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<th>Description</th>
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<tbody>
<tr>
<td>AfDB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>BEAC</td>
<td>Banque des Etats de l’Afrique Centrale</td>
</tr>
<tr>
<td>BCEOA</td>
<td>Banque Centrale des Etats Ouest Africains</td>
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<tr>
<td>CB</td>
<td>central bank</td>
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<tr>
<td>CEMAC</td>
<td>Communauté Économique et Monétaire de l’Afrique Centrale</td>
</tr>
<tr>
<td>CFA</td>
<td>Communauté Financière d’Afrique</td>
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<tr>
<td>CMA</td>
<td>Common Monetary Area</td>
</tr>
<tr>
<td>EAC</td>
<td>Eastern African Community</td>
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<tr>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>ECCB</td>
<td>Eastern Caribbean Central Bank</td>
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<tr>
<td>ECCU</td>
<td>Eastern Caribbean Currency Union</td>
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<tr>
<td>ECOWAS</td>
<td>Economic Community of West African States</td>
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<td>EMU</td>
<td>Economic and Monetary Union</td>
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<tr>
<td>GDP</td>
<td>gross domestic product</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>IR</td>
<td>interest rate</td>
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<tr>
<td>MU</td>
<td>monetary union</td>
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<tr>
<td>NCB</td>
<td>national central bank</td>
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<tr>
<td>OCA</td>
<td>Optimum Currency Area</td>
</tr>
<tr>
<td>OLS</td>
<td>Ordinary Least Squares</td>
</tr>
<tr>
<td>RIR</td>
<td>real interest rate</td>
</tr>
<tr>
<td>SCF</td>
<td>Stabilisation and Cooperation Fund</td>
</tr>
<tr>
<td>UEMOA</td>
<td>Union Économique et Monétaire Ouest-Africaine</td>
</tr>
<tr>
<td>USD</td>
<td>United Stated Dollar</td>
</tr>
<tr>
<td>USSR</td>
<td>Union of Soviet Socialist Republics</td>
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<tr>
<td>VIF</td>
<td>Variation Inflation Factors</td>
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<tr>
<td>WACB</td>
<td>West African Central Bank</td>
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<tr>
<td>WAFSA</td>
<td>West African Financial Supervisory Authority</td>
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<tr>
<td>WAMI</td>
<td>West African Monetary Institute</td>
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<tr>
<td>WAMZ</td>
<td>West African Monetary Zone</td>
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<td>WAMZS</td>
<td>West African Monetary Zone Secretariat</td>
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<tr>
<td>WEO</td>
<td>World Economic Outlook</td>
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<td>WB</td>
<td>World Bank</td>
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Establishment of West African Monetary Zone

Introduction

With the undeniable progress of globalisation, integration becomes the power word in many regions all over the world. African continent is not an exception, particularly not the area of Western Africa where the first ideas and initiatives for regional cooperation were formed right after the process of decolonisation in 1960s. The withdrawal of Great Britain and France from their colonial territories created a fragmented system of many small unstable states with artificial borders and very little experience with self-government. Due to its colonial history the region is still divided into two zones – the francophone and the anglophone one. Since then the ideology of Pan-Africanism has become the core of Africa’s development strategy. But this concept exists rather as a utopian vision of democratically thinking individuals but its realisation is strongly troubled by weak political will, unstable national governments and numerous wars for power in most of the Sub-Saharan Africa. However, the All-African spirit is very strong in sports, and some African countries succeeded in building several smaller organisations on sub-regional level from 1960s to 1980s, mostly focused on economic cooperation as a key ingredient of further development.¹

In the western parts of Sub-Saharan Africa, the main building block is represented by the Economic Community of West African States (ECOWAS) which is a part of a continental project African Economic Community. ECOWAS was established in 1975 and it currently comprises of fifteen independent states with the perspective of building a single market and later a monetary union among its members. The formation of a common currency zone was envisaged to open a possibility to the participating countries to benefit from an enhanced trade, higher investment, better fiscal discipline, price stability and boosted economic growth².

Eight countries, all former French colonies, formed Union Economique et Monetaire Ouest-Africaine (UEMOA) in 1994 to promote their economic potential using the benefits of common currency, the CFA franc. The original date for the

¹ Oshikoya, 2010.
² Cham, 2009.
completion of a monetary integration of the whole West African region was set on the year 2000. However, in 1999 it was apparent that this goal is unachievable and a new approach was adopted. The “two-track” concept, initiated by Ghana and Nigeria, proposed the establishment of another sub-regional cooperation between those states that do not use CFA franc but have their own currencies. These countries were to create a functioning monetary union with a common currency Eco which would afterwards merge with the existing franc zone UEMOA in 2004.³ Subsequently in April 2000, the Gambia, Guinea, Ghana, Nigeria and Sierra Leone launched the West African Monetary Zone (WAMZ) on its summit in Lome, Togo in December 1999⁴. In February 2010, Liberia joined.

Figure 1: ECOWAS membership scheme.

Nevertheless, even the adjusted two-track approach did not support the integration process as expected and the proposed merge in 2004 had to be postponed to the end of 2009. In the beginning of that year, the Eco was still not introduced in either of the WAMZ countries and the integration status report clearly stated that another adjournment is inevitable. Lack of commitment of member states, distrust and fear of smaller countries from being dominated by bigger ones, were pointed out as major causes of the set back of the integration process. The new date for completing the establishment of fully operational monetary zone in WAMZ countries was set on January 2015, followed by the ultimate introduction of the single currency for the whole of Western Africa in 2020.⁵

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³ A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union, 2006.
⁴ Oshikoya and Tarawalie, 2009.
⁵ Oshikoya, 2010.
Objectives and methodology

This diploma thesis is focused on planned establishment of a monetary union between six Sub-Saharan countries – the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone – which is expected to happen in January 2015 as the West African Monetary Zone (WAMZ).

The main objective of this diploma thesis is to present a comprehensive assessment of the monetary integration project in those African countries, including its institutions and fiscal resources, evaluation of participating states according to the monetary integration theories, convergence criteria for member states and their fiscal stability. Subsequently it will offer suggestions for possible adjustments of certain WAMZ parameters, including the accession requirements. In order to achieve this main goal, several partial objectives will be targeted in the analysis of West African Monetary Zone problematic.

