T.C.
ANKARA YILDIRIM BEYAZIT UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

THE IMPACT OF MIGRANT REMITTANCES ON THE ECONOMIC GROWTH OF THE GAMBIA, SENEGAL, NIGERIA, TOGO, CABO VERDE, AND GUINEA BISSAU

MASTER THESIS

Basiru CAMARA

DEPARTMENT OF ECONOMICS

ANKARA, 2021

T.C.
ANKARA YILDIRIM BEYAZIT UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

THE IMPACT OF MIGRANT REMITTANCES ON THE ECONOMIC GROWTH OF THE GAMBIA, SENEGAL, NIGERIA, TOGO, CABO VERDE, AND GUINEA BISSAU

MASTER THESIS

Basiru CAMARA

DEPARTMENT OF ECONOMICS

Supervisor
Asst. Prof. Nergis DAMA

Co-Supervisor
Assoc. Prof. Sıdıka BAŞÇI

ANKARA, 2021

THESIS ACCEPTANCE APPROVAL PAGE

The thesis prepared by Basiru CAMARA titled “The Impact of Migrant Remittances on the Economic Growth of The Gambia, Senegal, Nigeria, Togo, Cabo Verde, and Guinea Bissau” has been accepted by the jury members as a thesis at Ankara Yıldırım Beyazıt University, Graduate School Of Social Sciences, Department of Economics.

Committee Members		Institution	Signature
Asst. Prof. Nergis DAMA		AYBU	
Accept [X]	Reject [ ]		
Assoc. Prof. Fatih Cemil ÖZBUĞDAY		AYBU	
Accept [X]	Reject [ ]		
Prof. Dr. Murat ATAN		AHBV	
Accept [X]	Reject [ ]		

Thesis Defense Date: 23/12/2021

I certify that this thesis fulfills all the requirements to be deemed a master thesis at Ankara Yıldırım Beyazıt University, Graduate School of Social Sciences, Department of Economics.

Director of the Graduate School of Social Sciences Doç. Dr. Seyfullah YILDIRIM

DECLARATION

I hereby declare and confirm that I have written this thesis in accordance with the rules, guidelines and ethical conducts which set by the Institute of Social Science at Ankara Yıldırım Beyazıt University. I would like also to proclaim here that I have cited and referenced fully all the information that I have obtained from secondary sources. Throughout the study, I kept in mind to produce desirable outcome, therefore I followed all the necessary steps for doing such useful work. Lastly I accept all legal responsibility related to my thesis's academic procedure.

Name, Last Name : Basiru CAMARA

Signature :

DEDICATION

My dissertation is dedicated to my mother, Kumba Jobe, and grandmother, Ajaratou Fatou Marong. My maternal grandmother, whose love for me knows no bounds and who taught me the value of hard work, has a particular place in my heart. You have never left my side, Granny, and you are one of a kind. Thank you too, mother, for being a solid pillar in my life, a source of inspiration, wisdom, knowledge, and understanding for me.

This dissertation is also dedicated to Uncle Edrissa Touray and Uncle Wahab Faye, who have been tremendously supportive throughout the process. I will always be grateful for what they have done for me; you have meant and continue to mean so much to me. Your words of encouragement and wisdom are continually ringing in my ears. Throughout this journey, you have all been a source of strength for me.

ACKNOWLEDGEMENT

Everyone encounters ordeals and trials in every phase of life, but my personal experience is quite distinctive. As the American Roy T. Bennett once said, “Challenge and adversity are meant to help you know who you are. Storms hit your weakness but unlock your true strength.” This assertion has found expression in my growth as a young man who has traveled a long and challenging path, but I never lost sight of the reality that every difficulty and hardship hold the seeds of opportunity and progress. Life threw challenges, and those hurdles were turned into rainbows and lights through the help of few people whom I wish to acknowledge.

First and foremost, I wish to express my deepest gratitude to my supervisor Asst. Prof. Nergis Dama, for providing me with the necessary academic guidance and moral support throughout writing this dissertation. In the same vein, I also wish to convey my sincere appreciation to my co-supervisor, Assoc. Prof. SIDIKA BAŞÇI, who has convincingly guided and encouraged me to be professional and do the right thing, even when the going got tricky. I would not have finished this dissertation if it hadn't been for her persistent help and understanding of the topic, which was evident in her critiques and remarks.

I would also like to recognize the invaluable assistance that (YTB) provided to me during my study. The financial, physical, and technical contribution of the Presidency of Turks Abroad and Related Communities (YTB) is genuinely appreciated. This degree will not see the light of the day without their support.

I also want to express my gratitude to the University of The Gambia's staff as well as Yıldırım Beyazit University for their scholarly contributions to my life. I am indebted to these two institutions' staff for their invaluable guidance, unwavering support, and extensive knowledge. I want to acknowledge my supervisors at the Central Bank of the Gambia for their excellent cooperation during my internship.

I would want to express my gratitude to my grandmother, AJa Fatou Marong, my mother, Ya Kumba Jobe, my grandmother’s sister, Ndiku Marong, my brother, Baboucarr Fadera, and my fiancé Fatou K. Camara, for their unwavering support and affection. I owe a debt of gratitude to these incredible individuals without whom I would not have made it through the heat. Thank you, dear mum and grandmother, for all your support and for being my rock and pillar during my journey.

I am indebted to the Njie Kunda Family in Ankara. I owe gratitude to His Excellency Ambassador Sering Modou Njie and wife, Aunty Sally Manneh-Njie, who has luckily turned out to be our personal Aunty. I thank you for all the unconditional support in this very intense academic journey and beyond. By extension, I would also like to recognize the invaluable assistance provided to me by the Njie Kunda family members during my study. I am grateful to my benevolent sisters and brothers for their support and willingness to help in any manner they can. I am glad for our pleasant conversations, which have brought worth to my life and thesis. Most significantly, thank you for bearing with my stresses and laments during the years of study. I also wish to thank members of staff of the Gambia Embassy in Ankara under the stewardship of H.E Njie.

Also, I'd like to express my gratitude to my dear friends who have contributed significantly to my thesis and my life, particularly Momodou Jallow, my economist and excellent proofreader, whose assistance was crucial in my thesis. Your insightful comments inspired me to diversify my thinking and increase the quality of my work.

I won't be doing justice to my acknowledgment if I don't acknowledge the support of the Sanneh, Sonko, and Marong families. Additionally, I would like to express gratitude to Mama Ceesay for her invaluable assistance, which has had a significant impact on my life. I thank you all for your kind help. Without your tremendous understanding and encouragement in the past years, it would be impossible for me to reach this level.

Basiru Camara

Ankara, 2021.

ABSTRACT

The Impact of Migrant REM on the Economic Growth of The Gambia, Senegal, Nigeria, Togo, Cabo Verde, and Guinea Bissau

The paper aims to explore the impact of migrant workers' remittances (REM) on the growth in six West African countries punctiliously: Gambia, Senegal, Nigeria, Togo, Cabo Verde, and Guinea Bissau; we used balanced panel data from 2004 to 2019. The impact of REM is estimated using pooled OLS, FE, RE, and Dummy-variable Interaction models. In the six West African countries, empirical regression analysis reveals both a negative and positive impact of REM on economic growth; additionally, all West African countries except The Gambia have a positive effect of REM on growth.

Keywords: Migrant REM, Economic growth, West Africa, Panel data.

ÖZET

İşçi Dövizlerinin Gambiya, Senegal, Nijerya, Togo, Cabo Verde ve Gine Bissa'un Ekonomik Büyümesi Üzerindeki Etkisi

Bu makale, gelişmekte olan altı Batı Afrika ülkesinde göçmen işçilerin dövizlerinin ekonomik büyüme üzerindeki etkisini incelemeyi amaçlamaktadır: Gambiya, Senegal, Nijerya, Togo, Cabo Verde ve Gine Bissau; 2004'ten 2019'a kadar Toplaştırılmış panel verileri kullandık. REM'in etkisi, karma OLS, FE, RE ve Kukla değişken Etkileşim modelleri kullanılarak tahmin edildi. Altı Batı Afrika ülkesinde, regresyon analizi, REM'in ekonomik büyüme üzerindeki hem negatif hem de pozitif etkisini göstermektedır; ayrıca, Gambiya hariç tüm Batı Afrika ülkelerinde işçi dövizlerinin ekonomik büyüme üzerinde olumlu bulunmuştur.

Anahtar Kelimeler: Göçmen dövizleri, Ekonomik büyüme, Batı Afrika, Panel veri.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

FDI	Foreign Direct Investments
F-E	Fixed Effects Model
GCF	Gross Fixed Capital Formation
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
IV	Instrumental Variables
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
R-E	Random Effects Model
REM	Remittances
SSA	Sub-Saharan Africa
WB	World Bank
IMF	International Monetary Fund

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

Migrant REM are the earnings that workers (remitters) from abroad send back home to support their families in the form of cash or items. Banga & Sahu (2014) posited that REM inflow accounts for a significant portion of most developed countries' GDP. It has also contributed 40-50 percent of the GDP of some developing countries. Migrant REM have also been reported to have increased dramatically in developing countries over the years (Abdulaev, R. 2011; OECD, 2006). Migrant REM have been considered to be useful means of external financing for most of Sub-Saharan Afrıca (SSA) (Ratha, Mohapatra, & Özden, 2011) (Ratha et al., 2011).

REM are a means of financing for households and thus reducing poverty in most SSA'n countries (Zouhaier, 2019). REM has aided in the maintenance and improvement of poor home communities' lives, as well as meeting their many needs. Daily necessities (food, clothing, and rent), consumer durables (such as radios, televisions, and refrigerators), healthcare, savings and investments, and housing are among them. REM also funds basic education for siblings, as well as agricultural improvements such as irrigation schemes and basic infrastructure improvements through hometown associations (Orozco, 2008).

