Universidad Zaragoza

1542

Undergraduate Dissertation

African Regional Integration: The ECOWAS as a Single Currency Area

Integración Regional en África: La CEDEAO como un Área de Moneda Única

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Year 2020

INFORMATION

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Title: African Regional Integration: The ECOWAS as a Single Currency Area / Integración Regional en África: La CEDEAO como un Área de Moneda Única

Degree: Degree in Business Administration and Management / Grado en Administración y Dirección de Empresas con docencia en inglés

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ABSTRACT

Globalisation is a phenomenon that has increased the commercial transactions volume, allowing countries to benefit and to have access to a wide number of markets. However, this process, along with the increasing complex geopolitical and economic environment among countries and regions of the world, has led the governments to seek solutions that combine the needs and priorities of that areas, easing in this way the economic transactions. The different alternatives to achieve integration and regional coordination include the creation of institutions and supranational and international organizations. The Economic Community of West African States (ECOWAS) is one of these organizations created to overtake the existing political, economic, historic, and social issues in West Africa through the creation of a single monetary area among the fifteen member states in order to achieve acceptable economic growth levels and sustainable development in the region. Following the Economic and Monetary Union (EMU) model, it would be explained why a monetary integration and creation of a new currency is needed, in order to end the colonial vestiges in Africa, as well as the path to be followed to place the region as a competitive market in the context of the international economy.

Key words: optimum currency area, exchange rate, ECOWAS, West Africa, integration, Eco

RESUMEN

La globalización es un fenómeno que ha provocado un aumento del volumen de las transacciones comerciales, permitiendo a los países beneficiarse y tener acceso a un gran número de mercados. Sin embargo, este proceso añadido a la cada vez más compleja situación geopolítica y económica entre países y regiones del mundo en los últimos años ha llevado a los diferentes gobiernos a buscar soluciones que integren las necesidades y prioridades de dichas zonas, y faciliten de esta manera las transacciones. Entre estas soluciones se encuentra la creación de instituciones y organismos internacionales y supranacionales con el objetivo de integrar y coordinar regiones. Una de ellas es la Comunidad Económica de Estados de África Occidental (CEDEAO), que fue creada para superar los problemas políticos, económicos, históricos y sociales de los países que componen África Occidental a través de una unión monetaria que integre todos los estados con el objetivo de alcanzar niveles adecuados de crecimiento económico y desarrollo sostenible de la región. Siguiendo el modelo de la Unión Económica y Monetaria Europea (UEM), se trata de explicar por qué es necesario una integración monetaria óptima y la creación de una única moneda en la CEDEAO que ponga fin a los vestigios coloniales en África, así como marcar el camino que se debería seguir para convertir a la región en un mercado competitivo en el contexto de la economía global.

Palabras clave: área monetaria óptima, tipo de cambio, CEDEAO, África Occidental, integración, Eco

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1. INTRODUCTION

The Economic Community of West African States (ECOWAS) has been trying to integrate its fifteen member states through the introduction of a new currency in the region since it was established in 1975. The assessment of the viability of this project has been extensively studied during the last years, and different institutions and political bodies have been created in order to accelerate the above-mentioned process. Nevertheless, political, social, and economic-related issues have delayed the launch of the currency – to be named as Eco – and therefore, the last step to a complete integration in the area. The implementation of the Eco would not make the ECOWAS the first single currency area in Africa – there already exist the West African Monetary Union and the Economic and Monetary Community of Central Africa – but it would be the first project created, developed and managed by African institutions. The existing single currency areas are controlled by French authorities and hence, these regions still depend on the decisions made by France. Thus, the creation of a monetary area represents not only an economic process, but also a restructuration and the end of last remnants of European colonialism in West Africa region.

Although considerable research has been devoted to the EMU experience, rather less attention has been paid to the ECOWAS single currency area process. However, the study of this project has a great importance for two main reasons. First of all, it means that West Africa is trying to catch up with the more advanced economic regions in the world, and secondly it could be the precedent for a future further integration of the whole African continent under the framework of the African Union. By doing this, West Africa would not only increase its presence in the international markets and trade, but it would also get to improve living standards of the population. The project is based upon the principles of democracy and solidarity in order to integrate West Africa, and on the words that the Ghanaian economist George Ayittey expressed in 2008 'African solutions to African problems'. According to that statement, the solution to Africa's problems must be the result of coordinated actions and collaborative approaches within the continent.

Studies show that statistics is a useful tool to control and achieve integration in an efficient way. However, little available data exist in order to analyse the effects of such integration in the case of ECOWAS. One of the main drawbacks of this project is the lack of reliable statistical databases and sophisticated sites that compile indicators for each of the ECOWAS member state. The absence of harmonisation in the research procedures hampers the possibility of obtaining clear and trustable results, making it difficult to provide an answer or reach a conclusion. Consequently, and providing that economics is not a science that can predict what it is going to happen, together with the difficulty to obtain quality data, it cannot be accurately said what the benefits and costs of creating a single currency area in West Africa could be. Nevertheless, countries' governments count with the help from the African Development Bank to reduce the amount of inconsistent information provided.

The present dissertation has not only one aim, but a few. The main and first purpose of the research attempts to give an overview of the creation of a single currency area in the ECOWAS region, and tries to give reasons to explain why the introduction of a single currency may boost not only economic growth, but also sociocultural development within the region. Additionally, it is intended to make an approach to African topics, continent that has always been shaded by the developed world, being the presence of African-related issues, except from poverty, very few. Common research and literature mainly focus on the European Union, the United States or China, but a small number of economic researchers have dealt with the ECOWAS project. The lack of investigations covering such important issue, were one of the reasons that motivated me to focus the present study on this topic. Moreover, I have always felt attracted by international issues, which made easier to carry out the project and deepen my knowledge on currency areas and economic integration. Furthermore, the historical and geographic topic have always been of my interest, and learning about and researching about West Africa made me think about how little importance has Africa been given in the world's history and its both important and unfair role in the development of the rest of the world.

With the express intention of clearly explain how the ECOWAS integration process is going to be developed, this dissertation is divided into 4 main sections. The first of these consists of a theoretical framework which will be helpful to review the Theory of Optimal Currency Areas of Robert Mundell, but in any case, the requirements proposed by the Canadian economist will be strictly considered to determine the possibility of establishing a monetary area in the ECOWAS. In the next section '*An Approach to African Economics'*, the most relevant economic, political and geographical issues are commented, taking special attention to the West Africa region. In addition, to make the section more complete, a brief analysis on the countries' structural characteristics is included. In this same section, the African Union concept will be introduced as well as the Regional Economic Communities. The following section, '*The Economic Community of West African States: A Monetary Union Project'*, comprises the main body of the dissertation. It explains in detail the ECOWAS history, institutions, functions, structure, and also includes information related to the single currency area project. A statistical analysis is also provided in this section, in which diverse economic indicators are discussed as well as each country economic features. A correlation study of the ECOWAS countries on different statistics and its results complement the section. Finally, the last part of the research includes the conclusions and recommendations for the ECOWAS integration project.

2. THEORETICAL FRAMEWORK

The implementation of the Eco among the West African countries is an issue subject to an in-depth economic analysis of the countries' economies involved, in which a theoretical approach must be applied as a first step in the viability study. For the successful development of the present research, a brief introduction to the exchange rate systems will help to introduce the main question of the paper. For the analysis of the ECOWAS as a single currency area and the monetary integration process, the project will be based in theoretical terms on the Theory of Optimum Currency Areas (Robert Mundell, 1961)[1].

2.1. Exchange Rates Systems

The exchange rate system is a key component of the economic policy of any country, or in this case, of a monetary area and it is adopted by the government. It determines how the currency of that country will vary or respond to the nowadays changing economic world. There exist several systems, and the use of one or another significantly effects on the exchange rate and on other elements of the country's economy. There are two varieties of systems: fixed and floating exchange. However, in the practice, each government can alter and combine these systems, giving birth to a broad number of mixed exchange rate systems. Here, each one is briefly described:

a) Fixed exchange rate system, also known as pegged. The price of a currency is set by the government policy with respect to another currency. They can also fix the value

[1] Mundell, R. (1961) 'A Theory of Optimum Currency Areas' (American Economic Association)

of the currency to a commodity such as gold (Gold Standard), and it is known as commodity standard system, or even to a basket of currencies. The reasons that governments have to peg its currency to the value of another's country currency are mainly linked to maintain a stability level, as fluctuations in prices are eliminated. The fixed exchange rate system is usually associated to developing countries to create a stable environment for foreign investment. By way of contrast, a fixed regime is difficult to maintain in the long run.

b) Floating exchange rate system, also called variable or free-floating. Governments do not influence the value of the currency. Conversely, the price of the currency is set by the demand and supply of that currency in the markets, which makes it subject to high level of variability. Floating systems usually create uncertainty.

c) Mixed exchange rate system. There exists some intervention of central banks in a free-floating exchange rate system, so the fluctuation is said to be limited. This system is adopted to avoid significant changes in the country's currency.

Nowadays, in the ECOWAS region there exist several exchange rates systems and eight different currencies:

– Cape Verdean Escudo (CVE). Established in 1975, it is the official national currency in Cape Verde. It is tied to the Euro with a fixed exchange rate (1 CVE = 0.0091 EUR).
– Ghana Cedi (GHS). Established in 2007, it is the official currency and is used only in Ghana. It has a flexible exchange rate since that moment.
– Dalasi (GMD). It is the official national currency used in the Gambia since 1971, and it has a free-floating exchange rate system.
– Guinean Franc (GNF). It is the national currency in Guinea since it replaced the CFA franc in 1959. It is not pegged to any currency.
– Liberian dollar (LRD). It has been the official currency of the Republic of Liberia since the year 1943, and it has a flexible exchange rate system.
– Naira (NGN). It is the official currency of Nigeria, introduced in 1973. It also has a floating exchange rate system, and the symbol of the currency is ₦.
– Leone (SLL). It is the official currency for the Republic of Sierra Leone since it replaced the British West African Pound in 1964. It has a free-floating exchange rate.

– West African CFA Franc (XOF)[2]. It is the currency used in eight states in West Africa: Benin, Burkina Faso, Guinea-Bissau, Côte d'Ivoire, Mali, Niger, Senegal, and Togo. The acronym CFA stands for *Communauté Financière d'Afrique* and it was established in 1945. The CFA Franc is tied to the Euro with a fixed exchange rate (1 Franc is equal to 0.0015 Euro). A deeper analysis of this currency will be carried out later as it is one of the drivers to the question of the single currency area in the ECOWAS.

2.2. The Optimal Currency Areas Theory

The ECOWAS is not the first case of monetary integration in the world economy. Previous attempts have challenged the ideas of the well-known Optimal Currency Areas Theory, such as the EMU experience. In this paper, a theoretical approach to this theory will also be used in order to determine whether such hypothesis could be applied to our case study or it cannot.

An Optimal Currency Area (OCA) can be broadly defined as a geographical area where the use of a single currency or several currencies with a fixed exchange rate would lead to a significant increase of the economic benefits for all the participating countries. The theory arises from the discussion of the benefits of a fixed exchange rate against a floating exchange rate, and it was first mentioned and developed in 1961 by the economist Robert Mundell, but other important economists have added some criteria in order to define which factors facilitate the creation of an OCA. Let us discuss each factor briefly:

- Symmetry. It is probably the key factor for the existence of an optimal currency area, so that asymmetric shocks do not exist (inflation, sudden change in the demand or in oil prices…) and thus, asymmetric economic reactions to external disturbances are avoided.
- Mobility of the production factors. The integration of markets, especially in the labour market, will reduce the need of adjusting real prices, replacing in this way the exchange rate. Moreover, people could freely move around the area to work or to live.
- Price and wage flexibility. A high level of flexibility means a faster homogenization of prices and lower negative effects over employment and inflation.

[2] It is important not to confuse the West African CFA franc with the Central African CFA franc, which is used in Cameroon, Central African Republic, Chad, Republic of the Congo, Equatorial Guinea and Gabon, and it is issued by the BEAC (*Banque des États de l'Afrique Centrale*), although both are equal in value and have the share the same colonial background.