The first theoretical part will introduce the basic theories of monetary integration and historical as well as current examples – the existing monetary unions will then serve as an inspiration and comparison for WAMZ members and structure. In this part of the thesis, the study and presentation of existing literature will be the key method for establishing the background of further practical analysis. The topic of currency unions is a study subject of many authors such as Mundell (1961), MacDougall (1977), Bayoumi (1994), Bergman (1999), Frankel and Rose (1998), Alesina and Barro (2000) or Horvath and Komarek (2002).

Following this basic introduction is an individual analysis of the six WAMZ countries according to the Optimal Currency Area (OCA) theory which is theoretically explained in the works of Mundell (1961), Ricci (1997), Alesina and Barro (2000), Lane (2000), Rose (2000), Horvath and Komarek (2002), Houssa (2004), Sy (2006), Goncalves, Rodrigues and Soares (2008), Milbredt (2008) and Dybczak and Melecky (2011). The statistical data presented in graphs were taken from the database of World Bank (WB) and International Monetary Fund (IMF). For certain aspects of the OCA theory, namely the synchronisation of business cycles and trade flows,
a correlation matrix is used to assess better mutual links between the indicators and between the countries.

Since one of the most important aspects of the creation of West African Monetary Zone is the setting of convergence criteria, their fulfilment by all six countries is the point of focus of another chapter. Four primary convergence criteria are in the spotlight of the analysis although the compliance of states with a secondary set of another six convergence rules is also presented in the final part of the chapter. For this valuation, the data were taken again from the World Bank, concretely for the primary criteria, and from the statistical section of the West African Monetary Institute (WAMI).

Following part will take a look on the dispute about the necessity of convergence among the six WAMZ countries before the establishment of the union and its possible positive effects on the union ex post. This topic has been a well studied in works of Roe (2000), Horvath and Komarek (2002), Fielding and Shields (2004), Lane (2006) and Balogun (2009). The second half will be applying the econometric analysis to find out which of the macroeconomic policies could influence the economic performance and synchronisation the most.

Fifth analytic chapter will try to identify which countries might be the biggest gainers and losers in case of their accession to the West African Monetary Zone, as well as what would be the predicted benefits and costs.

Partly connected with the criteria chapter of the thesis is the next question of fiscal sustainability in WAMZ countries. The problem with a balance between the monetary and fiscal management and their division under a common currency is studied by Uctum and Wickens (2000), Debrun, Masson and Pattillo (2001), Galí and Perotti (2003), Polito and Wickens (2005), Budina and van Wijnbergen (2007), Oshikoya and Tarawalie (2009) and Deyshappriya (2012). These authors also suggest several methods of evaluating the level of fiscal sustainability which are applied to the WAMZ countries in this work. Due to the lack of data for Sub-Saharan countries, it is particularly the accounting techniques which were possible to be used for the assessment of fiscal policies. This methodology is based on comparison of certain pairs of macroeconomic indicators, such as the interest rate, GDP growth, public debt and deficit or debt growth. If a chosen indicators is in a prescribed relationship
Establishment of West African Monetary Zone

(lower or higher) to the paired indicator, then the fiscal management can be considered sustainable which means that the indebtedness is in a limit and does not possess a danger for future development. Furthermore, an econometric analysis of what has an impact on the indebtedness will be conducted and its results applied on the convergence criteria for WAMZ.

Last analytic chapter offers a brief overview of the planned structure of West African Monetary Zone, namely the institutional framework, central budget and members' financial contributions. The key organisational units of WAMZ is the West African Monetary Institute and most importantly the West African Central Bank which will be held in a special focus in the overview. For this survey, the main informational source is the official WAMZ documentation, such as declarations, statutes, reports and agreements, provided by the West African Monetary Institute which is currently the essential body operating on behalf of the WAMZ.

Finally, the discussion part of the thesis will be looking into the possibilities of future design of the West African Monetary Zone formation and suggestions of possible adjustments with regard to the found shortages and problems in current proposition of WAMZ establishment. These recommendations will be assessed through the findings in previous chapters – on the theories and real conditions in the WAMZ countries. Is it really necessary to reach fulfilment of the OCA theory requirements before the introduction of a monetary union? Do the potential WAMZ countries have to comply with the convergence criteria in order to launch the common currency? Which criteria really matter the most for ensuring a fiscal stability in the union? Is the budget of West African Monetary Zone sufficient? What is the danger of Nigerian giant’s participation in WAMZ for the functioning of monetary union? The process of assessing these questions will mostly use econometric techniques, especially the correlation matrix and regression analysis via the Ordinary Least Squares model, which allows to examine and explain the connections between specified variables. Most importantly, the discussion will be working with the

This last part will include the main contribution of this thesis – the proposition of modifications of certain measures as a part of establishment of the West African Monetary Zone which is in the process of preparation in Sierra Leone, Nigeria, Liberia, Guinea, Ghana and the Gambia.
Establishment of West African Monetary Zone

Two authors should be mentioned when it comes to the problematic of West African Monetary Zone because they specialize in it and their works and results are looked at and referred to throughout this thesis – Emmanuel Dele Balogun from the University of Lagos, Nigeria, and Dr Temitope Waheed Oshikoya, acting Director-General of the West African Monetary Institute.

From the methodological point of view it should be stressed that many efforts of a profound assessment of any West African Monetary Zone question is made difficult by the lack of available data. This obstacle is generally characteristic for all of Africa where the only source of statistical data is provided by the World Bank, International Monetary Fund and the West African Monetary Institute, and in all these sources the African data are usually available only from year 2000 onwards. National statistical structures in WAMZ states are either non-existent or do not provide any data publicly.

As was already stated in previous description of individual chapters, those statistics that were available are either presented in graphs and tables or included in an econometric analysis. For the latter approach an open-source software gretl was used. The essential technique employed in this thesis is the regression analysis, concretely the Ordinary Least Squares (OLS) model, which is a statistical tool enabling to explore relationships between a dependent variable on one or more explanatory (independent) variables:

\[ Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n + u, \]

where \( Y \) stands for dependent variable, \( x \) for explanatory variable, \( \beta \) for the estimator and \( u \) for the error term. For the interpretation of model, the \( \beta \) estimator is the key part as it shows how does each explanatory variable \( x \) influence the dependent variable \( Y \). The focus of regression analysis is to estimate an average value of one variable based on fixed values of other variables. Closely connected to the regression is the correlation analysis which measures the strength of association between two variables.\(^6\)

\(^6\) Gujarati, 2003.
\(^7\) Gujarati, 2003.
Monetary integration theories and historical examples

