



# The Potential of Sudanese Diaspora Remittances

September 2020

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## Foreword:

### H. E. Prime Minister Abdalla Hamdok

The transitional Government of Sudan welcomes the publication of this study on the potential of Sudanese diaspora remittances.

The analysis is refreshingly honest in indicating the many knowledge gaps we suffer from when it comes to understanding the nature and amount of remittances in Sudan. It, however, does indicate a likely magnitude for remittances, which is in excess of the amounts Sudan has been getting in International assistance.

We can take the needed measures to expand the productive contribution of the Sudanese diaspora to the country's development. The transitional Government is fully aware and appreciative of the efforts exerted by the Sudanese diaspora in acting as the spokespersons of the revolution in far flung corners of the World. The Prime Minister's office has been engaged in some initiatives involving Sudanese diaspora and has constituted a dedicated diaspora task force for more systematic engagement with the diaspora.

We believe this study can make a useful contribution to the Government's development effort, by highlighting an overlooked source of financing available to us during this transition phase. We are also proud that the study largely depends on contribution of our Sudanese experts and illustrates the catalytic role that the UN system can play in unleashing national potential.

We welcome the recommendations of this study for a more systematic approach to the collection and use of data relating to the diaspora and deepening their contribution to our dual transition to peace and democracy.

We cherish the contribution of the diaspora and look forward to working with UNDP and other partners to deepen our understanding of the potential contribution of diaspora to the new Sudan. We are particularly interested in using the financial and human resources of the diaspora to build an inclusive economy that unleashes the potential of the youth and women who led the revolution.

We are alarmed at the decline in remittances the study expects due to the combined impact of the slump in oil prices and the COVID-19 lockdown measures introduced in major host countries of Sudanese migrant workers. We look forward to working with the concerned host Governments to avert an expected large scale return of migrant workers at this critical juncture, where the Sudanese economy suffers from additional recessionary forces, unleashed by the pandemic.



**H. E. Abdalla Hamdok**  
*Prime Minister*

## Foreword: UNDP Resident Representative Selva Ramachandran

The political transition in Sudan creates an exceptional opportunity to involve the diaspora in the country's socioeconomic development. Anecdotal evidence shows the diaspora makes a valuable contribution to social stability in the country by allowing significant numbers of the poor to meet their basic consumption needs. This role is expected to continue, driven by strong bonds of social solidarity embedded in Sudanese culture.

The Sudanese diaspora is poised to make additional contributions to the country's development through its expertise and investment funds. Diaspora can provide technical knowledge, as well as a new culture of doing business and providing public services. Remittances are particularly important as they provide a reasonably stable source of foreign exchange that can be utilized to fund essential imports, thus reducing Sudan's dependence on donor assistance and associated conditionality.

The transitional Government of Sudan is interested in maximizing the contribution of the Sudanese diaspora to the transition process. It values the policy space that relying on national financial and technical resources creates. The Government is accessing diaspora expertise to help with performance of key Government functions. It plans to enhance the role of migrants by accessing diaspora funds to provide space to reform the foreign exchange market and unify the exchange rate for the Sudanese Pound. The Government also plans to attract diaspora investment in productive activities, and access diaspora expertise in diverse fields.

Having worked with the diaspora on a number of projects, UNDP looks forward to continuing its support to Sudanese authorities and the diaspora to ensure the greatest contribution to Sudan's transition. It is in this context we issue the current study, the most up to date effort to estimate the size of remittances in Sudan and better understand their nature. The study is timely given the likely reduction in remittances due to COVID-19 and the slump in oil prices.

We hope this study will allow a better-informed debate about the potential role of remittances by diaspora in realizing Sudan's economic revival - a prime component of the new and inclusive Sudan that the December 2018 revolution seeks to establish. We stand ready to assist our Sudanese partners to further refine and prioritize recommendations for future action and proceed with implementation of priority interventions in partnership with relevant UN entities and other interested parties.



**Dr. Selva Ramachandran**  
*Resident Representative,  
UNDP Sudan*

## Acknowledgements

This study is an in-house UNDP Sudan initiative, including a year long research and data collection effort. It was prepared by three colleagues, namely Dr. Selva Ramachandran, Resident Representative; Mohammad Pournik, Senior Economist; and Dr. Abdalatif Hassan, National Economic Analyst. Mohammad Pournik took the lead in writing the final study drawing on background papers from Dr. Ismail Abbo, Associate Professor, Department of Economics, Medical Sciences University; Dr. Ebaidalla Mahjoub Ebaidalla, Assistant Professor, Department of Economics, University of Khartoum; Dr. Abdalla Ali Ahmed Idriss, Assistant Professor, Department of Economics, Economic and Social Research Institute, Khartoum; and Leen Consultancy, Khartoum.

We would like to thank the many participants in surveys who cooperated with our researchers and provided useful information about remittances sent and received and how they are used. The drafters of background papers showed a lot of patience in the face of many hours of discussion about their findings and professionally handled all requests for additional clarifications.

Shahrokh Fardoust, Hamed Ghoddusi and Ishac Diwan, respectively of the College of William and Mary, the Stevens Institute of Technology and the Harvard Kennedy School offered valuable professional reviews on the estimation of informal remittances, done by Ebaidalla and Idriss. This gives us additional confidence regarding the robustness of estimates produced.

The draft has benefitted from extensive comments by Selva Ramachandran, Thangavel Pananivel, Abdalatif Hassan, Khalid Lord, Khalid Eltahir, Ahmed Elhag, Willian Seal, Vito Intini, Devika Iyer, Bashair Ahmed and Samia Nour.

UNDP Sudan, however, remains responsible for any remaining errors of omission or commission and hopes that additional constructive comments will lead to the correction of these errors.

## Glossary of Terms

**Brain Drain:** The situation in which large numbers of educated and very skilled people leave their own country to live and work in another one

**Circular migration:** The temporary and usually repetitive movement of a migrant worker between home and host areas, typically for the purpose of employment.

**Diaspora:** People who come from a particular nation, or whose ancestors came from it, but who now live in many different parts of the world

**Emigration:** Moving from one's country of nationality or usual residence to another country, so that the country of destination effectively becomes the new country of usual residence.

**Formal remittances:** Remittances which enter a country through official banking channels, informal remittances: Remittances which occur through private, unrecorded channels. Such remittances include money brought home by friends, relatives and the migrant himself/herself.

**International migration:** The movement of persons away from their place of usual residence and across an international border to a country of which they are not nationals.

**Involuntary return:** Return of a migrant to his/her country of origin that is not based on his/her conscious choice.

**Irregular migration:** Movement of persons that takes place outside the laws, regulations, or agreements governing the entry into or exit from the State of origin, transit or destination

**Migrant:** A person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons.

**Migrant worker:** A person who engaged in a remunerated activity in a State of which he or she is not a national.

**Migration:** The movement of persons away from their place of usual residence, either across an international border or within a State.

**Migration profile:** An analysis of available data on migration-relevant aspects of a country's national context.

**Official transfer:** Transfer of funds through a bank or other official channel, such as a registered foreign exchange agency.

**Permanent migration:** Movement from country of residence to another country with the intention of making the new country one's home country.

**Poll tax:** Tax imposed on an individual simply based on his/her role as a resident in a country, without regard to the income or wealth of the concerned individual.

**Regular migration:** Migration that occurs in compliance with the laws of the country of origin, transit and destination.

**Regular migration pathways:** Migration schemes that allow eligible persons to migrate regularly to the concerned country of destination based on conditions and for a duration defined by such country.

**Remittance:** A transfer of money, often by a foreign worker to an individual in their home country.

**Returnee:** A person who comes back to his country of birth/residence after residing in a foreign country for some time.

**Social remittances:** The transfer of ideas, behaviors, identities and social capital from migrants to their communities of origin.

**Temporary migration:** Movement from country of normal residence to another country for a fixed period and purpose, for example as a student or contract worker.

**Unofficial transfer:** Transfer of funds through informal channels, such as the Hawala system in the Middle East, which are not captured in official data and are not subject to control of the countries concerned.

## Executive Summary

Information about the diaspora and their remittances to Sudan are limited. We know reported remittances for Sudan substantially understate the actual transfers, as they exclude amounts sent through informal channels. A small number of informal transfer estimates exist, but the latest one dates to 2014. For this study, UNDP commissioned a new peer reviewed estimate of informal transfers, and two limited surveys - one of migrants and one of their families in Sudan.

Our twin surveys indicate that, while emigration has served Sudan well as a response to limited job opportunities in the country, recent changes in policies in main host countries limit prospects for further emigration. The number of Sudanese living outside the country is estimated at four to five million. Information about the diaspora's technical capacity is limited. From information in various Sudanese migrant databases, we can estimate that 100,000 highly qualified Sudanese are potentially interested in assisting with the country's development.

We estimate that total remittances (formal plus informal) peaked at US\$3.3 billion in 2013 and settled at \$2.9 billion for 2017 and 2018. Remittances risk falling by as much as \$500 million in 2020 due to the COVID-19 induced recession in GCC countries through falling oil prices and lockdown measures, which negatively impact employment and pay for the hundreds of thousands of Sudanese migrants in these countries.

Due to problems with international banking, lack of trust in the Sudanese banking system, and the existence of multiple exchange rates, the bulk of remittances are sent to Sudan through unofficial channels. The ratio of remittances sent through formal channels over the period 2014 to 2018 is estimated to vary between six and sixteen percent. Despite actual remittances being many times higher than estimated official remittances, they are not enough to cover the trade deficit, which has been oscillating around the \$5 billion mark since the separation of South Sudan in 2011.

The bulk of remittances meet the daily needs of family and friends in Sudan. Between 20 to 30 percent are devoted to investments, mostly in real estate. The distribution between investments and consumption changes in response to economic conditions in the country. The ratio invested goes up during boom periods, while consumption support becomes more important during periods of increasing poverty.

Data to estimate the impact of remittances on poverty rates in the country are limited due to insufficient attention to the issue of remittances in the Household Income and Expenditure Surveys (HIES) carried out in 2009 and 2014. Anecdotal evidence suggests that remittances play an important role in allowing the many poor Sudanese to maintain a minimal level of consumption and avoid destitution. The HIES planned for 2020 should increase attention to remittances to provide a better understanding in the future.

Sudan will need to create a comprehensive database of Sudanese diaspora in different countries, irrespective of the reasons they left Sudan. There is also need for rigorous studies to better understand the dynamics that lead many Sudanese to migrate to other countries in search of a brighter future. A better understanding is also required of the positive and negative impact of outmigration, and associated remittances, on Sudan's development.

A strengthened evidence base should enable authorities to better organize the humane movement of migrant workers to labour receiving countries, while minimizing brain drain and maximizing the contribution of the diaspora to Sudan's socioeconomic and political transition. To this end, there should be informed public debate on the challenges and opportunities of diaspora movements, including remittances.



# (1)

## Introduction and Methodology

This study seeks to encourage informed discussion regarding the potential contribution of diaspora remittances to Sudan's socioeconomic development, by providing the most up to date estimate of remittances in Sudan and an initial assessment of how they are being used.

Given the relative lack of data, our approach is eclectic, using a mixture of different sources and methods. This study does not claim to have the definitive answer on the issue of the Sudanese diaspora and their contribution to the country's development. We are aware of systematic approaches to the study of diaspora issues, including brain drain, but do not have data to even confirm the existence of brain drain, let alone quantify it. Similarly, we are unable to quantify the beneficial and negative impacts of remittances. The difficulty is particularly acute with respect to negative impacts such as an overvalued exchange rate and draining of a dynamic younger labour force.

Based on anecdotal evidence and earlier studies on informal remittances in Sudan, we have commissioned a rigorous econometric simulation of factors affecting formal remittances to develop a more realistic understanding of the potential importance of remittances in Sudan's development.

The simulation's results are consistent with earlier studies by Elbadawi in 1994<sup>1</sup>, Suliman et al in 2014<sup>2</sup> and Ebaidalla and Edriess in 2015<sup>3</sup>. The econometric model uses variables such as official remittance flows, parallel market premium, inflation, financial sector development and trade openness for the period 1980 to 2018. It uses the GDP per capita and inflation data of the Central Bureau of Statistics, domestic banking credit to the private sector, official and parallel market exchange rates, and trade as percentage of GDP of the Central Bank of Sudan. Official remittances and foreign income (i.e. average income of host countries) are sourced from the World Bank Development Indicators. All monetary variables are used in real values. The main features of the econometric model are presented in Appendix A.

We have also commissioned two surveys of migrants and remittance receivers to understand how money is transferred and used. We compare the ratio of formal to total remittances with channels of transfers used. We then compare the resulting total figure with estimates of remittances for similar African countries to gauge if results are reasonable.

We evaluated the consistency of data between the surveys of migrants and receivers, finding discrepancies that merit further study, but no evidence to doubt the robustness of the simulation's results. We also obtained additional information regarding the transfer process, including the associated cost, from foreign exchange dealers in the informal market.

Our Khartoum survey of remittance receivers covered a random purposive sample of 240 households, divided by the respective population weights of four localities with the highest concentrations of migrant workers: Khartoum, Jabal Awleya, Karari and Sharg Elneil.

(1) Elbadawi, I. 1994. "The Expatriate Workers' Remittances, Parallel Foreign Exchange Market and Macroeconomic Performance in Sudan." *Journal of African Economies*, 3, No. 3: 481-512.