Some expatriates invest their earnings in real estate or create small enterprises with the aim of making a profit (Hamouri, 2020). It indıcated that reducing poverty among poor households has a multiplier effect, creating jobs and income in local communities as well as in the country's economy (Adepoju, 2008). REM provides a constant supply of foreign currency that can assist prevent a balance of trade issue because of the positive social and financial externalities they generate, which are likely to be significant (Olmedo & Cordova, 2006).

Generally, migrants send back REM to their home countries via two channels: formal and informal channels. Sending REM formally for instance by western union and MoneyGram in SSA is very expensive. The cost of sending REM to SSA remains significantly greater in any other part of the world. With an average cost of around 9 percent, SSA remained the most expensive region. Remittance costs remained above 10 percent across numerous African corridors and small Pacific islands. Intraregional migrants accounted for more than two-thirds of all international migration from SSA. However, intraregional remittance costs in SSA, on the other hand, are extremely high (WB, 2020) .

The high cost of sending REM is one of the contributing factors that trigger REM via unofficial channels. If the intraregional cost were to be reduced and a proper mechanism put in place the migrant REM would follow the official channels, then a greater benefit of remittance in SSA could be realized. A study by Martinez (2005) posited that existing data in most countries do not capture the total magnitude inflows of REM, governments should develop stronger systems to optimize the development impact of remittance inflows.

In 2020, WB projected that the migrant REM to the SSA region were expected to shrink by 23.1% due to the factors induced by the coronavirus outbreak and a desert locust attack in east Africa. However, many researchers (Chami, Barajas, Cosimano, Fullenkamp, Gapen, & Montiel, 2008) (Chami et al., 2008; Frankel, 2011; Constantinescu & Schiff, 2014) found that REM are countercyclical as they continue to increase as a stable source of income for households even at times of crises and as well as being less volatile than other capital flows.The study conducted in India from 1975 to 2003, concluded that REM were also affected by the economic condition in the origin country and they also appeared to be counter-cyclical, most especially greater during years of low economic growth (Gupta, 2006).

Furthermore, several months into the pandemic, data shows that The Gambia, like many developing countries, has registered the most remarkable annual increase in the inflows of remittance (Joof & Touray, 2021). In 2020, Gambians abroad remitted a record US$589.8 million, up 78.8% well over previous year's US$329.8 million. The exceptional rise in official statistics is due to a number of factors, including the Central Bank's improved data collection methods and accessabilty as more money transfer operators got unauthorised (Joof & Touray, 2021).

Due to travel restrictions imposed in response to the public health crisis, unauthorised means of transfer were shut down. Furthermore, the use of technology not only makes sending and receiving money quicker and less expensive, but it also assures that data is correctly collected.

1.1. Research Objective and Significance

The objective of this study is to explore the impact of migrant REM on growth in selected West African countries. Specifically, we intend to examine the average effect of

migrant REM on the growth of the economies of the selected countries. Secondly, we intend to use a dummy interaction term to narrow down the individual country effect, with the Gambia being the main country of interest in other words it is the base country. This research will be the first of its kind to be conducted in the West Africa region.

This study is significant for the following reasons: it will add to existing literature by assessing both average and individual economic impact of migrant REM on the of the six West African countries in the SSA region. Furthermore, providing evidence on the importance of migrant REM on the growth of the selected countries. Finally, the study will also reveal the individual country effect such that policy makers will incorporate these findings in their policy decision process.

The study attempts to examine and address the research questions:

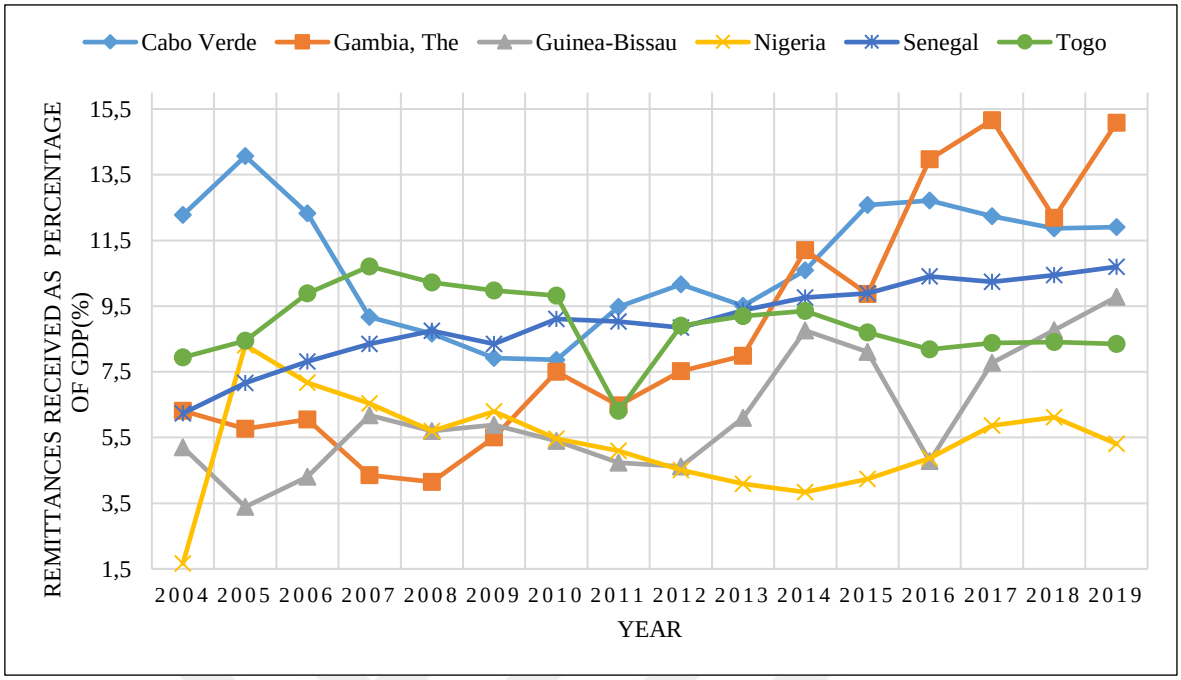
1. The extent of the impact of migrant REM on the growth of the six West African countries?

2. The individual effect of migrant REM on the growth of the six West African countries?

1.2. Background/Historical Perspective of Migrant Remittances and Growth

The REM received by migrants as a % of GDP in the six West African countries from 2004 to 2019 is showed by Figure 1. In 2004, REM contribution to GDP recorded highest in Cabo Verde with a rate of 12.27%. On the other hand, Togo, Gambia, Senegal, Guinea-Bissau, and Nigeria also recorded rates of 7.94%, 6.32%, 6.24%, 5.21%, 1.67%, respectively, making the contribution of REM to GDP the lowest in Nigeria as of 2004. In 2010, Togo recorded the highest rate following the aftermath of the world financial crisis in 2009, followed by Senegal, Cabo Verde, the Gambia, Nigeria, and Guinea Bissau, respectively. As of 2019, apart from Nigeria, all the countries had presented high migrant REM as percentage of the GDP despite the fact there was coronavirus pandemic insurgence at the tail end of the year, with Gambia (15.09%) recoding the highest rate, followed by Cabo Verde (11.90%), Senegal (10.70%), Guinea Bissau (9.78%), Togo (8.35%) and Nigeria (5.31%).

Figure 1. Shows the REM received as a % of GDP



Source: The compilation of the author using World Bank Data.

The REM sent by Gambian expatriates to the Gambia needs special attention because they have steadily increased from 7% to 15% over the years, from 2010 to 2017. In 2015, the United Nations Department of Economics and Social Affairs's (UNDESA) Population Division estimated that there were roughly 90,000 Gambians living in various parts of the World (United Nations, 2015). This was deemed an underestimation. According to current estimates, there are approximately 140,000 Gambian migrants (Kebbeh, A Statistical Portrait of Gambians Living Abroad, 2017). The Gambia is Africa's smallest country, yet it has had considerable internal and international migratory flows, particularly after 2010, and this accelerated significantly in 2015. Aditionally, the rise in emigration among all parts of the population had stemmed from the inability of the Gambian administration to restore economic stability, including addressing significant unemployment, particularly among youths. In 2010, there were approximately 65,000 Gambians living outside the country (about 4% of the total population), compared to 35,000 Gambians emigrants in 2000 (Kebbeh, 2013), It further argued that the Gambia recorded the ninth highest net migration rate in Africa (-2.34 migrants/1,000 population), while being small in contrast to migrant pools from other SSA countries. It was backed up by claiming that from 2014 to 2017, Gambians accounted for a high number of arrivals to Europe, with thousands trying to flee the repressive regime and hoping for a better future by taking the Central Mediterranean route to Europe, also known as the back way (Altrogge & Zanker, 2020). Moreover, the

Gambia Bureau of Statistics (GBoS) states that between 2013 and 2017, 38,500 Gambians departed the country through "illegal" ways (GBoS, 2018). These pieces of evidences imply that between 2010 and 2017, Gambians migrated to Europe in large numbers. This has been reflected in The Gambia's REM as percentage of GDP. As a result, the increase in REM that began in 2015 could be ascribed to the increased number of Gambians living overseas. Despite a considerable increase in REM in 2015, REM as percentage of GDP fell sharply in 2018. The number of Gambian asylum applications to EU nations decreased from 15,725 in 2016 to 4,275 in 2018 (Eurostat, 2021). This is because, since newly Gambian administration assume office, a large of asylum seekers have received negative asylum judgments and face deportation if they do not willingly depart (Altrogge & Zanker, 2020). So remittance fell significantly. Apart from individuals who have left the country, there have been many migrants who have returned in recent years. Following the deterioration of the situation in Libya since 2017, the IOM relocated most of them from transit nations to Europe, between 2017 and 2019, for instance, the Gambia received 5,002 migrants from Libya, 2,992 from Niger and 1,392 from other countries along significant migratory paths in Africa and Europe (IOM, 2020). Moreover, the total of 1,050 people has come back home from a Schengen country after being ordered to leave return 2017 and the end of 2019 (Eurostat, 2021). The return has also been a major topic of discussion and agreement between European Union and the Gambian administration. In May 2018, the Gambian authorities signed a non-binding ‘good practice' agreement with the EU on optimal conditions for forcible return from EU member states, in response to increased demands for cooperation from European countries. As a result, from November 2018 forward, there was an increase in the rate and amout of forced return operations (The Conversation, 2019)

The macroeconomic status of the REM receiving countries, the exchange rate, political instability, inflation, and other factors all influence the impact of REM. REM to Guinea Bissau fell dramatically in 2016, which could be due to a variety of factors. The exchange rate of Guinea Bissau fell by 10.6% in December 2015, resulting in a 20% decline in fuel prices and 7.3 percent inflation. All these reasons have led to the franc's depreciation, pushing inflation to 8.5 percent in 2016 (IMF, 2016).