Monetary unions are created for different reasons which drive countries towards accepting a common currency but it is safe to say that the glue that holds these unions together is the political unity of participating countries. The political interests are connected with the economic incentives and other reasons such as common history, language, culture or religion.\(^8\)

It is the economic side of the common currency which is intensely discussed in the literature. Concretely, the pros and cons of joining a monetary union. The costs are associated with the loss of a national monetary autonomy, which is handed over to a common monetary authority. So the country no longer has the ability to influence money in circulation, interest rates or de/revaluation of its currency, for stabilisation of national economy.\(^9\) On the other hand, there are benefits that a common currency can offer to its member states. Those are the reduced costs of exchange of national currencies and elimination of risks from uncertainty about the exchange rates development. Combination of these two effects should lead to a promotion of economic efficiency within the monetary union.\(^10\)

Traditionally the discussion of costs and benefits of monetary union establishment is directed by the Optimum Currency Areas (OCA) theories, pioneered in 1960s by Robert Mundell. He defined an optimum currency area as a domain with stable fixed exchange rates and stressed the importance of internal product factors mobility for the successful establishment of currency union\(^11\). The loss of exchange rate as an adjustment tool advocates the need for convergence programmes to ensure greater policy coordination as a stable economic foundation for monetary union. It is the production factors mobility which should help to reach the stability goal since in

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\(^8\) Bordo and Jonung, 1999.
\(^9\) Coleman, 1999.
\(^10\) De Grauwe, 2009.
Mundell’s theory, the movement of labour is supposed to work as an automatic stabilizer of asymmetric shocks which are the pitfalls of monetary integration.

Kenen\textsuperscript{12} came with his argument that greater diversification of production structure can push down the danger of asymmetric shocks occurrence or at least their strength. Further elaboration of the optimum currency area characteristics came in the work of Mckinnon\textsuperscript{13} who stated that the openness of economy negates the effectiveness of exchange rate changes. Hence it is an open economy which can benefit more from accessing a monetary zone since the loss of the possibility to use its exchange rate as a tool of monetary policy is not so painful.

To summarise presented theories, it should be said that there is no concrete guideline as to how the future performance of the currency union can be predicted. There are, however, six key requirements that are most often suggested as vital indicators of a currency union’s success potential\textsuperscript{14}:

- **openness of economy** (in an open economy the effectiveness of exchange rate policy is considered smaller and so the loss of independent national monetary policy to the common bank is less painful for the state);

- **diversified structure of economy** suggests that the country’s economic performance is less vulnerable to the shocks and so there is lesser danger of occurrence of asymmetric shocks (or better to say their impact on the economy is less significant) in the monetary union which the central bank would have to deal with, as it is more difficult to adjust asymmetric disturbances with a common monetary policy;

- **similarity of business cycles** is connected to the above explained use of common monetary policy that can much better react to similar developments in all countries of the monetary union;

- **mobility of production factors**, especially the labour force (if a country is experiencing a negative demand shock when the unemployment rises, high integration of labour markets facilitates placement of unused workers to the country with positive demand shock where the production needs them);

\textsuperscript{12} Mundel and Swoboda, 2006.


• **flexible prices and wages** are closely related to the previous situation when the country needs to adjust to a negative demand shock and wage flexibility can prevent increase of unemployment (workers accept lower wages);

• **integrated financial markets** also provide adjustment mechanism to asymmetric shocks (a change in interest rates can trigger equilibrating capital movements of investments between the countries of the union).

The chart above primarily follows the first theories of the OCA from Mundell, Mckinnon and Kenen but the last stage shows another two vital features of any monetary union – fiscal transfers and commonality of destiny.

Previous theories focused on creating such an environment in the monetary union that would minimize or prevent asymmetric shocks. But it was MacDougall\(^{15}\) in 1977 who dealt with the question of how to manage the asymmetric shock when it does occur. Once there is a problem, the remedy should be provided by a sufficiently large central budget of the union. A small budget does not enable to employ stabilizing mechanisms which would support the region affected by the negative shock and so the costs of monetary union participation rise and the union’s existence becomes impracticable. He looks for inspiration to the federal regimes of Germany and the United States where the central expenditure counts for 20-25 % of country’s GDP. Although from one half to two thirds stay in the hands of lower local government, it is still used to ensure geographical equalization and to cushion any temporary fluctuations. Since the EMU was not a federation yet, MacDougall suggested that for this pre-federal phase of building the integration a budget of 2-2.5 % of union’s GDP would be sufficient.

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\(^{15}\) MacDougall, 1977.
Regional currency areas originate from various roots – historical, economic and political. And with studying the examples of monetary unions in practise, it is clear that the commonality of destiny (the political commitment and vision) is a sine qua non for any monetary integration project. Because when a conflict between union’s and national interests occurs, participating states have to be willing to accept certain costs it brings\textsuperscript{16}. Political will and homogeneous national preferences play an important role in promoting growth and lowering the costs of any trade-offs which could appear within the monetary union\textsuperscript{17}.

The OCA theory gained popularity and attracted further research in the field over the last decades. New studies criticise the original theories for their statical point of view and ignorance of impacts cause by changes in policies. Frankel and Rose\textsuperscript{18} brought a serious discussion about the necessity of compliance with the OCA theory requirements when they argued that international trade and correlation of business cycles within the zone are endogenous and hence they can be achieved \textit{ex post} after the launch of monetary union, via the enhanced trade eased by the common currency. Horvath\textsuperscript{19} supported this idea with his opinion that policy coordination increases the synchronisation of cycles and therefore prevents the occurrence of asymmetric shocks. Thus, the best way to become an optimum currency area is to actually establish the monetary union and its functioning will lead to the opening of economies, boosting mutual trade and synchronising business cycles.

Returning back to the beginning and to the question of benefits and costs of joining monetary union, it can be concluded that there is no general ultimate rule on how much will the country have to sacrifice and how much it will receive in return for its membership. Both, the benefits and costs, are dependent on the character of the country and its compliance with the OCA specification, which are designed to lower the costs of adopting common currency\textsuperscript{20}. Based on that, the type of country with the strongest tendencies to give up its own currency is a small country with high inflation which is close to a larger and monetarily stable country from which it

\textsuperscript{16} Wyplosz, 2012.
\textsuperscript{18} Frankel and Rose, 1998. \textit{A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union}, 2006.
\textsuperscript{19} Horvath and Komarek 2003. \textit{A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union}, 2006.
\textsuperscript{20} Grabner, 2003.
can benefit in the area of lowering inflation and financial credibility.\textsuperscript{21}

The fact that neither this conclusion nor the six rules of the original OCA theory play much role in the decision-making when it comes to the establishment of new monetary unions stresses the importance of political will.\textsuperscript{22} Practical demonstration is evident in following historical examples of monetary integration.