(2) Suliman, A., Ebaidalla, E., and Ahmed, A. (2014) "Impact of Migrant Remittances on National Economy and Household Income: Some Evidence from Selected Sudanese States" In A. Barlagaber, *International Migration and Development in Eastern and Southern Africa*, OSSREA, Ethiopia.

(3) Ebaidalla, E. M., and Edriess, A. A. 2015. "Flow of migrants' remittances into Sudan: the role of macroeconomic environment". *Middle East Development Journal*, 7, No.1: 70-88.

Our survey of migrants could not use a sampling frame, as we lack the information to construct it. We instead used an eclectic approach of interviewer networks combined with snowball sampling. We targeted the following 12 countries: USA, UK, UAE, Saudi Arabia, Qatar, Oman, Malaysia, Holland, Germany, Ethiopia, Egypt and Canada. The survey of migrants used a mixture of online questionnaires (2,002) and interviews at offices in Khartoum dealing with visiting diaspora (700) over a six week period.

Our final response rate broken down by country is broadly consistent with what we know about the likely distribution of migrants. The highest number of responses were from Saudi Arabia, followed by UAE and Qatar. We were disappointed at the low response rate in Egypt and did not manage to reach out to South Sudan, despite the presence of many Sudanese migrants there.

The results of the current survey in Khartoum were compared with the previous survey of remittance-recipient households conducted by Suliman et al (2014), to investigate changes in the pattern of remittances and migrant characteristics over time. The survey of remittance-sending households managed to cover a significant number of households in the GCC member countries, as well as the main Western countries where Sudanese diaspora reside.

We also interviewed a random sample of five exchange offices in Khartoum and Omdurman to obtain information about their methods of operation, cost, and range of services provided and amounts of foreign currency they each handled on a monthly basis.

Our study also made use of data gathered by the Secretariat of Sudanese Working Abroad (SSWA) and the Ministry of Labour and Social Development. These formal data sources, however, suffer from an almost exclusive focus on economic migrants travelling to various Gulf countries on officially sanctioned contracts.



## (2) Migration Landscape

Changes introduced by the international community in the development of the SDGs, notably addition of specific targets with respect to migration and mobility, creates a better recognition of migration as a contributor to sustainable development<sup>4</sup>.

Migration is increasingly seen as a coping or even survival strategy for many. There is recognition of the role that remittances and transfer of knowledge and skills by migrants can play in sustainable development. However, migration's contribution to the SDGs is constrained by lack of a supportive policy environment to protect the rights of migrants and their families in host countries. Overcoming these challenges requires a comprehensive legal framework for movement of people. In the Sudanese case, migrants moving to Egypt benefit from equality of treatment with nationals through a reciprocal agreement that provides for expedited flow of people between the two countries. Most migrant workers to other Arab countries are covered through officially sanctioned contracts issued in Sudan prior to their departure. There are, however, also significant numbers who engage in irregular migration or officially sanctioned migration to OECD countries without the benefit of any bilateral agreements.

### A historical perspective on international migration from Sudan

International migration assumed an important role in Sudan from the early 1960s. From the outset it had two components: permanent migration to advanced countries, mostly by professionals; and circular migration to oil rich Arab countries by mostly male teachers and engineers on secondment from Government service. The latter wave of migration accelerated following the increase in oil prices in 1973 and the associated labour demand in building and construction in the Gulf region. It was estimated that by 1978 the total number of Sudanese emigrants reached around 230,000, around 1.5% of the total population at the time. Until this period most Sudanese migrants were skilled and had employment possibilities in Sudan but migrated in search of higher pay.

Failed development policies in Sudan fueled an expanded wave of migration that began in the 1980s and has continued. During this period most Sudanese migrants were unable to find employment at home, due to jobless growth and a mismatch between an increasing number of university graduates in the arts and humanities and local labour market needs.

Emigration to oil-rich Gulf countries accelerated and peaked by the late 1980s. It slowed down after 1990, as a result of the political stand the country took in the Iraqi invasion of Kuwait, before picking up again after 1995 when Gulf countries relaxed their boycott of Sudan.

The supply of migrants further expanded after 1995 due to continued high levels of conflict in the country, and economic stagnation accentuated by structural adjustment policies. The situation was aggravated by reductions in the number of civil servants, and the privatization of several publicly owned enterprises that led to retrenchment of staff. These developments left a significant portion of the labour force with no option but migration to the Gulf.

(4) IOM 2018a

In order to have a more coherent support structure for managing migration of Sudanese, the Secretariat of Sudanese Working Abroad (SSWA) was established in 1998. The SSWA is mandated to deal with challenges faced by Sudanese migrants abroad in cooperation and coordination with relevant government institutions. The SSWA has supported the Sudanese diaspora in areas including dual nationality, voting rights, and legal aid to citizens.

The SSWA supports research on migration issues through the Sudan Centre for Migration and Development Studies and the Department of Migration Economics. The SSWA also publishes data on migrant workers abroad and deals with the contractual modalities that govern the movement of labour from Sudan to host countries.

The Sudan Center for Migration and Development Studies organized two conferences in 2011 and 2012. With the participation of government and private sector institutions, these aimed to define the economic role of migration, and encourage the state to provide incentives for migrants to transfer their remittances through official channels.

Traditionally, men migrated from Sudan. However, due to an increase in the ratio of professional migrants able to take their families, as well as a substantial increase in the number of female economic migrants, the number of females included in the migrant population rose after 1990. By 2010, 27% of Sudanese working outside Sudan on government sanctioned labour contracts were women, mostly occupying technical positions.

The oil fueled economic boom Sudan experienced in the 2000s failed to stem the flow of outmigration as it was not accompanied by employment creation. Unemployment actually increased by 4.1% annually until it reached 1.4 million in 2008<sup>5</sup>. The pace of outmigration increased following the end of the oil boom with the separation of South Sudan in 2011. The annual number of migrants through official contracts increased from 10,032 to 105,435 between 2008 and 2013, a ten-fold increase over the six-year period.

Government estimates in 2011 put the total number of migrants between 880,000 and 1,338,000, half of whom were in Saudi Arabia<sup>6</sup>. Recent World Bank estimates put the total number of Sudanese emigrants at 1.5 million, while SSWA gives a higher figure of four to five million.

## Nature of migration

The survey of migrants distinguishes between permanent and temporary emigrants and indicates the two groups are roughly evenly divided in aggregate. The ratio of permanent emigrants is much higher for Europe and North America at over 90%. Conversely, most migrants to the Gulf countries are on temporary work visas. We can also see permanent migration has become more difficult in the past five years, with the ratio of permanent migrants declining substantially to 34 percent, while the share of temporary migrants increases to 66 percent.

**Table 1: Time when left Sudan versus type of migration**

Time when you left Sudan	Type of Migration		Total
	Permanent	Temporary	
1-5 years	34.2%	65.8%	20.0%
6-15 years	60.1%	39.9%	45.4%
16-25 years	43.7%	56.3%	22.5%
> 25 years	39.9%	60.1%	11.7%

Source: Author's tabulation based on survey of migrants in host countries

The surveys were carried out by different people and as a result the time frames adopted are not always overlapping. Despite this difficulty, they both show similar trends with migration becoming markedly more difficult in the recent past. Yet, the urge to migrate is clearly high, as reflected in the latest Arab Barometer report for Sudan carried out in December 2019<sup>7</sup>.

(5) Mudawwi, 2016 (other estimates of the unemployment rate in 2008 put it at 28%. See, for example, Assal, 2010)

(6) UNU, 2017

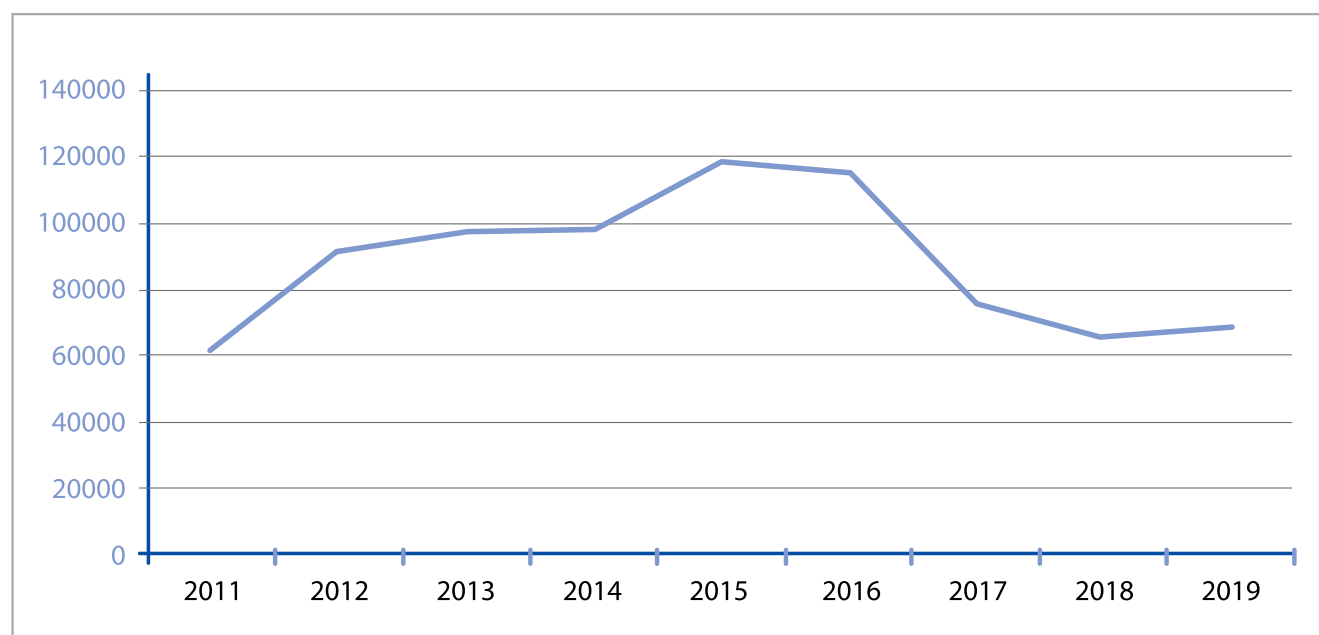
(7) Arab Barometer Report on Sudan 2019

**Table 2: Time when left Sudan**

Number of years working abroad	Percent
1-5 years	27.1%
6-10 years	43.8%
11-20 years	22.5%
More than 20 years	6.7%

Source: Recipient households survey 2019- Khartoum state

The data shows a clear spike in migration between 2005 and 2014, with around half the number of migrants leaving during this period. It is possible that migration sped up following the separation of South Sudan in 2011, as indicated by Figure 1, which shows that officially registered migration of Sudanese to the main destinations in the Arab world witnessed a rising trend between 2011 and 2016. This increasing trend is even more notable when considering that the data up to 2010 would also include migrants originating in South Sudan. The decline in numbers post-2016 is potentially influenced by more restrictive immigration policies in Western countries and Saudi Arabia in the past five years.

**Figure 1: Migrants to main mestination Arab countries 2011 - 2019**

Source: Ministry of Human Resources Development and Labor.

## The debate about brain drain

The extent of brain drain in Sudan is unclear. The IOM publication *Migration in Sudan: A Country Profile 2011* asserts around 75 – 80% of Sudanese in Arab countries work in low-skilled occupations.<sup>8</sup> Our two field surveys, however, seem to indicate a higher level of emigration by more qualified Sudanese. This can partly be due to sampling errors, as our surveys are likely to have disproportionately captured more qualified migrants. However, there is no dispute that both surveys confirm a rise over time in the level of education of the migrants, which is consistent with the increase in tertiary education observed in Sudan, particularly since the start of oil production in late 1990s. The migrants' survey finds that 32.4 percent of migrants have post-graduate qualifications. The Khartoum survey indicates that 34% of migrants to the Gulf are physicians, engineers or university professors, indicating a 10 or 3 percentage point increase compared to the 2014 survey. This is substantially higher than the 20-25% range given by the IOM 2011 study.

Table 3 shows that both the Khartoum and external survey of migrants found most of these migrants have a university degree. The Khartoum survey indicates a reduction by more than half in the proportion of migrants without a university degree from 2014 to 2019.

