The internationalization of the renminbi will reduce the dominance of the U.S. dollar, and efforts are underway to gradually promote the use of the renminbi by African countries. However, it is likely that the U.S. dollar will remain used for the payments of commodity trade transactions.

- **Intra-SSA corridor:** Regional integration within SSA is increasing and has proved resilient to the 2008 financial crisis. The resilience of intra-African flows point to increased intra-regional transactions that helped buffer the fall of transactions from the eurozone. As discussed above, de-risking by European banks seems to have contributed to the reduced payment flows from Europe to SSA.

A number of policy recommendations follow from the above stylized facts:

1. Global financial regulation is important for SSA, and its unintended consequences on the region such as the extent of de-risking by global banks should be assessed and managed. Stricter international financial regulation in the aftermath of the crisis was aimed at strengthening global financial stability. Increased global security concerns have also led to a tightening of anti-money laundering (AML), know your customer (KYC), and combating the financing of terrorism (CFT) regulations. However, regulatory compliance by global banks can have unintended consequences on African countries if payment flows are negatively impacted. This seems to have been the case for payments flows between the eurozone and SSA.[6] The enforcement of U.S. economic and trade sanctions (by the Office of Foreign Assets Control-OFAC) can have a negative effect on payments with Africa as payments to third-party countries mostly transit through U.S. banks.[7] African policymakers should be fully aware of current developments in the global financial architecture and assess their consequences on domestic and regional economies. African policymakers, regulators, and supervisors, as well as financial institutions should clearly articulate the costs to their domestic economies of the unintended consequences of global financial regulation and have a voice in international standards setting bodies. Exercises such as the joint World Bank-IMF Financial Sector Assessment Programs (FSAPs) could be used to provide detailed information on the impact of global financial regulation such as de-risking by global banks on African economies.

2. As China is SSA's largest bilateral trading partner, the use of the renminbi as a currency of payment between the two regions should be increased. The region's payment flows with China—its largest bilateral trade partner—are routed through correspondent or clearing U.S. banks with associated costs and risks. Although a large share of Sino-African trade includes commodities whose international prices are denominated in U.S. dollars, the renminbi accounts for less than 2 percent of payments between China and SSA. This is in part due to the limited internationalization of the Chinese renminbi, which increases transaction costs and exposes Sino-African payments to global spillover financial risks (outside the two regions), exchange risks, and the risks from economic and trade sanctions. A number of initiatives are under way to increase the use of the renminbi in Sino-African trade, including the clearing of renminbi business and the opening of individual renminbi accounts in South Africa, as well as the establishment of currency swap agreements with six African countries.[8] Going forward, African countries should have a clear strategy on how the internationalization of the renminbi will affect their economies and how best to take advantage of this trend. For instance, as China reduces its imports of commodities from the region, there is an opportunity for the region to attract Chinese direct investment in sectors such as manufacturing. Efficient payments between China and Africa can help facilitate such an adjustment.

3. Regional financial integration should be encouraged as it helps support trade and investment integration and increase the region's resilience to external shocks. Regional trade integration in sub-Saharan Africa is the lowest globally and countries in the region trade more with the rest of the world than with themselves. Regional integration has become a policy priority on the continent and as African countries reduce non-tariff trade barriers and improve regional infrastructure, it will be important to also strengthen regional financial integration. At the moment apart from the Southern African Development Community (SADC) and the West African Economic and Monetary Union (WAEMU), payments between African countries have to be mostly channeled through banks in the U.S. and eurozone. By

harmonizing legal and regulatory frameworks and building regional payment systems and other financial market infrastructure, African countries can help facilitate regional trade integration. Facilitating intra-regional payments can also help support the operations of pan-African banks and corporations, and support the development of regional money and capital markets. For instance, central banks in the five East African Community (EAC) member states have recently agreed on direct convertibility of their national currencies.[9] The data suggest that Nigeria can play a much more important role in terms of payment integration in the WAMZ and that there is a potential to increase integration in the Economic Community of Central African States (ECCAS).

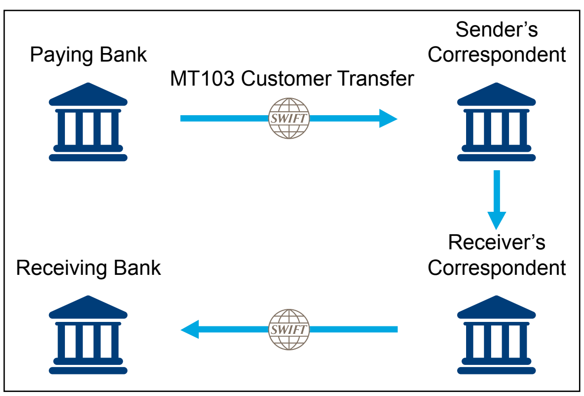
Finally, it will be important for African countries to consider the opportunities and challenges from the emergence of new technology such as blockchain technology and developments in electronic commerce.

DATA DESCRIPTION: SWIFT MT103 SINGLE CUSTOMER CREDIT TRANSFERS

Data from SWIFT provide a comprehensive source of transaction flows as cross-border payments are rarely routed outside of the SWIFT network. About 11,000 financial institutions in more than 200 countries and territories around the world use SWIFT's messaging services.

We focus on a specific type of SWIFT message, the MT103 message, which is a customer credit transfer (for a single payment) sent by or on behalf of the financial institution of the ordering customer to the financial institution of the beneficiary customer, instructing a fund transfer from the ordering customer to the beneficiary customer. For instance, a MT103 message would be used when South Africa-based company "ABC" would like to transfer $1 million for the import of goods to a foreign company "XYZ"'s U.S. dollar account in a U.S. bank (account "123456789") on a specific date.

Figure 1. How an MT103 Transaction is Conducted among Participating Entities.



Source: SWIFT

It is important to note that we do not have data on the ultimate beneficiary customer and that a payment, for instance, from a South Africa-based company to a Chinese company could be routed through a clearing bank in the U.S. As discussed below, such flows explain the large disconnect between trade flows and payments flows between China and SSA.

We also focus on the number of MT103 messages rather than their value for the following reasons. A longer time series is available for the number of messages compared to the value of messages. Furthermore, unlike the value of messages, the number of messages series is independent of inflation and exchange rates and has fewer outliers (see SWIFT for more detail).