**Economic and Monetary Union (EMU)**

Majority of specialized literature brand the Economic and Monetary Union of the European Union as the most successful case of monetary unification. The first significant step towards its establishment came with the Werner report in 1969 which sought to deepen the stabilisation and harmonisation of exchange rates. Ten years later, the European Monetary System was created with the objective to promote exchange rate stability through macroeconomic reforms, and ultimately to create a stable monetary zone in Europe. Another important step came in 1987 with the signing of the Single European Act, leading to the Delors Report in 1989 which specified the single market, competition policy, common policies of regional development and coordination of macroeconomic policies as the foundation for future economic union.\textsuperscript{23} Finally in 1992 the Treaty on European Union established a set of so called Maastricht criteria (inflation rate, public finance, interest rates and exchange rates) as a guideline for further convergence towards the monetary union.\textsuperscript{24} Afterwards the actual implementation of concrete steps took a faster track and only two years later the European Monetary institute started its task of coordination of monetary policies and central banks of member states in order to prepare ground for the take off of the European Central Bank (ECB) in 1998. Closely after, in January 1999 a full monetary union with a common monetary policy and common currency Euro (in physical form went into circulation in 2002) was established as the Economic and Monetary Union of the European Union.\textsuperscript{25}

Nowadays the Eurozone includes Austria, Belgium, Finland, France,

\begin{itemize}
  \item \textsuperscript{21} Ishyama, 1975. Alesina and Barro, 2000.
  \item \textsuperscript{22} The crucial role of non-economic dimension can be clearly showed in the existence and prosperity of countries like India or China which unify diametrically different regions and would not pass the OCA criteria either but are tight together through historical development and political and cultural motives for continuing integration.
  \item \textsuperscript{23} One currency for one Europe – the road to the euro, 2006.
  \item \textsuperscript{24} Treaty on European Union, 1992.
  \item \textsuperscript{25} Masson and Pattillo, 2001.
\end{itemize}
Establishment of West African Monetary Zone

Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Greece, Slovenia, Cyprus, Malta, Slovakia and Estonia. They all use the Euro as an official currency and have their monetary policy governed by the ECB, although each of them keep their national central bank (NCB) which is a part of the European System of Central Banks, and are represented in the Governing Council of the ECB. Foreign reserves are partly pooled and partly kept by national central banks. Even though all EMU members are advanced countries with relatively low inflation and long history of cooperation, the transition process took about fifty years and compliance with strict convergence criteria was required.

There are several interesting settings in the model of the EMU which have an important inspirational role for other monetary unions. They are all embedded in the Treaty on Functioning of European Union:

(a) **prohibition of monetary financing** bans any usage of credit overdraft of the ECB or NCBs in favour of any Union bodies or national authorities of member states as well as direct purchase of debt instruments from ECB or NCBs by any Union body or national authorities (Article 123);

(b) **no bail-out clause** states that the Union is not liable for any commitments of any member state’s government since no participating country should be responsible for fiscal management of other members (Article 125);

(c) to supervise the fiscal conditions in the EMU member states serves the Stability and Growth Pact which is a framework consisting of two parts – the preventive arm and the corrective arm – which aim on keeping sound permanent budgetary policies in the zone (based on Article 121 and 126).

Although the design of the EMU, its convergence criteria and functioning rules as well as institutional framework is highly influential to other integration projects in different regions, there can be still found some critique. Primarily, the fact that even though the paper design of EMU is precise, the reality unfortunately is less optimal and many states do not respect the boundaries established in the Treaty. Especially the loose approach to the fiscal rules were one of the problems leading to the debt crisis in Europe and brought into questioning the very credibility and viability of the

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Establishment of West African Monetary Zone

Euro itself.

And secondly, its non-fulfilment of the OCA theory criteria in the first place. Namely the openness of participating economies, insufficient diversity of production, heterogeneity of national preferences about fiscal and monetary objectives and poor labour mobility, were pointed out as imperfections undermining the potential success of the union. In spite of this, European leaders decided to move forward with the unification following the commonality of destiny fuelled by their political commitment to the European Union idea.  

CFA franc zone

This common currency union is actually constructed from two zones – the West African CFA zone and the Central African CFA zone, both using the CFA franc as the official currency. Unlike in the case of the EMU, these unions came into existence rather from the historical foundation because almost all member states used to be colonies of France and once they gained independence, it was simply easier to keep the franc as their currency. It had several benefits – saved costs of introduction and transition to new national currency and new monetary institutions, non-interruption of trade links with France due to the exchange barriers, benefits of established and stable currency and a guarantee of CFA franc by the French Treasury. The CFA franc is pegged to Euro (since 1999, before pegged to franc) which ensures its international convertibility but on the other hand it also limits the autonomy of monetary policies of both zones.

In the west, the Union Economique et Monetaire Ouest-Africaine (UEMOA) consisting of Benin, Burkina Faso, Cote d’Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo is governed by Banque Centrale des Etats Ouest Africains (BCEOA). While in the central region of the continent, Cameroon, Central African Republic, Chad, Republic of the Congo, Equatorial Guinea and Gabon form the Communauté Économique et Monétaire d’Afrique Centrale (CEMAC) with the Banque des Etats de l’Afrique Centrale (BEAC). Each monetary zone issues its own CFA franc, but both types are pegged in the same rate to the Euro and they are also exchangeable one-to-one against each other. Reserves of national central banks of member states are kept

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28 A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union, 2006.
by French Treasury.\textsuperscript{30}

Since 1970s, both zones started to create an economic background for the monetary union. In theory, in Western CFA zone as well as in Central CFA zone, a common tariff system, harmonized tax system and surveillance of fiscal policies were introduced but in practice they are unevenly applied.\textsuperscript{31}

In 1990s both CFA franc zones experienced a banking crisis caused by an inadequate control of banking system and its exploitation by national governments. Although the monetary financing and no bail-out rule are somehow applied in the settings of the zones, government bodies are not prohibited to borrow from commercial banks which then obtain refinancing from the central bank at concession rates. This led to extensive borrowing and serious undermining of fiscal discipline. In the end, it was the BCEAO and BEAC who had to play the major creditor and finance the recovery of the system. This only further encouraged growing unwillingness of French Treasury to keep of backing up the convertibility of the CFA franc. This development is an incentive for restructuring the economies of member states and it is also one of the rationales behind the efforts to create a new and extended monetary union with the Eco currency in Western Africa giving the UEMOA desired monetary autonomy.\textsuperscript{32}