(8) IOM, 2011

**Table 3: Education profile of surveyed migrants**

Education	Percent
Not educated	0.1%
Primary	0.2%
Secondary	8.5%
University First Degree	58.2%
Master	24.6%
PhD. Holder	7.8%

Source: Author's tabulation based on survey of migrants in host countries

Education	2014	2019
	Percent	Percent
Primary	3%	-
Secondary	25%	12%
University First Degree	53%	71%
Postgraduate	19%	17%

Source: Author's tabulation based on survey of recipient households

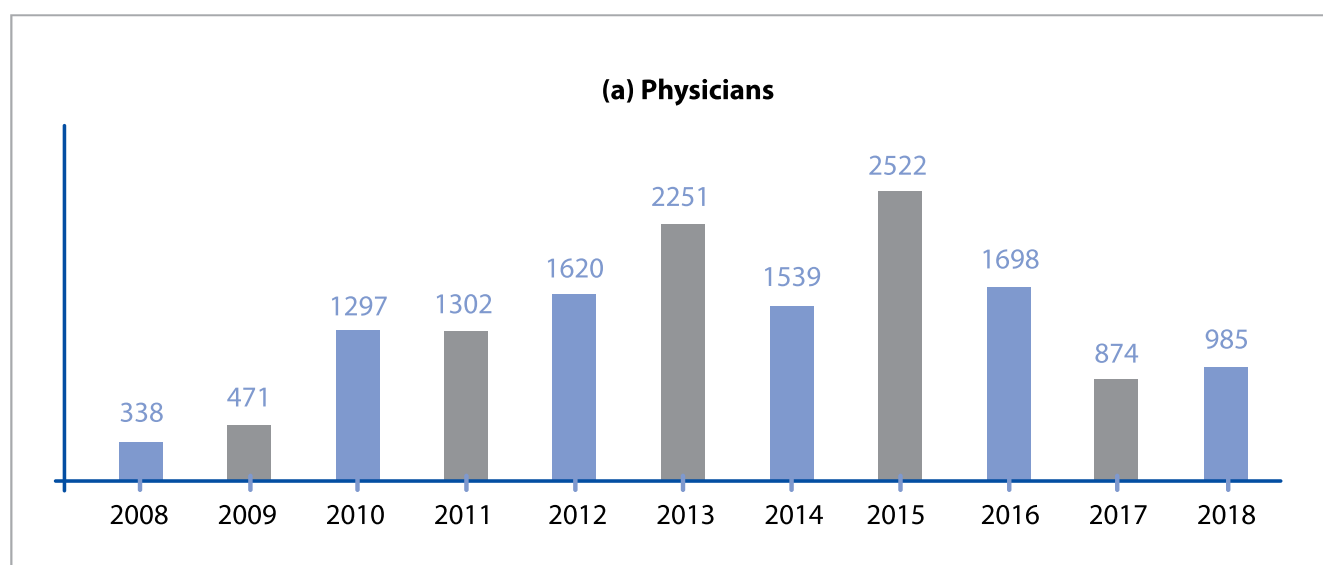
Table 4 shows the distribution of migrants by occupation over the two surveys of 2014 and 2019. In the 2019 survey about one-quarter of migrants were accountants, followed by engineers, while in the 2014 survey freelancers represent the largest category - about 29% of migrants. The table also indicates that engineers and medical practitioners represent a considerable number of migrants in 2019.

**Table 4: Distribution of migrants by occupation - 2014 and 2019**

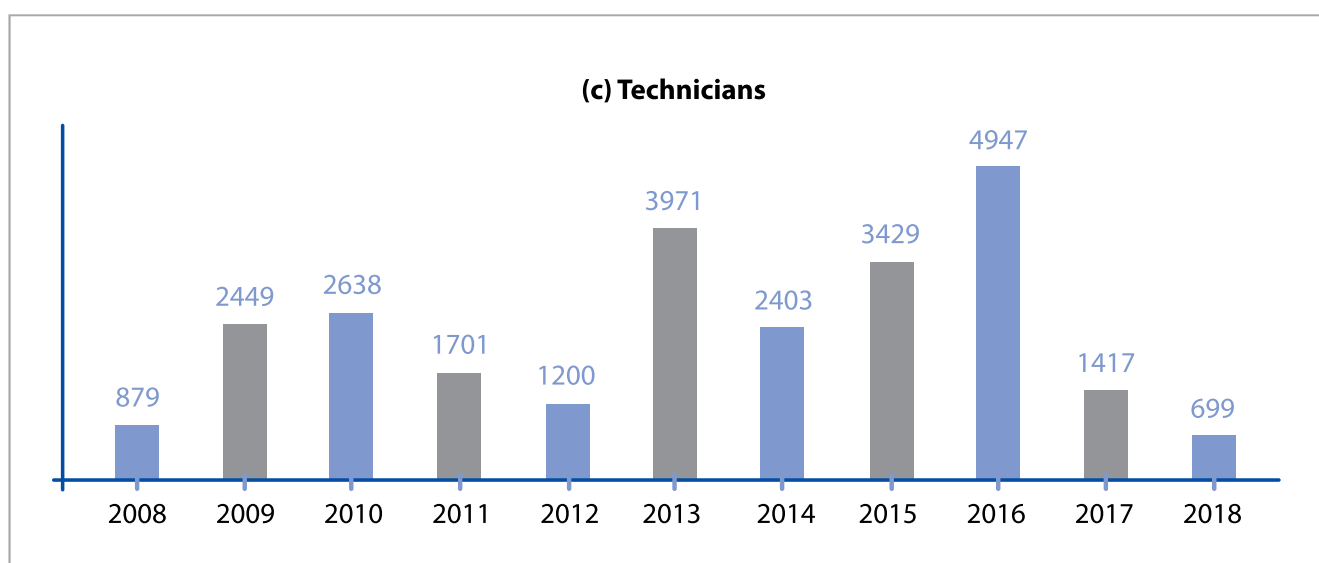
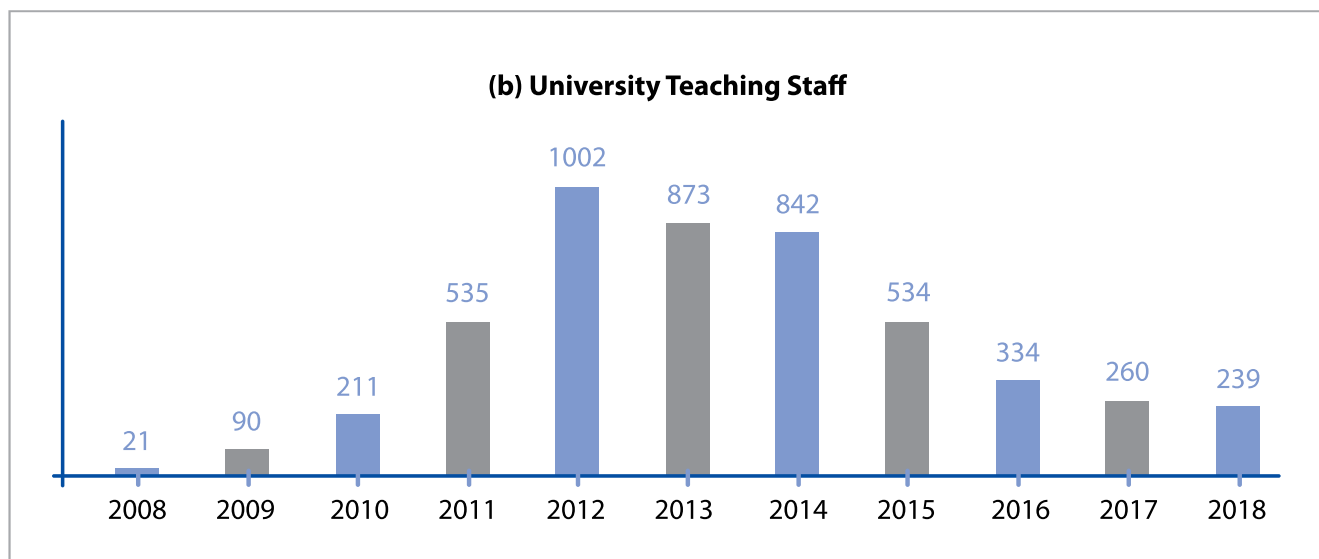
Migrant job	2014 survey		2019 survey	
	Number	Percent	Number	Percent
Physician/Specialist	15	8.24	22	9.17
Professor/Teacher	12	6.59	9	3.75
Accountant	42	23.08	65	27.08
Freelancer	53	29.12	41	17.08
Health field	12	6.59	25	10.42
Engineer	29	15.93	51	21.25
Others	19	10.44	27	11.25
Total	182	100	240	100

Source: Recipient households survey 2019- Khartoum state

Data on professional migration by the Ministry of Labour shows a spike in brain drain since 2008. Figure 2a reflects an annual exodus of physicians averaging 1,750 per year. Badr claims that by 2013 more than half of Sudanese medical doctors worked abroad.<sup>9</sup> Figure 2b shows a sizeable drain of university teachers given their smaller numbers compared to physicians. The number peaked in 2012 at over 1,000 then gradually dropped but never returned to its earlier magnitude of 20 – 90 migrants a year. Figure 2c indicates high levels of outmigration by technicians, who have always been in short supply in Sudan. It is likely that the departure of 26,000 technicians over the period 2008 to 2018 negatively impacted the potential growth of some industries.

**Figure 2: Migrants by Selected Professions 2008 – 2018**

(9) Badr, 2013.



Source: Ministry of Human Resources Development and Labour

We can thus observe a marked shift in the composition of migrants, with brain drain becoming an issue in the period since 2011. This is consistent with the decline in Sudan's GDP noticed in the period since the separation of South Sudan in 2011 and loss of 75 percent of oil income. It can also reflect the substantial increase in tertiary education over the same period. To what extent the increase in outmigration of university graduates is a cause or effect of the decline in GDP can be the subject for more in depth follow up study.



## Regional distribution of Sudanese Diaspora

Table 5 indicates the country distribution of Sudanese diaspora in our migrants' survey. It shows Saudi Arabia as the dominant country, with UAE and Qatar as the second and third most popular destinations, consistent with the Khartoum survey. The higher level of migration to Europe and North America shown in this survey is likely due to higher levels of online activity of these migrants and the fact that most responses were obtained through online surveys. Had the study team not conducted interviews in offices dealing with migrants in Khartoum, the response rate from Sudanese based in the Gulf would have been even lower. The low relative weight of migrants in Egypt shown in this data also differs from common assertions about large numbers of Sudanese living in Egypt and could be due to the lower level of social media activity by the Sudanese diaspora in Egypt. Our study of Sudan-focused Twitter feeds shows that Egypt has one quarter of tweets compared to Saudi Arabia.

**Table 5: Distribution of respondent by country**

In what country do you live?		Permanent	Temporary	Frequency
<b>Arab Countries</b>	Egypt	22.6%	77.4%	53
	Oman	55.2%	44.8%	165
	Qatar	60.3%	39.7%	290
	Saudi Arabia	28.3%	71.7%	1,192
	UAE	50.9%	49.1%	391
<b>Europe and America</b>	Canada	93.5%	6.5%	77
	Holland	95.7%	4.3%	47
	Germany	88.4%	11.6%	69
	United Kingdom	89.0%	11.0%	127
	USA	94.5%	5.5%	181
<b>Others</b>	Ethiopia	0.0%	100.0%	16
	Malaysia	54.5%	45.5%	33

Source: Author's calculations based on commissioned survey of migrants in host countries

Table 6 presents the distribution of migrants by host country from the Khartoum survey. Both the 2014 and 2019 surveys show more than half of migrants work in Saudi Arabia, followed by UAE and Qatar. The share of European countries and USA is low. This figure confirms that Gulf States are the main destination of Sudanese circular migrants. The share in Saudi Arabia, however, shows a noticeable decline, consistent with anecdotal evidence of returnees from Saudi Arabia due to the cost of poll taxes recently imposed on foreign workers and their families. Since the huge waves of early Sudanese migrants to Gulf States, these countries appear to remain the main destination for temporary migration.

A robust indication of the global spread of Sudanese migration would have to await further study.

**Table 6: Distribution of migrants by host country**

Country	2014		2019	
	Number	Percent	Number	Percent
Australia	-	0	2	0.8%
Bahrain	11	6.0%	6	2.5%
UAE	26	14.3%	45	18.8%
Europe	11	6.0%	9	3.8%
Kuwait	4	2.2%	5	2.1%
Oman	6	3.3%	9	3.8%
Qatar	14	7.7%	30	12.5%
Saudi Arabia	102	56.0%	123	51.3%
USA	2	1.1%	7	2.9%
Others	6	3.3%	4	1.7%
Total	182	100	240	100

Source: Recipient household survey 2019- Khartoum state

## Factors motivating migration

Table 7 shows that migrants aged between 30 and 50 represent about two-thirds in 2014 and about three-quarters in 2019. The data also shows that migrants with a university degree are the majority, about 53 and 71 percent in 2014 and 2019, respectively. The majority of migrants are in their prime working age and represent the few who have managed to get tertiary education in a country that suffers from a high level of inequality in education. This high education level in 2019 indicates an improvement in migrants' qualifications over time. This is consistent with the assertion that many are engaged in professional occupations i.e. physicians, professors and engineers. It should be noted that most people migrated to improve family income in both the 2014 and 2019 surveys. However, the number of migrants who went abroad to fund houses and investment was lower in 2019 than in 2014.

The increasing predominance of migration as a poverty reduction tool, as opposed to seeking to build up human or financial capital through enhanced earnings, is clear when one compares the reasons for migrating between the 2014 and 2019 cohorts. In 2019, 92.5% of respondents indicated migration as a coping mechanism to deal with insufficient income by noting that the main reason for migration was to improve income. The ratio of respondents who noted this as the main reason for migration in 2014, however, was much lower--64.3%, with 16% indicating migration was meant to help with local investment plans, and 11.5% going abroad for education.

**Table 7: Basic Socioeconomic characteristics of migrants - 2014 & 2019**

	2014		2019	
	No. (N=182)	Percent	No. (N=240)	Percent
<b>Age (years)</b>				
<b>15-30</b>	19	10.4%	44	18.3%
<b>31-50</b>	135	74.2%	161	67.1%
<b>50+</b>	28	15.4%	35	14.6%
<b>Reasons for going abroad</b>				
<b>Improve income</b>	117	64.3%	222	92.5%
<b>Education</b>	21	11.5%	6	2.5%
<b>Build/furnish</b>	29	15.9%	3	1.3%
<b>Investment/project</b>	3	1.7%	6	2.5%
<b>Other</b>	12	6.6%	3	1.3%

Source: Recipient households survey 2019- Khartoum state

[illegible]



### ( 3 ) Return Migration

There has been little research done on return migration in Sudan. The large-scale return of Sudanese migrants from GCC member countries following the invasion of Kuwait by Iraq in 1990 temporarily reversed the tendency of Sudanese to emigrate. The opportunity created was not used to promote job creation, by taking advantage of skills acquired by the migrants in their host countries.