The data cover the 2003-2014 period and all SWIFT messages to and from sub-Saharan Africa. We also have information on the currency denomination of the messages for the period 2010-2014.

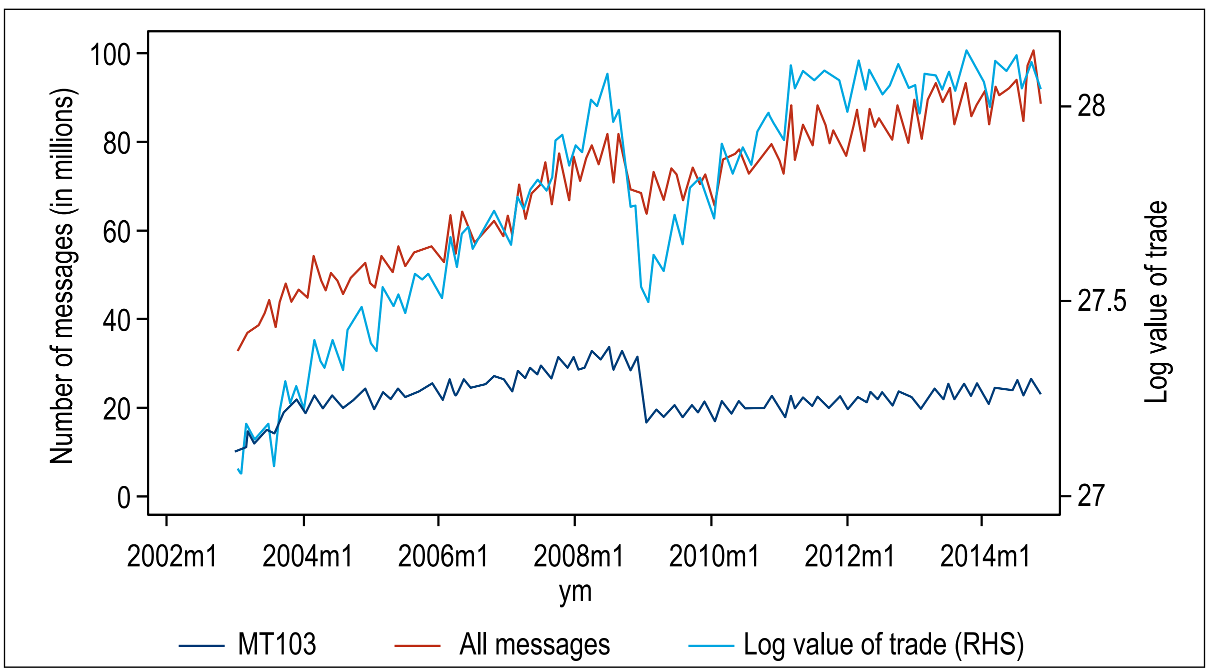
FINANCIAL FLOWS FROM SUB-SAHARAN AFRICA

SWIFT payments data are highly correlated with trade data. The 2008 global financial crisis led to a sharp reduction in both financial flows (plotted here as the total number of all types of messages) and trade. Although both types of flows recovered afterwards, their co-movement was less pronounced. In particular, trade (measured as the log of the value of exports and imports using data from the IMF DOTS) slowed down in recent years, and global MT103 messages did not recover from their pre-crisis trend (Figure 2).

In contrast to global MT103 messages, total messages sent from sub-Saharan Africa were resilient during the 2008 global financial crisis (Figure 3A). However, while messages sent within SSA and from the U.S. continued to grow, messages sent from the eurozone fell and did not recover fully. Messages sent from and to China are low and have remained at a low level after the crisis (Figure 3B).

There is an asymmetry in the effect of the 2008 financial crisis on MT103 messages sent and received from SSA.[3] Messages sent from the region did not fall in the aftermath of the crisis and actually continued to grow. In contrast, messages received by the region fell except for intra-African transactions. The fall was the most pronounced for messages received from the eurozone, which not only fell after the financial crisis but did not grow afterwards—while messages from the U.S. recovered after the crisis. This trend may be explained by the more severe and more sustained impact of the financial crisis on the eurozone economy. The reduced external demand in the eurozone coupled with the pull back of European banks from trade finance in the aftermath of the crisis and other de-risking activities should also be captured by the collapse of MT103 transactions from the eurozone.

Figure 2. Global Financial Activity and Global Trade



Log Value of Trade (RHS) refers to the value of exports and imports from the IMF Direction of Trade Statistics (DOTS) database.