The constitutionality of the expulsion of 15 dissenting African Party for the Independence of Guinea and Cape Verde (PAIGC) members of parliament, as well as Vaz's (President, 2014-2020) insistence on choosing prime ministers unilaterally without the permission of the ruling party, PAIGC, swiftly escalated the political crisis into a

constitutional issue in early 2016. As a result, until early 2018, the parliament was paralyzed and inactive. These and other factors may have contributed to the decrease in REM as per its contribution to Guinea Bissau's economic growth in 2016.

Global Trends in Remittances

Official REM to emergent nations were $466 billion in 2017, up 8.5% from $429 billion the previous year (WB, 2020). Global REM, which comprises transfers to high income nations, rose by 7% to $613 billion in 2017, compared to $573 billion the year before. The relatively strong remittance rebound is being fueled by growth in Europe, Russia, and the United States. When measured in US dollars, higher oil prices, as well as the appreciation of the Euro and Ruble, aided the recovery in REM.

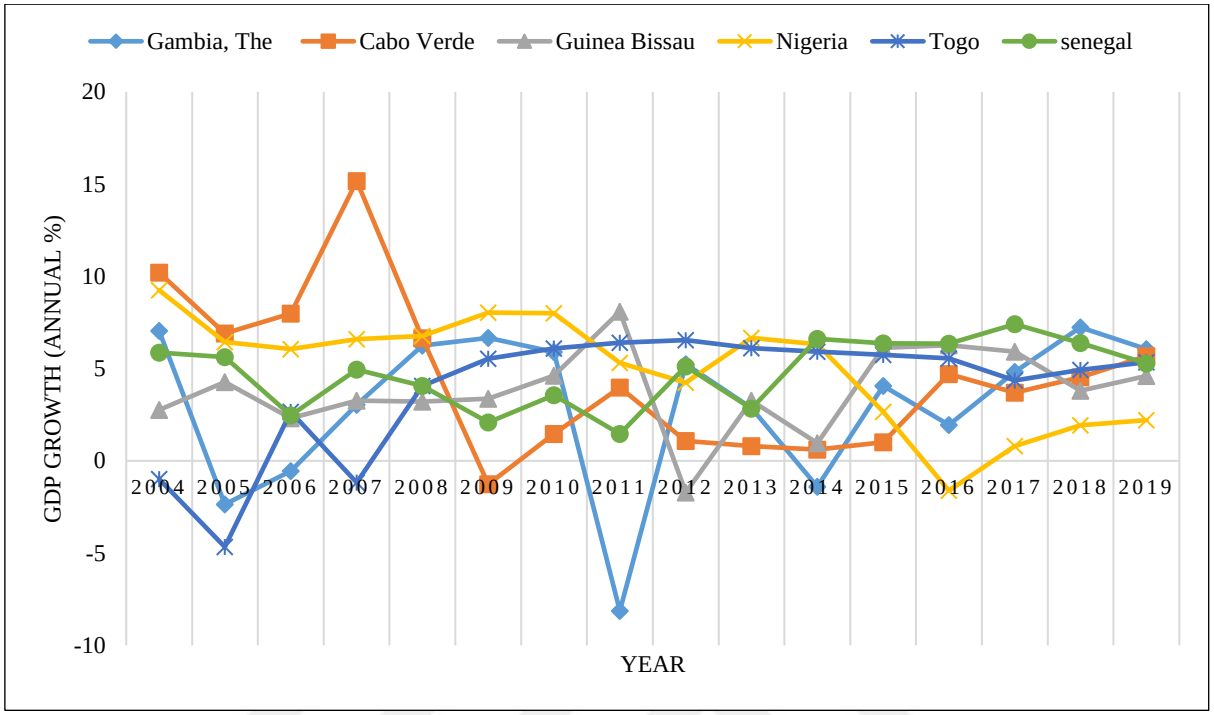
REM to SSA increased by 11.4% to $38 billion in 2017, owing to stronger economic development in wealthy nations and higher oil prices that benefited regional economies. Nigeria, Senegal, and Ghana were the top remittance recipients. Liberia, The Gambia, and the Comoros are among the countries in the region where REM contributes a considerable share of their GDP.

REM to the East Asia and Pacific region, on the other hand, increased 5.8% to $130 billion in 2017, reversing a 2.6 percent fall in 2016. REM to European and Central Asian countries climbed by 21% to $48 billion in 2017, following a three-year decline.

Moreover, in 2017, REM to Latin America and the Caribbean climbed by 8.7%, hitting a record high of almost $80 billion. The main drivers of the increase are stronger US economy and greater enforcement of the rules of US immigration, which might have influenced REM as migrants repatriated funds set up in expectation of shorter stays in the US. Furthermore, due to rising flows to Egypt and more stable exchange rate assumptions, REM to the Middle East and North Africa climbed by 9.3% to $53 billion in 2017.

Finally, in 2017, REM to South-Asia increased by 5.8% to $117 billion. In 2017, REM to India increased by 9.9% to $69 billion, reversing a significant decrease the previous year. Also in 2017, REM to Pakistan and Bangladesh were basically unchanged, while those to Sri Lanka fell somewhat (-0.9 percent). After a dip in 2016, REM to many nations look to be increasing (WB, 2018).

Figure 2. The annual growth in GDP in percentage terms



Source: The compilation of the author using World Bank Data.

1.3. Overview of Economic Growth Patterns in selected countries

For a country to enjoy growth in the economy, there must be a rise in the total output of products and services produced by the economy; we can determine the growth status of the countries under study by comparing one period to the next.

Nigeria, being the largest economy in Africa, experienced recession in the second quarter of 2016, as a drop in petroleum prices wreaked havoc on the OPEC member's finances and damaged the Naira currency. Two-thirds of the government's revenue comes from crude oil sales (Ohuocha, 2017). Recent statistics have shown that growth in real GDP is predicted to be 2.3% in 2019, marginally greater than the 1.9% reported in 2018. The primary drivers of growth were improved modes of transportation, an improved oil industry, and information and communication technologies. Flooding and occasional clashes between herdsmen and land owners have harmed agriculture. Despite this, manufacturing is impeded by a lack of capital. The main engine of growth in 2019 was final household consumption, which maintained its 1.1% boost to real GDP growth from the preceding year.

Economic growth in the Gambia has been robust since 2007 despite the global downturn as of that year. A substantial expansion in agriculture, backed by favorable weather and sound policy, has been the major engine of growth. Economic growth was predicted to slow from 6.3 % to roughly 5.5 % in 2011, before stabilizing at approximateley 5.6 % in 2013. Since late 2008, The Gambia's growth has been fueled primarily by strong agricultural performance (Gambia Economic Outlook, 2012, p. 7). However, in 2011, poor weather conditions hindered crop production, causing a negative shock in GDP growth of 8.13%, the worst since 2002.

GDP growth in The Gambia rose to 6.6 % in 2018, mainly to a recovery in agriculture, tourism, construction, and trade after the political transition in 2016. Due to poor fiscal management and delays in budget support disbursements, it declined to a projected 5.4 % in 2019. Because to a stable exchange rate, which has only depreciated by 3.2 % since September 2018, an abundant food supply, and falling commodity prices, inflation has slowed. During 2015–18, Gambia's current account deficit worsened because to its reliance on food and fuel imports, although increases in net services, private capital flows, and REM from the diaspora helped to close the gap in 2019 (African Economic Outlook, 2021).

The economy of Guinea-Bissau grew by about 8% in 2011. However, there was a predicted drop in cashew nut exports which had a negative impact on the GDP in 2012 and 2013. Exports, particularly cashew nuts, helped boost GDP growth to 8.1 percent in 2011, up from 4.6 percent in 2010.Because of an excellent harvest, exports of the latter accounted for 81 % of all exports in 2009/2010 and reached % in 2011. However, the European debt crisis was predicted to result in a decline in international prices for nuts, lowering growth to 4.6 % before increasing to 4.9 % in 2013 (Guinea-Bissau Economic Outlook, 2012).