There have also been spates of return over the past five years, which did not receive much attention due to pre-occupation of authorities with fighting recurring crises with diesel, wheat, and other necessities. The COVID-19 pandemic and lockdown measures imposed by host countries is likely to result in a new return wave, though it is unlikely to be as extensive as what happened in the early 1990s.

There are a number of studies of the issue of brain drain and how best to remove constraints to the return of highly qualified Sudanese diaspora, particularly in the medical field where they are critically needed. One such study by Abdalla et al<sup>10</sup> sees little prospects for permanent return of medical doctors and instead suggests expanded arrangements for temporary return through which their expertise can be made available. UNDP has successful experience of helping with this through its Transfer of Knowledge Through Expatriate Nationals (TOKTEN) programme, which is being revived as part of UNDP's support to diaspora engagement in Sudan. Any large-scale return of highly qualified Sudanese does not appear feasible given the recessionary economic conditions prevailing in Sudan at present, which have been exacerbated by the COVID-19 pandemic.

The need for a policy on reintegration of returning migrants in the Sudanese economy is becoming more urgent with the imminent return of thousands of migrants from the GCC member countries in response to the COVID-19 pandemic and slump in oil prices. The depressed job market in Sudan has so far led to Sudanese migrants who have lost their jobs or seen their incomes decrease to wait it out in the host countries, hoping for a quick recovery. However, as the pandemic continues to wreak havoc on economies around the World, the likelihood of a quick recovery is receding.

(10) Abdalla, Fayrouz Mohammed et al: "Contribution of Sudanese medical diaspora to the health care delivery system in Sudan: exploring options and barriers" Human Resources for Health, 2016



Remittances reduce poverty by providing families in countries of origin with additional income for consumer goods, and investments in education and health. A seminal article by Adams and Page of the World Bank, published in the World Development Journal in 2005<sup>11</sup>, shows a 10% increase in the share of migrants in a country's population will lead to a reduction of between 2% and 3.5% in the proportion of people in poverty, depending on the extent to which we control for other factors. Remittances are also used to finance community projects, such as hospitals or schools, or invested in business ventures.

In the case of Sudan, due to data limitations, we are unable to assess the benefits and costs associated with remittances<sup>12</sup>. We are, however, aware of the potential contribution remittances can make to poverty reduction and stabilizing the economy. The 2011 labour survey provides evidence of the contribution of remittances to poverty reduction and improved educational outcomes. We have not, however, been able to assess the likely negative impact of remittances in terms of preventing further declines in the value of the Sudanese Pound, which could potentially have helped encourage exports and reduce imports.

The main purpose of this study is to demonstrate the importance of remittances in Sudan, encouraging authorities and academia to study its positive and negative effects more seriously, with a view to maximizing its benefits while minimizing potential negative effects.

### The trend of migrant's remittances

Since 1970, migrants' remittances have been an important source of external funding in Sudan, significantly contributing to financing imports and development. However, there has been limited awareness of their importance due to a lack of reliable estimates of total remittances, given the importance of informal transfers and the variable share of remittances that are sent through official channels. There have been some estimates of total remittances using econometric models in the past, and these have clearly indicated the contribution remittances could make to the country's development. Still, policymakers at the time did not respond to these studies proactively.

Our research estimates informal remittances using an econometric model. The simulation indicates informal transfers are substantial and tend to exceed formal transfers. There are several reasons for substantial transfers coming through unofficial channels, including the parallel market premium, and lower cost and greater ease of such transfers compared to those sent through the banking system. The results indicate that between 1980 and 2018 about 80% of remittances entered through unofficial channels. This is consistent with earlier studies by Elbadawi (1992), and Suliman et al (2014), which estimated official remittances as a percentage of total remittances at, respectively, below 23 and 15 percent for the periods of 1970-1989 and 1970-2008. However, the share of informal remittances fluctuated in line with volatilities in the black-market exchange rate premium. For instance, during the period of oil boom (1999-2011) a substantial share of remittances was sent through official channels, because of an almost unified exchange rate.

(11) "Do International Migration and Remittances Reduce Poverty in Developing Countries" Adams and Page, World Development Vol 33, No 10, 2005.

(12) See "The good and the bad in remittance flows", 2014.

The information gathered from surveys of remittance recipients and senders, and informal exchange offices interviews, are consistent with simulation findings. The overwhelming majority of migrants send money through the parallel exchange market. The surveys and interviews indicate most remittances originate from GCC member countries. The surveyed households also indicated a large share of remittances are spent on current consumption, as improving income is given as the main reason for migration.

Inflation and the black-market exchange rate premium have a negative and significant impact on official remittances in the short and long run. Sanctions imposed on official transfers and lack of correspondent bank arrangements also create an unfavourable environment for transfers through the banking system. Moreover, the study found that trade openness and foreign direct investment exert positive effects on official remittances. These findings support the study of Ebaidalla and Edriss (2015), which indicated macroeconomic stability discourages informal remittances.

To provide another test on the robustness of our estimated value of remittances, we compare the estimated value of remittances with other African countries to see if the revision produces a reasonable figure. Table 8 includes the simulated remittance value for Sudan based on World Bank estimates. This table shows that underestimation of remittances is not confined to Sudan. Ethiopia, with thousands of economic migrants in many countries, is shown to have just over \$400 million as remittances in 2018, while actual transfers are likely to be many times this figure. Thus, it is possible that remittances for other countries are also understated, indicating the results of our simulation exercise are reasonable.

**Table 8: Place of Sudan in remittance recipients in 2018 as share of GDP and in millions of US Dollars**

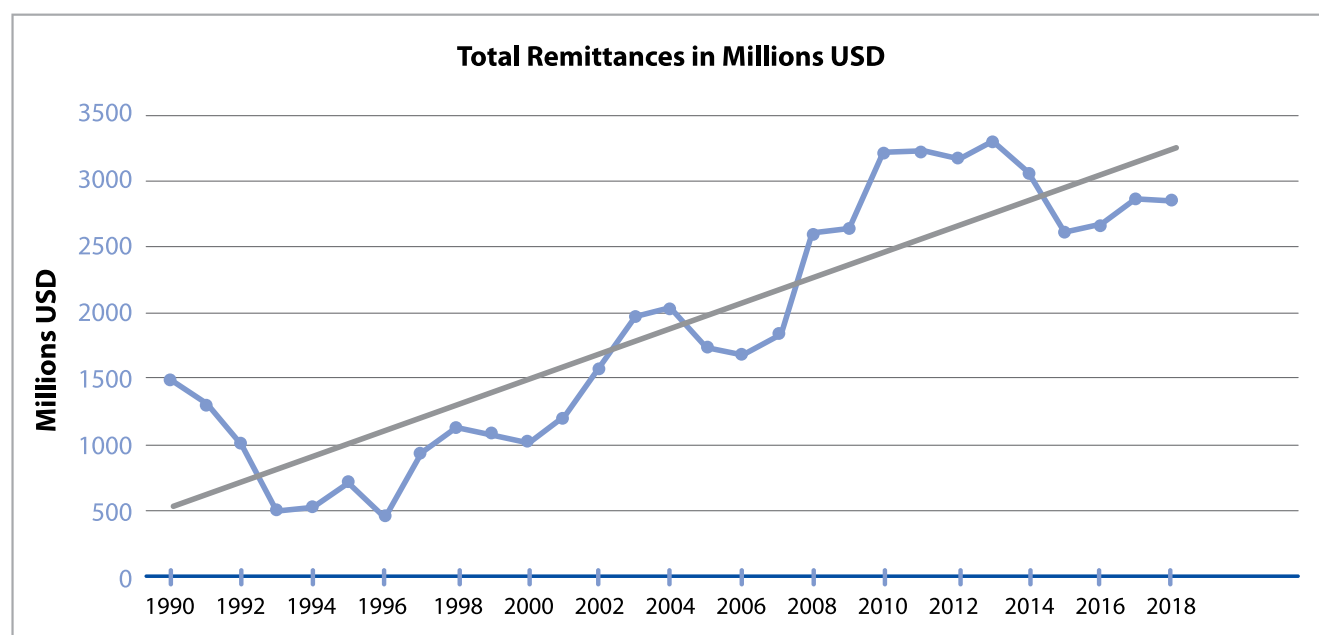
Country	%	Total (\$ millions)
Ethiopia	0.5%	412
Sudan	0.8%	271
Rwanda	2.4%	230
Niger	3.0%	282
Kenya	3.0%	2,720
Burkina Faso	3.1%	437
Uganda	4.5%	1,245
Tunisia	4.9%	2,027
Morocco	6.2%	7,375
Ghana	7.3%	3,803
Sudan simulation	8.36%	2,866
Senegal	9.1%	2,213
Zimbabwe	9.6%	1,856

Source: Author's tabulation based on World Bank data and simulation results

When using the estimated value of remittances for Sudan as opposed to official remittances, we see that remittances have significant impact with their share in GDP - reaching 8.36% in 2018 - with an estimated remittance value of \$2.9 billion. This is higher than the relative size of remittances in a range of African countries from Ghana through to Rwanda, and only slightly under the 9.1% share of Senegal, where remittances are an important contributor to development.

Figure 3 shows the evolution of total remittances over the period 1990-2018. Remittances had a declining trend for the period 1990 to 1996, consistent with the involuntary return of many Sudanese migrants from the Gulf following the backing of Sudan for the Iraqi invasion of Kuwait in 1990. The situation was resolved by 1996 with Sudan mending fences with the GCC member countries. Remittances, which were on an upward trend since 1996, peaked at \$3.3 billion in 2013 and have stabilized at under \$3 billion in the last couple of years.

**Figure 3: Evolution of total remittances over the period 1990-2018**



Source: Author's calculations based on a simulation exercise

The global outlook for migrant workers has been severely affected by COVID-19, with the World Bank estimating a 20 percent<sup>13</sup> global decline in remittances because of reduced economic activity in many migrant receiving countries. Sudanese migrant workers are not exempt from this trend. They are also affected by the impact of the significant drop in oil revenues in the first five months of 2020, which is unlikely to be reversed soon. While we have not seen any mass return of Sudanese migrants from the GCC member countries, we are aware of many who have either lost their jobs or seen a cut in pay. Our expectation is that the loss in remittances will be less than the 20 percent global decline expected by the World Bank, at \$500 million in 2020 due to the global impact of COVID-19. It is difficult to predict what will happen in the future, but it may well take years before remittances return to the \$3 billion mark.

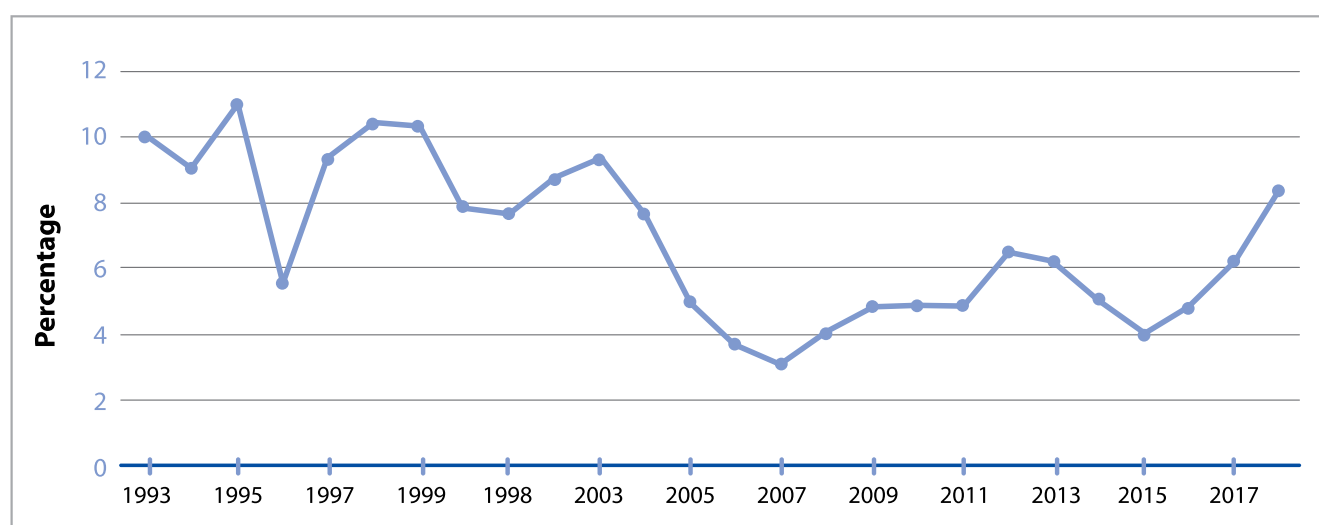
(13) World Bank: COVID-19 crisis through a migration lens. April 2020



## Importance of remittances in Sudan's economy

Figure 4 shows total remittances sent home by Sudanese nationals working abroad is an important source of capital flows during the period 1993-2018, ranging from 3 to 11 percent of GDP. This confirms previous studies, which claim that total remittance flow into Sudan is the largest source of capital flows in the country (Elbadawi, 1992; Ebaidalla and Edriess, 2015). Remittances are equal to around 10% of GDP between 1993 and 1995, despite their contraction due to the return of many Sudanese migrants from the Gulf during this period. They reach a low point of 5.6% in 1996, before picking up from 1997 due to resumption of Sudanese migration to GCC member countries. This share then drops in response to the oil led boom during the 2000s, oscillating between 3 and 5 percent of GDP between 2005 and 2011. This ratio falls again below 5 percent in 2015, likely due to a poll tax on migrants in Saudi Arabia rendering migration less attractive for unskilled, low-wage workers. Remittances as a ratio of GDP have doubled since 2015, largely due to a substantial decline in GDP rather than a doubling of remittances. The ratio of remittances to GDP was above 8 percent in 2018.