- Fiscal integration. It can be achieved through the creation of common financial regimes, tax harmonization, and allocation of income towards those economies with a negative balance.
- Integration of financial markets. This type of integration may reduce the need of adjusting the exchange rates.
- Degree of openness. International trade helps raising living standards as people produce products in which they have a comparative advantage.
- Production and consumption diversification. Diversification reduces the effect of external disturbances that may occur in one sector or in a country.
- Similar inflation rates. The existence of similar levels of prices between the participating countries prevent variations in trade from happening. Most imbalances in the balance of payments came from different inflation level of countries that trade among them. Consequently, the lower the difference in inflation rates, the lower the need to correct imbalances.
- Political integration. Political will is a key point in any monetary union, as it not only implies sharing the decision-making process but also accept and apply supranational institutions rules.

Despite the theoretical approach to an OCA, additional factors must be of paramount importance, such as a comparison of the economic structure of the countries, its main source of income, rates of growth or inequality to check if they are in a same degree of development and even, the historical backgrounds, languages spoken, religion or geopolitical issues.

The country's decision to belong an OCA or not, should be based in whether the benefits or belonging to the OCA are higher than the costs. Those benefits must be analysed from a microeconomic perspective, whereas the costs have a macroeconomic view. Both the benefits and costs are commented below:

- Benefits
  - Transaction costs are eliminated, as they use a single currency or fixed exchange rates.
  - Currency risk is diminished and consequently, uncertainty also is as individuals and companies are usually risk-averse. The variation in prices is not an issue

anymore, which generate welfare gains. In this way trade and investment are boosted.

- Transparency in prices, derived from the use of a single currency or fixed exchange rates.
- Capital market boost. If the currency is used internationally, national financial markets activity is stimulated. Being the variations in exchange rates eliminated, the price system becomes a trusted mechanism for the decision-making, which allows a better allocation of resources.
- Reduction of problems arising from time inconsistency of authorities. This is an issue affecting especially traditionally inflationary countries, which can have an immediate benefit from adopting a single currency along with other countries which a low inflation, mainly if coordination and supervision mechanisms are adopted that guarantee stability and make credible the engagement of governments to maintain low inflation.

- Costs
  - The use of a single currency implies giving up the monetary policy as well as the possibility of using the exchange rate as an adjustment mechanism, that can temporally fix asymmetric costs.
  - Different growth rates. It can negatively affect the balance of payments, which in a monetary area can only be fixed with contractive fiscal policies.
  - Different tax systems. Countries have different levels of public debt and monetary finance of its budget deficit.

2.3. The European Experience

The theory developed by Mundell provides some ideas on what are the reasons that countries shall consider when joining an optimum currency area and fixing their mutual exchange rates. Taking the EMU experience as example for the ECOWAS project, we can determine whether, according to the theory, the EMU is an optimal currency area or not.

The trade volume among EMU members is not significantly high (exports of an average EU member to another member represents around 20% of its output), but it is enough to say that a fixed exchange rate among them could be beneficial. Labour force moves freely among the continent thanks to the inexistent border controls, however, language or cultural barriers still exist. If we also compare economic structure of member-states, we do not find a lot of similarities: northern European countries have high levels of capital and skilled human capital, whereas southern countries main production is based on low-skill labour force.

The Euro has not performed in the same way in every country, being a prove that the monetary policies adopted by the European Central Bank have not been appropriated for all the member-states. Growth and inflation rates have differed during the last years as well, so we could say that an important degree of asymmetry does exist among the European Union countries. Moreover, fiscal integration is still far from being adopted due to the complexity it requires, and there is no chance of transferring economic resources from members with strong economics to those suffering (as it could be seen during the financial crisis).

So theoretically, the EMU does not meet the requirements to be called an optimal currency area. After the global financial crisis was when the weakens of the basics pillars of the union were seen, which are mainly the macroeconomic asymmetries. However, it is true that the national economies and financial market have been better off after the integration of the euro, showing that such large monetary union can work, despite of the problems that it has faced. The EMU has turned since its creation into an example of success: the Euro is the second most traded currency in the world after the US dollar, the European GDP is already higher than the American GDP, in spite of being home of only 7% of world total population, and along with EEUU and China represent the most important actors in international trade.

3. AN APPROACH TO AFRICAN ECONOMY

3.1. Context

Africa is the third biggest continent in the world, located between the Atlantic Ocean and the Indian Ocean, occupying a surface of 30,37 million of km^2, with a population of around 1,300,000,000 people, equivalent to 17% of total world population. The history of Africa dates to at least 200,000 years ago, being the reason of the important relevance of the continent in the world's history. Nowadays, we can find 55 countries in Africa and important cities such as Lagos (capital city of Nigeria and biggest city in Africa), Cairo (capital city of Egypt) or Johannesburg (South Africa), and a diverse and multicultural environment, which history has not treated in a fair way. In order to a better understanding of the paper, an analysis of the context will be helpful.

3.1.1. Economic Structure

Most African countries are, broadly speaking, characterized as developing economies. The vast majority of them are based on agriculture and subsistence, which along to a rapid growth of the population, has usually led to low gross domestic product figures and decreasing growth rates. As a first approach to the research, analysing the general African economic structure is crucial to understand the development pace of the continent.

- Natural resources

The continent itself is rich in natural resources, including coal, uranium, copper, oil, cobalt, natural gas or gold. Among them, the most important and relevant for the economy is, obviously, oil. The major oil reserves are found in the western coast in Nigeria mainly, and some parts of Cameroon, Gabon, and Equatorial Guinea. In terms of metallic resources, the Atlas Mountains are very rich as big reserves of iron can be found there; and when it comes to cobalt, the Democratic Republic of the Congo owns half of the world reserves. Gold and similar are disseminated throughout the continent, being South Africa the place where most of these metals can be found (also Zimbabwe or Ghana have some important sources of gold). Diamonds and precious stones are also significant in Africa, especially in South Africa, Botswana, or Tanzania. However, the Africans were not the people exploiting and enjoying the benefits of the minerals, but the European colonisation.

With respect to water resources, it is not needed to say that they are scarce due to the severe periods of drought and it depends mainly on the existence of lakes and swamps, and the construction of dams. The best-watered zones are those in West and Equatorial Africa thanks to the presence of rivers such as the Senegal and the Niger. It is also important to mention to strategic importance of the Nile River, the world’s longest river and key for trade.

- Primary sector

Primary sector, especially agriculture, is by far the most important activity in the continent. It is estimated that around two out of three people work on agriculture, and it contributes an average of 30% to 60% of the GDP of the countries. However, except for some countries, agriculture is related to subsistence and constrained to the undeveloped systems of growing, and the reduced percentage of arable land due to desertification.

The most grown crops in Africa are corn, wheat, and rice. Nonetheless, we can find protein-rich legumes such beans in North-Africa, or peanuts in Western Africa, root crops like potatoes in Ethiopia, Kenya or Madagascar, fruits in tropical Africa and North-Africa (bananas, dates, pineapples, olives…). Another important crop for Africa is the one related to beverages such tea, coffee, cocoa, and grapes. Oil palm, coconuts, sugarcane, and tobacco are widely cultivated both for external and domestic consumption, as well as the use of cotton for textile manufacturing.

Livestock and fishing industry have experimented a rise during the last years for own consumption, but also for production of wool, milk, hides or poultry. Fishing has become important especially in the domestic level, in countries of the west coast such as Nigeria, Ghana, Morocco, South Africa or Senegal.

- Secondary sector

Africa's slow industrial development is mainly due to the colonisation process: it was seen as a source of raw materials and natural resources. Therefore, the industrialisation process at the end of the World War II was not the same in African countries than in the rest of the world. Even among the continent, the pace of growth was not the same in Egypt or South Africa than in Guinea or Niger.

The principal industrial production includes electric motors and transport equipment's. However, industries such as chemical, mining, and crude oil or coal are also really important in terms of GDP. Refining industry can be found in several countries nowadays. Wood manufacturing and paper industry must also be named.

Along with the industrialisation process, energy industry also caused a breakthrough in Africa from the second half of the 20th century, mainly due to the increase of the oil industry and the creation of hydroelectric infrastructures. This not only increased productivity levels in Africa, but also improved living conditions of millions of African people.

3.1.2. Geopolitical Framework

Africa is one of the most unsuccessful places on Earth, in spite of having a head start as the place where Homo Sapiens originated about 200,000 years ago, and it is described in an article of National Geography "It's the opposite of what one could expect from the runner first off the block" (Jared Diamond, 2005).

Almost the whole continent below the Sahara Desert developed in isolation from the Eurasian land mass, where ideas and technology moved from west to east. Africa is a huge continent which consists of different regions, cultures, and natural resources. But they all have something in common: isolation from each other and the outside world.

Western world has a mistaken idea of the size of the African continent, due to the Mercator world map[3]. Africa is far longer than usually portrayed in conventional maps. In fact, Africa is three times bigger than the United States; or fourteen times bigger than Greenland, meanwhile in the maps it seems to have a similar size. The easiest way to explain African geography is dividing the continent in terms of top third and bottom two-thirds.

What it is called the top third of Africa begins on the Mediterranean coastlines of the North African Arabic-speaking countries. These plains, after the Atlas Mountains, quickly become the world's largest dry desert, the Sahara. Below the Sahara, we find the semi-arid and rocky Sahel region, stretching from Gambia to Eritrea, from west to east, from the Atlantic to the Red Sea. From the Mediterranean to the Sahel, the majority of people are Muslims. At the bottom of the Sahel, the Islamic influence diminishes. The bottom two-thirds of Africa are way more diverse than the first third. The land becomes mild with green vegetation, being jungle as you approach Congo and the Central African Republic. The Eastern part is characterized by great lakes in Uganda and Tanzania, alike the west, where desert appears in Angola and Namibia. When we reach South Africa, the climate becomes kind of Mediterranean.

In Africa, much of the land consists of jungle, swamps, dessert, or steep-sided plateaus, making it impossible to grow wheat or rice, or sustaining herds of sheep and goats. Not even the fauna of Africa can be used as beasts of burden: rhinos, gazelles, giraffes, or lions. The head start of this continent has allowed it to develop something

[3] Mercator, G. (1596). The Mercator projection is a cylindrical map projection which has become the standard map projection.

different to expected: a big number of diseases such as malaria, the HIV virus, or yellow fever, heavily increased by the extreme heat, poor healthcare infrastructures or difficult living conditions, additionally to the existence of the mosquito and the Tsetse fly.

3.1.3. The Problems of Africa

Another drawback that complicate trade and development is that most of rivers begin in high land and descend through abrupt drops, which thwart navigation. Moreover, the greatest rivers – the Niger, the Congo, the Nile, or the Zambezi do not connect, impeding in this way the cultural or language unification. The existence of such great rivers is good for the hydroelectricity, being a source of potential conflict (Egypt and Ethiopia with the issue of the Nile). A strategic geographic place is the Suez Canal, through which passes 8% of the world's entire trade every day. Around 2.5% of the world's oil passes this way daily, which means that closing the canal would add about 15 days' transit time to Europe and 10 to the USA, with the concurrent costs.

In Africa there are thousands of languages and no culture emerged to dominate areas of similar size. Therefore, although the myriad cultures that did emerge across the whole continent, the physical landscape was a barrier to the technological development. Moreover, African coast lines are usually smooth, which difficult the penetration to the land. Africa is equally cursed and blessed – blessed has it has abundant natural resources but cursed because outsiders steal them, although nowadays this is decreasing as they invest instead.

The first European expeditions to Africa started in the fifteenth century and they took away whatever they found of value, which was mainly natural resources and people. Slavery was common in the Sahel region, started by the Arabs, and followed by the Ottoman Empire and the Europeans. Explorers, military forces, and businessmen quickly draw a map of Africa with lines, making African population prisoner of the political geography distribution the Europeans made. Right now, there are fifty-six African countries. However, since the independence of Africa, the borders have almost not changed, which depicts the legacy of the colonialism, still present today.

Ethnic conflicts in Sudan, Somalia, Kenya, Angola, the Democratic Republic of the Congo, Mali, or Nigeria are the evidence that the European map of Africa did not represent at all the reality of Africa's demographics. Colonialism forced those differences in such artificial atmosphere, and it motivated the modern civil wars in Africa. The imposition of artificial borders has led to weak and divided states, full of internal conflicts with resulted in thousands of people killed and with natural resources exploited by outsiders (take the war in the Democratic Republic of the Congo as an example).