**Common Monetary Area (CMA)**

Another example of monetary unification efforts in Africa can be found in the south of the continent where South Africa, Botswana, Lesotho and Swaziland signed and agreement in 1974, establishing that Southern African Rand will circulate freely in all four countries as a legal tender alongside their national currencies.\textsuperscript{33} After gaining independence from Great Britain, the pound sterling was replaced by the rand in 1961 and was used in former colonies in the south. However, newly freed states started to introduce own national currencies and establish national banks and rand became a co-currency. In 1975, Botswana opted out from the 1974 Agreement and rand is in circulation there only unofficially.\textsuperscript{34}

\textsuperscript{30} Masson and Pattillo, 2001.
\textsuperscript{31} Masson and Pattillo, 2001.
\textsuperscript{32} Fielding and Shields, 2004.
\textsuperscript{33} Agbeyegbe, 2003.
\textsuperscript{34} Tavlas, 2008.
Although all states of the union keep their own currencies and central banks, they all accept common monetary policy determined by the Reserve Bank of South Africa which is the leading power in the coalition. The NCBs of Lesotho and Swaziland issue their own currencies which are mutually exchangeable one-to-one against each other as well as against the rand, but they are obliged to back their own currencies fully with foreign reserves.\(^{35}\)

From the OCA theory point of view, the CMA is another example of stronger historical and political reasons for the integration because economically the Rand Area does not fit the specification of an optimum currency area. Particularly it is pointed to the high vulnerability to external asymmetric shock and insufficient labour mobility. Despite these conclusions, the vision of lowering cross-border transaction costs for trade and investment was enough of an economic benefit for the states to commit to the union.\(^{36}\)

**Eastern Caribbean Currency Union (ECCU)**

Looking away from the African continent, another example of successfully running monetary union can be found in Eastern Caribbean where eight small island countries – Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines – formed the Eastern Caribbean Currency Union in 1965.\(^{37}\)

The Eastern Caribbean Currency Authority was established in the same year but in 1983 it was replaced in its role of the ultimate monetary authority by the Eastern Caribbean Central Bank (ECCB) which is nowadays the creator and supervisor of the single monetary policy in the union. The ECCB is also responsible for issuing the Eastern Caribbean Dollar which used to be pegged to the Pound Sterling and since 1976 it is tight to the US Dollar. Just like in the EMU settings, there is a strict prohibition of financing national governments of member countries which has been maintained during the functioning of the union. However the leading objective of the ECCB’s management is to ensure foreign exchange cover which is prescribed as 60% or higher. Foreign reserves are fully pooled under the supervision

\(^{36}\) Wang, Masha, Shirono and Harris, 2007.  
of the ECCB and are not assigned to individual countries.  

There are serious differences between the eight Eastern Caribbean countries, especially with respect to the income level and institutional structure. Their mutual trade in the region is low covering less than 10% of total trade of member states. All eight countries are characterised by an export dependent economy with a production structure focused on primary commodities like banana and sugar. Although tourism became an important source of national income in last years, the ECCU countries can hardly be considered compliant with the OCA criteria.

**The Rouble Zone**

In the preceding parts, the successful cases of monetary unification were presented, but it should be shown that not every common currency project have a happy ending. The collapse of USSR brought the same destiny to the monetary zone of Soviet rouble, which will be the first demonstration of a failed currency union. All post Soviet-states inherited the rouble in 1991 but it was also the beginning of disintegration efforts within the zone which brought it to its ultimate end in 1993.

During the period of Soviet rouble, the monetary policy was in the hands of the State Bank of the USSR, which issued the Soviet rouble for circulation as an official currency in the area of today’s Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

When the central planning system ceased, so did the control over the banking system in the Soviet union. Suddenly, it was clear that the rouble is an inconvertible currency suffering from high inflation. Monetary situation in Russia itself was less than ideal too and on top of it, there were significant economy structure differences between Russia and the rest of former Soviet republics which posed an additional danger of asymmetric shocks. For all these reasons, all the states of former USSR saw as more preferable to introduce their own currencies even though those would be

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41 Bordo and Jonung, 1999.
starting off as weak and inconvertible.42

As a main justification of keeping the common currency was relatively large intra-union trade and the avoidance of costs connected with the transition to new national currencies. But the intensive trade flows within the Soviet block rapidly dropped after the disintegration of the USSR when countries shifted their attention to newly available Western markets. Other than that, there were almost no economic arguments advocating continued existence of the rouble zone. Plus the political reality again reflected the necessity of the willingness of national leaders to tight their countries into a monetary union. Most of the former Soviet union states were looking more to escape the system of previous forced regime rather than to build on it their future.43

**Eastern African Community (EAC)**

Looking back to the African experience with the monetary integration, a failed project of East African Community will be presented as the final example of historical monetary unions.

Just like in the case of its Southern African neighbour, the idea of sharing a common currency emerged upon the verge of gaining independence from colonial powers in 1960s. It was concretely Kenya, Tanganyika (today’s Tanzania) and Uganda who agreed on keeping the East African sterling as a second currency, which was the official payment unit under the previous British rule in those states. All three countries established separate national central banks and introduced their own national currencies but the East African sterling served as a freely available tool for an exchange at par. Moreover, individual national currencies were in practise usable for any type of transaction in all the countries in the union. Even the national monetary policies of the NCBs were to some extend coordinated.44

However, major disruptions occurred in 1970 as an effect of nationalisation policies in Tanzania and later on in Uganda. Exchange controls and prohibition of export and import of national currencies were imposed which severely harmed the functioning of the union and triggered further controls, restrictions and barriers

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between the three states. This was the beginning of a disintegration process which brought the collapse of the EAC in 1977 and its following official break-up in 1983. There were two main reasons behind this unfavourable destiny of the EAC. Firstly, the three countries were on different level of industrialization, experiencing asymmetric shocks from similar production. This influenced uneven trade flows between Tanzania, Uganda and more developed Kenya which gave way to questioning whether the monetary system is not only one-sidedly advantageous for Kenya. And finally, the unification was undermined by growing disparities in ideological preferences since Tanzania pursued a socialist model while Kenya and Uganda were committed to the capitalist path. Parting of political visions of participating countries was the last blow to the already falling-apart union.

It is interesting to mention that there is a current plan to establish a new monetary union in Eastern Africa in 2015.