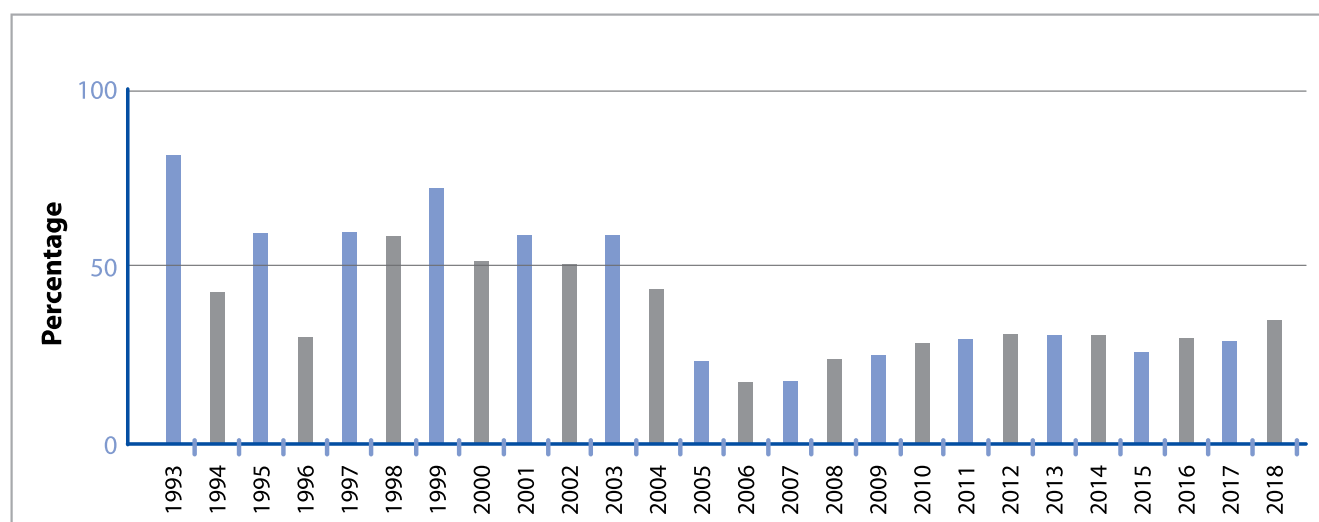
**Figure 4: Share of remittances in GDP (%) - (1993-2018)**



Source: Author's compilation using latest IMF estimates of GDP at current prices and simulation results

The significant role of remittances in Sudan's economy can be shown through its ability to cover the cost of imports. Figure 5 compares remittances to imports for the period 1993-2018. It shows remittances on average covered the cost of 40% of imports, with the ratio reaching a maximum of 82% in 1993 and a minimum of 18% in 2007, during the oil boom. However, the relative importance of remittances has increased since 2010 due to the drop in imports in response to the decline in oil exports, with the ratio reaching 35% by 2018.

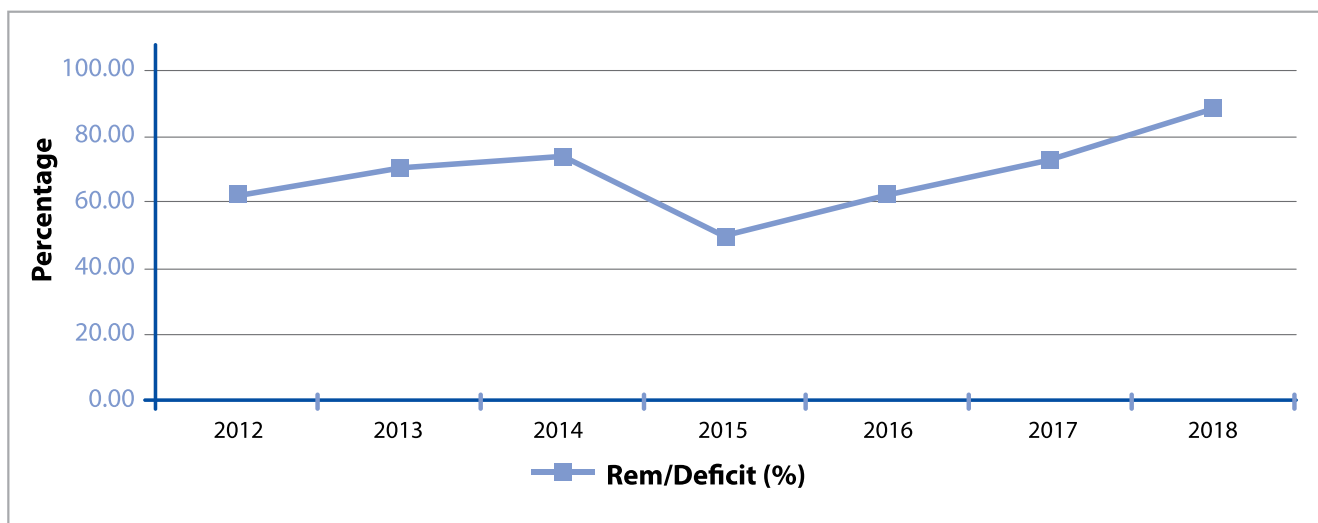
**Figure 5: Comparison of total remittances with imports (%) (1993-2018)**



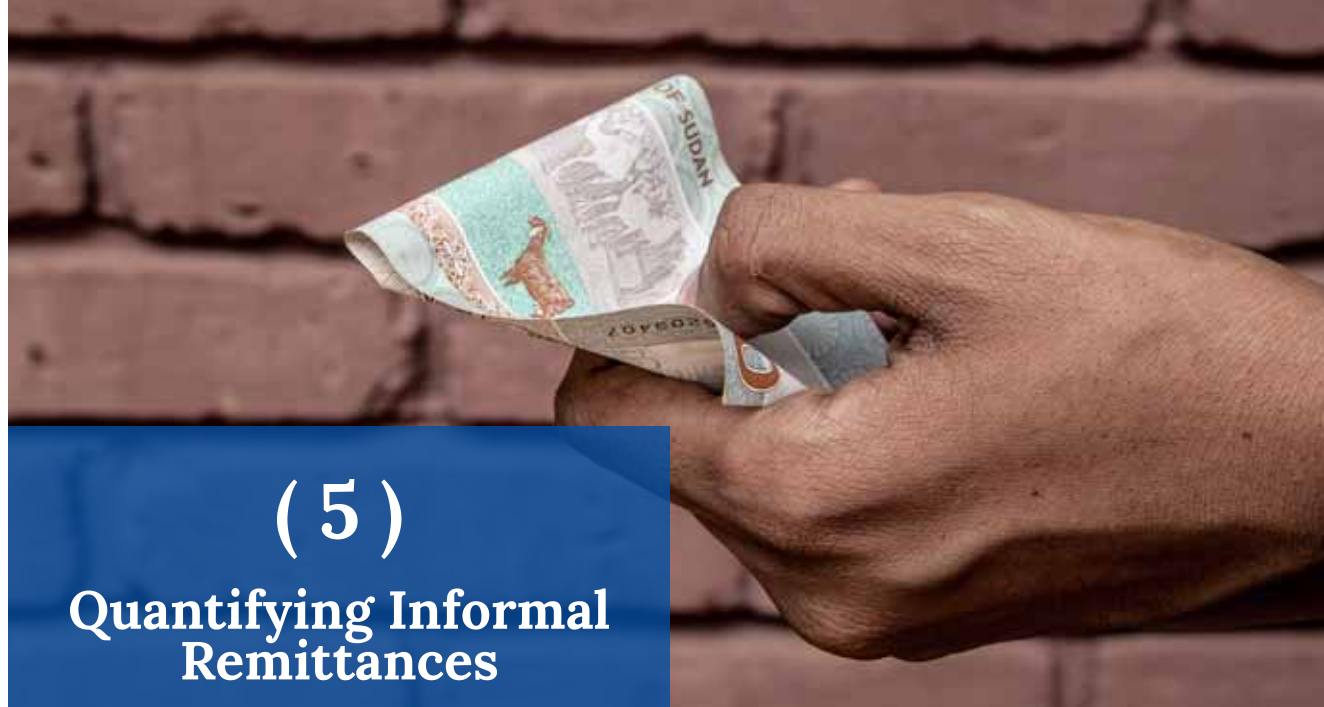
Source: Author's compilation based on World Bank's Development Indicators and the simulation results

Figure 6 plots total remittances against trade deficit over the period 2012-2018, a period during which the country suffered from a structural trade deficit due to the loss of oil exports and stubbornly high level of imports. The figure indicates that total remittances have been able to cover more than 70% of the trade deficit during this period.

**Figure 6: Comparison of total remittances with the trade deficit (%) (2012-2018)**



Source: Author's compilation based on World Bank's Development Indicators and the simulation results



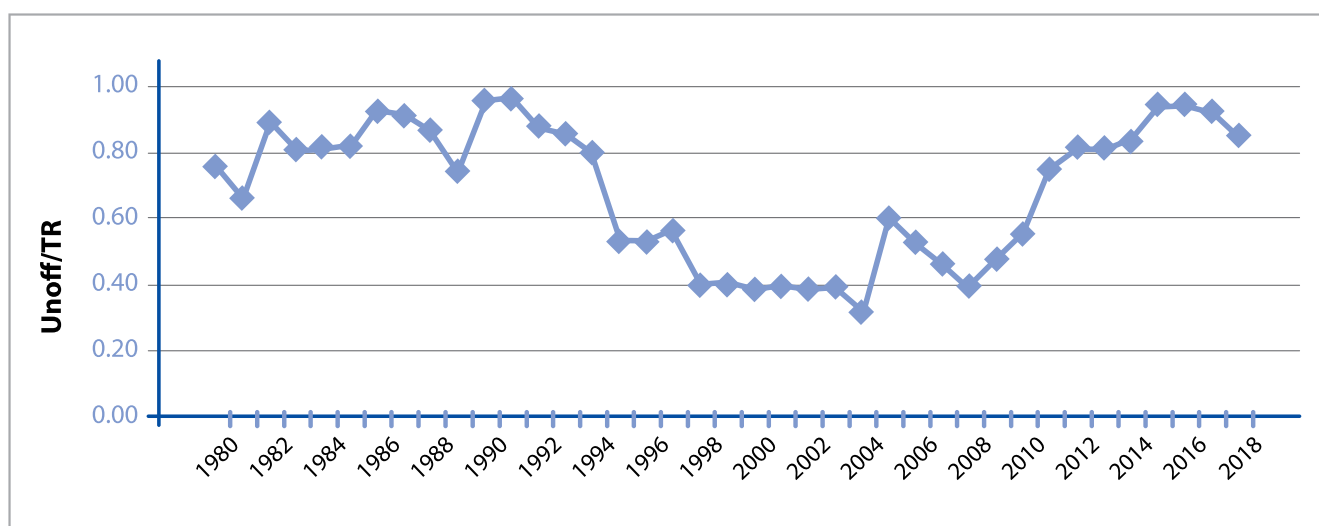
(5)

## Quantifying Informal Remittances

This section presents the results of a simulation of informal remittances and results of microanalysis based on data gathered from remittance sending and receiving household surveys, and interviews with exchange offices involved in the parallel market. As indicated in the Appendix A, the study uses a cubic function to simulate informal remittance flows, focusing on the parallel market exchange rate premium as a key variable. The simulation is conducted for the period 1980-2018 based on the model developed by El Qorchi et al (2003)<sup>14</sup>.

The simulated share of informal remittances in total private transfers are presented in Figure 7. The share of informal remittances reached a peak by the early 1990s as a result of the June 1989 Coup and external factors such as the second Gulf War. Between 1995 and 2010, share of informal remittances was range bound between 60 and 40 percent, as the country experienced an economic boom and relatively stable exchange rates and inflation, due to rising oil production and exports. With the separation of South Sudan in 2011, and an associated fall in oil income, the share of informal remittances increased and averaged 0.88 for the period 2011-2018. This finding confirms the previous results of Elbadawi (1992) and Suliman et al. (2015).

**Figure 7: Simulated share of informal remittances in total private transfers**



Source: Estimates are for Unoff/TR, using the simulation methodology.

Table 9 presents formal and estimated informal remittances over the period 1980-2018. Total remittances decreased in the early 1990s, due to the expulsion of large number of Sudanese workers from GCC member countries after the Iraqi

(14) El-Qorchi, M., S. M. Maimbo, and J. F. Wilson. (2003). "Informal Funds Transfer Systems: An Analysis of the Informal Hawala System." IMF Occasional Paper 222, International Monetary Fund, Washington, DC.

invasion of Kuwait. From 1997 total remittances increased sharply, peaking at \$3.3 billion in 2013. There are a range of domestic and external factors that might account for the decline since 2014. These include a more restrictive market for Sudanese migrants in the Gulf region, the continuing turmoil in Libya that has shut off the country as a destination and rising political and economic strain in Sudan.