Despite the conflict afore mentioned between Egypt and Ethiopia on the dam built in the Nile, the oil is another contested liquid in Africa. Nigeria is the sub-Saharan Africa's largest producer of oil and the highest quality oil is located in the south. The north of Nigeria, where the population is Muslim, is less developed and complains that oil profits are not shared equally across regions in the country. By size, population and natural resources, Nigeria is West Africa's most powerful country, and hence in the ECOWAS, which could be and independent regional powerhouse, but the people and the resources have been mismanaged for years. Much of the money made from oil is spent to pay off the leaders in Nigeria. There also exists the Movement for the Emancipation of the Niger Delta, which is a cover for terrorism and extortion of oil workers in the onshore. The offshore oilfields are free of these activities and is where the investments go. Another threat is the Islamist group Boko Haram in the north of the country, which could make alliances with the jihadist up north in the Sahel region (Nigeria, Chad and Cameroon cooperate with the Americans and French in this area to solve the problem). Angola is the sub-Saharan Africa's second producer of oil and is one of the few nation states in Africa enjoying natural borders: Atlantic Ocean, jungle, desert, and the sparsely populated east as a buffer zone with the DRC and Zambia.

About a third of China's oil imports come from Africa. European and American companies and big multinationals are far more heavily involved in Africa, but China is catching up. China is investing a lot in Africa, with the construction of rail roads, overhaul of ports, airports or in oilfields. However, this is just an attempt to 'own' the continent getting all the markets, precious minerals, and oil. China does not care about human rights or corruption levels in Africa, they just care about the economic profits.

The second biggest economy after Nigeria is South Africa (and the powerhouse in the south). Its strategic location with access to two oceans, the gold, silver and coal, and the climate and land has allowed the country to be more technologically developed than the other African nations. Moreover, diseases have not reached that part of the continent. Military speaking, South Africa is also more powerful than the rest of advanced African nations. The Cape of Good Hope is a key piece of real state in the world geography. South Africa dominates the South African Development Community, rival of the East African Community. Nevertheless, Tanzania belongs to both associations, and South African view of Tanzania is a vehicle to reach the Great Lakes region and beyond.

3.1.4. A look at the West African region

Focusing on the West African region, it can be said that, like the rest of the continent, it was much richer and more diverse before the European colonisation. Wildlife and plant life were wide-ranging across the area, but now they are under thereat due to the growth of the population, urbanization of rural areas and the climate change, as well as the effects of deforestation. West Africa is one of the most important fishing zones in the world, which has led to another major problem in the region: overfishing. According to data from 'Economic Structure of West Africa' (Nwokoye, E., Uzodigwe, A. & Nzeribe, G., 2018), the economic structure of West Africa is similar to that of Africa itself. Agriculture represents approximately 36% of the region's GDP and employs nearly 60% of labour force. In countries with higher development rates (Nigeria, Ghana, or Cape Verde) agriculture is not so important as it is in Burkina Faso, Liberia, or Guinea-Bissau. Manufacturing has been underperforming during the last decades in West Africa, with the main drivers being mining and oil, and representing around 20% of region's GDP and generating little employment. Nigeria is the most industrialized country in the region, which explains the huge weight of Nigerian economy in the area. It is the centre for regional integration and internalization of the area. Service sector dominates region's economy representing nearly 45% of West Africa's GDP. Landlocked countries such as Niger, Mali or Burkina Faso face more difficulties than those located in the Gulf of Guinea or the Atlantic Coast, but in their southern part there are large rivers and potential agricultural territories. However, such imbalance in the economic structure of the region is translated into an external dependence to cover the gap left by the low performance of the industrial sector. Consequently, goods become more expensive across the region which affects consumption. Infrastructures in West Africa can be found in the form of railways (Trans-ECOWAS project, which is a railroad network), roads (Trans-West African Coastal Highway from Mauritania to Nigeria), or air facilities (such as the Kotoka International Airport in Accra or the Murtala Muhammed International Airport in Lagos, to name most important).

3.2. The African Union

Amid a complex international context with the United Kingdom withdraw from the European Union, commercial war between the United States and China, religion conflicts in the Middle East, the refugee crisis, Latin America social protests, climate change and the global spread of the new infectious disease COVID-19, well-known as coronavirus; Africa remains optimist and prepares a monetary and economic union in an attempt to create a more integrated continent.

This project has some previous history. The main institution is the African Union, the continental body formed by the 55 countries that constitute Africa, created in 1963. It drives the attention to the promotion of cooperation for sustainable development, integration, solidarity among African countries, fostering peace, security and stability, as well as democracy, ensuring human rights and the removal of the last remnants of colonisation in the continent, fighting for an independent and competitive Africa.

At present, the African Union is working on important reforms concerning different areas, such as the financial system or the creation of a continental free trade area. In this context, Agenda 2063[4] was developed to drive Africa's economic and cultural development, cooperation to raise living standards of people, and to ensure the achievement of aspirations and projects lead by African citizens.

3.3. Regional Economic Communities

In 1998, the African Economic Community (AEC) was established as a depending body of the African Union, with the objective of creating a common market. It was signed in the Abuja Treaty. The AEC is composed of several groups called Regional Economic Communities (REC), which are the following:

- Southern African Development Community (SADC). Aiming to achieve high levels of development, peace, and security in the Southern African countries, as well as eradication of poverty. It was established in 1980 and the member-states are Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia, and Zimbabwe.

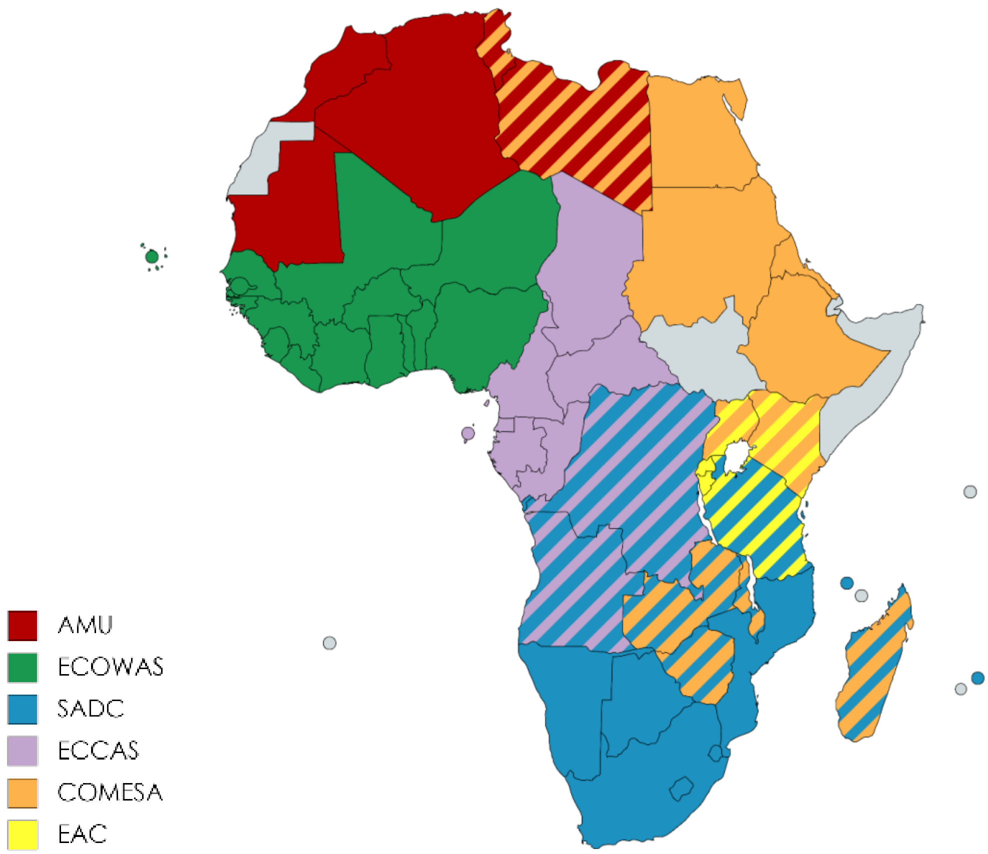
[4] Agenda 2063 was adopted on 31 January 2015 at the 24th Ordinary Assembly of the Heads of State and Governments of the African Union in Addis Abeba.

- Arab Maghreb Union (AMU). It is a trade agreement that aims for an economic and political union among Arab countries of Northern Africa. Nevertheless, the Union has not achieved any progress, mainly due to political disagreements, and no meetings have been held since 2008. It maintains no relation with the AEC. The member-states are Algeria, Libya, Mauritania, Morocco, and Tunisia.
- East African Community (EAC). Intergovernmental organization that enjoys a custom union and common market. They tried to adopt a single currency, but the numerous political and economic differences have hampered the implementation of the monetary union. The member states are Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda.
- Economic Community of West African States (ECOWAS). Established in 1975 with the Treaty of Lagos, it is a group promoting economic integration and expecting to work as a trade union. The member-states of ECOWAS are Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal, and Togo.
- Economic Community of Central African States (ECCAS, most known as CEEAC, from *Communauté Économiqe des États de l'Afrique Centrale*). Established in 1983, it is an economic organization that promotes co-operation and economic and socio-cultural development in Central African Countries, as well as human integration. CEEAC plays a key role in the field of peace and security. Its member states are Angola, Burundi, Cameroon, Central African Republic, Chad, Republic of the Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Sao Tomé and Príncipe and Rwanda. Inside this organization, it exists the CEMAC (*Communauté Économique et Monétaire de l'Afrique Centrale*), which tries to promote integration among the countries using the Central African CFA franc (Cameroon, Central African Republic, Chad, Republic of the Congo, Equatorial Guinea and Gabon).
- Common Market for Eastern and Southern Africa (COMESA). Established in 1994, it is a free trade area, which has gradually expanded until being formed by 21 countries. It promotes trade and harmonisation of markets among the area. Nowadays, it includes the former members, the East African Community and the South African Development Community. The member states are Burundi, Comoros, Djibouti, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Eswatini, Kenya, Libya,

Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Somalia, Tunisia, Uganda, Zambia, and Zimbabwe.

There also exist different agreements and treaties between the rest of African countries as it is the case of the Economic Community of the Great Lakes Countries, the Council of Arab Economic Community, the Indian Ocean Commission (*Commission de l'Ocean Indien*), among others, which are engaged in promoting integration.

Graphic 1: Regional Economic Communities in Africa



Source: Own elaboration

To consolidate the establishment of the African Economic Community, according to the Abuja Treaty (art. 6 and 88), an Integration Plan was created to be completed in six stages. In fact, the establishment of the AEC shall be the final objective of the integration process carried out by all the RECs. In order to do so, the six stages will gradually implement further achievement among the area, and they are briefly commented below:

- First stage (1999). Implies the creation of Regional Economic Communities (REC) wherever they do not exist.

- Second stage (2007). Enrichment of integration and harmonisation among regional economic communities and strengthening of sectors integration.
- Third stage (2017). Establishment of a free trade area and customs union in each Regional Economic Community.
- Fourth stage (2019). Coordination and harmonisation of tariff systems in order to develop a free trade area and continental customs union.
- Fifth stage (2023). Creation of an African Common Market.
- Sixth stage (2028). Consolidation of all the structures of the African Common Market, which include free movement of people and goods, the creation of an African single currency and an African Parliament, and consequently a Pan-African Economic and Monetary Union, as well as an African Central Bank.

It remains clear then the key role of the RECs in the implementation of such strategic plan at a Pan-African level. Due to that importance, a protocol which will work as an instrument for coordination and cooperation was created in order to control both the relations between the AEC and the RECs, and among all the RECs. Consequently, a deeper integration of the economic regional bodies will accelerate intra-African trade and boost the African position in the international markets. The main drawback of the Integration Plan is that each of the REC, which deal with political and economic regional issues, will adopt different regulations, limiting in this way the efficiency and impeding trade within the continent.

So, as part of the strategic process of integration and in order to solve this problem, the African Continental Free Trade Agreement (AfCFTA) was created, seeking to reduce the trade barriers among all the regional blocks to achieve the Pan-African customs union. It was first agreed in 2012 to establish a continental Free Trade Area. It took ten negotiation rounds until its signature in spring of 2018, together with the Protocol on Free Movement of Persons, which seeks to create an African Union Passport in a visa-free area within all the AfCFTA member countries. The main objective is to boost African economics through the homogenization of trade among the subregions of the African continent.