Table 1: Overview of historical monetary unions.

<table>
<thead>
<tr>
<th>Monetary Union</th>
<th>Currency</th>
<th>Established</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic and Monetary Union (Euro Area)</td>
<td>Euro</td>
<td>1999</td>
<td>operating</td>
</tr>
<tr>
<td>CFA franc zone</td>
<td>CFA franc</td>
<td>1945</td>
<td>operating</td>
</tr>
<tr>
<td>Eastern Caribbean Currency Union</td>
<td>Caribbean Dollar</td>
<td>1965</td>
<td>operating</td>
</tr>
<tr>
<td>Common Monetary Area (Rand Area)</td>
<td>Rand</td>
<td>1974</td>
<td>operating</td>
</tr>
<tr>
<td>East African Community</td>
<td>East African sterling</td>
<td>1966</td>
<td>failed</td>
</tr>
<tr>
<td>The Rouble zone</td>
<td>Soviet rouble</td>
<td>1922</td>
<td>failed</td>
</tr>
</tbody>
</table>

*Source of data: Masson and Pattillo (2001), Bordo and Jonung (1999).*

Six historical examples of monetary integration from different regions were presented in this chapter, some persisting until today and some already banished. From both groups there are valid lessons to be learnt about the viability of currency unions.

Firstly, all the operating zones did not came into existence out of a blue but were following a long integration process which laid the foundation of closer cooperation through establishment of customs union or a single market. Also they are all composed of countries with shared history and some even cultural background. And secondly, the main reason for a break-up of the two failed currency

zones was the difference in economic structure and level of development, and most importantly the lack of ideological unity of their member states. In case of East African Community the split between the socialist and capital visions were the first steps towards the ultimate decomposition. The Rouble zone fell apart when the political restraint from Soviet Russia ceased to hold the USSR together. Bottom line, in all these models, none of the state groups formed an optimum currency area described by the OCA theory and in the end, the success or the failure of the union was determined by political interests.

Thus, in order to prevent any similar negative developments as those experienced by the presented six currency zones, countries trying to create a monetary union should take into consideration the historical, cultural and political aspects of their national identity when looking for partners. They should start with building an economic cooperation, removing barriers, boosting mutual trade and set up a platform for closer integration and convergence. Once the union is established, a proper and strict supervision over all rules, especially fiscal ones, should be put into place, including sanction system for breaching those regulations. The participation in a monetary union has to be perceived as beneficial for all members, otherwise some of them could over time sabotage the whole integration by starting tariff or other restrictions, ignoring fiscal rules or denying their financial contributions for the central budget.

Two surviving monetary unification projects will serve as an inspiration and comparison for the analysis of West African Monetary Zone in following chapters – the EMU and the CFA franc zone. The first one is considered the most successful case of monetary union and is looked up to by many authors, and the latter one is the closest to WAMZ in terms of economical, political and social conditions.
Analysis of West African Monetary Zone under the OCA theory

The potential member countries of West African Monetary Zone represent a diverse set of states. From the smallest African country, the Gambia, to the largest and economically strongest state, Nigeria which has more than three times larger population than all the other WAMZ countries together.

This quick characteristic may suggest that the six countries are ideal for a regional currency union, creating an entourage of four smaller states benefiting from their partnership with larger Nigeria and Ghana. But this swift judgement might prove premature and it is the goal of following pages to evaluate the suitability of the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone for the formation of the West African Monetary Zone in more detail following the theory of Optimum Currency Areas which was presented in the theoretical overview.

To remind the conclusions of the OCA theory, an ideal group of countries to form a monetary union has following characteristics:

(a) openness of the economy preferably with high mutual trade flows,
(b) diversified structure of economy,
(c) synchronized individual business cycles without asymmetric shocks,
(d) high mobility of production factors (especially labour) between the states,
(e) flexible prices and wages and
(f) integrated financial markets.

All these requirements which, in theory, should be found in the potential monetary union participants in order to create an ideal environment for introducing common currency, will be analysed now in the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone.
Structure of economy

Graph 1: Sector shares in the economy (% of GDP) in 2002 (left) and 2010 (right).

The graph reveals that in 2002, the five countries had different economy structures – with strong rural Nigeria and Sierra Leone and, on the opposite, service oriented Gambia and Guinea. On average, agriculture was the leading sector with 38 % on the GDP, followed closely by the services while industry only accounted for 25 % of the output.

Over the next eight years a shift towards more industrialized and service providing structure could be expected but, examining the second graph, that was not much the case. The average shares of all three sectors stayed almost the same in WAMZ. This small change can be explained by the involvement of Liberia whose 60% agricultural ratio and nearly non-existent industry notably influenced the statistics. Liberia, skipping the previous ten years of convergence initiatives of the original WAMZ states and having experienced years of civil wars which undermined the economic progress, is mostly agriculturally based economy with seriously underdeveloped industry sector.

Even though, if Liberia is omitted, all the other countries demonstrate only slight growth of the service and industry sector which. In any case, severe differences between all six countries are apparent in the graphical representation which suggest an unfavourable result in the first OCA criterion. This analysis is supported by a more detail look on the commodity structure of trade which is provided below (data
for Liberia and Sierra Leone is not available).

Graph 2: Structure of exports (left) and imports (right) of goods in 2010.

While the import side in all four countries is dominated by manufactured goods, there are clear differences in the composition of exported products. Nigeria’s trade is dependent on the rich deposits of oil which supplies almost 90 % of all exports. Also, Guinea benefits from its reserves of bauxite, alumina and gold. On the other hand, Ghana and the Gambia that do not have rich supplies of natural materials rely mostly on their agricultural exports.

Luckily, full set of data on general export and import value of goods for all six countries is available which permits the following correlation analysis. It examines the co-movements of export flows of the six WAMZ countries. The correlation coefficients between -1 and 1 show the strength and direction of associations.

Table 2: Correlation matrix of net exports of goods and services in 1970-2011.