Table 9 indicates an upward trend for the share of informal remittances in the 1980s, accounting for 96% of the total by 1990. During the 1990s the share of official remittances rose, reaching 62% of the total by 2000. During the oil boom of the 2000s remittances were more or less equally distributed between formal and informal channels. The ratio of informal remittances rises to 75% in 2011, following the reappearance of black-market premium after separation of South Sudan, and rises to above 90% by 2015-17. The downward trend in official transfers appears to be reversed in 2018 as the Government managed to unify the exchange rate for a brief period through introduction of the commercial rate of 47.5 SDGs to the US dollar in October 2018.

**Table 9: Estimation of informal and total remittances in Million USD**

Year	Official	Informal	Total	Share of Informal in Total (%)
1980	262.20	823.33	1085.53	76
1981	383.99	748.66	1132.65	66
1982	133.11	1079.63	1212.74	89
1983	274.46	1154.06	1428.52	81
1984	284.77	1240.23	1525.00	81
1985	260.81	1166.34	1427.15	82
1986	113.32	1395.85	1509.17	92
1987	137.82	1408.30	1546.12	91
1988	217.36	1411.99	1629.34	87
1989	416.73	1196.49	1613.23	74
1990	61.90	1445.49	1507.39	96
1991	45.40	1269.27	1314.67	97
1992	123.70	905.48	1029.18	88
1993	75.20	449.30	524.50	86
1994	107.20	434.70	541.90	80
1995	346.20	391.69	737.89	53
1996	221.52	244.17	465.69	52
1997	419.60	533.26	952.86	56
1998	686.60	451.26	1137.86	40
1999	665.10	438.34	1103.44	40
2000	640.80	397.84	1038.64	38
2001	739.60	472.75	1212.35	39
2002	977.69	606.50	1584.19	38
2003	1223.60	763.12	1986.72	38
2004	1402.95	635.91	2038.86	31
2005	703.79	1051.94	1755.73	60
2006	800.83	889.19	1690.02	53
2007	999.71	847.35	1847.06	46
2008	1590.63	1021.87	2612.50	39
2009	1394.40	1249.72	2644.12	47
2010	1455.54	1760.27	3215.81	55
2011	824.22	2413.23	3237.45	75
2012	595.84	2586.99	3182.84	81
2013	619.51	2689.98	3309.49	81
2014	506.56	2567.92	3074.48	84
2015	151.39	2465.67	2617.06	94
2016	153.41	2514.34	2667.75	94
2017	212.94	2660.42	2873.36	93
2018	425.21	2441.10	2866.32	85

Source: Author's compilation based on the simulation results



# ( 6 )

## Characteristics and Pattern of Remittances

To understand the characteristics of remittances sent by Sudanese working abroad, Table 10 provides insight regarding channels of transfer as well as the amount of transfers, obtained through interviews with migrants' families in Khartoum. As can be read from the table, 92.5% of remitting migrants send their money through unofficial channels. Data obtained from migrants indicates a slightly higher proportion of remittances are sent through formal channels at 12 percent but confirm that almost all diaspora (97%) remit money. Some remittances are sent in cash with travelers and some in kind. In the 2014 survey, the results indicated about 90 percent of households receive remittances through unofficial channels. This finding is consistent with simulation results, as most remittances in recent years enter through informal channels. Regarding the type of currency used in the transfer, the table indicates that about 94 percent of recipient households in our sample receive remittances in local currency while only 6 percent receive remittances in hard currency.

**Table 10: Characteristics of remittances transfer 2019**

	No. (N=240)	Percentage (T=100 percent)
Channels of Transfer		
Official channels	18	7.50
Unofficial channel	222	92.50
Currency of Transfer		
Local currency	225	93.75
Hard currency	15	6.25
Average remittance per month		
Under 10,000 SDG	19	7.92
11,000-20,000 SDG	68	28.33
21,000-50,000 SDG	129	53.75
50,000-100,000 SDG	19	7.92
More than 100,000 SDG	5	2.08
Irregular remittances		
Yes	170	70.83
No	70	29.17
Value of irregular transfer last year		
0	70	29.17
10,000- 50,000SDG	37	15.42
50,000-100,000SDG	83	34.58
More than 100,000SDG	50	20.83
Possessing real estate / property outside Sudan		
Yes	10	4.17
No	230	95.83
Remittances transferred abroad last year for the purpose of tourism, medication		
Yes	35	14.58
No	205	85.42
Saving Remittances		
Yes	74	30.83
No	166	69.17

Source: Recipient households survey 2019- Khartoum state

As indicated in Table 10, most surveyed households (82%) receive between SDG 11,000 and 50,000 per month. These amounts are considerable when compared to the minimal monthly expenditure of 4,600 SDGs for a poor household of six, reported in the Khartoum urban poverty study<sup>15</sup>. The table shows that few households (10%) received more than 50,000 SDG per month. These larger amounts are likely to be for investment purposes. The table also indicates about 70 percent of households received irregular remittances for different purposes such as, weddings, school fees and building houses or buying land. The value of these irregular remittances is significantly higher than regular ones. All these transfers exceed 10,000 SDGs, with 29% exceeding 100,000 SDGs, indicating a major share of these remittances are likely for investment.

The table shows that 10 of the surveyed households own real estate outside the country, mainly Egypt and UAE. If we generalize, this indicates about 5 percent of migrants possess properties outside Sudan. This may explain the reduction in total remittances in the last years, as some Sudanese working abroad invest in real estate in other countries like Egypt and Turkey. The respondents also show some households use remittances for the purpose of tourism and healthcare, mainly in Egypt and India. Finally, the table shows a considerable portion of households (30.8%) save some of their remittances. This implies that remittances represent an important source of funding private investment of migrant families.

Table 11, drawn from the survey of migrants in host countries, confirms that the bulk of remittances (81%) fall between \$100 and \$1000, consistent with the responses obtained from remittance recipients above.

**Table 11: Social support funds transfer by Sudanese Diaspora (USD)**

	Frequency	Percent
Not remitted	79	2.9%
Average 100 (USD)	178	7%
100-500 (USD)	1439	53%
500-1,000 (USD)	682	25%
>1,000 (USD)	181	7%

Author's tabulation based on survey of migrants in host countries

Table 12 indicates that 57 percent and 62 percent of remittance recipients in 2014 and 2019, respectively, used remittances for current consumption. This confirms the main reason behind migration is improving household income. Health and education come in second and third after consumption spending, though the relative importance of these two items reverse between 2014 and 2019, confirming other indications of rising poverty in this period. Saving, spending on building houses, and investment represent, respectively, 4, 3, and 2 percent out of total remittances expenditure. This is consistent with the assertion of migrants that 88 percent of their remittances are sent to meet social obligations.

**Table 12: Purposes of remittances utilization**

Purpose	2014 (%)	2019 (%)
Consumption	57	62
Education	20	13
Health	14	16
House/Furniture	6	3
Investment	1	2
Saving	2	4

Source: Recipient household survey 2019 - Khartoum state

The interviews we conducted with five informal remittance dealers (offices) indicated that:

1. The black-market exchange premium is the main factor affecting the amount of remittances through these offices. Transfers fluctuate from month to month depending on exchange rate premium and family needs.
2. Saudi Arabia ranks first in terms of number of migrants and the average amount of remittances sent, followed by the United Arab Emirates and Qatar.
3. The monthly irregular remittances can be estimated as 30 percent of the total.
4. Transfer fees come to 4-5% of the transfer value, with larger transfers getting better terms.

(15) Khartoum Urban Poverty Report, May 2020, The Commission on Poverty Reduction of the Ministry of Labour and Social Development with support from UNICEF, UNDP, WFP and the African Development Bank, Table 7.

We also tried to establish an estimate of remittances from household budget surveys. Unfortunately, it appears that remittances are not properly captured. The 2009 survey indicated that only 2 percent of household incomes came from remittances in North Sudan, while the 2014 survey indicated an even smaller share at 1 percent of GDP. The total amount of remittances reported in 2014 came to only \$200 million or less than 7 percent of the estimated total remittances for that year. One possible reason this fact has not attracted much attention could be the traditional focus on official remittances, which for 2014 were reported to be around \$500 million, 2.5 times the amount of remittances captured by the household budget survey.

The occasion of the upcoming population census and household budget survey should be used to more reliably capture both the composition and total number of migrants, as well as remittances.



(7)

## Diaspora Investment in Sudan

We have also attempted to gain a better understanding of the amount of funds saved by the diaspora and sent to Sudan to fund investments, and the distribution of these investments. Our survey of migrants had a dedicated module on investment. From this survey it appears that there are only 2 percent of diaspora who do not send any money to Sudan. Out of the 98 percent that do send money, 10 percent send money only for investment purposes, while 40 percent send money only for social obligations, and 48 percent send money for both. In addition, a small proportion of amounts sent to family and friends as a social obligation are saved or invested by the recipients as reported previously. Interest in investment is more marked amongst migrants who reside in Europe and North America, with only 30 percent of migrants working in GCC member countries sending remittances for investment purposes. This is partly due to the lesser capacity of migrant workers in the Gulf to save, due to the engagement of many in low income positions.

The migrant respondents to our survey confirmed that most of their investment in Sudan has been in real estate (52.4%), with investments in agriculture and trade coming in second and third, respectively at 16% and 13%. Figure 8 shows the sectoral distribution of investments by diaspora.

**Figure 8: Investment pattern of Sudanese Diaspora**

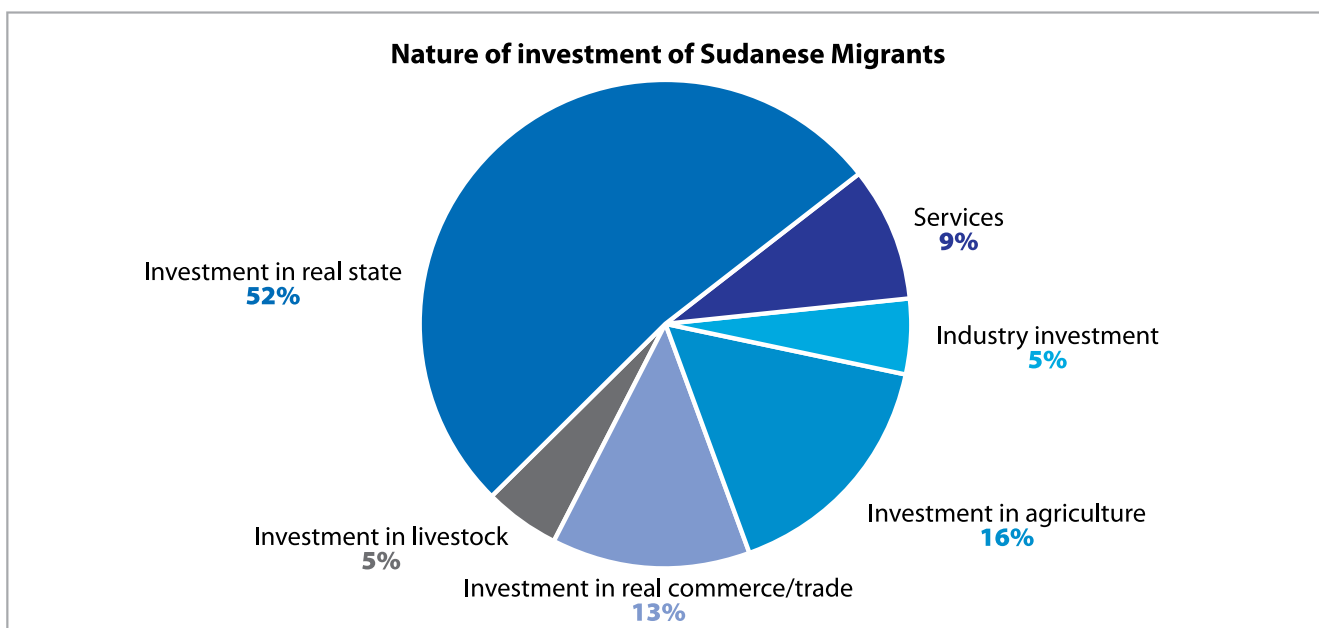


Table 13 shows the distribution of investments by country of residence. The data shows that only 58 percent of migrants have investments in Sudan. There is some level of consistency in the preference for investments in real estate across all countries of residence, with respondents from Egypt being the only ones for whom real estate was not the first choice in investments. The second most popular sector for investments of those resident in Europe and North America is commerce, while it is agriculture when it comes to those residing in GCC member countries.