AfCFTA implies the creation of a continental single market of goods and services, as well as a customs union with free movement of capital and people. This agreement will be the biggest trade area in the world, and it will cover a market of 1,200 million people located in the 55 African countries. It is projected that Africa emerges as a strong market amounting 2.5 billion of dollars for household consumption and 4.2 billion of dollars for business consumption. According to the United Nations Economic Commission for Africa, intra-African trade is expected to grow by 52.3% under the AfCFTA. Together with the elimination of tariffs, it will promote a competitive industrial sector and economic diversification. By the creation of a single African market, the AfCFTA is a guarantee to fulfil the African Union's Agenda 2063, as a big step to create decent jobs and reduce poverty by bringing prosperity and hope to Africa.

4. THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES: A MONETARY UNION PROJECT

Considering the time delay, the slowness and lack of consensus among countries and economic institutions to organize and coordinate its activities within the continent, the Economic Community of West African States (ECOWAS) has started the process of integration by creating a single currency – the Eco. The idea of the regional currency area has been a relevant issue for the last thirty years since the devaluation of the CFA Franc in 1994. Since then, and over the years, the ECOWAS has been trying to move forward the creation of the single currency area in West Africa.

4.1. History

The ECOWAS is, as briefly aforementioned, an organization established in 1975 with the signature of the Treaty of Lagos, to promote economic integration and development of the fifteen constituting countries and it is considered one of the pillars of the African Economic Community. The main mission of ECOWAS is to foster and achieve the collective self-sufficiency of the member states by creating a single market within the countries. It is not only focused on economic or industrial activities but also tries to reach social and cultural matters.

The ECOWAS territory comprises an area of 5,114,162 m^2, located in the territory known as West Africa and has an estimated population of nearly 400 million people. ECOWAS member states speak three official languages – English, French and Portuguese, although there exist over thousands of local languages distributed across the countries.

West Africa, in the same way as the whole continent, suffered the colonisation process. Nevertheless, the region enjoys of cultural, linguistic, and biological diversity, being a window of opportunity, and at the same time a challenge for the process of integration. This diversity in terms of culture, society and development must be a building block to reach peace and security in the area.

The first effort for integration dates to 1945 with the creation of the CFA franc and consequently a single currency union, bringing the francophone countries together. Later, in 1964, William Tubman, which was the Liberian president at that time, suggested an economic union for the West Africa zone, which lead to the signature in 1965 of an agreement by Cote d'Ivoire, Guinea, Liberia, and Sierra Leone. It was not until the 1972 that the idea of the West African union started to be generally accepted among the countries. Gen Yakubu Gowon and Gnassingbe Eyadema (former Nigerian military head state and lead president of Togo) are widely acknowledge to as two of the founding fathers of the ECOWAS, and along with the leaders from other West African countries signed the Treaty of Lagos which gave birth to ECOWAS. At that time, there were fifteen members, but in 1976 Cape Verde joined ECOWAS, and Mauritania withdrew the union.

4.2. Functions and Organization

ECOWAS consists of diverse organisms and institutions which lay the foundations of the union. Thanks to the presence of such organisms, it possible to coordinate the countries' needs and the policies.

In order to achieve an effective coordination, the ECOWAS has undergone through a political union by the creation of institutions such as The Authority of Heads of States and Government, The Commission, The Community Parliament, The Community Court of Justice, The Council of Ministers, The ECOWAS Bank for Investment and Development (EBID) and Specialized Technical Committees; and Specialised Agencies such as the West African Health Organization (WAHO), the West African Monetary Agency (WAMA), Inter-governmental Action Group against Money Laundering and Terrorist Financing in West Africa (GIABA) or the ECOWAS Gender and Development Centre (GIABA).

ECOWAS serves as well as peacekeeper in the region (creating a system called the Protocol on Mutual Defence Assistance and an Allied Armed Force of the

Community). During the period between the 1970s and the 1990s, wars were rampant and they retarded growth in the region, especially due to the civil wars in Liberia and Sierra Leone, where thousands of people were killed while the rest of the world watched. In the 1990s the whole region was in deep trouble and in this context the Economic Community Cease-Fire Monitoring Group (ECOMOG) was created. It also intervened in Mali when extremists threatened to overrun the country and in Guinea-Bissau to achieve some stability. Moreover, in order to get a sustainable peace, ECOWAS has gone further by helping victims in post-conflict countries, in collaboration with the African Development Bank. Additionally, housing estates have been built in Liberia, Sierra Leone, and Guinea to rehabilitate former refugees and also provided some help to people who wanted to start businesses.

It also remains important to mention the year 2014 in the history of ECOWAS, when Ebola virus devastated the region leaving thousands of deaths and destroying the economy of the most affected countries (Guinea, Liberia, and Sierra Leone). ECOWAS intervened here with a regional response led by the West African Health Organization (WAHO). ECOWAS also fights malaria, which kills more people than all the wars in the region.

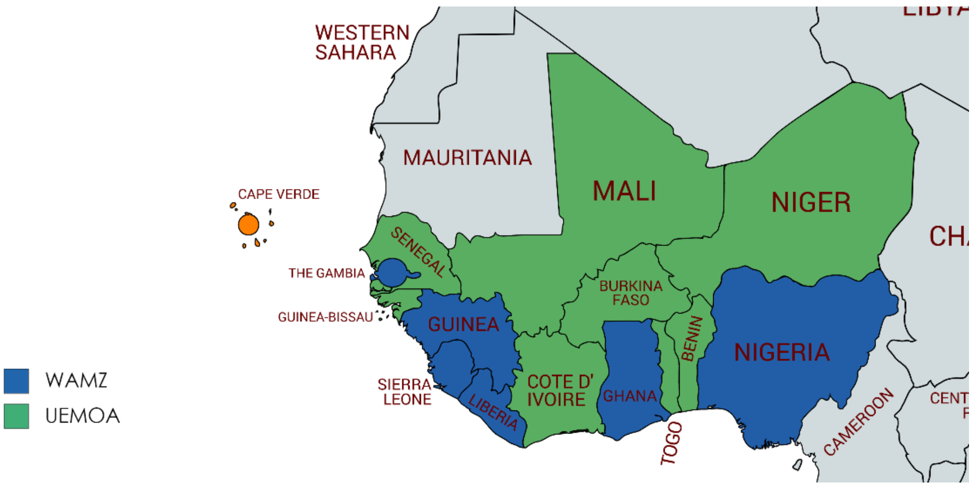
ECOWAS is working hard to ensure democracy and good governance. It is empowered to intervene in the event of an attempted overthrow of the democratic government and other similar incident in order to strengthen democracy, proving the zero tolerance for unconstitutional access to power (particularly in countries such Mali, Guinea-Bissau and Burkina Faso). Democratic culture is spread across the Member States as ECOWAS monitors the elections and the processes coming from it.

The ECOWAS's founding fathers expectations have been accomplished and it starts to be recognized all around the world as a case of success of regional co-existence and integration. However, there is still a lot of work to do, such as efforts on harmonisation of macroeconomic policies or private sector promotion. ECOWAS is governed under the principles of democracy, rule of law and good governance, as it is correlated with economic development. Population living in the ECOWAS has access to numerous resources and can exploit them through a sustainable process. They enjoy free movement, efficient education, and health system. Apart from the economic achievements, coherence, continuity of the actions developed, and defence of member countries is required.

As already mentioned, ECOWAS' member states use different currencies, and have different exchange rates systems: while some of them have their own central bank, others depend on French government. These two regional subgroups within ECOWAS are explained below:

- The West African Monetary Zone (WAMZ). It was created in 2000 by the six countries which are mainly English-speaking countries. The main objective is to introduce a strong stable common currency, together with the UEMOA countries. The member-states of the area are The Gambia, Ghana, Guinea, Liberia, Nigeria, and Sierra Leone. Each of these countries is, in terms of monetary policy, independent as they use a different currency, as explained in the first section. Although Cape Verde not yet participates in this zone, it expressed the wish to join the WAMZ.
- The West African Economic and Monetary Union (also known as UEMOA – *Union Économique et Monétaire Ouest-Africaine*). It was established in 1994, being the successor of a former monetary union. It promotes competitiveness and tries to converge the macroeconomic policies of the members, as well as coordination. The member-states of this organization are mainly French speaking and have a customs union and share the CFA franc as common currency pegged to the Euro. The countries belonging to the union are Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.

Graphic 2: ECOWAS monetary areas



Source: Own elaboration

The history behind the West African CFA Franc starts in 1945, and it is issued by the BCEAO (*Banque Centrale des États de l'Afrique de l'Ouest*) for the members of the

UEMOA. It was created for the French colonies from the Sub Saharan Africa after the WWII.

The former name for the CFA was *Colonies Françaises en Afrique,* but a controversial fact happened when such colonies gained its independence from France and the CFA meaning changed to *Communauté Financière d'Afrique,* using the same acronym. This was just done to satisfy the population, but it only implied a rename and not a real operational change. The functioning of the CFA franc follows a monetary union common rule, but it is also supported by specifications that are not possible to find elsewhere, as presented below.

- Fixed parity. The CFA franc was first fixed to the French currency, and now to the euro (anchor currency). It cannot be modified unless the French authorities authorise it.
- Free movement of capital within the African countries and France.
- Unlimited convertibility against the French currency (now the euro), assured by the French Treasury. However, this convertibility is only possible within the emission countries, and under the supervision of the French Treasury. This non-convertibility of CFA franc increases the demand for euros.
- Centralisation of foreign exchange reserves. The BEAC, the BCEAO and the BCC (Banque Centrale du Congo) must deposit the 50% of their external assets in the French Treasury. Then, it leaves France the convertibility of their currencies and, it acts as a solidarity system: all the countries share the resources, except France.

The implementation of these four principles is possible thanks to the creation a key instrument: the operations account. It was created during the colonisation period to carry out the economic transactions from the colonies to the metropolis in a monetary stability environment. It means that every transaction from a CFA franc country with a third country must go through the French Treasury, so it is often seen as a strategy. Nevertheless, over the last years there have been a lot of movements in UEMOA countries claiming for a monetary independence as the CFA franc is seen as a heritage of colonialism. By the end of 2019, the French president Emmanuel Macron along with Alassane Ouattara, the Côte d'Ivoire president, announced the end of the CFA franc, paving the way to the Eco.

4.3. The Project of a Single Currency Area

Once the free trade and movement of people had been achieved in the ECOWAS area, the West African countries announced in the year 2000 their will to accelerate the integration process, with the help of a two-phased project of single currency creation. The first step would consist of the launch of a single currency called Eco among the countries of the WAMZ in 2015; and a second step which would imply the merge of those countries with the WAMU in 2020. However, due to the lack of preparation and economic convergence, they eliminated the two-phased plan, which delayed the introduction of the single currency in the ECOWAS.

Nowadays, the non-compliance with the first 2015 deadline, and the successive postponements have questioned the countries' commitment to the project. Given the different levels of development in the region, the European Union experience as precedent, and the COVID-19 pandemic the unlikely probability of such currency not to be launched in a short time span, complying with the 2020 proposed date is reinforced.

It is true that this project deals with an additional internal issue, which is the monetary difficulty for some West African countries, but it is also true that the solution must be provided with a regional approach. The monetary problems are linked to the current international monetary system as it does not guarantee a reasonable exchange rate for the currencies used in West Africa. Some studies carried out by the African Development Bank have proved that economic and monetary policies applied in other countries have a significant impact on West African currencies, especially in those pegged to major international currencies such as the US dollar or the Euro. West African countries have a weak financial management capacity, which clearly affects the effective setting of economic objectives, the organization of financial markets or management of banking sector. The financial system is the main way of establishing a monetary policy, but West African countries have the least developed financial sector in the world. Additionally, most of the eight currencies used in the 15 countries of ECOWAS are not convertible, hindering the integration of the area to the world economy. Consequently, the exchange rates within the region are very volatile.

As previously said, West Africa's monetary problem are so big that no country, not even the giant Nigeria, can solve them alone, which means that they require supranational procedures. Given such need for a regional monetary integration, the analysis will be started assuming that the existence of an optimal currency area is essential for the success of this union and its development.

Additionally, the growing differences between countries in terms of economic structure, politics commitment or stability makes it difficult to reach an ECOWAS-wide agreement. In the next section, an analysis of its economic and statistical data will be used in order to better understand and get some basic ideas on how the single currency area should be implemented.