Figure 3A. Number of MT103 Messages: Sent from Sub-Saharan Africa

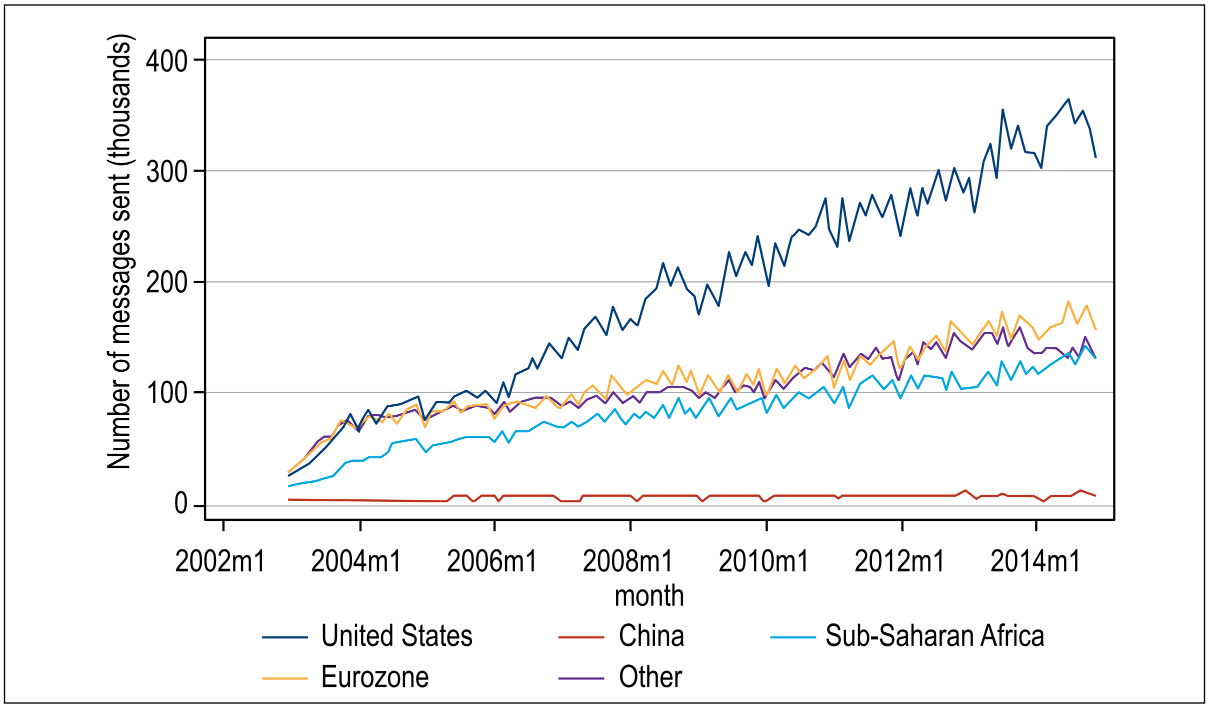
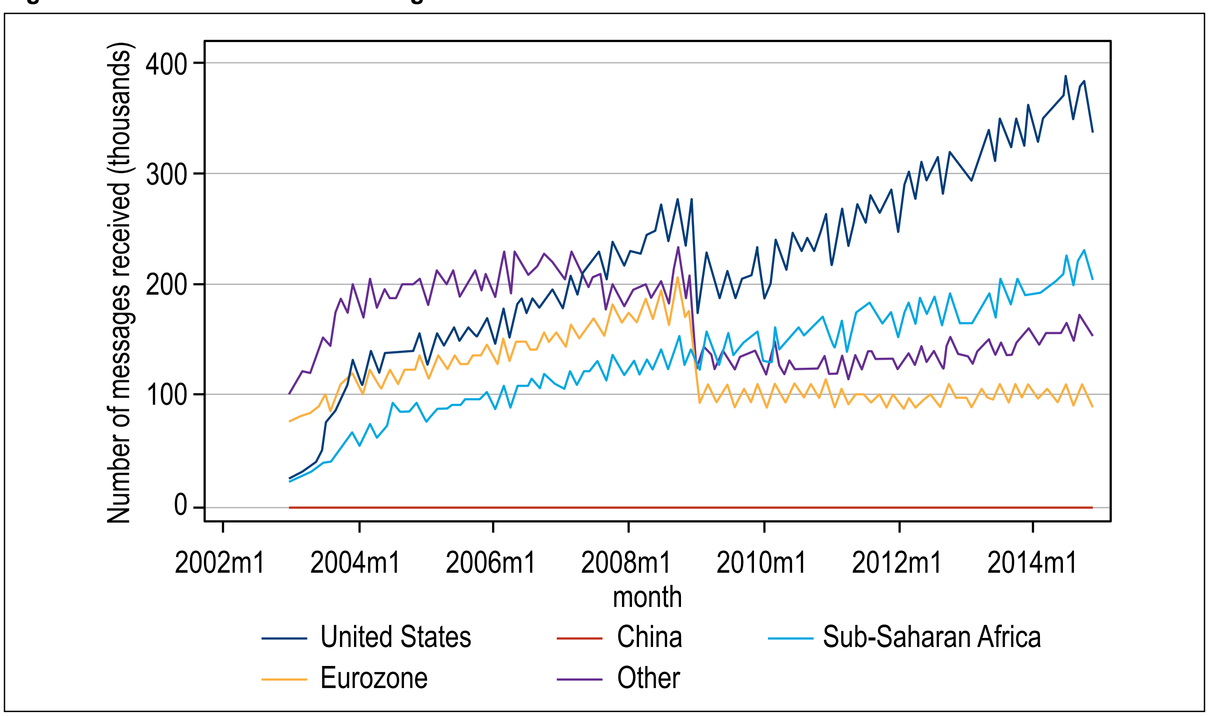


Figure 3B. Number of MT103 Messages: Sent to Sub-Saharan Africa



The predominance of U.S. dollar-denominated transactions

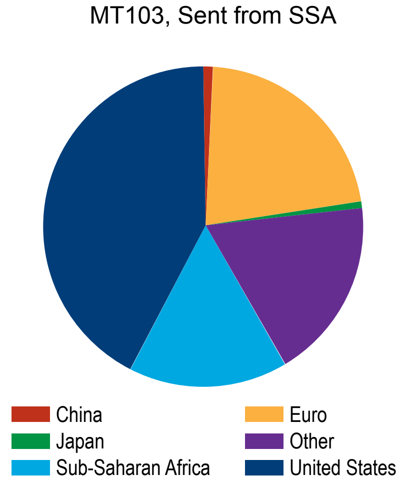
Where do financial transactions originate from and where do they go?

The U.S. dollar is by far the most-used currency in transactions to and from SSA. MT103 messages denominated in the U.S. dollar account for 37 percent and 31 percent of messages sent to and received by SSA, respectively. The euro is the second-most-used currency with, respectively, 26 percent and 23 percent of messages sent to and received by the region. In contrast to the U.S. dollar and the euro, the share of the Chinese renminbi is negligible at 0.21 percent and 0.01 percent of messages sent to and received by the region (Figure 4). Some local currencies of the region including the South African rand (ZAF), the West African CFA franc (XOF), and the Central African CFA franc (XAF) stand among the most-used currencies (Table 1). However, limited regional financial integration leads to a large share of intra-African to be denominated in U.S. dollars.

Although China is the region's largest bilateral trading partner, the U.S. remains the most important destination of the region's payments as measured by MT103 messages. The low volume of renminbi-denominated transactions is not surprising given that its internationalization is limited. The structure of African trade can also help explain the importance of the U.S. dollar as the region relies heavily on commodity exports, which are denominated in U.S. dollars.

Next, we compare trade flows and financial flows to establish some useful stylized facts.