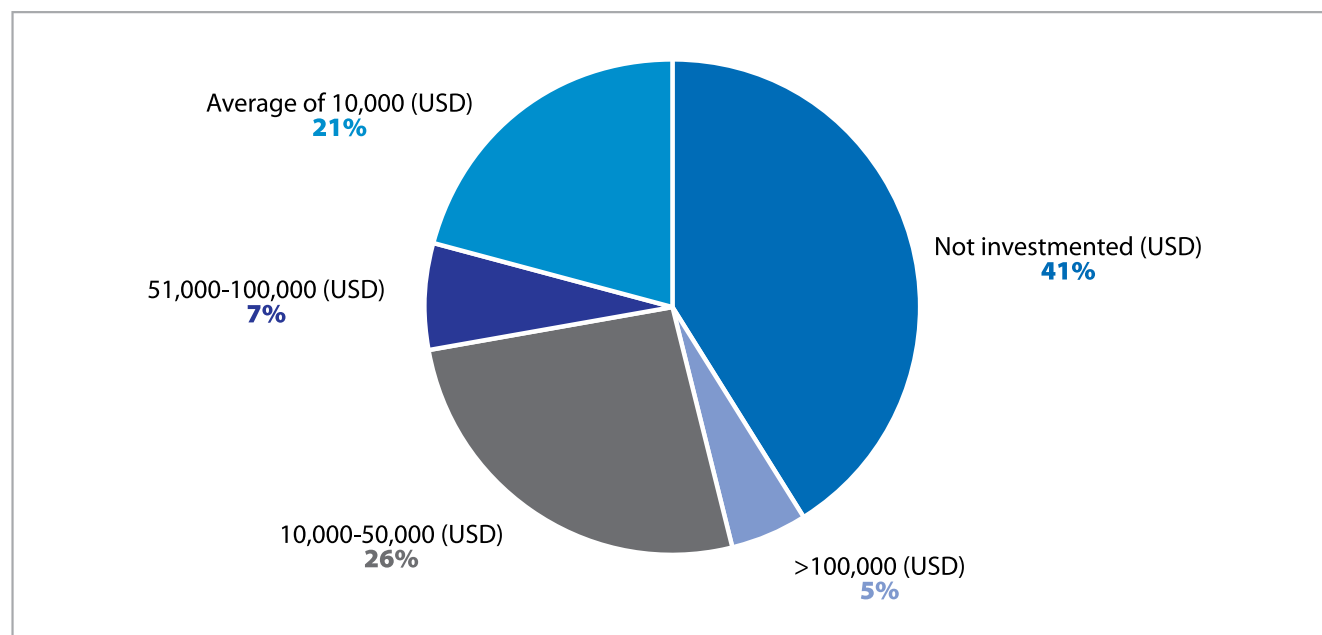
**Table 13: Cross tabulation of investment of diasporas by country**

Country	If you send money for investment, what is the nature of your investment?					
	Industry invest-ment	Investment in agriculture	Investment in real commerce/trade	Investment in livestock	Investment in real state	Services
Canada	10.3%	12.1%	19.0%	1.7%	50.0%	6.9%
Egypt	2.5%	12.5%	42.5%	0.0%	30.0%	12.5%
Germany	10.9%	17.4%	17.4%	10.9%	39.1%	4.3%
Holland	5.7%	14.3%	20.0%	11.4%	45.7%	2.9%
Malaysia	10.0%	25.0%	2.0%	15.0%	45.0%	0.0%
Oman	4.5%	16.4%	11.9%	3.0%	56.7%	7.5%
Qatar	2.1%	15.5%	6.3%	4.2%	67.6%	4.2%
Saudi Arabia	2.5%	16.3%	10.1%	5.1%	55.7%	10.4%
UAE	5.0%	19.6%	15.1%	6.5%	44.7%	9.0%
United Kingdom	15.7%	14.6%	16.9%	1.1%	48.3%	3.4%
USA	10.2%	13.6%	17.8%	1.7%	47.5%	9.3%
<b>Total</b>	<b>4.9%</b>	<b>16.0%</b>	<b>13.3%</b>	<b>4.7%</b>	<b>52.4%</b>	<b>8.7%</b>

Source: Author's tabulation based on data from the 1,567 migrants in host countries with investments in Sudan

Figure 9 demonstrates the average investment in Sudan for the remittance sender cohort. As can be seen, roughly half of those with investments in Sudan have less than \$50,000 at stake while another half have an average of \$75,000, with only a small number having investments that exceed \$100,000 in value.

**Figure 9: Investment of Diaspora in Sudan**

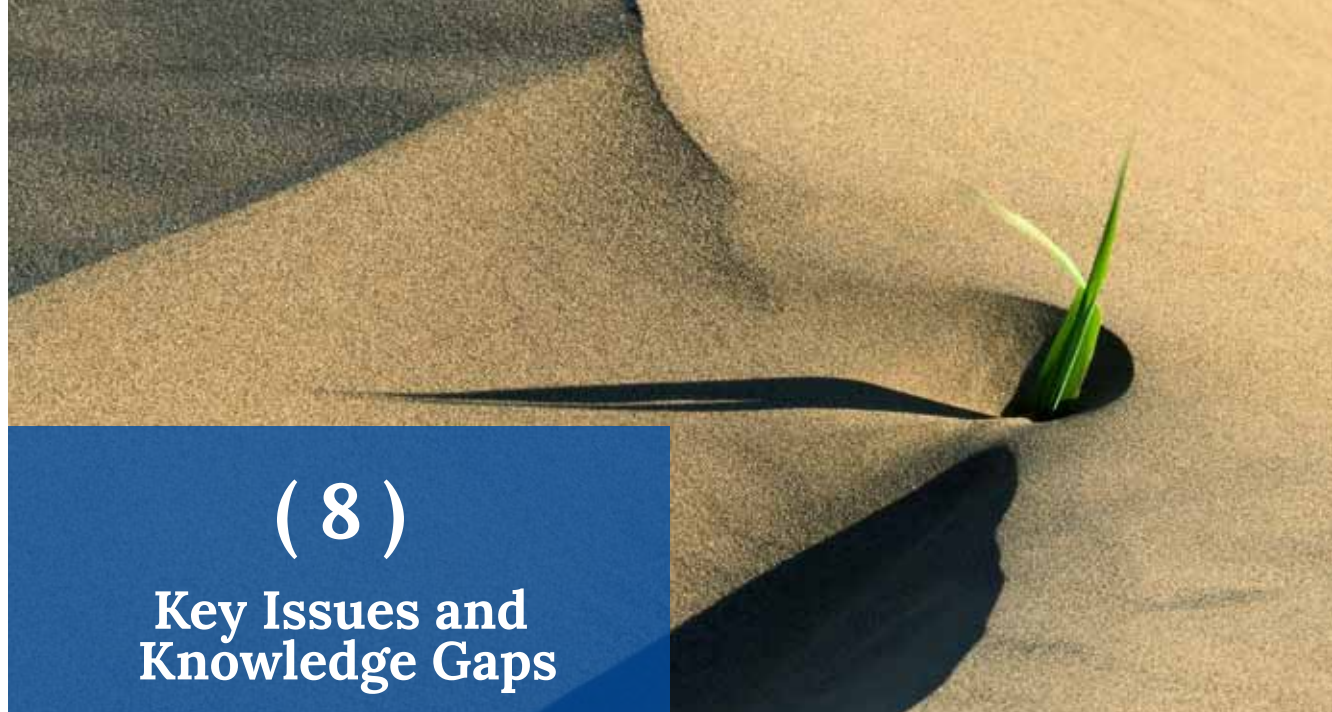


Migrants surveyed were also asked about their willingness to invest in Sudan and an absolute majority (76.4%) replied positively. The average amounts they wished to invest, however, were disappointingly low with 63.3% only willing to invest between \$1,000 and \$5,000. This may reflect lack of confidence in the business environment in Sudan.

**Table 14: Expressions of interest by Sudanese Diaspora in investing in Sudan**

Value	Frequency	Percent	Average amount
Not willing to invest	638	23.6%	000
>10,000 (US\$)	165	6.11%	10,000.00
5000-10,000 (US\$)	188	6.96%	7,500.00
1000-5000 (US\$)	743	27.50%	3,000.00
average 1000 (US\$)	968	35.83%	1,000.00

Source: Author's tabulation based on survey of diaspora in host countries



( 8 )

## Key Issues and Knowledge Gaps

This analysis of the potential contribution of the Sudanese diaspora to Sudan's economic and political transition confirms that emigration has played an important role in Sudan's post-independence development. Our understanding of the diaspora, however, suffers from key knowledge gaps that urgently need to be filled. The main areas where more robust data is required are:

1. Number of Sudanese migrants and their composition
2. Migration as an employment option
3. Actual contribution to consumption, health, education and investment
4. Factors affecting diaspora savings and their potential contribution to investment
5. Return migration and its impact

There is need for a comprehensive survey of Sudanese diaspora. This can be led by the SSWA and implemented through Sudanese embassies, in conjunction with statistical authorities of the host countries. The goal would be to obtain a reliable baseline about the skill sets available with the diaspora as well as their potential contribution to the country's development through provision of badly needed foreign exchange. This survey should also identify areas where diaspora need support to ensure that their basic human rights are respected, and they can benefit from host country facilities for education and health. In the interim, electronic platforms set up by the Sudanese diaspora can be used to collect some information.

Once we have a better understanding of the number and composition of the Sudanese diaspora, more rigorous studies can be conducted to assess the contribution that migration has made to employment in Sudan, as well as the potential contribution of the diaspora to the country's future development.

The actual contribution of diaspora remittances to poverty reduction and investment can be captured by ensuring migration issues are fully integrated into the upcoming Sudan census. The census can also be used to collect information about migrants who have recently returned to Sudan and their impact within the household as well as at the macro level.



## (9)

### Recommendations

Sudanese diaspora remittances have been in the \$3 billion range or 8-9% of GDP, for the recent past, making a major contribution to the country's economy - one that can be enhanced through supportive policies. Given the diaspora may number as high as five million (more than ten percent of the population), they merit dedicated support to ensure their rights as economic migrants are safeguarded. The COVID-19 pandemic and the slump in oil prices, however, are likely to reduce remittances by as much as \$500 million and can lead to the return of thousands of migrants on temporary visas in 2020. Return to the \$3 billion mark for remittances is likely to take a few years at least and will most likely depend on an effective outreach of Sudanese authorities to the major host countries for Sudanese migrants.

The potential contribution of the Sudanese diaspora can far exceed the current amount of remittances with the right supportive policy and operational environment in place. The diaspora was most active during the revolutionary process in 2018-2019. Their initial response to the Prime Minister's recent initiative "Stand for Sudan" reconfirms their willingness to actively participate in rebuilding the country. It is important for Sudanese authorities to strengthen their outreach to diaspora, including those who have obtained a foreign nationality and are unlikely to return to Sudan on a permanent basis in the near future.

The contribution of the Sudanese diaspora to the country's development can be maximized through:

- Improved data collection and analysis;
- Articulation and implementation of a comprehensive migration policy, including attention to the needs of returning migrants, whether on a permanent or temporary basis;
- Improving the environment for investments by diaspora; and
- Increasing the use of official channels and electronic systems for transferring money to Sudan.

Collection of qualitative and quantitative data and their use for informed policy making can be improved through:

- Creating a comprehensive, gender-disaggregated database on migration that collects and analyzes data on first and second generation migrants, factors that motivate people to leave and stay out of Sudan, and the number of Sudanese diaspora including their skill sets and financial capabilities;
- Creating a database on remittances and savings covering the current flows of transfers made by diaspora and its uses, notably impact on poverty, savings and investment;
- Documenting and sharing lessons learned and best practices in diaspora engagement in social and financial remittances; and
- Establishing a multi-stakeholder forum for data analysis and development of evidence based decisions on International migration.

Adoption and implementation of a comprehensive national migration policy can be supported through:

- Developing a comprehensive migration policy that articulates a national vision about migration as an effective tool for enhancing the country's development, and the choices available to Sudanese citizens;
- Increasing policy coherence across Government at Federal (SSWA and Ministries of Interior, Foreign Affairs, Finance and Labour) State and local levels through activating a diaspora support network around the migration policy framework;
- Active labour market policies to retain scarce specialized human resources and thus reduce brain drain; and
- Promoting and enhancing Sudanese identity and support among the diaspora, through proactive outreach by key domestic Sudanese figure and political leaders, encouraging diaspora contribution to national development.

The return of Sudanese migrants and continuous interaction between the diaspora and Sudan can be facilitated and made more beneficial through:

- Establishing a policy framework on return migration (both temporary and permanent), aimed at maximizing the potential contribution of returning diaspora to Sudan's development by making use of their new skills and financial resources to create new business ventures. Improving the business environment to encourage investments, thereby creating opportunities for Sudanese diaspora to productively invest part of their savings in Sudan;
- Developing a strategy for reabsorption of returning migrants, initially to ensure the productive involvement of Sudanese migrants who are compelled to return to the country due to adverse changes in the labour market in host countries related to the fallout from the COVID-19 pandemic; and
- Putting in place mechanisms for regular and sustained technical and financial support of the diaspora to Sudan's development efforts through appropriate mechanisms including a national mechanism for linking the diaspora to academia and the business community for technical advice and operational and financial support to cutting edge research and production.

Improving the business environment and rendering it friendlier to diaspora productive investments through:

- Improving the business environment to increase investment opportunities for Sudanese businesses and facilitating their contacts with potential investors amongst the diaspora;
- Encouraging the Sudanese diaspora to increase their investments in Sudan and move away from a focus on real estate, with adoption of appropriate supportive policies, such as extending the same facilities to Sudanese diaspora as are offered to Foreign Direct Investment;
- Creating diaspora bonds for social investments in development projects and social protection measures; and
- Establishing a multi-stakeholder taskforce on the topic of remittances and diaspora investment.

Increasing the ease and reducing the cost of transferring money through:

- Unifying the exchange rate and expanding and increasing the efficiency of the formal banking system to lower the cost of transferring money to Sudan and increase the share of remittances sent through official channels; and
- Providing the informal exchange operators with incentives for greater transparency and regular submission of information on remittance flows.

Providing greater support to diaspora to protect their rights as migrants in host countries through:

- Bilateral agreements with main host countries to regulate the movement of temporary and permanent migrants and protect their rights, drawing on the global compact on migration;
- Providing pre-departure practical information on destination countries, financial information and worker's rights; and
- Establishing dedicated migrant support units within Sudanese missions in major host countries for Sudanese migrants to resolve practical difficulties faced by migrant workers.