4.4. The Convergence Criteria

As the European Union does, ECOWAS has designed a convergence criteria programme in order to ensure economic and price stability for the Eco to be implemented. In Table 1 we can see the data of each of the ECOWAS countries during the year 2016 that shows the information for each criterion, and the number of criteria achieved by each one. The criteria have been divided in two types: the primary criteria, among which we find the ratio of budget deficit to GDP equal or less than 3% (1), an annual average inflation rate equal or less than 10% (2), a Central Bank financing of budget deficit equal to or less than 10% of previous year tax revenue (3), gross external reserves worth at least three months of imports must be available (4); and the secondary criteria, which must also be meet and include a ratio of total public debt to GDP ratio equal to or lower than 70% (5) and a nominal exchange rate variation of no more than 10% (6).

Table 1: Convergence criteria by country in year 2016

Country	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**Number of criteria achieved**
Benin	- 6.2	- 0.8	0.0	4.4	49.4	0.50	5
Burkina Faso	-3.14	- 0.20	0.0	4.4	34.23	0.50	5
Cape Verde	-3.5	-1.4	0.0	6.6	128.6	0.50	4
Côte d'Ivoire	-3.9	0.7	0.0	4.4	42.1	0.50	5
The Gambia	-9.5	7.9	33.1	2.4	117.3	-3.3	2
Ghana	-10.9	17.5	N/A	2.8	73.1	-4.2	2
Guinea	0.1	8.2	0.01	1.4	43.1	-16.4	4
Guinea-Bissau	-4.0	1.5	0.00	4.4	46.1	0.5	5

Liberia	2.2	8.8	0.0	3.3	36.7	-8.4	6
Mali	-3.9	-1.8	0.0	4.4	36.0	0.50	5
Niger	-6.1	0.2	0.00	4.4	39.7	0.5	5
Nigeria	-2.2	15.7	0.0	5.8	17.1	-23.5	4
Senegal	-4.2	0.8	0.0	5.79	55.7	0.50	5
Sierra Leone	-6.4	10.8	33.1	4.7	55.7	-19.1	2
Togo	-8.5	0.90	0.00	4.4	79.40	0.50	4

Source: Own elaboration based on ECOWAS data[5]

From the table it can be seen that Benin, Côte d'Ivoire, Senegal, Togo, or Guinea meet the main four convergence criteria, and that Liberia is the only country that meets the six required criteria to join the union. The main objectives for the fulfilment of such requirements by all the countries are to ensure price stability, and avoid shocks derived from asymmetries in countries' economies. However, there are some of them that are far from the figures required to enter the single currency area, which challenge the creation of the monetary zone in the short-term being some of them The Gambia, Ghana or Sierra Leona which are still far from achieving the convergence criteria, and can jeopardize the launch of the single currency in the region.

4.5. Statistical Analysis and Interpretation of Data

Following the OCA theory, a bunch of data will be used to determine if ECOWAS fulfils the necessary requirements to be called and optimal currency area. According to the OCA theory, mobility of people, goods and capital is a key factor to success. Whereas the free movement of people, work and residence has already been achieved, it remains important to know if intra-African, and most particularly intra-regional trade in the creation of a monetary union is significant, and it will help us to also check the degree of openness.

During the year 2016, the exports within the ECOWAS area represented a 10.6 % of total world exports. In general, exports from ECOWAS are characterized by products coming from agriculture and fuels, representing 75 % of total exports and almost totally provided by Nigeria (crude oil especially) and Côte d'Ivoire, followed by Ghana and Senegal. Cocoa, stones, cotton, or wood represent the rest of exports. The main buyers

[5] See Annex 1 for individual information on countries' data for the convergence criteria.

are Europe, North America, and Asia. In Table 2 we can see the weight of exports for each ECOWAS member state, both intra (regional) and extra (rest of the world). For Gambia, exports to ECOWAS countries amount to 46% of the total and it is mainly primary agricultural commodities. Liberia, Côte d'Ivoire, Guinea, Niger, Senegal, and Togo also have some a high trade relationship between the ECOWAS.

Table 2: Exports' weight for each ECOWAS country (USD, millions)

Country	**Intra**	**Extra**	**Total**	**% Intra**	**% Extra**
Benin	165.4	791.6	957	17.0	83.0
Burkina Faso	340.1	2,439.4	2,779.5	12.0	88.0
Cape Verde	5	301.6	306.6	2.0	98.0
Côte d'Ivoire	3,437.2	13,621.1	17,058.3	20.0	80.0
The Gambia	85.9	102.2	188.1	46.0	54.0
Ghana	1,362.8	12,919.7	14,282.5	10.0	90.0
Guinea	423.9	1,684.2	2,108.1	20.0	80.0
Guinea-Bissau	0	236.3	263.3	0.0	100.0
Liberia	79	138	216	37.0	63.0
Mali	440	3,262.6	3,702.6	12.0	88.0
Niger	326.4	945.9	1,272.3	26.0	74.0
Nigeria	3,687.4	72,952.4	76,639.8	5.0	95.0
Senegal	1,030.3	2,679.4	3,709.7	28.0	72.0
Sierra Leone	34.7	303.1	337.8	10.0	90.0
Togo	582.1	1,011.8	1,593.9	37.0	63.0

Source: Own elaboration based on ECOWAS data[6]

Intra-regional imports represented 9.4 % of the total world imports. Fuels account for the 24 % of total imports, followed by motor vehicles, machinery, mechanic product and pharmaceuticals. The imports are manufactured abroad with the raw materials initially provided by Africa. Table 3 provides the data for the importance of imports per country, dividing it as well between intra and extra imports. Imports from other ECOWAS

[6] Data retrieved from https://www.ecowas.int/23749-2/

countries are really important for Mali, Gambia, Sierra Leone, Burkina Faso, and Côte d’Ivoire.

Table 3: Imports’ weight for each ECOWAS country (USD, millions)

Country	Intra	Extra	Total	% Intra	% Extra
Benin	411.5	3,110.8	3,522.3	12.0	88.0
Burkina Faso	817.5	3,668.1	4,485.6	18.0	82.0
Cape Verde	19.7	1,075.7	1,095.4	2.0	98.0
Côte d'Ivoire	2,693.3	11,904.1	14,597.4	18.0	82.0
The Gambia	114.6	387.8	502.4	23.0	77.0
Ghana	430.4	12,840.1	13,270.5	3.0	97.0
Guinea	162.1	2,439.6	2,601.7	6.0	94.0
Guinea-Bissau	15.4	330.7	346.1	4.0	96.0
Liberia	390	2,955.5	3.345.2	12.0	88.0
Mali	1,149	4,071.3	5,490.3	26.0	74.0
Niger	360.6	5,585.6	2,946.2	12.0	88.0
Nigeria	1,182.2	41,644.9	42,827.1	3.0	97.0
Senegal	804.7	6,167.9	6,972.6	12.0	88.0
Sierra Leone	681.2	2,405.9	3,087.1	22.0	78.0
Togo	221.7	2,130.4	2,352.1	9.0	91.0

Source: Own elaboration based on ECOWAS data[7]

However, such figures do not represent an extremely high interdependence of countries in terms of trade, which reflects a very low level of product differentiation. Indeed, the same could be said for the imports: they depend in a high amount on the rest of world, which in case of collapse a main supplier, provoke a negative shock in the whole area. The Gambia and Côte d’Ivoire are the countries that trade the most within the ECOWAS area. Oil represents one of the most important sources of revenue for countries touched by the Guinean Golf, especially for Nigeria.

Migrations figures are as well a significant indicator for mobility. Migration in sub-Saharan Africa is remarkable, and despite the amount of people migrating to Europe,

[7] Data retrieved from https://www.ecowas.int/documentation/statistics/

the number of movements within West-African area is ten times higher. Considering the porous borders, the main reasons for migrants to leave are the better opportunities in other countries, or insecurity in their origin countries. Nevertheless, the economic situation, has not a relevant effect on migrants desiring to leave. Nigeria stands as the country both sending and receiving most people. Another relevant pattern of movement is from the inland countries such as Mali or Niger to coastal ones, which generally are richer and give more work opportunities, as it is Nigeria or Ghana.

Another relevant factor to be analysed is symmetry, which can be identified in monetary and financial statistics such as inflation or debt, but as well in the shape of the productive structure of each country. This is very related to the intra-regional trade potential, meaning that the more diverse the productive systems in the region, the more likely intra-trade to happen is. As shown in Table 4, which designates the share of the economic activities to the total gross domestic product, the structure of each country's economy varies from one to another. Liberia, Sierra Leone, Guinea-Bissau, Niger, or Mali are strongly dependent on agriculture (more than 40 % of total GDP); whereas Guinea, Côte d'Ivoire, Ghana, or Senegal are more dependent on industry, mainly due to oil industry and mining. The manufacturing sector is not very developed in any of the countries in ECOWAS, being in this way a major objective of growth for the area and subject to technological improvements along with the private sector investment. Services sector is the most important for almost every country in ECOWAS, especially in Cape Verde and Nigeria, where tourism is more advanced. Obviously, geography is an important factor that considerably affects the productive structure of each country: while Cape Verde is a small archipelago in the Atlantic Ocean, Mali occupies an enormous landlock territory in the Sahara dessert.

Table 4: Economic activities' weight on total GDP by country

Country	**Agriculture % of total GDP**	**Industry % of total GDP**	**Manufacturing % of total GDP**	**Services % of total GDP**
Benin	26.0	22.5	13.3	51.5
Burkina Faso	31.0	24.0	8.8	45.1
Cape Verde	9.7	20.0	8.1	70.2
Côte d'Ivoire	23.7	30.6	16.4	45.7
The Gambia	22.1	14.9	5.2	63.0

Ghana	19.7	25.4	7.9	54.9
Guinea	19.7	34.4	12.7	45.9
Guinea-Bissau	49.1	13.5	12.2	37.4
Liberia	70.3	9.0	5.2	20.7
Mali	40.3	19.4	13.4	40.3
Niger	41.7	17.8	6.0	40.5
Nigeria	21.2	18.5	8.8	60.4
Senegal	18.0	24.0	13.5	58.0
Sierra Leone	60.9	5.9	1.9	33.2
Togo	29.0	18.6	8.1	52.4

Source: Own elaboration based on African Development Bank data[8]

The difference between each productive structure can be used to take advantage from the intra-regional trade. This relates to the theory of Comparative Advantage (David Ricardo, 1817)[9] providing a powerful argument in favour of free trade and specialization among countries for a better allocation of resources, and consequently more efficient results as well as a higher level of social welfare within the region. As a simple example, those countries in which the agriculture sector is more intensified may export to those with a lower farming capacity.

Additionally, in order to boost productivity, the region should create strategies that allow manufactures and private sector to grow. One of the existing problems in ECOWAS trade, with direct consequences in the development of the area, is how these transactions are managed. West African countries export raw materials to countries, France among them, which use these resources to produce machines and other goods eventually sold to West Africa. In this way, with the intention of achieving global competitiveness, West African countries should start decreasing their exports of raw materials to the countries from which they import machines and other manufactured products, and start producing them by themselves so that productivity and employment

[8] Data retrieved from “African Statistical Yearbook 2018.” *African Statistical Coordination Committee (2019)*

[9] Ricardo, D. (1817) “On the Principles of Political Economy and Taxation”. (London: John Murray, Albemarle-Street

levels will increase, and consequently, it will make ECOWAS region more competitive and independent from the rest of the world.

From the data and information shown above, it can be concluded that ECOWAS region shows strong differences between the member states. Let us analyse Table 5, which shows the mentioned differences through two simple selected statistics: GDP in US dollars and population. Nigeria itself accounts for 65% of total GDP (in billions of US dollars) of the region and half of the total population of ECOWAS (51%). If we add to this figure the next four better performers in terms of GDP (Ghana, Côte d'Ivoire, Senegal, and Mali), the cumulated GDP is nearly 90% of the region, and they represent 77% of the total population in ECOWAS. From the statistics, we can affirm that the five richest countries have, on average, a domestic income 20 times that of the average of the poorest countries (Sierra Leone, Liberia, The Gambia, Cape Verde, and Guinea-Bissau).