Furthermore, GDP in Guinea Bissau increased by almost 5% in 2019, attributable mostly to personal consumption and exports. The amount and price of cashew nuts continue to be strongly correlated with economic growth. The nuts are considered Guinea-Bissau's "green oil," accounting about 70% of jobs and more than 90% of exports. As agriculture is the major contributor of domestic revenue, failing cashew exports resulted in decreased revenue in 2018. The low cashew price is likely to put a strain on the budgets for 2019 and 2020. Due to small earnings and high spending, the budget deficit expanded to 5.1% of GDP in 2018, but subsequently fell to an anticipated 2.8% in 2019. To pay the deficit, 10 billion African Financial Community (CFA) francs in public debt instruments were issued in

September 2019, putting public debt at a projected 27% in 2019. As a result of decreasing cashew nut export prices, the current account deficit increased from 1.6 % of GDP in 2018 to 3.4 % in 2019. Machinery and construction materials account for 19%, followed by petroleum and refined goods (18%), services (16%), and food and agricultural products (12%), showing that the country depends on imports heavily (Guinea-Bissau Economic Outlook, 2012).

Cabo Verde, on the other hand, maintains strong economic growth momentum, with real GDP expected to grow about 5% in 2019, owing to high activity in manufacturing, fishing, trade, and tourism. Inefficiencies in the big sector resulted in a significant level of public debt, the impact of public investment on growth fell short of its potential. To counter debt, fiscal consolidation was implemented, including a domestic borrowing cap of 3% of GDP. These initiatives started to pay off in 2018, with the fiscal deficit dropping under 3% of GDP thanks to concessional loans and issuances of Treasury bonds. The state debt dropped from 128.4% of GDP in 2016 to 123.9% in 2018, and is predicted to drop to 98.5 percent of GDP by 2023 (Cabo Verde Economic Outlook, 2021).

The Togolese economy went through a recession in 2005, after which it grew steadily between 2008 and 2016, on average. In 2017, GDP growth slowed to 4.4% as civil unrest impacted some private sector activity, especially construction. Increased government spending contributed to the previous rise, pushing the fiscal deficit to 9.5% of GDP in 2016. In 2017, the authorities committed to a new IMF-backed initiative, which included a dramatic cut in spending that far exceeded the program's goals. Civil unrest erupted, accompanied by calls for a new constitution and stricter presidential term limits. In 2018, a more cautious approach to budget cuts was taken, leading to an increase in growth of 4.9%. Real GDP rose barely 0.4 percent in 2020, compared to 5% in 2018 and 5.5 % in 2019. This was due to a reduction in Foreign Direct Investment (FDI), portfolio equity, and migrant REM, as well as a slump in global trade.

The speed of recovery of the Senegalese economy slowed marginally in 2011, with growth estimated at 1.5%, owing primarily to prolonged electrical power outages that lasted until the end of September. In 2012, growth was expected to hit 4.2%, but the real figure stood at 5.1%. These forecasts were with backings that the government of Senegal would implement with the help of the Economic Support Policy Instrument (ISPE-II) 201.

The key investment programs on which the plan was vested were the energy sector, as part of (the Takkal Plan) to restructure and relaunch it, and in the road sector, with work on the toll highway continuing.

Finally, from 2014 all the way to the end of 2017-2018 Senegal's economic growth was among the fastest in Africa, averaging over 6% per year. The economy grew at a 5.3 percent annual rate in 2019, dropping from 6.3% in 2017. The services sector continues to be the most important contributor to GDP growth, with investment and exports serving as the primary demand drivers (WB, 2020).

2. LITERATURE REVIEW

REM from migrants have made a significant contribution to the economies of the six West African countries, although there should be measures that must be taken to address the costs of remittance and issues of REM through informal channels to feel a greater impact of migrant REM on growth. Nevertheless, there is much research done on the effect of REM on other important variables. However, the motive of this thesis is to investigate the impact of migrant REM on economic growth in six West African nations in the Sub-Saharan region. This section will review publications on the effect of REM on economic upturn to have a better understanding.

Fayissa & Nsiah (2010) studied the impact of REM on economic growth in 36 African countries and found positive correlation between REM and economic progress. The impact of workers' REM on economic progress using 39 countries from 1980 to 2004 was exermined. It was discovered that REM had a significant and positive effect on growth (Pradhan, Upadhyay, M., & Upadhyaya, K., 2008) (Upadhyay et al., 2008). In another study a balanced panel data is used to analyze data from six Western Balkan communist nations from 2005–2015 and discovered REM has a positive effect on economic progress (Topxhiu & Krasniqi, 2017). The different impacts of REM on the economic progress of six high REM receiving countries was evaluated by employing a panel data collection from 1999 to 2013. REM plays a substantial and positive impact in the growth of the nations investigated (Meyer & Shera, 2017). The macroeconomic effects of migrant workers' REM on growth in Bangladesh, India, Pakistan, and Sri Lanka was studied, it was discovered that REM boosted growth in all four countries (Azam, 2015). By analyzing the impact of REM on growth of economies utilizing data of 23 Latin American and Caribbean nations during a seventeen-year period. It is found that REM impact on real per capita GDP growth is significant and positive Ramirez (2013). A data from seven Central and Eastern European countries was used over a six-year period in a research to clarify the connection between REM, FDI , and economic progress. In all of the nations investigated, the empirical findings showed that REM and FDI have a positive outcome on the growth (Comes, Bunduchi, Vasile, & Stefan, 2018) (Comes et al., 2018). By using cointegration and causality tests to explore the effects of REM inflows on Nigerian economic progess, the results of the investigation revealed that the experiment's variables exhibit a long-run equilibrium connection (Akano & Jamiu,

2013). In addition, the causality test reveals that the relationship between Gross Domestic Product and Remittance Inflows is unidirectional.

However, the relationship between workers' REM and Turkey's economic development from 1970 to 2005 was exermined and according to the study the growth of REM is negatively associated with economic growth (Karagöz, 2009). Another research studied the effect of REM on GDP growth using panel data from 113 countries from 1970 to 1998. It concluded that REM and GDP growth have a negative relationship, It also discovered that remittance growth and economic growth had a negative relationship and that REM are used for altruistic reasons (Chami et al., 2005). By using an 11-year panel dataset from 33 countries (2003-2014), it is concluded that only a small portion of REM was put to productive use (Ferdaous, 2016). Additionally, REM have a significant and positive effect on the growth of the economies of South Africa, Ghana, and Nigeria (Kanu & Ozurumba, 2013).

There are several researchers who have come up with diffrent findings for the outcome of REM on growth. The relationship between REM and economic progress in 5 countries: Brazil, India, China, South Africa, and the Russian Federation was examined using data from 1994 to 2013. The research identified a positive relationship between REM and China's economic development. It also showed that REM had a significant negative effect on Brazil, India, and Russia's economic growth, however, it observed a positive but small association between REM and economic progress in South Africa, on the other hand (Pradhan, 2016). The period 1981–2011, a research was executed on the effect of REM on Nigerian economic development. It discovered that REM has a long-term positive effect on Nigeria's economic growth. There was a short-run negative correlation with REM and economic progress (Oshota & Badejo, 2014). It is also discovered that REM has a long-run positive and important effect on Bangladesh, India, Sri Lanka, and Nepal's economies. On the contrary, it is discovered that REM has a significant yet negative impact on growth in Pakistan (Jawaid & Raza, 2016). The effect of REM on Ethiopia's economy was investigated by using data from 1981 to 2012, REM have a negative out-turn on GDP which was significant in the long run, however, in the short run, it have a considerable and positive impact on economic development (Rao & Tolcha, 2016). By using a data set from 1977 to 2016 to evaluate the impact of REM on economic progress in four south Asian developing countries, It was concluded that REM is more effective in alleviating poverty than economic growth, also REM has a negative outcome on economic growth in Bangladesh, Pakistan, and Sri Lanka,

according to the research, on the other hand REM contributes to India's economic development positively, finally, the research indicated a strong and negative association of REM and economic growth in all 4 countries (Sutradhar, 2020).

There have been studies that have found no evidence of REM having a positive or negative impact on growth. Using a data from 1980 to 2014, to investigate the link between REM and Pakistan's growth over a 35-year period and it is found that personal REM have no impact on Pakistan's economic growth (Shaikh et al., 2016). Also, using a 34-year panel dataset, the research discovered that REM had no effect on the economic progress of 84 developing nations (Barajas et al., 2009).

Finally, some researchers found that REM have a negative influence on growth development since they appear to cause a moral hazard problem (Abdih et al., 2008; Kapur, 2004; Aldaba, 2004).

When REM deteriorates the economy, most governments in developing countries appear to ignore and implement required regulatory problems carelessly. REM have a negative impact on the labor market in the home country, which may be linked to more severe labor market growth if the emigrants are educated (Chami et al., 2003). A significant and consistent inflow of REM would result to the real exchange rate to rise (Dorantes & Pozo, 2004). The Dutch-disease effect predicts that this increase of the real exchange rate will impede economic progress in the long-run.

2.1. Economic Growth Theories and Migrant Remittances:

REM from migrant workers contribute significantly to household spending, savings, and, to a lesser degree, investment. It represents a massive contribution to the rate of increase in productive potential. In this part, we will look at how migrant REM affects the economy in a variety of ways.

2.1.1. Migrant Remittances and The Total Factor Productivity

Migrant workers' REM can have an impact on total factor productivity growth by lowering the efficacy of domestic investment. As the efficiency of household members to work and make valuable investments is at stake, migrant REM have an impact on the overall

factor of productivity's growth rate. The real exchange rate of recipient countries can appreciate because of migrant REM, causing the **Dutch disease effect**. These effects can occur if the real exchange rate rise induces the reduction of areas of production that create dynamic production externalities (Barajas et al., 2009; Sutradhar, 2020). REM from international migrants, although received by households, are a valuable source of capital that promotes technological change (innovation) and total factor productivity growth, but not efficiency (Dzeha, 2017).