Figure 4. Regional Breakdown of MT103 Sent and Received by SSA (2010-2014)



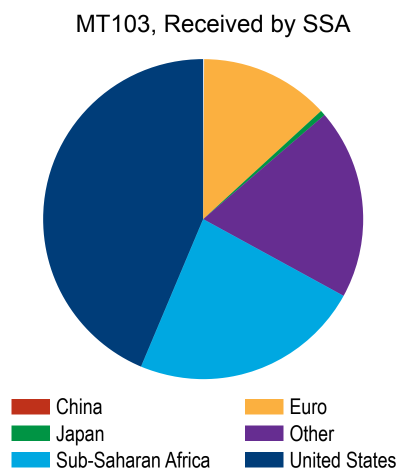


Table 1. Currency Decomposition of MT103 by SSA

Currency	MT103 Sent by SSA	MT103 Received by SSA
USD	36.54%	30.91%
EUR	26.17%	22.59%
ZAR	9.38%	16.76%
GBP	6.30%	5.07%
XOF	2.79%	3.61%
XAF	1.94%	2.33%
CAD	1.93%	1.47%
INR	1.84%	0.01%
AUD	1.72%	1.48%
KES	1.32%	3.69%
JPY	1.30%	0.23%
CHF	1.06%	2.22%
SGD	0.55%	0.25%
AED	0.54%	0.28%
THB	0.52%	0.00%
MUR	0.46%	1.22%
NAD	0.45%	0.74%
SEK	0.42%	0.39%
UGX	0.41%	0.79%
BWP	0.40%	0.60%
HKD	0.34%	0.10%
ZMW	0.28%	0.45%
SAR	0.22%	0.12%
NGN	0.22%	0.37%
CNY	0.21%	0.01%

Note: Currencies include: USD, U.S. Dollar; EUR, Euro; ZAR, South African Rand; GBP, Great Britain Pound; XOF, West Africa Franc; XAF, Central Africa Franc; CAD, Canadian Dollar; INR, Indian Rupee, AUD, Australian Dollar; KES, Kenyan Shilling; JPY, Japanese Yen; CHF, Swiss Franc; SGD, Singapore Dollar; AED, United Arab Emirates Dirham; THB, Thai Baht; MUR, Mauritian Rupee; NAD, Namibian Dollar; SEK, Swedish Krona; UGX, Uganda Shilling; BWP, Botswanan Pula; HKD, Hong Kong Dollar; ZMW, Zimbabwean Dollar; SAR, Saudi Riyal; NGN, Nigerian Naira; CNY, Chinese RMB.

TRADE AND PAYMENTS FLOWS

How do trade and payments compare over time?

We compare the share of trade defined as the share of trade between SSA and a country or a region in global trade (using data from IMF DOTS) with the share of payments defined as the share of MT103 messages from/to SSA to/from a country or region over the total number of global MT103 messages. There is a high correlation between payments and trade flows. Correlations between the two types of flows range from 0.63 to 0.74. So, in general, countries that trade more with SSA tend to account for a larger share of the payment flows with the region.

The general pattern, however, is only part of the story. As discussed above, the data show that the robust growth of SSA's trade with China has not been mirrored by payment transactions and the share of China has remained negligible. Interestingly, however, a closer look at the trade finance data shows that China favors using risk-mitigating trade finance tools such as letters of credit and documentary collections (MT400 and MT700) rather than the MT103 messages analyzed above. Indeed, we find that China accounts for about 20 percent of the total of trade finance messages between SSA and the rest of the world.[4]

The trade and payment relationship between China and Africa is in sharp contrast with the U.S. where trade with SSA has been declining over time while financial transactions have been growing robustly. In fact, SSA's trade with the U.S. has declined recently because of the fall in Nigerian oil exports to the U.S. Indeed, American demand for Nigerian oil has been curtailed by the increase in U.S. oil production as new technologies such as fracking are being implemented. The growth in financial transactions between SSA and the U.S. can be attributed to the increase in Sino-African trade, which is U.S. dollar-denominated and is channeled through U.S. banks.

The data show that, unlike the U.S. and China, both the shares of the eurozone's trade and financial transactions with SSA have fallen with a more pronounced decline in the share of financial transactions. While trade between the eurozone and SSA has consistently weakened, the effect of the 2008 financial crisis has been significant in reducing financial flows between the two regions.

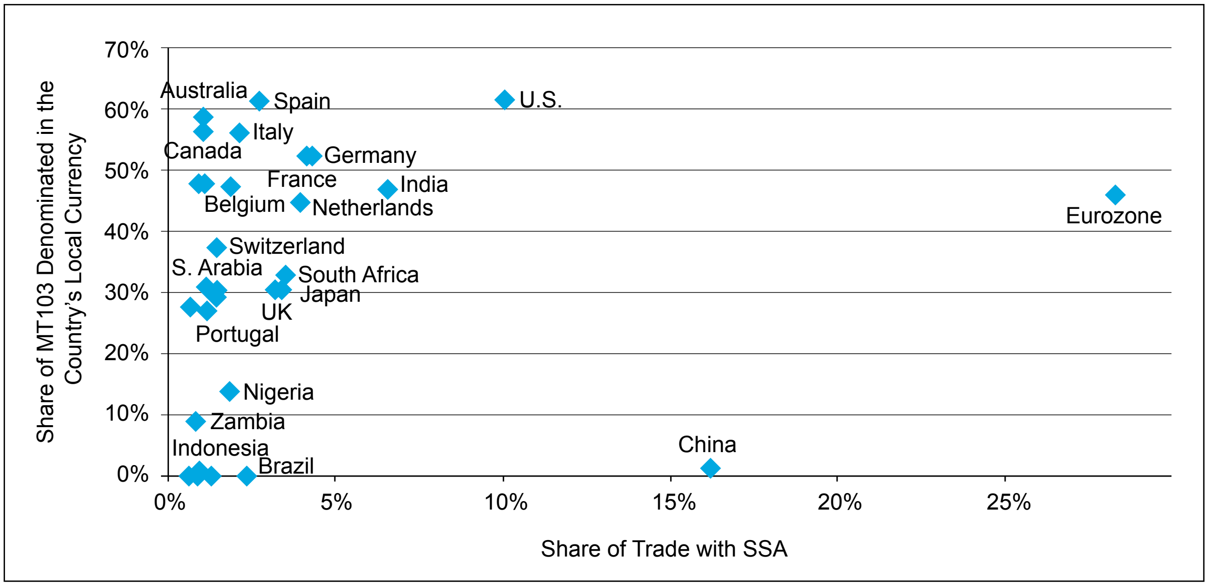
Intra-African trade and financial flows appear to have been increasing even in the aftermath of the 2008 financial crisis (although at a less rapid rate than trade with China and financial flows with the U.S.). This trend suggests the possible role of intra-regional trade and financial flows provides additional buffers to increase the resilience of the region.