Table 5: Statistical indicators for each ECOWAS country

Country	**GDP (billion US $)[10]**	**Population[11]**	**% of total GDP**	**Cumulated (%)**
Nigeria	1,168.75	206,140,000	65.0	65.0
Ghana	189,707	30,780,000	10.5	75.5
Côte d'Ivoire	145	26,920,000	8.1	83.6
Senegal	59,839	17,240,000	3.3	86.9
Mali	44,337	19,670,000	2.5	89.4
Burkina Faso	43,990	20,920,000	2.4	91.8
Benin	37,545	12,150,000	2.1	93.9
Niger	32,189	24,210,000	1.8	95.7
Guinea	31,066	13,970,000	1.7	97.4
Togo	13,974	8,400,000	0.8	98.2
Sierra Leone	12,238	7,910,000	0.7	98.9
Liberia	6,330	4,690,000	0.4	99.3
The Gambia	5,947	2,420,000	0.3	99.6

[10] Gross domestic product, current prices (Purchasing power parity; international dollars), October 2019 or most recent year available, source: International Monetary Fund, World Economic Outlook Database, October 2019

[11] Population, October 2019 or most recent year available, source: International Monetary Fund, World Economic Outlook Database, October 2019

Cape Verde	4,047	570,000	0.2	99.8
Guinea-Bissau	3,743	1,820,000	0.2	100.0

Source: Own elaboration

As a complementation to the study, a correlation analysis of the countries will be carried out. It will be helpful to determine if some of the most important economic indicators move in the same way and which degree of connection the economies of ECOWAS have. In order to do so, the Pearson Coefficient[12] will be applied to check the relationship of the countries involved. The application of this simple statistic will be helpful to determine whether there exists any similar trend in the economic cycles of the ECOWAS countries or each country's economy follows its own tendency.

$$\rho_{X,Y} = \frac{Cov_{XY}}{\sigma_P \sigma_Y}$$

The correlation is calculated for three relevant indicators: GDP growth, inflation, unemployment. Data from 2008 to 2018 will be used, and each country will be compared with the total average of ECOWAS. Then, X will represent each country of ECOWAS, while Y will represent the average for ECOWAS. The more approximated the results are to 1, the more correlated the economy of each country is with the ECOWAS area.

Table 6: Correlation Coefficient between each country and the ECOWAS area

Country	**GDP growth**	**Inflation**	**Unemployment**
Benin	0.60	0.46	0.24
Burkina Faso	0.72	0.67	-0.21
Côte d'Ivoire	0.24	0.53	0.63
Cape Verde	0.22	0.34	-0.34
Ghana	0.15	0.12	-0.30
Guinea	0.33	-0.47	0.38
The Gambia	0.39	0.45	0.57
Guinea-Bissau	-0.40	0.73	0.76
Liberia	0.49	0.53	0.69
Mali	-0.57	0.35	-0.29

[12] The Correlation Coefficient applied to the research was developed by Karl Pearson in 1880.

Niger	0.63	0.30	0.10
Nigeria	0.02	0.38	-0.49
Senegal	-0.01	0.69	0.52
Sierra Leone	0.84	0.61	-0.28
Togo	0.09	0.12	0.48

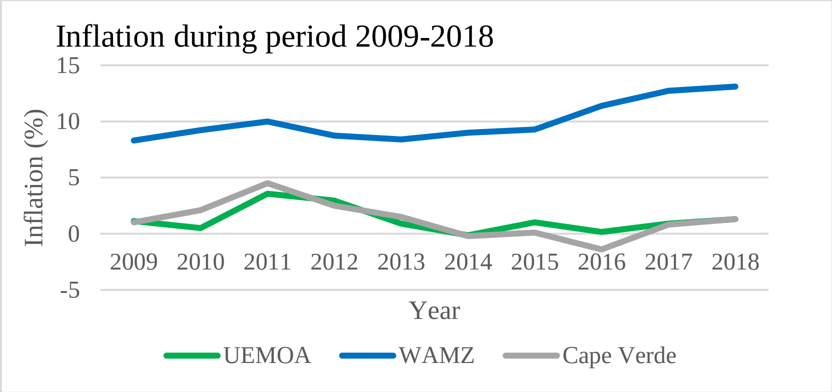
Source: Own elaboration[13]

Table 6 lists the results for each country and the different indicators. When it comes to GDP growth (which has an average for the period of 4.75%), we can observe that Mali, Guinea-Bissau and Senegal are totally deviated from the path that the rest of ECOWAS countries have followed during the 2008-2018 period; but Sierra Leone, Burkina Faso, Niger or Benin had a very similar growth as the one of the area. Countries have also had a similar movement of prices (the average for the period was 4.7%), except Guinea, which inflation rate moved in the opposite direction. Unemployment is the less correlated indicator within the area (with an average rate of 5.1%), being Nigeria, Cape Verde, Ghana, Sierra Leone, or Mali the countries which unemployment rates moved in a different way than that of the area. From the table we can see that sometimes the richest countries saw its indicators move in the same way that the ones of the poorest one, which illustrates a high degree of diversity as no pattern of movement can be identified. However, in spite of some negative results, the overall correlation tends to be positive.

A graphical representation will be helpful in order to observe the any pattern comparing each area in the ECOWAS and Cape Verde, which does not belong to any regional subarea. Graphic 3 showing the inflation during the period analysed, depicts a clear pattern between the UEMOA and Cape Verde. However, in the WAMZ, inflation started to move in the opposite way especially from the year 2015, as a result of a decrease in commodities and food prices for that period and the resilience in the agriculture in spite of the Ebola's impact on economy. Nonetheless, the inflation rate variation during the period was similar in each area (around $\pm$5%). It remains important to mention the weight of Nigerian results, which being the most important driver for the West African economy, has an unstable and considerably high inflation rate, which has an average for the period of nearly 12%. These high inflationary levels are a result of ineffective monetary policies and money supply.

[13] See Annex II for further information on the elaboration of the results

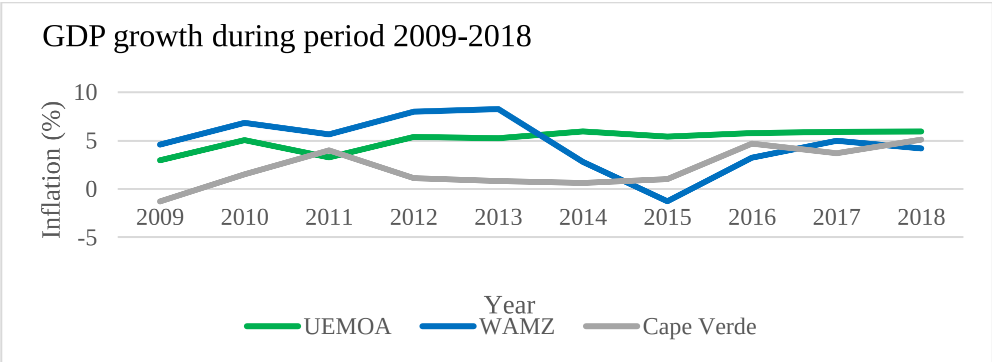
Graphic 3: Inflation in the ECOWAS during the period 2009-2018



Source: Own elaboration[14]

GDP growth during the period is an interesting indicator to be showed in a graphic representation. Figures are more similar than for the inflation indicator, and they follow similar patterns of growth as well, clearly showing upwards movements that mean that during the first part of the period, ECOWAS was experiencing a rapid economic growth. Nonetheless, there is an important difference between WAMZ and UEMOA during 2014 and 2015 and it is due to the dramatic fall in GDP growth in countries affected by Ebola. For example, Liberia's GDP growth rate moved from 8.8% in 2013 to 0.7% in 2014, and the same happened in Sierra Leone and Guinea. However, the economies of the countries affected started a slow recovery, reaching some kind of convergence during the year 2018 in which we can see that average GDP rates of growth seemed to be stabilised between 4% and 6% in the West African region.

Graphic 4: GDP growth in the ECOWAS during the period 2009-2018



Source: Own elaboration[15]

[14] Inflation rate average consumer prices, annual percent change, October 2019 or most recent year available, source: International Monetary Fund, World Economic Outlook Database, October 2019

[15] Real GDP growth annual percent change, October 2019 or most recent year available, source: International Monetary Fund, World Economic Outlook Database, October 2019

A perfect correlation will reduce the effect of shocks affecting in different ways the countries in the area. For example, in the case of an economic crisis, if countries are correlated, it will be unlikely that they experiment asymmetric economic reactions making it easy to recover and to adopt monetary or fiscal policies for the whole union. It is important to notice that a single currency within the area will make the business cycles of the countries converge more easily.

The foreign exchange rate in terms of the US dollar has also been analysed for the countries of the WAMZ. In this case, all of them have a strong correlation which means that, when a country's currency appreciates against the US dollar, the rest of WAMZ currencies do the same.

Table 7: Foreign Exchange Correlation Coefficient within WAMZ area

Country	FX Correlation
Cape Verde	0.84
Ghana	0.94
Guinea	0.98
The Gambia	0.93
Liberia	0.90
Nigeria	0.96
Sierra Leone	0.99

Source: Own elaboration[16]

Since May 2009, progress has been made when it comes to statistical harmonisation and elimination of trade barriers. However, it is necessary for the Eco to success that all the governments agree. The importance of a single currency in the ECOWAS has been completely understood in West African countries, and political commitment is real. The main problem is how to translate the commitment into an action plan to achieve the objectives.

4.5. Creation of The Monetary Area

After having assessed the economic situation it can be concluded that ECOWAS countries are still far from economic convergence, which has been one of the reasons for the delays

[16] See Anex II for further information

in the Eco implementation, and according to the convergence criteria, not all ECOWAS member states qualify to implement the new currency. However, it must be noticed that the creation of a single currency area does not necessarily have to follow the OCA theory, so the convergence status does not have to be a strict condition to the creation of the single currency. The explanation arises in the fact even in the best example of an OCA, which is the United States of America, significant economic and structural differences are observed within the federal country. Another reason which should make countries getting involved is that belonging to a common currency area boosts trade and convergence of structures and cycles of activities of economies, which is also known as the real convergence which makes situations homogeneous. Countries belonging to the WAMZ, which have their own currency, have also express their interest and their promise to renounce their central banks and national currency in exchange of the Eco. However, Nigeria which is the heavyweight of the area, is the less convinced country to go on with the process, as it does not want to be leader of the area, and bear with all the costs.

From just an exchange of information between national central banks, which is the lesser way of integration, to the monetary union together with the creation of the single currency and a common monetary policy, there are several different options that have been discussed. Among all the possible outcomes for the monetary integration options considered by the experts, they can be summarized in two different and opposite scenarios, which are presented below.

a) Implementation of the Eco in the UEMOA. This first scenario considers the centralization of foreign reserves and therefore the solidarity among member states. In general, the situation would be the same but the Eco will be a substitute for the CFA Franc which means that it will have a fixed exchange rate to the Euro, and they will depend on the French Treasury. UEMOA is already an experimented single currency area, so this option has almost its success guaranteed.

b) Immediate Implementation of the Eco. It will be adopted by every country in the ECOWAS and it will be managed by a Central Bank. It proposes to strictly fulfil the convergence criteria in all the countries, so it is based on total convergence. Until all of the countries do not meet the requirements, the Eco will not be implemented. The Eco would have a flexible exchange rate system and the countries will have continuous assessment of their inflation rates and performance, in order to enhance economic growth. According to the OCA theory, this scenario is the best option for the creation of a single currency area. However, having the European Union experience in mind, it could be said that may not be so effective during recession periods and crisis, although the European Union characteristics are not even close to the ECOWAS. Moreover, it could take a lot of time for all the countries to meet the requirements.

Diverse alternatives that have been also studied are the implementation of the Eco with a flexible exchange rate regime in which ECOWAS countries would have to converge to the biggest economies in the region which are Nigeria or Ghana. Nigeria, representing half of the population in the ECOWAS and 65% of GDP would have the responsibility of taking the lead role and be the lender in case of default of any of the countries, apart from renouncing to the Naira. Some others proposed to use the Naira as the regional currency but the not very high volume of Nigerian trade within the ECOWAS region and the lack of presence in financial markets of this currency would not make this option competitive enough.

Some steps have been made during the last months of 2019 and the beginning of 2020, despite of the coronavirus pandemic. The abovementioned meeting in December 2019 between Emmanuel Macron and Alassane Ouattara showed the will of turning the region in an integrated economic space and a prosperity source. Currently, what is clear from the deal is that the new currency will keep its peg to the Euro – which is not the most attractive option for most of the countries – but now the members will not have to keep the half of their reserves in the French Treasury and consequently, there will no longer be a representation of France in the Board of Administration of the new currency. Nevertheless, countries such as Nigeria or Ghana do not want to implement the Eco as long as some conditions are guaranteed. For example, they do not want the Eco to be fixed to the Euro as they already have an independent economy and fixing the currency would mean to lose it. During the last years the conditions for the Eco's implementation have changed from time to time, so it is likely that these new features will be eventually changed.