2.1.2. Remittances from Migrant Workers, Foreign Exchange, and Labor Participation

Inflows of migrant REM may serve as a reliable foreign currency exchange, easing constraints on foreign exchange and assisting in the repayment of external debts. As a result, by resolving the moral hazard dilemma, governments would be less pressured to enact changes and reduce external imbalances. Remittance receipts can increase the growth rate of labor inputs. Since the families of the recipient consider the funds as non-labor profits, remittance receipts are expected to hold a negative influence on the participation of the labor force, an issue known as moral hazard (Barajas et al., 2009; Sutradhar, 2020). On the other hand, migrant worker inflows can reduce recipient families' labor effort as they become wealthier, resulting in a negative impact on growth in other words moral hazard problem (Abdullaev, 2011).

2.1.3. Remittances from Migrant workers, Human Capital, and Capital Accumulation

Inflows from migrant REM could be a means of saving and investing for the purpose of capital accumulation and growth. While the study finds evidence that REM promotes capital accumulation, it also indicates that the relationship between REM and human capital does have a significant impact on capital accumulation Dzeha (2017). Therefore, remittance inflows can only result in capital accumulation if the recipients are skilled and well-trained. Furthermore, migrant REM can make it easier to invest in children's education, thereby contributing to the growth of human capital. Households receiving REM will accelerate the accumulation of physical and human resources (Sutradhar, 2020).

3. EMPIRICAL STUDY

3.1. Methodology

The main focus of this research is to evaluate the effect of remittance inflows on six West African countries' economic growth (The Gambia, Senegal, Togo, Nigeria, Cabo Verde, and Guinea Bissau). By identifying the average effect of REM on per capita GDP in the six West African nations, as well as the individual impact in The Gambia and other countries in the study. It stated that researchers fall into traps of choosing variables that lack theoretical support, resulting in incorrect model specifications and misleading results (Easterly et al., 2004). Most research on regression analysis based on developing nations shows the average influence of REM on the growth of economies but not independent effects (Sutradhar, 2020). Few studies show the individual effect using time series data. To avoid the problems that past studies have encountered, such as those described by (Ferdaous, 2016; Sutradhar, 2020), we used a group of variables that has been commonly used and accepted in the growth literary works, as well as those suggested by the standard neoclassical model of growth, such as Solow and Swan model was employed to explain the relationship between per capita GDP and migrant REM. We will compare the results of our findings from the six nations, and we will use the F-test to determine the joint significance of the individual effects.

3.2. Research hypothesis

The research null hypothesis suggests that the migrant REM coefficient might not be statistically different from zero, whereas the alternative hypothesis suggests that it would be. REM are a form of accumulation of capital that is significant statistically and do help to improve growth in an econmy (Meyer & Shera, 2017; Sutradhar, 2020).

However, if our findings support the null hypothesis that migrant REM might not have impact on the economic growth in the West African countries studied, it will add to the literature that migrant REM may have no impact on GDP, lowering the labor force participation rate in receiving countries, moral hazard problem (Chami et al., 2011; Sutradhar, 2020). However, contrary to the null hypothesis, our empirical estimation indicates both positive and negative remittance coefficient values.

The research null hypothesis suggests that the migrant REM coefficient might not be statistically different from zero, whereas the alternative hypothesis suggests that it would be. REM are a form of accumulation of capital that is significant statistically and do help to improve growth in an econmy (Meyer & Shera, 2017; Sutradhar, 2020).

3.3. Data and Econometric Model

In this study we used panel data of six West African countries (The Gambia, Senegal, Togo, Nigeria, Cabo Verde, and Guinea Bissau) from 2004 to 2019. For the empirical analysis, nominal variables are used, and they are expressed in USD. All the variables are converted to their natural logarithm and the figures that could not be logarithmically transformed are deleted. All data are compiled from the database of the **WB** and Penn World Table databases. Per capita **GDP**, both the net-inflow of FDI as a % of **GDP** and in current USD, Gross Capital Formation (GCF) as % of **GDP** and gross capital formation in current USD, personal REM received and trade as a % of **GDP** (represents openness of the economy) are gathered from the WB'S World Development Indicator. The exchange rate data is taken from the **Penn World Ta**ble Database.

The economic model is Cobb-Douglass production function:

$$lngdppc_{it} = \beta_0 + \beta_1 ln(rem)_{it} + \beta_2 ln(gcf)_{it} + \beta_3 ln(tra)_{it} + \beta_4 ln(fdi)_{it} + \beta_5 ln(exch)_{it} + \varepsilon_{it} \quad (3.1)$$

where **i signifies** the **countries** in the sample and **t signifies** is **time**

Where $ln(gdppc)_{it}$ is the log of the GDP. $ln(rem)_{it}$ the natural logarithm of personal REM sent by migrant workers. $ln(gcf)_{it}$ is the natural logarithm of the GCF (both in the percentage of GDP and current USD) which is frequently refer to as a proxy for the investment physical capital. $ln(fdi)_{it}$ is the natural logarithm of FDI (both in the percentage of GDP and current USD). $ln(exch)_{it}$ is the natural logarithm of Exchange rate, national currency/USD. $ln(tra)_{it}$ is the natural logarithm that captures the trade effect. The ratio of export to import price indices determines the terms of trade for each country under study.

We used a static econometric model (Meyer & Shera, 2017; Topxhiu & Krasniqi, 2017). These are two most recent papers that use the static model to examine the link between REM and growth, but they do not include the interaction terms that is used to define the country-specific effect of REM (Sutradhar, 2020).

4. ECONOMETRIC MODELS

4.1. Problems of previous Literature

The problems with estimating approaches for the link between migrant REM and economic growth were identified (Ferdaus, 2016). Furthermore, some researchers fall into traps when it comes to selecting variables, most of them lack theoretical support and there is the problem of incorrect model specification which leads to misleading results (Easterly et al., 2004). Most panel data analyses for emerging nations demonstrate the average effect of REM but does not reveal individual impacts (Sutradhar, 2020). Only a few researchers evaluate the individual impact but using time series data. To avoid the problems stated above we will use a group of variables that has been commonly used and accepted in the growth literature, specifically suggested by the standard neoclassical growth model of Solow and Swan.

4.1.1. Static Model

The following is the general form of the regression equation:

$$Y_{it} = \mu_i + \delta_t + \beta(X_{it}) + \varepsilon_{it} \quad (4.1)$$

Where i denotes countries and t is time,

Y_{it} is the log of GDP. The country specific, time invariant effect is denoted by μ_i. The time-specific, country-invariant effect is denoted by δ_t. where as X_{it} is the explanatory variables vectors (personal REM sent by migrant workers, GCF, openness of the economy, exchange rate and FDI). $\beta = (\beta_1, \beta_2, \ldots \beta_4)$ are the scalar vector of coefficients. "ε_{it} represents the error term. The error term is iid (independent and identically distributed), with zero mean and constant variance. Subscript (i) represents countries in sample $i = (1,2, \ldots N)$, and Subscript (t) represents time $t = (1,2, \ldots N)$, where $T = 16$." For this Thesis number of countries is 6 and time is 16.

Equation (3) is the country dummy variable interaction model:

$$Y_{it} = \mu_i + \delta_t + \theta D_{it} \times (rem)_{it} + \beta(X)_{it} + \varepsilon_{it} \quad (4.2)$$

To address the effects of heterogeneity on the six West African countries the author employed an interaction by using the countries and REM to form a country-dummy of remittance in the model, like in the case of Sutradhar (2020). For each country, a country dummy is generated, as well as interaction terms in equation (3).

The natural logarithm of GDP per capita is represented by Y_{it}, μ_i representing the country specific, time invariant effect. δ_t representing the time-specific, country invariant impact, D_{it} represents the country dummy interaction variable, each country a dummy interaction term is calculated to study the country specific REM impact on the growth of the economies. $(rem)_{it}$ represents the personal REM sent by migrant workers. X_{it} is the explanatory variables vector (personal REM, GCF, openness of the economy, exchange rate and FDI). "ε_{it} represents the error term. The error term is iid (independent and identically distributed), with zero mean and constant variance."

Endogeneity

Part of the problems with explanatory variables in economic growth regression are often endogeneity. Estimates of how the response variable in the model is affected by the explanatory variable in the equation, which can be biased due to endogeneity. Traditional F-E estimations are used to eliminate unobservable heterogeneity. However, this estimate is only consistent if we presume that country attributes are entirely exogenous. Meaning, they are unrelated to the country's history and are simply random observations through time. However, in practice, this assumption is unlikely to be true. F-E ignores the endogeneity it may be biased, whereas the pooled OLS ignores the unobserved heterogeneity which as result may be biased as well. Nevertheless, in the study, the F-E model is considered to incorporate and control unobserved heterogeneity.

IV estimation and GMM estimation can be used to address the issue of endogeneity. When the size of the sample is small, however, GMM estimators are biased due to the relation between the moments and the weight matrix. Finding an IV that is significantly related to the exposure is extremely difficult; also, a poor instrument may result in a large standard error in the IV estimator. The sample size in this study is not large enough to apply the GMM estimators. As a result, the FE model is our best option for dealing with endogeneity. Even with a large sample size, a minor violation of the IV's main assumptions will lead to a biased estimation of IV (Martens et al., 2006).

5. THE RESULTS OF THE EMPIRICAL FINDINGS

This section discusses coefficients of the estimated models used, the tests conducted in the analysis such as the unit root tests which examines if the variables being used are stationary or not, and other tests like endogeneity, the sensitivity analysis and how robust are the core models, heteroskedasticity, multicollinearity, and autocorrelation. To obtain a robust result and a model that best fit we ran multiple tests.