<table>
<thead>
<tr>
<th></th>
<th>Gambia</th>
<th>Ghana</th>
<th>Guinea</th>
<th>Liberia</th>
<th>Nigeria</th>
<th>Sierra Leone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gambia</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>-0.1413</td>
<td>0.0682</td>
<td></td>
<td>0.2991</td>
<td>-0.1574</td>
<td>0.1779</td>
</tr>
<tr>
<td>Guinea</td>
<td>0.0845</td>
<td></td>
<td>0.5656</td>
<td></td>
<td>-0.5087</td>
<td>0.3110</td>
</tr>
<tr>
<td>Liberia</td>
<td>1.0000</td>
<td>0.6054</td>
<td>1.0000</td>
<td>-0.2598</td>
<td>-0.5590</td>
<td>0.1609</td>
</tr>
<tr>
<td>Nigeria</td>
<td>-0.2928</td>
<td>0.0000</td>
<td>0.0000</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>0.3088</td>
<td>0.3110</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The matrix above supports the explained dominance of oil exports in Nigeria’s trade statistics which is expressed in negative correlation with all the other economies in
Establishment of West African Monetary Zone

WAMZ as their economies’ production is oriented in a different way. Although the other five countries are mostly positively correlated, the only significant figures (higher than 0.5) are achieved between the net exports of Liberia and Ghana and Guinea. It is not a surprise in case of Ghana which, just like Liberia, is among the agriculturally based economies. On the contrary, Guinea is highly dependent on the bauxite and alumina exports and so it could be rather expected that it should be correlated with Nigeria, but it has to be taken into account that the prices of different commodities influence these indicators as well. Therefore prices of oil and bauxite, with no mutual connection, determined on separate markets, prevent the correlation between these two countries.

Overall, when it comes to the economy and trade structure, there are severe differences between the countries of WAMZ. However, some OCA theories suggest that diverse economies, although more vulnerable to the asymmetric shocks, provide better starting point for specialization within the union which is one of the expected outcomes of the unionisation since it should encourage the implication of the economies of scale and more effective allocation of resources. Balogun presents a view that it is the synchronisation of trade that is more significant for the assessment of potential creation of currency union rather than the criterion of business cycle synchronisations which is included in the standard OCA theory literature. This opinion is further explored in the following chapters.

Synchronisation of business cycles

The OCA criterion of synchronisation of business cycles is connected to the efficiency of common monetary policy as was explained earlier.

Table 3: Correlation matrix of annual GDP growth in 2000-2011.

<table>
<thead>
<tr>
<th></th>
<th>Gambia</th>
<th>Ghana</th>
<th>Guinea</th>
<th>Liberia</th>
<th>Nigeria</th>
<th>Sierra Leone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gambia</td>
<td>1.0000</td>
<td>0.1415</td>
<td>-0.4548</td>
<td>-0.5126</td>
<td>0.7007</td>
<td>-0.6681</td>
</tr>
<tr>
<td>Ghana</td>
<td>1.0000</td>
<td>0.0000</td>
<td>0.0438</td>
<td>0.0426</td>
<td>1.0000</td>
<td>-0.3786</td>
</tr>
<tr>
<td>Guinea</td>
<td>1.0000</td>
<td>-0.0438</td>
<td>1.0000</td>
<td>-0.0357</td>
<td>1.0000</td>
<td>-0.0552</td>
</tr>
<tr>
<td>Liberia</td>
<td>1.0000</td>
<td>-0.4548</td>
<td>-0.5126</td>
<td>0.7007</td>
<td>1.0000</td>
<td>0.4272</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1.0000</td>
<td>-0.0426</td>
<td>-0.0357</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.6936</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>1.0000</td>
<td>-0.6681</td>
<td>-0.3786</td>
<td>0.4272</td>
<td>0.6936</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source of data: World Economic Outlook IMF (2012).

47 Balogun, 2008.
The correlation matrix focuses on the mutual relations of the GDP growth, as a business cycle indicator, between the WAMZ countries. The results in the table for the period since 2000 are clearly stating that the synchronization of business cycles is very far from the desired state. In fact the only significant positive correlation can be find between Nigeria and the Gambia. Other mutual relations between all the countries considered have either low significance or, in majority of cases, express a negative correlation which is directly in opposition to the intended synchronization of business cycles. Especially Guinea shows negative correlation towards all the other WAMZ countries which is caused by a high share of the service sector in its economy compared to the predominantly agricultural states like Liberia or Sierra Leone. The two latter ones are only positively related with each other which supports this explanation.

Returning to the net exports correlation matrix, except for Nigeria, almost all the other countries showed a positive correlation. That is clearly not the case in the GDP growth correlation matrix above. This comparison suggests that role of trade on the overall economic performance in WAMZ will not be so essential. Thus the theory of ex post convergence of business cycles caused by boosted trade flows is in WAMZ area rather doubtful.

Overall, development of this OCA condition in the six WAMZ states does not look promising for close future compliance as most of the economies show a negatively correlated fluctuations of their business cycles.

**Openness of the economy**

As was already stressed, it is an open economy which fits the best the requirements of the OCA theory. First of all, country with an open economy have limited ability to influence its economy through the exchange rate policy as a monetary tool because any change of currency's price effects not only the price of domestic exports but also prices of imports from abroad which negates the stimulus to the economy. Thus, the loss of monetary policy is relatively less costly for an open economy\(^48\). How open a country is traditionally measured as a ratio of its exports and imports of goods and services combines to the GDP\(^49\). The openness of WAMZ states toward the

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\(^{48}\) De Grauwe, 2009.

Establishment of West African Monetary Zone

international trade is showed in a graph below.

**Graph 3: Trade (as imports and exports combined) to GDP ratio.**

![Graph 3](image-url)

*Source of data: World Bank (2012).*

The development of trade between 2000 and 2010 shows slight decrease in Nigeria, Sierra Leone and Ghana which can be explained by a negative impacts of the crisis in Europe since European Union is a major trading partner for all the observed states, in both exports and imports. Nevertheless, except for Sierra Leone, all the WAMZ countries demonstrate ratio of international trade to GDP higher than 60% in 2010 which suggests high openness of economies. Generally, majority of Sub-Saharan Africa is trade dependent because the states only produce commodities, the only source of income, but they have to import all the manufactured goods from abroad because their industries are underdeveloped.

Based on one of the most promoted benefits of creating a monetary union with common currency – the enhancement of trade between the member countries – it would be appropriate to assess the inter-regional trade between the six countries.

**Graph 4: Trade with developing countries in Sub-Saharan Africa (% of total trade).**

![Graph 4](image-url)

*Source of data: World Bank (2012).*

Unfortunately detail statistic trade data for this area are not available but certain
conclusions can be reached from following figures. From 35% to 50% of exports from all WAMZ states is headed to the EU and about 20% of national imports come from there. Other important trading partners for WAMZ exports are South Africa, United States, Switzerland, Senegal, Russia and India. On the opposite, the import linkages are strong with Cote d'Ivoire, United States, China and Brazil. Both, import and export with these foreign partners counts for 70-80% of WAMZ countries’ trade. In 2010 the trade with other developing economies in Sub-Saharan region did not go over 35% which includes not only West African countries but also the rest of the continent. Therefore, it can be estimated that the intra-union trade would not reach more than 10-20% of total national trade flows which can be seen as a limitation to the benefits of the future unification.