5. CONCLUSIONS AND RECOMMENDATIONS

The process of creation of a monetary area is preceded by a complex and in-depth analysis of a big number of economic indicators and geopolitical influences, but it is even a more difficult task if such area is tied to problematic historical issues such as colonialism. Currently, West Africa is organizing a single currency area at the same time it faces the challenges that being tied to other countries' decision in their economic and political matters implies. As a consequence, the most of ECOWAS' countries are characterized by an undeveloped industrial sector and low productivity rates, as well as poor financial systems.

However, there exists a will among not only the government and political bodies, but also amid the population to start having a total autonomy in their economic decisions. By doing this, they would stop depending on France and they could develop its own industries, which could help and boost economic growth in the region. Moreover, they will open to external trade and enter the international financial markets due to the fact that their financial systems will develop thanks to the existence of a unique currency that can be as competitive as the rest of international currencies.

There are several theories and models that propose how the Eco should be implemented in the region, although it is clear that it cannot be proved which of them is going to be the most effective for the ECOWAS. Once the countries' economies and their structural characteristics have been analysed, it is possible to reach some conclusions.

According to the Theory of Optimum Currency Areas (Robert Mundell, 1961), ECOWAS is not a complete optimum monetary area, regarding that there are some discrepancies among the countries that, in theoretical terms, will hamper the successful development of the monetary area in the region. Notwithstanding, taking into account that the EMU neither meets the necessary requirements to be defined as an optimum monetary area, it can be said that the ECOWAS' countries will benefit from the creation of a monetary area, as well as EMU countries did with the introduction of the Euro. A single currency for the region will promote economic stability which may stimulate investment and reduce structural problems that currently exist, such as high levels of unemployment or elevated inflation.

ECOWAS has presence of institutions on which the foundations of the monetary area lay. In this case, ECOWAS comprises not only economic-related organizations, but it also includes defence, anti-terrorism, or health organisms, as well as the Commission, the Parliament and Court of Justice, among others. All of these organizations depend on the coordination of the policies adopted by the ECOWAS, and its role is fundamental to the foundation process as it helps to lay the foundations of the monetary union. The presence of an institutional framework established with supranational organisms facilitates the creation of the area. ECOWAS sufficiently fulfils this requirement, as it is an organization with 45 years of experience in the West African integration process, counting with an increasing number of institutions.

The ECOWAS, as the EMU does, applies the convergence criteria which require the fulfilment of economic conditions – usually related to inflationary or public debt levels – that countries must meet in order to participate in the monetary area. They are established in order to avoid unequal effects due to economics shocks among the member states and thus, to control the prices stability. Liberia was the only country to meet the six required criteria in 2016, but some countries barely met three of them. It means that it is possible that the criteria are too strict for the economies of these countries, and hence most of them struggle to meet the criteria in the short-term. That is why a convergence analysis is necessary to check the current situation of ECOWAS' countries, due to the fact that the non-compliance of the convergence criteria does not exempt the presence of similar economic trends among them.

Trade is another relevant indicator for the study of monetary areas, especially that which is produced among the member states. Among the ECOWAS countries, trade figures also present differences. For example, Nigeria is a country that mainly trade with third parties, whereas there are others that barely export their products, among other variations. The data extracted from the intraregional export as well as from the intraregional imports are not relevant enough for the area, although it is true that some countries have a high dependence on intra-ECOWAS trade. Trade forecasts after Eco's implementation increase in all the member states regarding that a single currency will facilitate transactions, and consequently, the allocation of resources, in spite of the already existing free movement of goods.

The productive structure of each country, which has a great impact on a country's trade, shows variation among countries. For example, Cape Verde's agriculture represents approximately 10% of its total GDP, while in Liberia the percentage significantly moves up to 70%. Diversity among productive structures may be a potential source of stimulating the intraregional trade. Variety is also found in population and GDP figures. For instance, Nigeria accounts for half of ECOWAS's population and represents 65% of regional GDP. Additionally, the five richest countries have, on average, a GDP twenty times higher than those of the five poorest countries.

Homogeneity level resulting from the correlation analysis carried out among ECOWAS' countries is not very high, but it is enough in order to prevent the economic shocks from producing different effects on regional monetary and economic stability. During the analysed period, the ECOWAS was on a development stage, resulting on a constant economic development showed in the data, except during 2014 and 2015. From the four studied indicators, inflation rate was the one that showed more similar movements among all the countries. GDP growth was also parallel, except for the period 2014 and 2015, years in which the Ebola significantly hit the economic growth that the vast majority of countries were experimenting. However, we can observe similar trends among countries of each area. For instance, countries using the CFA Franc (UEMOA area) did show very similar trends during the seven-year period in all of the indicators, and the same happened with WAMZ countries, which use a national currency unit, especially in the exchange rate.

Therefore, for the creation of a monetary area in the ECOWAS, it is necessary to determine a series of recommended features that ECOWAS must have to reach such progress, regardless the latest requirements of some of the countries involved and the progress made in the last meetings.

On the one hand, the Eco must be controlled through a decentralized management system, so that each country can manage their own reserves and can benefit from the reserves it has been able to build. On the other hand, the single currency area will be built under the solidarity principle, meaning that it should have a mechanism that allows countries with difficulties to temporarily access the reserves of other countries. It will boost cooperation between ECOWAS, and it will also avoid Nigeria being the leader, although it may have to intervene or help some country in recession periods.

The exchange rate system must be flexible, which will make the area competitive in the international environment. This is especially important as a fixed exchange rate would mean to be tied to another currency and therefore, tied to another central bank with different priorities, and one of the main objectives of this union is to be independent. The implementation should start by the UEMOA countries, as they already form a monetary area would help to stabilize the new currency during its birth. Then, the rest of ECOWAS countries would join the area, with no strict criteria to be fulfilled. Instead, a rigorous and extended assessment of financial performance of each country must be done to detect potential problems and set the objectives of the area. The economic union would join the rest of political bodies and organizations that try to build democratic values and achieve economic growth in the West Africa area. The creation of such area would be a success since the moment of its implementation, and a prove to the world that Africa can provide their own solutions and develop itself without the need of any other country.

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ANNEX

ANEX I. Macroeconomic Convergence between 2012 and 2016

- **Benin**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤3%	- 0.4	- 2.6	- 1.9	- 8.0	- 6.2	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	6.8	1.0	- 1.1	0.3	- 0.8	Achieved
Central Bank Financing of Budget Deficit	≤10% of previous years tax revenue	0.00	0.00	0.00	0.00	0.00	Achieved
Gross External Reserves	≥ 3 months of imports	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	26.8	25.4	30.9	42.4	49.4	Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.5	Achieved
Number of Criteria Respected		**6**	**6**	**6**	**5**	**5**	

- **Burkina Faso**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤3%	- 3.10	- 3.58	- 1.85	- 2.03	- 3.14	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	3.80	0.50	- 0.30	0.90	- 0.20	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.00	0.00	0.00	0.00	0.00	Achieved
Gross external Reserves	≥ 3 months	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	27.96	28.58	30.79	32.75	34.23	Achieved
Nominal Exchange rate variation	± 10%	- 4.78	4.12	0.09	- 9.33	0.50	Achieved
Number of Criteria Respected		**5**	**5**	**6**	**6**	**5**	

- **Cape Verde**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 12.4	- 8.8	- 7.2	- 3.9	- 3.5	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	2.5	1.5	- 0.2	0.1	-1.4	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0,0	0,0	0,0	0,0	0,0	Achieved
Gross external Reserve	≥ 3 months	4.0	4.9	5.4	6.4	6.6	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	91.1	102.5	115.0	126.1	128.6	Not Achieved
Nominal Exchange rate variation	± 10%	- 4.0	4.1	0.1	- 9.3	0.5	Achieved
Number of Criteria Respected		**4**	**4**	**4**	**4**	**4**	

- ## Côte d'Ivoire

Convergence Criteria	**Standard**	**2012**	**2013**	**2014**	**2015**	**2016**	**Remark**
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 3.2	- 2.2	- 2.2	- 2.9	- 3.9	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	1.3	2.6	0.4	1.2	0.7	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.0	0.0	0.0	0.0	0.0	Achieved
Gross external Reserve	≥ 3 months	5.3	4.7	5	5	4.4	Achieved

Secondary Criteria							
Ratio of total public debt to GDP	≤70%	34.2	34.0	36.9	40.8	42.1	Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.50	Achieved
Number of Criteria Respected		**5**	**6**	**6**	**6**	**5**	

- ## The Gambia

Convergence Criteria	**Standard**	**2012**	**2013**	**2014**	**2015**	**2016**	**Remark**
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤3%	- 4.6	- 8.7	- 9.6	- 6.3	- 9.5	Not Achieved
Annual Average Inflation rate	≤10% with objective of £5% in 2019	4.3	5.7	6.9	6.8	7.9	Achieved
Central Bank Financing of Budget Deficit	≤10% of previous years tax revenue	0.4	0.0	40.8	41.5	33.1	Not Achieved
Gross external Reserve	≥ 3 months	4.8	4.6	3.7	2.5	2.4	Not Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	78.0	88.1	104.1	101.1	117.3	Not Achieved
Nominal Exchange rate variation	± 10%	- 4.5	- 10.3	- 16.5	4.9	- 3.3	Achieved

- ## Ghana

Convergence Criteria	**Standard**	**2012**	**2013**	**2014**	**2015**	**2016**	**Remark**
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 5.7	- 8.6	- 6.4	- 4.8	- 10.9	Not Achieved
Annual Average Inflation rate	≤10% with objective of £5% in 2019	9.1	11.7	17.0	17.2	17.5	Not Achieved
Central Bank Financing of Budget Deficit	≤10% of previous years tax revenue	25.4	12.3	13.7	4.1	-	Achieved
Gross external Reserve	≥ 3 months	3.0	3.1	3.0	2.6	2.8	Not Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤ 70%	47.8	56.8	70.2	73.2	73.1	Not Achieved
Nominal Exchange rate variation	± 10%	- 4.4	- 7.4	- 31.5	- 15.7	- 4.2	Achieved
Number of Criteria Respected		**3**	**3**	**1**	**1**	**2**	

- **Guinea**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤3%	3.2	- 2.	- 3.56	- 6.9	0.1	Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	15.2	11.9	9.7	8.2	8.2	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.00	0.01	0.00	0.26	0.01	Achieved
Gross external Reserve	≥ 3 months	2.4	2.9	3.2	2.2	1.4	Not Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	42.2	44.5	73.5	43.3	43.1	Achieved
Nominal Exchange rate variation	± 10%	- 2.5	2.1	- 1.5	2.2	-16.4	Not Achieved
Number of Criteria Respected		**3**	**4**	**4**	**4**	**4**	

- **Guinea-Bissau**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤ 3%	- 2.1	- 3.4	- 2.6	- 2.7	- 4.0	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	2.1	0.7	- 1.0	1.4	1.5	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.00	0.00	0.00	0.00	0.00	Achieved
Gross External Reserve	≥ 3 months of import cover	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤ 70%	52.4	52.6	53.3	46.8	46.1	Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.5	Achieved
Number of Criteria Respected		**6**	**5**	**6**	**6**	**5**	

- **Liberia**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤3%	7.5	-0.5	0.2	1.6	2.2	Achieved
Annual Average Inflation rate	10% with objective of £5% in 2019	6.9	7.6	9.8	7.8	8.8	Achieved
Central Bank Financing of Budget Deficit	10% of previous years tax revenue	0.0	0.0	0.0	0.0	0.0	Achieved
Gross external Reserve	≥ 3 months	2.8	2.8	2.5	2.3	3.3	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	70%	34.1	30.5	37.9	32.0	36.7	Achieved
Nominal Exchange rate variation	± 10%	1.3	- 4.1	- 9.0	7.2	- 8.4	Achieved
Number of Criteria Respected		**5**	**5**	**5**	**5**	**6**	

- **Mali**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	≤ 3%	- 0.1	- 2.2	- 3.8	- 1.8	- 3.9	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	5.3	- 0.60	0.90	1.50	- 1.8	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.0	0.0	0.0	0.0	0.0	Achieved
Gross external Reserve	≥ 3 months	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	24.3	26.0	27.1	30.8	36.0	Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.5	Achieved
Number of Criteria Respected		**6**	**6**	**5**	**6**	**5**	