5.1. Static Model Results

In the first part of the analysis, we evaluated the pooled OLS by utilizing the parameters of equation (2), which assumes the country specific impacts are constant in all nations and that there is no time specific impact. The parameters of equation (2) were estimated in the second phase of the static model using the RE, which assumes the country specific variables are not correlated with the regressors in equation (2). The fact that the covariates are uncorrelated with μ_i , appears to be a point of contention (Ferdous, 2012). This suggests that the covariates are uncorrelated with μ_i. Finally, hence the need to estimate parameter of equation (2) by running FE which assumes the correlations of the covariates.

To assess which of the three models is the most appropriate, we employed the Breusch-Pagan LM test and the Hausman test, two main panel data estimations. To compare R-E with pooled OLS, the Breusch-Pagan LM test is used. The Breusch-pagan LM test's null hypothesis is that there is no significant difference between countries.

Choosing the R-E or F-E model we used the Hausman specification test. The hypothesis for the Hausman specification test is "Under the null hypothesis of no misspecification, there exists a consistent, asymptotically normal and asymptotically efficient estimator. Under the alternative hypothesis of misspecification, however, this estimator will be biased and inconsistent."

H_0: β_{FE} and β_{RE} are consistent; but only β_{RE} is efficient.

H_1: β_{FE} is consistent and β_{RE} inconsistent.

Since we have two distinct sets of variables in this study, we run two sets of estimations, each of which yields significant results. The first set of variables is expressed in percentage terms, while the second set is expressed in current terms.

Table 1 contains two sets of variables that are in their percentage forms: **the log of gross fixed capital formation as share of GDP (lngcf) and the log of FDI as a percentage of the GDP (lnfdi)**. After running Pooled OLS, The Hausman test was performed on the F-E and RE regressions, and it confirmed that the R-E model is preferred to the F-E model. The LM test of Breusch-Pagan was also ran, and it confirmed that pooled-OLS is preferable to the R-E model. In this study pooled-OLS is the preferred model for the percentage variables and the coefficients are explained clearly. The explanatory variables explain 58 percent of the variation in per capita GDP growth, according to the R-square value of 0.576.

Table 1. The dependent variable: lngdppc

Indicators	**Pooled OLS**	**FE**	**RE**
lnrem	0.164***	0.367***	0.164***
	(0.042)	(0.036)	(0.042)
lngcf	0.541***	-0.182***	0.541***
	(0.203)	(0.069)	(0.203)
lnfdi	0.0704	0.0132	0.0704
	(0.094)	-0.0267	(0.094)
lntra	0.0408	-0.193*	0.0408
	(0.258)	(0.0976)	(0.258)
lnexch	-0.192***	-0.318***	-0.192***
	(0.060)	(0.088)	(0.060)
Constant	2.932**	2.698***	2.932**
	(1.170)	(0.672)	(1.170)
Observations	89	89	89
R-squared	0.576	0.591	0.576
TheHausman test (R-E vs F-E) (p-value)	0.000(00000)		
TheBreusch-Pagan-LM test (pooled-OLS vs R-E)	0.000(1.000)		
(p-value)			
Number of countries	6	6	6
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1			

The pooled-OLS model outcome shows that a 1% rise in REM translates to 0.164% increase in GDP of the six West African countries and it is statistically significant at 10% level. Capital accumulation is a key variable for the growth of an economy, a 1% increase in GCF translate to a 0.541% rise in per capita GDP. The FDI effect on GDP growth is statistically not significant and 1% increase in FDI will translate to a 0.0704% increment in per capita GDP growth. In international trade, the openness of the economy is particularly important since it has a beneficial impact on growth; a 1% increase in openness to trade translates to a 0.0408 % rise in per capita GDP growth, but this is statistically insignificant. In terms of international trade, the exchange rate is important since it determines the value of the home currency; nonetheless, a 1% rise in the exchange rate decreases economic growth by 0.192 %.

While Table 2 contains the natural logarithm of fixed capital formation and the natural logarithm of foreign direct investment in their current terms. After running the regression for the three regressions, at a p-value of 0.05, the test for Hausman fails to reject the null which assumes both R-E and F-E are consistent. Thus, the result of our Hausman test shows that the R-E model is preferable to the F-E model for this study. The Breusch-Pagan test suggested that pooled-OLS is preferable to R-E model, so pooled-OLS model is the preferred model, and the coefficients are explained.

Table 2. The dependent variable: lngdppc

Indicators	**Pooled OLS**	**FE**	**RE**
lnrem	-0.219	0.239***	-0.219
	(0.160)	(0.045)	(0.160)
lngcf	0.420**	0.182***	0.420**
	(0.166)	(0.060)	(0.166)
lnfdi	-0.00336	0.0444*	-0.00336
	(0.091)	(0.025)	(0.091)
lntra	0.542***	-0.294***	0.542***
	(0.147)	(0.087)	(0.147)
lnexch	-0.242***	-0.299***	-0.242***
	(0.052)	(0.082)	(0.052)
	1.743*	0.388	1.743*

Table 2 (continued). The dependent variable: lngdppc

Indicators	**Pooled OLS**	**FE**	**RE**
Constant			
	(0.978)	(0.825)	(0.978)
Observations	89	89	89
R-squared	0.577	0.639	0.577
TheHausman test (R-E vs F-E) (p-value)	0.000(00000)		
TheBreusch-Pagan-LM test (pooled-OLS vs R-E) (p-value)	0.000(1.000)		
Number of countries		6	6
Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1			

The R-square value is 0.577 which means that the explanatory variables in the R-E model reveals 58% variation of per capita GDP. The results in Table 2 show that REM impacts economic growth negatively. That is, a 1% rise in REM translates to a 0.219% fall in GDP in six West African countries and it is statistically insignificant. Capital accumulation is a very important variable for economic growth, and it serves as a proxy for human capital. Consistent with the above analysis, a 1% rise in GCF translates to a 0.420% rise in per capita GDP and it proves to be highly significant. The impact of FDI on per capita GDP is statistically not significant and 1% increase in FDI will translate to a 0.00336% fall in GDP. Openness(trade) of the economy is consistent with our regression; hence its importance in international trade cannot be overemphasized as it has a positive effect on growth; a 1% rise in openness to trade translates to a 0.542% rise in per capita GDP growth, unlike the above regression analysis it is statistically significant. A 1% increase in exchange rate reduces growth by 0.242%, and it is consistent with the above analysis.

5.2. Results of the Dummy Interaction Model

Table 3. The dependent variable: lngdppc

Indicators	Pooled OLS	FE	RE
Interaction1(Cabo Verde)	0.320***	0.316**	0.320***
	(0.0479)	(0.152)	(0.0479)
rem (Gambia)	0.231***	-0.0488	0.231***
	(0.0451)	(0.0808)	(0.0451)
Interaction3 (Guinea Bissau)	0.282***	0.208***	0.282***
	(0.0492)	(0.0567)	(0.0492)
Intercation4 (Senegal)	0.241***	0.0143	0.241***
	(0.0482)	(0.0873)	(0.0482)
Interaction5 (Togo)	0.239***	0.0409	0.239***
	(0.0493)	(0.141)	(0.0493)
Interaction6 (Nigeria)	0.194***	0.355***	0.194***
	(0.0465)	(0.0523)	(0.0465)
lngcf	0.162***	0.340***	0.162***
	(0.0574)	(0.0706)	(0.0574)
lnfdi	0.0402	-0.00186	0.0402
	(0.0259)	(0.0264)	(0.0259)
lnexch	-0.290***	-0.303***	-0.290***
	(0.0805)	(0.0780)	(0.0805)
lntra	-0.294***	-0.280***	-0.294***
	(0.0900)	(0.0861)	(0.0900)
Constant	0.676	-0.390	0.676
	(0.829)	(0.854)	(0.829)
Observations	89		
R-squared	0.974	0.745	0.974
Number of countries	6	6	6
TheHausman test (R-E vs F-E) (p-value)	37.60 (0.000)		
TheBreusch-Pagan-LM test (pooled-OLS vs R-E) (p-value)	0.00 (1.000)		
Standard errors in parentheses			
***** p<0.01, ** p<0.05, * p<0.1**			

Table 3 shows the results of the 3 regressions for the interaction model with the dummy variable, which are the pooled-OLS, F-E, and R-E. It shows the individual impact of REM on each country's growth in the study. The Gambia being the main country of interest in other words it is the base country, with a negative and insignificant impact of migrant REM on growth in F-E models and positive and highly significant in the other models. To select the appropriate one between the R-E, pooled-OLS, and FE model, the Breusch-Pagan-LM test and the test for Hausman are conducted.

The test for Hausman shows that the model F-E is preferrable to the R-E model. According to the Breusch-Pagan-LM test, the pooled-OLS model is preferable to the R-E model. So, the F-E model is the suitable model when it comes to the interaction model and the coefficients of the model are adequately stated here. F-E model's R-square is 0.745%, implying that the explanatory variable can account for 74.5% of variations on GDP. For each of the countries include in the analysis, the interaction terms help explain the marginal effect of REM. According to the F-E model, a 1% rise in REM translates to a 0.316 % in Cabo Verde's per capita GDP. Cabo Verde was the second largest recipient of REM in 2016 and 2017, hence the country's positive influence on REM may indicate that REM were used for productive investment.