How do trade and financial flows compare by country and by currency?

China is SSA's largest bilateral partner and is the recipient of about 15.8 percent of the region's exports and 16.2 percent of its trade. However, China ranks relatively low in terms of payments flows, and it accounts for only 1 percent of SSA's messages sent. Interestingly, most of SSA's messages sent to China are denominated in U.S. dollars (70.9 percent).

The U.S. accounts for 13.5 percent of SSA's exports but for about 42 percent of messages sent or received by SSA. U.S. dollar-denominated transactions account for 61.7 percent of messages between the region and the U.S.

Figure 5. Share of Trade with SSA and Share of Payment Denominated in Local Currency



The data show the predominant role of the U.S. dollar as the most-used currency for Africa's trade and, even more so, for Africa's financial flows with the rest of the world, including with countries such as China, Japan, Brazil, the U.K., Switzerland, and Taiwan. Not surprisingly, eurozone countries rely less on the U.S. dollar and use the euro. For instance, 53 percent of financial flows with France and Germany are denominated in the euro and 61.3 percent of financial flows with Spain.

India and South Africa are two countries that are outliers in their relatively lower reliance on the U.S. dollars. India accounts for 7.3 percent of the region's exports and 6.6 percent of its trade. Nigeria is now India's number-one supplier of oil and, thanks to a tax treaty with Mauritius, SSA has been India's largest source of foreign direct investment (FDI). However, only about 20.0 percent of financial flows between India and SSA are denominated in U.S. dollars and 2.9 percent in euros. The Indian rupee accounts for around 47.1 percent of total MT103 transactions between SSA and India. India is a special case as it widely uses local currency settlements in its trade with SSA region.

South Africa, which accounts for 3.6 percent of SSA's trade, also relies less on the U.S. dollar in its trade with the region. About 26.4 percent of financial flows between South Africa and SSA are denominated in U.S. dollars and 2.6 percent are euro-denominated. In fact, South Africa relies on its own currency, the rand, to trade with its African partners. In the next section, we take a closer look at the currency composition of intra-African financial flows.

Table 2. Payment Flows, Trade Flows and Dependance upon U.S. Dollars (Average over 2010-2014)

Counterpart Country	Share of Exports	Share of Ex+IM	Share of MT103 Sent	Share of MT103 Received	Share of MT103 in USD	Share of MT103 in Euro	Share of MT103 in Pound Sterling	Share of MT in Central Africa CFA Franc	Share of MT in West Africa CFA Franc	Share of MT103 in South African Rand	Share of MT103 in Counterpart Country's Local Currency
China	15.8%	16.2%	1.0%	0.0%	70.9%	7.2%	0.1%	0.0%	0.0%	0.1%	1.2%
United States	13.5%	10.1%	42.0%	41.6%	61.7%	0.5%	0.3%	0.1%	0.7%	2.6%	61.7%
India	7.3%	6.6%	1.3%	0.2%	19.9%	2.9%	0.6%	0.0%	0.0%	8.2%	47.1%
Netherlands	4.5%	4.0%	0.5%	1.1%	14.5%	44.9%	1.6%	0.0%	0.0%	16.8%	44.9%
Spain	4.0%	2.7%	0.3%	0.4%	12.4%	61.3%	0.5%	0.0%	0.0%	5.6%	61.3%
France	3.8%	4.2%	6.2%	6.3%	18.4%	52.5%	0.9%	0.1%	0.3%	4.6%	52.5%
Japan	3.6%	3.4%	0.4%	0.4%	40.6%	2.4%	0.1%	0.0%	0.0%	5.6%	30.7%
Germany	3.6%	4.3%	6.4%	2.2%	21.1%	52.6%	2.1%	0.0%	0.0%	2.6%	52.6%
United Kingdom	3.2%	3.2%	12.6%	7.9%	20.2%	20.4%	30.5%	0.4%	0.8%	0.8%	30.5%
Brazil	3.1%	2.4%	0.1%	0.0%	74.2%	3.9%	0.1%	0.0%	0.0%	1.7%	0.0%
South Africa	2.7%	3.6%	6.5%	3.2%	26.4%	2.6%	0.5%	0.0%	0.0%	33.2%	33.2%
Switzerland	2.3%	1.4%	0.6%	2.1%	21.1%	12.5%	1.6%	0.0%	0.0%	5.5%	37.4%
Italy	2.2%	2.2%	0.8%	0.7%	14.1%	56.4%	0.3%	0.0%	0.2%	7.3%	56.4%
Taiwan	1.9%	1.3%	0.2%	0.1%	35.8%	0.9%	0.0%	0.0%	0.0%	42.8%	0.0%
Belgium	1.5%	1.9%	2.3%	2.1%	21.0%	47.6%	1.8%	0.0%	0.1%	6.7%	47.6%
Canada	1.5%	1.1%	0.6%	0.8%	20.2%	1.0%	0.1%	0.0%	0.0%	1.3%	56.6%
Korea, Republic of	1.3%	2.3%	0.1%	0.1%	29.6%	3.4%	0.0%	0.0%	0.0%	46.6%	0.1%
Australia	1.3%	1.0%	1.2%	2.7%	9.8%	0.7%	0.5%	0.0%	0.0%	5.2%	58.7%
Portugal	1.3%	1.4%	3.6%	0.5%	27.9%	29.4%	9.9%	0.0%	0.0%	9.7%	29.4%
Botswana	1.2%	0.6%	0.3%	2.6%	34.7%	1.4%	1.4%	0.0%	0.0%	23.6%	17.0%
Zambia	1.2%	0.8%	0.2%	1.2%	47.1%	0.6%	0.3%	0.0%	0.0%	14.0%	9.0%
Namibia	1.0%	0.6%	0.4%	0.2%	7.9%	0.8%	1.6%	0.0%	0.0%	31.2%	29.8%
Indonesia	1.0%	1.0%	0.0%	0.0%	61.0%	16.1%	0.2%	0.0%	0.0%	0.0%	0.9%
Ghana	1.0%	0.6%	0.1%	0.2%	38.3%	1.6%	0.4%	0.0%	9.1%	17.3%	10.8%
Zimbabwe	0.8%	0.5%	0.3%	1.8%	45.3%	0.7%	0.8%	0.0%	0.0%	27.4%	0.0%
Mozambique	0.8%	0.6%	0.1%	0.7%	38.7%	2.8%	0.1%	0.0%	0.0%	28.2%	9.7%
Côte d'Ivoire	0.8%	0.9%	0.7%	1.3%	3.3%	1.5%	0.0%	4.9%	48.0%	2.0%	48.0%
Malaysia	0.7%	0.9%	0.1%	0.0%	50.0%	3.8%	0.8%	0.0%	0.0%	24.5%	0.0%
Nigeria	0.7%	1.8%	0.1%	0.2%	42.5%	6.2%	1.5%	0.2%	5.0%	10.7%	13.9%