- **Niger**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 1.1	- 2.6	- 8.1	- 9.0	- 6.1	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	0.5	2.3	- 0.9	1.0	0.2	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.00	0.00	0.00	0.00	0.00	Achieved
Gross external Reserve	≥ 3 months	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	18.8	23.1	25.6	36.0	39.7	Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.5	Achieved
Number of Criteria Respected		**6**	**5**	**5**	**5**	**5**	

- **Nigeria**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	-1.4	-1.3	-1.0	-1.5	-2.2	Achieved
Annual Average Inflation rate	≤ 10% with objective of £5% in 2019	12.2	8.5	8.0	9.0	15.7	Not Achieved
Central Bank Financing of Budget Deficit	£ 10% of previous years tax revenue	0.0	0.0	0.0	13.1	0.0	Achieved
Gross external Reserve	≥ 3 months	8.5	8.9	6	8.2	5.8	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤ 70%	12.6	12.4	12.5	12.6	17.1	Achieved
Nominal Exchange rate variation	± 10%	0.7	2.1	- 1.9	- 1.9	- 23.5	Not Achieved
Number of Criteria Respected		**5**	**6**	**6**	**4**	**4**	

- **Senegal**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 5.8	- 5.5	- 5.2	- 4.8	- 4.2	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	1.4	0.70	- 1.1	0.10	0.8	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0,0	0,0	0,0	0,0	0,0	Achieved
Gross external Reserve	≥ 3 months	5.3	4.7	5	5	5.79	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	36.7	30.7	35.4	29.1	55.7	Achieved
Nominal Exchange rate variation	± 10%	-4.8	4.1	0.1	- 9.3	0.50	Achieved

- **Sierra Leone**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	-5.2	-1.6	-3.3	-4.1	-6.4	Not Achieved
Annual Average Inflation rate	£10% with objective of £5% in 2019	12.9	10.4	7.2	8.1	10.8	Not Achieved
Central Bank Financing of Budget Deficit	£ 10% of previous years tax revenue	-37.7	1.7	7.2	-0.7	33.1	Not Achieved
Gross external Reserve	≥ 3 months	3.4	3.2	3.6	3.8	4.7	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	£ 70%	36.7	30.8	35.4	29.1	55.7	Achieved
Nominal Exchange rate variation	± 10%	3.3	1.1	-4.0	-3.1	-19.1	Not Achieved
Number of Criteria Respected		**5**	**5**	**5**	**5**	**2**	

- **Togo**

Convergence Criteria	Standard	2012	2013	2014	2015	2016	Remark
Primary Criteria							
Ratio of Budget Deficit to Nominal GDP	Lower than or Equal to 3%	- 5.8	- 4.6	- 3.4	- 6.30	- 8.5	Not Achieved
Annual Average Inflation rate	≤10% with objective of ≤5% in 2019	2.6	1.8	0.20	1.8	0.90	Achieved
Central Bank Financing of Budget Deficit	≤ 10% of previous years tax revenue	0.00	0.00	0.00	0.00	0.00	Achieved
Gross external Reserve	≥ 3 months	5.3	4.7	5	5	4.4	Achieved
Secondary Criteria							
Ratio of total public debt to GDP	≤70%	44.0	45.3	66.9	76.8	79.40	Not Achieved
Nominal Exchange rate variation	± 10%	- 4.8	4.1	0.1	- 9.3	0.50	143 Achieved
Number of Criteria Respected		**5**	**4**	**5**	**4**	**4**	

ANEX II. Correlation Coefficient Data

As mentioned in the section 4.5, a correlation analysis has been carried out within the countries of the ECOWAS. Three selected economic indicators have been selected as the most relevant for the present evaluation. Tables A, B, and C, which are presented below presented the data for the 15 member states of the ECOWAS from 2009 to 2018, and an additional row has been added displaying the average of the area. The standard deviation (Std Dev) column depicts the deviation for each country during that period of time; covariance column (Cov) has been obtained as the result of each country's standard deviation and the average's standard deviation. Finally, the last column reflects the Pearson's correlation coefficient (being a number between 0 and 1), which has been calculated following the common formula comparing that of each country with the average. Data from each indicator has been obtained from the World Economic Outlook Database October 2019 of the International Monetary Fund.

Application example for Ghana (Real GDP growth data):

$$\rho_{X,Y} = \frac{Cov_{XY}}{\sigma_P \sigma_Y} = \frac{1.53}{4.13\ x\ 1.14} = 0.33$$

Table A. Real GDP growth (Annual percentage data)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Std Dev	Cov	Pearson
Benin	2,3	2,1	3	4,8	7,2	6,4	1,8	3,3	5,7	6,7	1,96	1,35	0,60
Burkina Faso	3	8,4	6,6	6,5	5,8	4,3	3,9	5,9	6,3	6,8	1,51	1,24	0,72
Cape Verde	-1,3	1,5	4	1,1	0,8	0,6	1	4,7	3,7	5,1	2,00	0,56	0,24
Côte d'Ivoire	3,3	2	-4,9	10,9	9,3	8,8	8,8	8	7,7	7,4	4,49	1,15	0,22
Gambia, The	6,7	5,9	-8,1	5,2	2,9	-1,4	4,1	1,9	4,8	6,5	4,33	0,74	0,15
Ghana	5,5	7,9	17,4	9	7,9	2,9	2,2	3,4	8,1	6,3	4,13	1,53	0,33
Guinea	-1,5	4,2	5,6	5,9	3,9	3,7	3,8	10,8	10	5,8	3,27	1,46	0,39
Guinea-Bissau	3,4	4,6	8,1	-1,7	3,3	1	6,1	6,3	5,9	3,8	2,70	-1,23	-0,40
Liberia	5,2	6,4	7,7	8,4	8,8	0,7	0	-1,6	2,5	1,2	3,63	2,01	0,49
Mali	4,8	5,3	3,2	-0,8	2,3	7,1	6,2	5,8	5,4	4,7	2,18	-1,41	-0,57
Niger	-0,7	8,4	2,2	11,8	5,3	7,5	4,3	4,9	4,9	6,5	3,23	2,33	0,63
Nigeria	8,4	11,3	4,9	4,3	5,4	6,3	2,7	-1,6	0,8	1,9	3,56	0,09	0,02
Senegal	2,1	3,6	1,5	5,1	2,8	6,6	6,4	6,4	7,1	6,7	2,02	-0,01	-0,01
Sierra Leone	3,2	5,3	6,3	15,2	20,7	4,6	-20,5	6,4	3,8	3,5	10,06	9,63	0,84

Togo	5,5	6,1	6,4	6,5	6,1	5,9	5,7	5,6	4,4	4,9	0,62	0,07	0,09
Average	3,33	5,53	4,26	6,15	6,17	4,33	2,43	4,68	5,41	5,19	1,14		

Table B. Inflation rate, average consumer prices (Annual percent change)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Std Dev	Cov	Pearson
Benin	0,4	2,2	2,7	6,7	1	-1,1	0,2	-0,8	1,8	0,8	2,11	0,88	0,46
Burkina Faso	0,9	-0,6	2,8	3,8	0,5	-0,3	0,9	-0,2	0,4	2	1,36	0,82	0,67
Cape Verde	1	2,1	4,5	2,5	1,5	-0,2	0,1	-1,4	0,8	1,3	1,54	0,73	0,53
Côte d'Ivoire	1	1,4	4,9	1,3	2,6	0,4	1,2	0,7	0,7	0,4	1,30	0,40	0,34
Gambia, The	4,6	5	4,8	4,6	5,2	6,3	6,8	7,2	8	6,5	1,15	0,13	0,12
Ghana	13,1	6,7	7,7	7,1	11,7	15,5	17,2	17,5	12,4	9,8	3,82	-1,63	-0,47
Guinea	4,7	15,5	21,4	15,2	11,9	9,7	8,2	8,2	8,9	9,8	4,57	1,85	0,45
Guinea-Bissau	-1,6	1,1	5,1	2,1	0,8	-1	1,5	1,5	1,1	1,4	1,71	1,13	0,73
Liberia	7,4	7,3	8,5	6,8	7,6	9,9	7,7	8,8	12,4	23,5	4,76	2,26	0,53
Mali	2,2	1,3	3,1	5,3	-2,4	2,7	1,4	-1,8	1,8	1,7	2,13	0,67	0,35
Niger	4,3	-2,8	2,9	0,5	2,3	-0,9	1	0,2	0,2	2,7	1,97	0,54	0,30
Nigeria	12,5	13,7	10,8	12,2	8,5	8	9	15,7	16,5	12,1	2,75	0,94	0,38
Senegal	-2,2	1,2	3,4	1,4	0,7	-1,1	0,1	0,8	1,3	0,5	1,43	0,89	0,69
Sierra Leone	7,5	7,2	6,8	6,6	5,5	4,6	6,7	10,9	18,2	16,9	4,51	2,50	0,61
Togo	4,1	0,2	3,6	2,6	1,8	0,2	1,8	0,9	-0,2	0,9	1,40	0,16	0,12
Average	4,0	4,1	6,2	5,2	3,9	3,5	4,3	4,5	5,6	6,0	0,90		

Table C. Unemployment rate (Percent of total labor force)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Std Dev	Cov	Pearson
Benin	0,97	1,04	2,65	2,73	2,67	2,54	2,46	2,42	2,18	2,13	0,62	0,01	0,24
Burkina Faso	4,40	4,91	5,29	5,81	6,28	6,48	6,70	6,36	6,01	6,06	0,70	-0,01	-0,21
Cape Verde	6,49	6,75	7,29	7,22	4,25	3,66	3,11	2,60	2,49	2,48	1,96	0,10	0,63
Côte d'Ivoire	10,64	10,67	10,98	11,60	12,11	11,99	12,11	12,31	12,24	12,28	0,64	-0,02	-0,34
Gambia, The	5,17	5,32	5,91	6,01	6,43	6,48	6,81	6,77	6,63	6,71	0,57	-0,01	-0,30

Ghana	4,13	4,28	4,22	4,10	4,20	4,23	4,21	3,67	3,57	3,61	0,27	0,01	0,38
Guinea	9,62	9,68	9,63	9,42	9,73	9,55	9,54	9,44	8,91	8,90	0,28	0,01	0,57
Guinea-Bissau	4,30	4,38	4,44	4,45	4,47	4,28	4,32	4,22	4,03	4,06	0,15	0,01	0,76
Liberia	2,25	2,27	2,28	2,26	2,29	2,21	2,18	2,15	2,03	2,03	0,09	0,01	0,69
Mali	9,40	8,07	6,90	7,09	7,30	6,38	7,73	9,73	9,44	9,57	1,20	-0,03	-0,29
Niger	0,87	0,50	0,32	0,33	0,32	0,32	0,30	0,31	0,28	0,27	0,17	0,00	0,10
Nigeria	3,76	3,77	3,70	3,69	3,70	4,44	5,31	6,24	6,01	6,03	1,05	-0,04	-0,49
Senegal	10,36	10,54	10,36	9,31	8,51	7,63	6,76	6,61	6,44	6,46	1,65	0,07	0,52
Sierra Leone	4,03	3,79	3,74	4,11	4,55	4,68	4,75	4,71	4,32	4,31	0,35	-0,01	-0,28
Togo	1,89	1,93	1,86	1,90	1,81	1,79	1,69	1,65	1,66	1,67	0,10	0,00	0,48
Average	5,22	5,19	5,30	5,34	5,24	5,11	5,20	5,28	5,08	5,10	0,08		

Table D. Official exchange rate (LCU per US$, period average)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Std Dev	Cov	Pearson
Cape Verde (CVE)	80	83	79	86	83	83	99	100	98	93	7,76	2510,75	0,80
Ghana (GHS)	1	1	2	2	2	3	4	4	4	5	1,21	459,58	0,93
Guinea (GNF)	4801	5726	6658	6986	6908	7014	7486	8960	9088	9011	1355,37	538633,19	0,98
The Gambia (GMD)	27	28	29	32	36	42	43	44	47	48	7,64	2820,80	0,91
Liberia (LRD)	68	71	72	74	78	84	86	94	113	144	22,46	8209,21	0,90
Nigeria (NGN)	149	150	154	157	157	159	192	253	306	306	61,56	23820,89	0,95
Sierra Leone (SLL)	3386	3978	4349	4344	4332	4524	5081	6290	7384	7932	1444,67	577262,32	0,98
Average	1216	1434	1621	1669	1657	1701	1856	2249	2434	2506	405,98		