However, a 1% increase in REM in the Gambia on the other hand decreases the per capita GDP growth by 0.048% and it is statically not significant, REM in the Gambia may partly be used for final household consumption and mostly used for altruistic purposes, which is consistent with Ferdous (2016). Most Gambians from abroad help finance their unfinish structures or build new houses with REM, thereby contributing to real estate investment in the Gambia. Although in 2020, the Central Bank of The Gambia has taken a big step in terms of making sure that REM are properly reported and recorded which has drastically helped reduce the REM on the unofficial channels. The study's findings reveal that The Gambia still has a tremendous amount of work to do to feel the effect of REM on the economy of the country. A 1% increase in REM increases 0.208%, 0.014%, 0.041%, 0.355% per capita GDP growth in Guinea Bissau, Senegal, Togo, and Nigeria, respectively. With Nigeria and Guinea Bissau having the highest marginal effect of REM on the growth of their economies, it is highly significant, implying that REM have been used for more productive investments than the other countries. The gross capital formation like the other regressions is still positive and statistically significant. 1% rise in GCF translates to a 0.340% increase in per capita GDP. On the contrary, the FDI impact in these countries proves to be

insignificant and negative on their economies. Although there can be a lot of factors responsible for the negative impact, political stability, rule of law, poor infrastructure, unskilled labor and so on. The impact of the exchange-rate is aligned with the findings of the regression above. A 1% rise in the exchange rate translates to a 0.303 fall in per capita GDP. Also, a 1% rise in the openness of the economy translates to 0.280% fall in the per capita GDP and it is statistically significant. Finally, we use the F-test to determine the joint statistical significance of the interaction terms, and we can conclude that the country-specific REM are statistically significant.

6. CONCLUSION

One of the most important international capital flows received by developing countries is REM. But the effect of REM inflows on growth is a contentious subject among researchers. Some experts believe that REM does have a positive impact on growth, while others are doubtful about REM impact on growth. The paper focuses on exploring how REM impacted GDP in countries in the study (Gambia, Senegal, Nigeria, Togo, Cabo Verde, and Guinea Bissau) using annual panel data from 2004 to 2019. Considering two separate sets of variables were employed in this study, the regression results exhibit contradicting conclusions.

Following the application of various diagnostic tests, the results show that REM has a positive impact on the economy of these West African countries, when the variables are measured in their percentage terms. As per the empirical findings, 1% rise in REM translates to 0.164 % increase in growth of GDP per capita. The variables such as FDI and trade are positively related to growth and statistically insignificant. GCF, on the other hand, is statistically significant and positively related the economic growth. The exchange rate, on the other hand, is significant statistically, but it has a negative effects on growth.

However, variables estimated in their current terms reveal a negative impact of REM on the economies of the six countries in the study. Then again, the other constant variables like GCF, trade and exchange rate are consistent with previous regression analyses of which are positively related to the growth of the six countries in the study. But FDI here is negatively related to growth in the economies and statistically insignificant.

Furthermore, the dummy variable interaction model contributes to the narrative by revealing the individual impact of REM to the six nations studied in this study. In brief, the effect of REM on each country has been evaluated, and regression findings proposed that REM and growth are positively related in all West African countries except The Gambia. The empirical results indicates that a 1% rise in REM leads to 0.316%, 0.208%, 0.014%, 0.041%, 0.355% increase and 0.049% fall in the GDP per capita growth in Cabo Verde, Guinea Bissau, Senegal, Togo, Nigeria, and The Gambia, respectively. The negative remittance results in the Gambia show that a bigger fraction of REM might be used for non-productive uses, The positive remittance results in the other countries in the study could indicate that a greater amount of REM is utilized for more productive reasons.

REM sent through unofficial channels may be higher than REM made through official channels. In Sub–Saharan Africa, the interest rate imposed on money transfers is higher than everywhere else on the planet., which may push migrant workers to channel money through unsuitable channels. This study is not concerned with the search for and calculation of REM through informal channels, as well as their contribution to economic growth. In future research, researchers can concentrate on informal remittance channels. For some more research, to obtain better and more robust results, a longer data set, control variables relevant to growth, and more countries can all be used.

This study's results suggest a range of policy implications. First, policymakers can collaborate with banks to ensure that account opening is easy and accessible, as well as money transfer agencies to ensure that proper records of REM are kept and that interest rates on REM sent are set at a level that allows every African migrant worker to transfer money faster, effectively, efficiently, and cheaper. REM can help the less fortunate boost their domestic consumption and income levels, lowering poverty and contributing to the growth of the West African countries through appropriate productive investments. Secondly, policymakers should encourage both senders and recipients of REM to invest more money in productive purpose. Reduced poverty among poor households has a multiplier effect, creating jobs and money for both local communities and the overall economy, resolving the moral hazard problem. Finally, remittance inflow appreciates the real exchange rate in country, thereby affecting export, the implementation of the African continental free trade area in 2019, governments will be able to promote trade which as a result will help reduce the effect of the negative Dutch disease of remittance flows.

REFERENCES

Abdullaev, R. (2011). *Impact of Remittances on Economic growth in selected Asian and Former Soviet Union countries*. http://lup.lub.lu.se/student-papers/record/1974163

Adepoju, A. (2008). *Migration in sub-Saharan Africa*. Nordiska Afrikainstitutet. https://www.files.ethz.ch/isn/91432/37_Migration-in-Sub-Saharan-Africa.pdf

African Economic Outlook Gambia https://www.youthpolicy.org/library/wpcontent/uploads/library/2012_African_Economic_Outlook_Gambia_Eng.pdf

Akano, Y., & Jamiu, O. (2013). *Effects of Remittance Inflows on Economic Growth of Nigeria*. 11. https://www.semanticscholar.org/paper/Effects-of-Remittance-Inflows-on-Economic-Growth-of-Akinpelu-Ogunbi/9a26e9bf4051ecb0719e0aee9d03c5e313853721

Alexandra Olmedo, & Cordova, E. L. (2006). *International Remittances and Development: Existing Evidence, Policies and Recommendations | Publications*. https://publications.iadb.org/publications/english/document/International-Remittances-and-Development-Existing-Evidence-Policies-and-Recommendations.pdf

Altrogge, J. & Zanker, F. (2020). The migration control in the Gambia. Research assistance from Rafael Hernández Westpfahl, published in summer 2020.

Azam, M. (2015). The role of migrant workers remittances in fostering economic growth: The four Asian developing countries' experiences. *International Journal of Social Economics*, *42*(8), 690–705. https://doi.org/10.1108/IJSE-11-2013-0255

Banga, R., & Sahu, P. K. (2014). *Impact of Remittances on Poverty in Developing Countries*. 27. https://www.semanticscholar.org/paper/Impact-of-Remittances-on-Poverty-in-Developing-Banga-Sahu/29d49716b419dc5966de845cf3735bcbfe12121e

Cabo Verde Economic Outlook (2021). The economic out of Cabo Verde. https://www.afdb.org/en/countries/west-africa/cabo-verde/cabo-verde-economic-outlook#:~:text=Real%20GDP%20growth%20is%20projected,develop%20a%20more%20diversified%20economy.

Chami, R., A. Barajas, T. Cosimano, C. Fullenkamp, M. Gapen, and P. Montiel. (2008). Macroeconomic Consequences of Remittances. Occasional Paper 259, International Monetary Fund, Washington, DC.

Chami, R., Fullenkamp, C., & Jahjah, S. (2005). Are Immigrant Remittance Flows a Source of Capital for Development? *IMF Staff Papers*, *52*(1), 55–81. https://doi.org/10.2307/30035948

Comes, C.-A., Bunduchi, E., Vasile, V., & Stefan, D. (2018). The Impact of Foreign Direct Investments and Remittances on Economic Growth: A Case Study in Central and Eastern Europe. *Sustainability*, *10*(1), 238. https://doi.org/10.3390/su10010238

Eurostat (2020, April 20): Asylum and First Time Asylum Applicants by Citizenship, Age and Sex Annual Aggregated Data https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=migr_asyappctza&lang=en (20/04/2021)

Eurostat (2020, April 26): Third country nationals returned following an order to leave – annual data http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=migr_eirtn&lang=en

Fayissa, B., & Nsiah, C. (2010). The Impact of Remittances on Economic Growth and Development in Africa. *The American Economist*, *55*(2), 92–103. https://doi.org/10.1177/056943451005500210

Ferdaous, D. J. (2016). *Impact of Remittances and FDI on Economic Growth: A Panel Data Analysis*. 21. https://www.semanticscholar.org/paper/Impact-of-Remittances-and-FDI-on-Economic-Growth%3A-A-Ferdaous/3fbb78bd8e86a8a6d873c890095fa9384eaed763

Gambia Economic Outlook (2021). The economic outlook of the Gambia https://www.afdb.org/en/countries/west-africa/gambia/gambia-economic-outlook

GBOS (2018): The Gambia Labour Force Survey (GLFS 2018) Analytical Report. https://r.search.yahoo.com/_ylt=AwrIdVkKS.hhc3MADxMDjgx.;_ylu=Y29sbwNpcjIEcG9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1642642314/RO=10/RU=https%3a%2f%2fwww.gbosdata.org%2fdownloads-file%2fthe-gambia-labour-force-survey-glfs-2018/RK=2/RS=YFOvq01caF3bdHMChjs_0GVUr8w-

Guinea-Bissau Economic Outlook (2012). Guinea-Bissau' Economic Outlook Report 2012. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Guinea-Bissau%20Full%20PDF%20Country%20Note.pdf

Guinea-Bissau Economic Outlook (2021). The Economic Outlook of Guinea-Bissau https://www.afdb.org/en/countries/west-africa/guinea-bissau/guinea-bissau-economic-outlook