Table 3. Share of MT103 Payment Flows within the Region, by Country (2003-2014)

Country	Share of MT103 Sent Outside of SSA	Share of MT103 Received Outside of SSA	Share of MT103 Sent & Received Outside of SSA	Share of MT103 Sent within SSA	Share of MT103 Received within SSA	Share of MT103 Sent & Received within SSA
South Africa	31.41%	40.18%	35.80%	14.71%	41.12%	27.92%
Senegal	1.67%	3.15%	2.41%	15.04%	14.79%	14.92%
Botswana	0.94%	0.76%	0.85%	13.52%	2.40%	7.96%
Côte d'Ivoire	2.52%	1.29%	1.91%	4.66%	4.35%	4.50%
Mali	0.53%	0.91%	0.72%	4.02%	4.30%	4.16%
Zimbabwe	1.86%	1.46%	1.66%	5.71%	1.91%	3.81%
Burkina Faso	0.49%	0.80%	0.64%	3.67%	3.48%	3.58%
Mauritius	6.07%	5.72%	5.90%	3.98%	2.05%	3.02%
Zambia	1.73%	1.55%	1.64%	4.65%	1.25%	2.95%
Kenya	5.29%	8.36%	6.83%	3.09%	2.53%	2.81%
Togo	0.36%	0.48%	0.42%	2.06%	2.95%	2.51%
Swaziland	0.12%	0.22%	0.17%	3.63%	1.23%	2.43%
Benin	0.61%	0.64%	0.62%	1.82%	2.47%	2.14%
Mozambique	1.08%	1.34%	1.21%	2.85%	1.16%	2.00%
Niger	0.26%	0.32%	0.29%	1.95%	1.83%	1.89%
Namibia	0.74%	1.15%	0.94%	1.15%	2.37%	1.76%
Lesotho	0.09%	0.11%	0.10%	1.75%	0.99%	1.37%
Cameroon	1.67%	1.34%	1.51%	1.38%	1.33%	1.35%
Malawi	0.64%	0.72%	0.68%	1.40%	1.17%	1.28%
Tanzania	2.35%	3.10%	2.73%	1.06%	1.20%	1.13%
Gabon	2.09%	0.34%	1.22%	1.51%	0.70%	1.10%
Uganda	2.06%	3.06%	2.56%	0.96%	1.04%	1.00%
Madagascar	1.05%	1.62%	1.34%	0.63%	0.70%	0.66%
Nigeria	15.18%	3.78%	9.48%	0.79%	0.48%	0.63%

TRANSACTIONS WITH THE REST OF THE WORLD

With about 45.3 percent of total payments together, South Africa and Nigeria—the region's largest economies—dominate SSA's payments with the rest of the world. South Africa accounts for 35.8 percent of payments (share of MT103 sent and received) far more than Nigeria, which accounts for about 9.5 percent of payments. Other countries with relatively high share of payments include Kenya (6.8 percent) and Mauritius (5.9 percent). As a group, the EAC (East African Community) remains important with more than 12.1 percent of payments (for Kenya, Tanzania, and Uganda), more than RECs sharing a common currency like the the West African Economic and Monetary Union (WAEMU) (4.3 percent for Senegal and Côte d'Ivoire) or the Economic Community of Central African States (ECCAS) (2.7 percent for Cameroon and Gabon).

INTRA-AFRICAN FINANCIAL FLOWS

Regional integration is one of the key priorities for African policymakers.[5] Non-tariff barriers such as delays along regional transit routes and rent-seeking activities at border crossings substantially limit cross-border trade in Africa, and efforts to reduce them should be accelerated. However, trade integration still faces another type of obstacle in the form of transaction costs for cross-border payments. Although often overlooked, stronger financial integration can help facilitate further regional trade and investment integration not only through lower transaction costs but also through lower costs of finance to businesses.

The currency denomination of financial flows to and from SSA shows that the South African rand (ZAF) and the CFA franc (XOF for the WAEMU and XAF for the ECCAS) are the most-used currencies after the U.S. dollar and the euro.

The data give a good idea of a country's integration with the rest of the region in terms of cross-border payments. Indeed, most intra-regional payment flows are denominated in the South African rand and occur among the four member countries of the Common Monetary Area (CMA) and the 15 member countries of the SADC on the one hand and among the eight member countries in the CFA franc zone in West Africa (WAEMU) and to some extent the six countries using the CFA franc in Central Africa (ECCAS) on the other.

In particular, the data indicate that South Africa is the main locus of financial flows in SSA and other countries in southern Africa such as Botswana, Zimbabwe, Zambia, Mauritius, Swaziland, Namibia, and Lesotho are also important. In West Africa, Senegal and Côte d'Ivoire are the most important sources and recipients of intra-African flows in West Africa, along with other CFA franc countries such as Mali, Burkina Faso, Togo, Benin, and Niger. Central African countries that also use the CFA franc such as Cameroon and Gabon are also important. Interestingly, intra-African flows from East African countries except for Kenya are relatively low. Kenya has a relatively large banking sector and is a regional financial center, so it is not surprising that it is the destination or origin of intra-East African financial flows.