## Appendix A:

### Determinants of Remittances Flow into Sudan: A Macroeconomic Analysis

Before applying the ARDL bounds analysis, we tested all variables used in the analysis against the presence of the unit root to determine their order of integration. Although the ARDL approach does not require a stationary test, in the case of I(2) variables, the computed F-statistics provided by Pesaran et al. (2001) are not valid, because the bounds test is based on the assumption that the variables are I(0) or I(1) (Ouattara, 2004). Therefore, we implemented the stationarity tests to ensure that none of the variable is integrated of order more than (1). The test of the order of integration for each variable is conducted using the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests. Tables A1 below show the results of the unit root test using constant and constant with trend.

**Table A1 Result of the unit root test**

Variable	ADF		PP	
	Constant	Constant and trend	Constant	Constant and trend
Level				
Official remittances	-1.801	-1.798	-1.801	-1.798
Total remittances	-2.561	-2.964	-2.442	-2.992
Home income	-1.761	-1.871	0.956	-1.913
Inflation	-2.164	-2.233	-2.162	-2.229
Premium	-4.350***	4.433***	-4.351***	-4.423***
Foreign income	-2.579	-3.716**	-2.722*	-3.753**
Trade openness	-1.524	-1.676	-1.716	-1.852
FDI	-1.226	-1.516	-1.521	-1.536
Financial development	-1.499	-2.272	-1.536	-1.483
First differences				
ΔOfficial remittances	-5.070***	-5.089***	-5.991***	-5.886***
ΔTotal Remittances	-6.367***	-6.289***	-9.248***	-8.745***
ΔHome income	-3.911***	-4.138***	-4.014***	3.573***
ΔInflation	-7.963***	-7.841***	-7.875***	-7.759***
ΔPremium	-6.383***	-6.284***	-17.123***	-16.974***
ΔForeign income	-4.929***	-5.196***	-4.902***	-5.200***
ΔTrade openness	-6.228***	-6.154***	-6.267***	-6.201***
ΔFDI	-4.818***	-4.784***	-4.816***	-4.713***
ΔFinancial development	-3.717**	-4.041**	-3.746***	-3.960**

Note: \*, \*\*, \*\*\* indicate significance at 10, 5 and 1 per cent respectively

Δ: denote the first difference

Lag 4 is maximum lag length selected by Akaike Information Criterion (AIC).

The result of the unit root test indicates that all variables are nonstationary at level except the exchange rate premium and foreign income. When taking the variables in the first difference, the results show that all the variables are integrated of order one, i.e. (1), by both Augmented Dickey-Fuller or Philips-Perron test. Therefore, we can conclude that our variables have mixed order of integration, I(0) and I(1), which constitutes a suitable justification for using ARDL for cointegration method; since the Johanson and Jusles (1990) test require all variables to have the same order of integration.

#### Determinants of official remittance flows

After we examined the order of integration of our variables, the next step in ARDL analysis is to test for existence of a long-run causal relationship between the variables used in the model of determinants of official remittances. Since the test is sensitive to the lag' length we used lag 2 as determined by Akaike information criterion (AIC). The result of cointegration test with restricted constant and trend is reported in table A2 below.

**Table A2: The results of bounds test - cointegration**

Dep. variables	AIC lag	F statistics	Bound test (at 0.95%)
Home income, inflation, PREM, Trade, Foreign income, FDI FIND	2	4.568 (0.000)	Lower: 2.32 Upper: 3.50

Source: Asymptotic critical value bounds are obtained from Table CI(iii), Case III: Unrestricted intercept and no trend for  $k = 8$  (Pesaran et al., 2001, p. 300).

The result shows that the calculated F-statistic (F-statistic = 4.568) is higher than the upper bound critical value at a 5% level of significance (3.50). This indicates that the null hypothesis of no cointegration between the variables is rejected at 1%. Thus, we conclude that there is a long term relationship between the flow of official remittances and its major macroeconomic determinants in Sudan, represented in (domestic income, inflation rate, black exchange rate premium, trade openness, financial development, foreign income and FDI).

Given the existence of a cointegration relationship between the variables, we estimated the second part of equation (2) using ARDL methodology. The results of long-run ARDL model using the specification of (1, 0, 1, 1, 0, 1, 1, 1) selected based on AIC, are reported in Table A3.

The results of the long-run estimation reveal that all variables are statistically significant except for FDI and foreign income. Most of the estimated coefficients also carry the expected signs except financial development. The result reveals that the inflow of remittances of Sudanese working abroad through formal channels in the long-run is influenced negatively by the inflation rate, black market exchange rate premium and financial development. On the other hand, trade openness positively attracts official remittances in the long-run.

**Table A3: The long-run results of ARDL - Official remittances**

ARDL (1,1,0,0,0,1,1) selected based on (AIC) Dependent variable is official remittances as ratio of GDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Home income	-0.002039***	0.000584	-3.494821	0.0017
Inflation	-0.020448***	0.006634	-3.082068	0.0048
Premium	-0.217576*	0.125504	-1.733613	0.0948
Foreign income	0.000059	0.000064	0.911838	0.3702
Trade openness	0.087769**	0.039512	2.221313	0.0352
FDI	0.185920	0.170585	1.089901	0.2858
Financial development	-0.283819***	0.068437	-4.147143	0.0003
Constant	4.205531**	1.585651	2.652242	0.0134

\*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

As expected, a negative inflation coefficient and a high level of significance, suggest that the increase in inflation rates leads to a decline in official remittance flows to Sudan in the long term, and this is consistent with previous studies. Like other empirical studies, the result indicates that the black-market exchange premium has a high coefficient (-0.218) and a negative and statistically significant effect on official remittance flows; this implies that an increase in single-unit premiums reduces the volume of official transfers by about 20 percent. This finding confirms previous studies on Sudan conducted by Elbadawi (1992) and Ebaidalla and Edriess (2015), which argued that the rise in the black-market exchange premium reduces remittance flows through official channels.

Unexpectedly, the financial development coefficient is found to be negative and significant, suggesting that financial development reduces official remittance flows in the long run. This result supports the reality of Sudan's financial sector process, which does not direct financing to the real production sector and thus leads to high inflation rates, reflected in the exchange rate premium and thus increases the transfer of remittances through informal channels. With regard to trade openness, our result shows that there is a positive and significant relationship between the degree of trade openness and the flow of remittances through official channels. This implies that an increase in the degree of trade openness encourages the flow of migrants' remittances through official channels.

After estimation of the long-run cointegration model we estimated the short-run dynamics of parameters within the ARDL framework. Table A4 below reports the results of error correction model of remittances in Sudan using the ARDL method.

**Table A4: The short-run results of ARDL - Error-correction model (Official remittances)**

<b>ARDL (1,1,0,0,0,0,1,1) selected based on (AIC) Dependent variable is official remittances as ratio of GDP</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ΔHome income	-0.006907**	0.003347	-2.063499	0.0492
ΔInflation	-0.017244**	0.006632	-2.600311	0.0152
ΔPremium	-0.183490*	0.094260	-1.946631	0.0625
ΔForeign income	0.000049	0.000058	0.857334	0.3991
ΔTrade openness	0.074019**	0.032823	2.255101	0.0328
ΔFDI	0.741396***	0.197961	3.745156	0.0009
ΔFinancial development	-0.405684***	0.122148	-3.321259	0.0027
ECT-1	-0.843340***	0.189564	-4.448832	0.0001
Adjusted R2	0.83			
Durbin-Watson statistics	2.41			
F statistics	18.46 (0.000)			

\*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

The results show that the error correction model has good explanatory power with adjusted R square = 0.83. Most of the estimated coefficients are significant and carry their expected signs. In addition, the (Error Correction Model) ECM findings fit well with the results of long-run analysis. The results indicate that the error correction term (ECT) is negative and statistically significant at 1%, confirming the existence of a long-run equilibrium relationship between the flow of remittances and its explanatory variables. The high value of ECM (0.84) indicates that the flow of official remittances has a high speed of adjustment to long-run equilibrium. In other words, approximately 84% of long-run disequilibria from the previous year's shock converge back to equilibrium in the current year.

Similar to the long-run analysis, the result of short-dynamic model shows that the exchange rate premium significantly discourages the flow of official remittances into Sudan. As is the case in the analysis of long-term, results of the analysis of the short term indicated that trade openness positively and significantly influences official remittances. This result corroborates the long-run analysis. As expected, the results also indicate that the home income and inflation rate negatively impact the flow of financial transfers in an experimental short-run. Similar to the long-run analysis, the result of short-dynamic model shows that macroeconomic policy variables such as financial development significantly discourage the flow of migrant's remittances into Sudan.

Overall, the results of the short and long term analysis revealed that macroeconomic conditions, in terms of the black market exchange rate premium, inflation, trade openness and home income, play an important role in remittances flow through official channels. This means that macroeconomic policies are important determinants of official remittance flows into Sudan. These results are consistent with most previous studies (e.g. Ebaidalla and Edriess, 2015, Gupta, 2005, Sakka and McNabb, 1999 and Nomad, 1994).

## Determinants of total remittance flows

Similar to the analysis of official remittances, first we tested the existence of a long-run causal relationship between total remittances flow and its predictors, using the bounds test approach developed by Pesaran et al. (2001). The result of cointegration test with restricted constant and trend using lag 2 is reported in Table 14. The result shows that the calculated F-statistic (F-statistic = 5.165) is higher than the upper bound critical value at a 1% level of significance (3.50). This result implies that there is a long relationship between the total remittances flows and their major macroeconomic determinants. This result is similar to the result of cointegration test in the official remittances model.

**Table A5. The results of bounds test - cointegration (Total remittances model)**

Dep. variables	AIC lag	F statistics	Bound test (at 0.95%)
Home income, inflation, PREM, Trade, Foreign income, FDI FIND	2	5.165 (0.000)	Lower: 2.32 Upper: 3.50

Source: Asymptotic critical value bounds are obtained from Table CI(iii), Case III: Unrestricted intercept and no trend for k = 8 (Pesaran et al., 2001, p. 300).

After we made sure that there is a cointegration relationship between the variables, we estimated the second part of equation (2) using ARDL methodology. The results of long-run ARDL model using the specification of (1, 0, 1, 1, 0, 1, 1, 1) selected based on AIC, are presented in Table A6.

**Table A6: The long-run results of ARDL- (Total remittances)**

<b>ARDL (1, 0, 1, 1, 0, 1, 1, 1) selected based on (AIC) Dependent variable is the total remittances as ratio of GDP</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Home income	0.000812***	0.000138	5.887919	0.0000
Inflation	-0.006062**	0.002339	-2.592142	0.0160
Premium	0.136817***	0.041118	3.327383	0.0028
Foreign income	-0.000021	0.000016	-1.258211	0.2204
Trade openness	-0.006935	0.011036	-0.628428	0.5357
FDI	0.097426**	0.044048	2.211805	0.0367
Financial development	0.076019***	0.020877	3.641272	0.0013
Constant	6.371571***	0.431177	14.777143	0.0000

\*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

The results in table A6 show that the inflow of total remittances (official+ informal) of Sudanese working abroad in the long-run is influenced positively by home income, black market exchange rate premium, FDI and financial development. Like the analysis of official remittances inflation is found to be negative and statistically significant in attracting total remittances in the long-run. Contrary to official remittance analysis, the coefficient of premium is found to be positive and significant, suggesting that black market premium increases total remittance flows in the long-run. This result implies that as long as most remittance flows come through unofficial channels, black market premiums play a significant role in enhancing total remittances. In addition, the coefficients of financial development and home income are positive and significant, in contrast to formal remittances. This result indicates that improving economic situation and expanding financial system encourage remittances in the long-run.

To identify the factors that affect total remittances in the short-run, the estimation results of equation 2 using the ARDL technique is presented in table A7. Similar to the results of long-run analysis, the results of error correction model in table A7 show that inflation negatively affects total remittance flows. On the other hand, FDI is found to have positive and significant role in attracting total remittance flows in the short-run. This result confirms the long run analysis, indicating that macroeconomic conditions play an important role in attracting remittances in Sudan.

**Table A7: The short-run results of ARDL- Error-correction model (Total remittances)**

<b>ARDL (1, 0, 1, 1, 0, 1, 1, 1) selected based on (AIC) Dependent variable is the total remittances as ratio of GDP</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
$\Delta$ Home income	0.000463***	0.000119	3.901642	0.0007
$\Delta$ Inflation	-0.005375***	0.001261	-4.263636	0.0003
$\Delta$ Premium	0.025228	0.017168	1.469518	0.1547
$\Delta$ Foreign income	-0.000012	0.000009	-1.268337	0.2168
$\Delta$ Trade openness	0.005957	0.007505	0.793651	0.4352
$\Delta$ FDI	0.111541***	0.034160	3.265271	0.0033
$\Delta$ Financial development	-0.041146*	0.020856	-1.972834	0.0601
ECT-1	-0.570297***	0.125820	-4.532658	0.0001
Adjusted R2	0.92			
Durbin-Watson statistics	2.20			
F statistics	37.39 (0.000)			

\*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

The results also show that the error correction term (ECT) is negative and statistically significant at 1%, confirming the existence of a long-run equilibrium relationship between total remittances and its independent variables. The sign of ECM (0.57) suggesting that 57% of long-run disequilibria from the previous year's shock converge back to the equilibrium in the current year.

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