Hamouri. (2020). The Effect of Remittances on the Real Estate Market in Jordan. *International Journal of Recent Technology and Engineering*, *8*(5), 426–435. https://doi.org/10.35940/ijrte.E5676.018520

https://lnkd.in/d_xpYgG

https://migration-control.info/en/wiki/the-gambia/

IMF (2016) https://www.imf.org/external/pubs/ft/scr/2016/cr1695.pdf

IOM & UN Migration (2020). IOM Hits Milestone: 5000+ Gambians Supported with Assisted Return. https://www.iom.int/news/iom-hits-milestone-5000-gambians-supported-assisted-return

Jawaid, S. T., & Raza, S. A. (2016). Effects of Workers' Remittances and its Volatility on Economic Growth in South Asia. *International Migration*, *54*(2), 50–68. https://doi.org/10.1111/imig.12151

Joof, F. & Touray, S. (2021): *The Impact of Remittance Flow on Real Effective Exchange Rate: Empirical Evidence from The Gambia.*

Karagöz, K. (2009). WORKERS' REMITTANCES AND ECONOMIC GROWTH: EVIDENCE FROM TURKEY. *Journal of Yasar University*, 18. https://journal.yasar.edu.tr/wp-content/uploads/2012/05/no13_vol4_01_karagoz.pdf

Kebbeh, O. (2013). The World Bank. 2010. Global Bilateral Migration. https://www.migrationpolicy.org/article/gambia-migration-africas-smiling-coast

Kebbeh, O. (2017). A Statistical Portrait of Gambians Living Abroad, Washington DC. https://gambia.iom.int/sites/g/files/tmzbdl166/files/documents/The%20Gambia%20Migration%20Profile.pdf

Martinez, J. de L.-. (2005). *Workers' Remittances to Developing Countries: A Survey with Central Banks on Selected Public Policy Issues* (SSRN Scholarly Paper ID 757265). Social Science Research Network. https://doi.org/10.2139/ssrn.757265

Meyer, D., & Shera, A. (2017). The impact of remittances on economic growth: An econometric model. *EconomiA, 18*(2), 147–155. https://doi.org/10.1016/j.econ.2016.06.001

OECD. (2006). *International migration outlook: Annual report 2006*. Organisation for Economic Co-operation and Development. https://www.oecd.org/els/mig/internationalmigrationoutlook2006.htm

Orozco, M. (2008). *Toward the Mainstream: Currents and Dynamics of Remittances to Latin America and the Caribbean | Publications*. https://publications.iadb.org/publications/english/document/Toward-the-Mainstream%C2%A0Currents-and-Dynamics-of-Remittances-to-Latin-America-and-the-Caribbean.pdf

Oshota, S., & Badejo, A. (2014). The Impact of Remittances on Economic Growth in Nigeria: An Error Correction Modeling Approach. *Zagreb International Review of Economics & Business*, *17*(2), 21–43. https://hrcak.srce.hr/file/191239

Pradhan, C. K. (2016). *Does remittance drive economic growth in emerging economies: Evidence from FMOLS and Panel VECM*. 57–74. http://store.ectap.ro/articole/1224.pdf

Pradhan, G., Upadhyay, M., & Upadhyaya, K. (2008). Remittances and economic growth in developing countries. *The European Journal of Development Research*, *20*(3), 497–506. https://doi.org/10.1080/09578810802246285

Ramirez, M. D. (2013). Do Financial and Institutional Variables Enhance the Impact of Remittances on Economic Growth in Latin America and the Caribbean? A Panel Cointegration Analysis. *International Advances in Economic Research*, *19*(3), 273–288. https://doi.org/10.1007/s11294-013-9407-2

Ratha, D., Mohapatra, S., & Özden, Ç. (Eds.). (2011). *Leveraging migration for Africa: Remittances, skills, and investments*. World Bank. https://play.google.com/store/books/details/Leveraging_Migration_for_Africa_Remittances_Skills?id=UNF4lDJeuiMC&gl=US

Reuters (2017, February 28). Nigeria's Economy Shrinks in 2016 for first time in 25 years. https://www.reuters.com/article/nigeria-gdp-idUSL5N1GD2MJ

Sutradhar, S. R. (2020). The impact of remittances on economic growth in Bangladesh, India, Pakistan and Sri Lanka. *International Journal of Economic Policy Studies*, *14*(1), 275–295. https://doi.org/10.1007/s42495-020-00034-1

The Conversation (2019): Why return from Europe is causing problems for The Gambia. https://theconversation.com/why-return-from-europe-is-causing-problems-for-the-gambia-

The World Bank in Senegal 2020. The Effect of Remittances in Senegal. https://www.worldbank.org/en/country/senegal/overview#:~:text=Senegal's%20economic%20growth%20has%20been,%2C%20remaining%20above%206%25%20annually.&text=Growth%20has%20slowed%20significantly%20to,and%20exports%20particularly%20hard%20hit

Tolcha, T. D., & Rao, Dr. N. (2016). The Impact Of Remittances On Economic Growth In Ethiopia. *Indian Journal of Commerce & Management Studies*, *7*, 1. https://link.springer.com/article/10.1007/s42495-020-00034-1

Topxhiu, R. M., & Krasniqi, F. X. (2017). The Relevance Of Remittances In Fostering Economic Growth In The West Balkan Countries. *Ekonomika*, *96*(2), 28–42. https://doi.org/10.15388/Ekon.2017.2.10989

United Nation (2015). Trends in International Migrant Stock: The 2015 revision https://www.un.org/en/development/desa/population/migration/data/estimates2/docs/MigrationStockDocumentation_2015.pdf

World Bank (2018). Remittances In Low- and Middle-Income Countries. https://www.worldbank.org/en/news/press-release/2018/04/23/record-high-remittances-to-low-and-middle-income-countries-in-2017

World Bank (2020). COVID-19 Crisis Through a Migration Lens: Migration and Development Brief 32 http://documents1.worldbank.org/curated/en/989721587512418006/pdf/COVID-19-Crisis-Through-a-Migration-Lens.pdf

World Bank (2020). The Effects of Remittances. https://www.worldbank.org/en/news/press-release/2020/04/22/world-bank-predicts-sharpest-decline-of-remittances-in-recent-history

Zouhaier, A. (2019). The impact of remittances on poverty: What relations in Sub-Saharan Africa and Latin America? https://mpra.ub.uni-muenchen.de/95953/

APPENDIX

Table 4. Summary of the Statistics

VARIABLES	N	mean	sd	min	max
lngdppc	96	7.018	0.688	6.004	8.227
lngcf	93	2.988	0.465	1.902	3.908
lnfdi	92	0.957	0.789	-1.022	2.935
lntra	96	4.093	0.404	3.031	4.769
lnprem	96	19.93	1.984	16.81	23.91
lnfdi(current)	92	18.89	1.949	14.47	22.9
lngcf(current)	93	20.94	2.211	17.66	25.49
lnexch	96	5.318	1.07	3.1	6.385

Table 5. Matrix of correlation

Variables	lngdppc (current)	lngcf	lnfdi	lnopeness	lnrem	lnfdi (current)	lngcf (current)	lnexch
lngdppc(current)	1							
lngcf	0.597	1						
lnfdi	0.215	0.481	1					
lntra	0.042	0.552	0.595	1				
lnrem	0.513	0.278	-0.318	-0.419	1			
lnfdi(current)	0.595	0.379	0.004	-0.324	0.932	1		
lngcf(current)	0.575	0.378	-0.236	-0.372	0.985	0.956	1	
lnexch	-0.315	-0.154	-0.337	0.1	0.122	-0.008	0.075	1

Table 6. The variables' definitions and data sources

Variables	Description	Source
$ln(gdppc)_{it}$	The growth of nominal GDP per capita. It is measured as the growth of nominal per capita GDP in current (2010) U.S. dollars.	The World Bank development indicator database
$ln(rem)_{it}$	Log of personal REM received in current U.S. dollars.	The World Bank development indicator database
$ln(gcf)_{it}$	The log of gross fixed capital formation as a percentage of GDP, used as proxy for investment in physical capital.	The World Bank development indicator database
$ln(fdi)_{it}$	Log of net foreign direct investment inflows as percentage of GDP.	The World Bank development indicator database
$ln(tra)_{it}$	The log of trade/openness of the economy (The terms of trade for each country under consideration are determined by the ration of export to import price indices)	The World Bank development indicator database
$ln\ (exch)_{it}$	The log of exchange rate, national currency/USD.	The Penn World Table Database.
$ln(gcf)_{it}, in\ current$	The log of gross fixed capital formation (in current U.S. dollars), used as proxy for investment in physical capital.	The World Bank development indicator database
$ln(fdi)_{it}, in\ current$	The log net foreign direct investment inflows in current U.S. dollars.	The World Bank development indicator database

Table 7. Panel unit root test result

Variables					
	At level				
	Augmented Dickey-Fuller(ADF)		**Phillips-Perron (PP)**		
	C	**CT**	**C**	**CT**	
					Order of integration
lngdpcc	38.056***	23.438***	178.354***	156.985***	I(0)
lngcf(%)	24.073***	50.473**	169.387***	157.378***	I(0)
lnfdi(%)	28.746***	15.763***	190.466**	186.871***	I(0)
lnprem	70.392***	20.557***	157.367***	151.259***	I(0)
lnfdi(current)	45.468***	50.448**	202.014***	202.526***	I(0)
lngcf(currrent)	38.846***	48.135**	199.893***	198.827***	I(0)
lnexch	23.363***	18.575**	110.128***	97.652***	I(0)

The specification with intercept is denoted by C, and the specification with intercept and trend is denoted by CT. The values denoted with ***, **, and * are significant at the 1%, 5%, and 10% levels of significance, respectively.

Source: Caculations of the Author