With less than 5 percent of intra-regional payment flows, it is surprising that Nigeria, the largest economy in SSA and with a sizable banking sector, does not appear in the list of top recipients and originators of payment flows within the region. One explanation could be that Nigeria's trade (it is the region's largest oil exporter) is mostly oriented towards countries outside Africa. Nigeria's share of MT103 transaction with rest of the world outside of SSA turns out to be around 10 percent of the whole region, which is the second-largest share after South Africa. However, this explanation is not fully convincing. In fact, trade data indicates that at 16.8 percent, Nigeria has the largest share of intra-regional trade behind South Africa, which accounts for 36.8 percent. In spite of being a more important regional trade partner than Gabon (which is also an oil exporter), Nigeria accounts for about the same share of intra-regional financial flows.

A more plausible explanation for the asymmetry between the trade activity and payment activity via SWIFT is that, unlike Gabon, Nigeria is less formally financially integrated with the rest of SSA. In contrast to the Nigerian naira, the CFA franc used in Gabon (XAF) is shared with the five other countries of the ECCAS and is fully convertible with the CFA franc used in the eight WAEMU countries (XOF). It is also pegged to the euro under the purview of one regional central bank (BEAC).

Table 4. Trade Flows and Financial Flows, within SSA Region

Country	Share of Exports	Share of EX+IM	Share of MT103 Sent to the Rest of the Region	Share of the MT103 Received from the Region
South Africa	36.85%	33.23%	37.41%	42.17%
Nigeria	16.84%	14.98%	4.89%	4.42%
Côte d'Ivoire	16.10%	13.62%	9.58%	4.12%
Senegal	15.06%	13.38%	28.28%	35.26%
Cameroon	14.75%	13.13%	20.76%	17.58%
Kenya	13.19%	14.40%	10.34%	12.62%
Zambia	10.47%	8.35%	1.36%	1.02%
Angola	7.45%	4.79%	5.59%	1.01%
Zimbabwe	6.95%	9.22%	3.73%	1.42%
Mauritius	5.98%	6.76%	11.74%	6.37%
Gabon	4.55%	7.00%	5.76%	4.14%
Tanzania	4.41%	5.75%	1.07%	4.31%
Mozambique	4.29%	4.20%	1.33%	0.84%
Togo	4.16%	3.62%	2.22%	3.87%
Uganda	4.16%	5.81%	1.75%	2.24%
Congo	2.88%	3.12%	3.34%	2.67%
Madagascar	2.76%	4.31%	2.97%	4.41%
Ghana	2.43%	4.11%	3.48%	4.24%
Chad	2.01%	3.65%	2.62%	2.23%

INTRA-REGIONAL ECONOMIC COMMUNITIES FINANCIAL FLOWS

We next focus on payment flows between regional economic communities and the rest of the region. We focus on relatively financially integrated RECs such as the SADC where the rand is a key currency or the WAEMU and the ECCAS where the CFA franc is the common currency as well as the EAC, which is stepping up its integration effort and the WAMZ, which includes Nigeria and is less financially integrated.

The data show the predominant role played by the SADC and the WAEMU as locus of financial flows to the rest of SSA (Figure 6 and Table 5). Interestingly, the EAC, thanks to its integration efforts such as the integration of its payment systems, is playing a larger role than the ECCAS, which has a common currency. While some EAC countries (such as Kenya) have a relatively diversified export structure, the ECCAS is dominated by oil exporters. Thus, the uniformity in the trade structure of the ECCAS may reduce its intra-regional trade. However, a lesson from comparing the ECCAS with the EAC could be that the constraints to financial integration from not having a common currency can be

Figure 6. MT103 Sent Within SSA, 2013

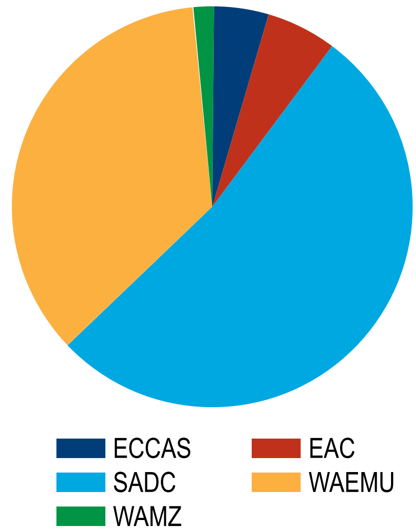


Table 5. Payment Flows, Trade Flows and Transaction Currency – Within and Between Regional Economic Zones

A. With the Rest of the Region								
Country Group within the Region	**Share of Trade**	**Share of MT Sent**	**Share of MT Received**	**Share of MT in USD**	**Share of MT in EUR**	**Share of MT in XAF**	**Share of MT in XOF**	**Share of MT in ZAR**
ECCAS	10.91%	2.48%	0.90%	3.88%	2.43%	22.26%	45.06%	5.49%
EAC	5.62%	11.60%	9.12%	28.42%	1.81%	0.00%	0.24%	23.73%
SADC	6.65%	7.89%	11.24%	24.86%	2.91%	0.01%	0.02%	29.32%
WAEMU	0.91%	0.10%	0.04%	5.47%	5.83%	11.38%	38.51%	2.15%
WAMZ	5.30%	3.09%	2.71%	22.92%	5.05%	0.17%	13.86%	19.05%
B. Within the Economic Community								
Regional Group within the Region	**Share of Trade**	**Share of MT Sent**	**Share of MT Received**	**Share of MT in USD**	**Share of MT in EUR**	**Share of MT in XAF**	**Share of MT in XOF**	**Share of MT in ZAR**
ECCAS	2.65%	9.86%	10.03%	0.01%	0.02%	79.80%	0.02%	0.01%
EAC	12.52%	10.40%	10.50%	41.24%	0.39%	0.00%	0.00%	0.45%
SADC	47.31%	15.14%	15.35%	29.89%	4.23%	0.00%	0.00%	28.57%
WAEMU	8.03%	38.85%	39.50%	0.01%	0.03%	0.00%	77.84%	0.00%
WAMZ	0.09%	0.59%	0.60%	73.18%	2.67%	0.00%	0.01%	0.01%

alleviated by efforts to integrate the regional payment system.

The data, however, show that for RECs with a common currency such as the WAEMU and the ECCAS, intra-REC payments are dominated by the common currency. For instance, about 65 percent of payment flows in the ECCAS and 63.5 percent in the WAEMU are denominated in that REC's common currency, the CFA franc, whereas the SADC and the EAC rely more on the U.S. dollar with 29.1 percent and 35.4 percent, respectively. The WAMZ, which includes Nigeria, is the least integrated with 41.5 percent of transactions in U.S. dollars rather than a regional currency.

CONCLUSION

Using a unique dataset of cross-border payments from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) as well as bilateral trade data from the IMF (Direction of Trade Statistics-DOTS) from 2010 to 2014, we find a number of stylized facts when looking at the payment and trade corridors with SSA:

- Payment flows from the eurozone to sub-Saharan Africa (SSA) fell sharply in the aftermath of the 2008 global financial crisis and did not recover. Reduced economic activity in the eurozone and banks' compliance with new global financial regulations such as Basel III can help explain this severe drop. In addition, the data appear to give some support to anecdotal and survey evidence of de-risking activities by European banks following the 2008 global financial crisis. De-risking—terminating or restricting business relationships with clients to avoid rather than manage risk—is associated with the reduction in correspondent banking relationships (CBR), which should also be captured by the sharp and persistent reduction in payments from Europe to the region.
- Bilateral trade flows with sub-Saharan Africa follow a different route than payment flows with the region. U.S. dollar-denominated transactions dominate payments between SSA and the rest of the world and U.S. banks dominate payment relationships with SSA. This is also the case for the payment of intra-African trade. Whereas China is the region's most important bilateral trading partner, very little of its payments with African countries go through Chinese banks or are denominated in Chinese renminbi. These payments may instead go through U.S. dollar payments through U.S. banks. However, the paper finds evidence that payments between Africa and China rely more on risk mitigating trade finance instruments (such as letters of credit and documentary collections, MT400 and MT700 messages) compared to payments between Africa and other regions.
- Regional integration—measured by payment flows between African countries—is increasing and has proved resilient to the 2008 financial crisis. Increased intra-regional trade has been supported and facilitated by improvements in regional financial infrastructure. Within the region, payment flows with the Southern African Development Community (SADC) dominate while within regional economic communities (RECs), payments within the West African Economic and Monetary Union (WAEMU) are the highest and are denominated in its common currency, the CFA franc (XOF).

The data indicate a clear divergence between African trade and payment corridors, which entail a number of costs and risks for the region. As Africa relies heavily on commodity exports typically priced in U.S. dollars, it is not surprising that the U.S. currency plays such a central role in African payment flows.[1] However, channeling most of African payments through U.S. and eurozone banks entails costs such as higher transaction costs or longer processing times and exposure to spillover effects from advanced economies. Channeling African payments mainly for the settlement of trade flows through banks in the U.S. and the eurozone opens a channel for the transmission of global financial crises to Africa even in the absence of financial linkages. A related risk for Africa is the possibility of having payment channels closed when the ultimate beneficiary resides in a country that is under U.S. or European sanctions.

Our findings confirm previous results from Chilosi et al. (2013) that current payments flows do not reflect the magnitude of commercial flows between Africa and Asia; that the U.S. dollar prevails as the dominant trade currency and the euro is rarely used for transactions with clients that are not based in the eurozone; and that the relative importance of U.S. dollar clearing banks has increased over time. [2]

Based on the above stylized facts, the paper offers a number of policy recommendations to (i) monitor and assess the unintended consequences of global financial regulation—such as de-risking by global banks—on African economies; (ii) increase the use of the renminbi in Sino-African trade and prepare African economies for the internationalization of the renminbi; and (iii) increase regional integration through improvements in the payment systems, especially in the West African Monetary Zone (WAMZ) where increased payment flows with Nigeria are relatively limited and in the Economic Community of Central African States (ECCAS).

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ENDNOTES

1. For the role of the U.S. dollar as an invoicing currency in international trade, please see Gopinath, Gita. "The International Price System" No. w21646. National Bureau of Economic Research, 2015.
2. Chilosi Thierry, Damien Dugauquier, Geraldinde Lambe, and Michimaru Onizuka. 2013, "African Payments: Insights into African Transaction Flows," SWIFT White Paper
3. There is also an asymmetry in the volume of MT103 transactions as messages sent from SSA are higher than messages received by the region. It is difficult to say whether the asymmetry in the type of MT103 messages to and from SSA is driven by the region's trade balance with the rest of the world. SSA ran a trade surplus with the rest of the world during 2004-2008 and a trade deficit afterwards. In surplus years, eight countries drove the region's trade surplus. In addition, SSA ran a surplus in goods trade and a deficit in service trade throughout the 2000s.
4. For a detailed discussion on trade finance using SWIFT data, see Niepmann, Friederike, and Tim Schmidt-Eisenlohr (2014), "International Trade, Risk, and the Role of Banks," Federal Reserve Bank of New York Staff Report No. 633, November. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr633.pdf. They clarify that, in a letter of credit, the importer's bank guarantees payment to an exporter upon proof that the goods were delivered to the importer. A documentary collection consists of ownership documents that are forwarded by the exporter's bank to the importer's bank; the importer receives the documentary collection only upon payment. Whenever a bank in an importing country issues a letter of credit, it sends a MT700 message to the bank in the exporting country; when it releases a payment related to a documentary collection, it sends an MT400 message to the exporting country.
5. See for instance the Common African Position (CAP) on the Post-2015 Development Agenda http://www.uneca.org/sites/default/files/uploaded-documents/Macroeconomy/post2015/cap-post2015_en.pdf
6. See also "Withdrawal from Correspondent Banking: Where, Why, and What to Do About it," World Bank, 2015 http://documents.worldbank.org/curated/en/2015/11/25481335/withdraw-correspondent-banking which uses survey data for 11 African banks.
7. For instance, in 2015, a large global bank was sentenced by a U.S. judge to forfeit $8.3 billion and pay a $140 million fine for violating sanctions against Sudan, Cuba, and Iran.
8. See comments on China's Africa strategy and the 2015 Forum on China-Africa Cooperation http://english-saceta.people.cn/a/Sino-SA_Relations/2016/0201/210.html
9. See James Anyanzwa, The East African, 30 July 2016 http://www.theeastafrican.co.ke/news/EAC--is-a-single-currency-on-the-way-/2558-3323198-item-0-wtngr9z/index.html

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