The main reasons for such low mutual trade can be explained by the use of multiple inconvertible currencies, narrow and often similar range of traded goods, poor regional infrastructure and existence of barriers (both tariff and non-tariff). However, it should be mentioned that the informal trade which is by most authors thought to be considerable in Western Africa is not included the provided analysis for obvious reasons.

These trade patterns reflect the existence of trade restrictions and high taxes on cross-border movements of goods. Another suggested problem that the traders are trying to limit is the difficulty of acquiring national currencies from other states and their troublesome convergence abroad. This specific issue could be expected to disappear entirely after the introduction of the Eco which is believed to smooth and boost the intra-WAMZ trade in the future.

**Wage flexibility**

Unfortunately the data for labour market and compensation of employees in Sub-Saharan countries is lacking and hence it is difficult to make any conclusions. Some available statistics are presented in the table below which can serve as certain basis for a general evaluation of the employment and wage situation in the WAMZ.

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51 Balogun, 2008.
Table 4: Chosen indicators of labour force in WAMZ in 2010.

<table>
<thead>
<tr>
<th></th>
<th>Gambia</th>
<th>Ghana</th>
<th>Guinea</th>
<th>Liberia</th>
<th>Nigeria</th>
<th>Sierra Leone</th>
<th>Eurozone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment (na)</td>
<td>na</td>
<td>11%</td>
<td>na</td>
<td>85%</td>
<td>21%</td>
<td>na</td>
<td>8%</td>
</tr>
<tr>
<td>(%) of population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firing costs (26)</td>
<td>26</td>
<td>178</td>
<td>26</td>
<td>84</td>
<td>50</td>
<td>189</td>
<td>38</td>
</tr>
<tr>
<td>(weeks of wages)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. month wage (0)</td>
<td>0</td>
<td>29 USD</td>
<td>0</td>
<td>52 USD</td>
<td>106 USD</td>
<td>37 USD</td>
<td>870 USD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

Firstly, the higher the unemployment rate the higher the flexibility of wages. Because if there is a shortage of work opportunities, employees will be more tolerant to a decrease of wage as there is a smaller chance of finding another equally or better paid job. Higher unemployment in Ghana, Nigeria and especially Liberia could actually have a positive effect on wage flexibility which can smooth the negative shocks to the economy.

Another guideline can be deducted from the firing costs statistics. Generally, employees are more likely to accept a change (even a negative one) in their wages if they know that it is relatively cheap for their employers to fire them and lose their jobs. Although, in Ghana, Liberia and Sierra Leone the number of weeks of wages connected to firing an employee seem quite high (compared to the Eurozone), the real costs are not as high as in Euro Area because the minimal wage (data for average is not available) is considerably lower in WAMZ. Therefore the expense occurring due to laying of an employee in the four African states is about 5 000 USD while in the Eurozone countries it would be about 33 000 USD. This too suggest higher wage flexibility in WAMZ.

Finally, one cannot forget about the role of trade unions which are an important player in wage negotiating. Their position in Africa was actually very strong in 1960s as they participated actively in the anti-colonial liberation movements. However, that has change a lot during the decades of military rule and unstable political and economical development in most of African states. Their power to influence working conditions and wages has suffered and it is now considered very weak to actually defend workers' demands. Trade unions' bargaining power is also undermined by high unemployment which gives companies a higher hand as they can usually replace a worker rather quickly.

53 Schillinger, 2005.
All in all, the wage flexibility in the countries of West African Monetary Zone would be probably higher than in the Eurozone which means that the six countries are more suitable for the formation of a monetary union in this aspect.

**Labour mobility**

It is difficult to assess the intra-WAMZ mobility of labour force since the statistical data for population migration is very basic or non-existing and a big part of all the cross-border movements in Africa happens on an illegal basis due to the poor administrative system and monitoring. According to the International Organisation for Migration under ECOWAS, the overall migration in the whole West African region is significant. Besides, there have always existed strong socio-cultural bonds in the region\(^5\). The same opinion is shared by Masson and Pattillo\(^5\) who summarize that mobility in WAMZ countries is high and follows the traditional migratory patterns that are powered by ethnic origins – often based on cross border tribal history – rather than national identity of the migrants.

Common official language in all the WAMZ countries, apart from francophone Guinea, should work as another enhancement of the population fluctuations. But there are many strong indigenous groups in all WAMZ countries, mostly in the rural areas, which still use their native languages and only very few of them actually speak English. It is therefore disputable how much the shared official language really helps the labour market integration in WAMZ but at least a certain level of easier dealing with the administration in foreign country is guaranteed.

Nigeria is an important destination for migrants in the region of West Africa although due to its large population, the migrant stock only accounts for 0.7 \% of population (97 \% comes from ECOWAS countries, 22 \% from Ghana). When it comes to the emigration from Nigeria, most of it is headed outside the Sub-Saharan area, only 5 \% of Nigerians aim to Ghana. The profile estimates that most of the migration flows from and to Nigeria is inflicted by job motivation\(^5\).

Similar basic information is provided for Ghana where the share of foreign population is considerably higher – 7.6 \%. However, only 58.9 \% is from ECOWAS

\(^5\) Konan, Anich, van Lidth and Mona, 2011.
\(^5\) Konan, Anich, van Lidth and Mona, 2011.
countries which strengthens the conclusion that the mutual migration between the smaller group of WAMZ members is not as significant as the migration within the whole of ECOWAS community. With the perspective of future merger of all ECOWAS states in a single monetary union as the ultimate goal these population movements can be seen as a positive trend.

These statistic data provide solely the most general figures on people leaving or coming to the country but do not divide them according to their motivations. So it is not possible to clearly mark the number of immigrants responding to the labour market situation in individual countries.

Graph 5: Net migration and GDP growth per capita.

In order to get some estimates, the above presented graphs show the GDP growth and net migration in WAMZ countries. Low demand for workers can be expected in the economy which is experiencing low or negative GDP growth and vice versa.
Consequently, those migrants that reflect on the international labour market situation should move from the economy struck by the negative shock which causes higher unemployment, to the economy experiencing high positive GDP growth where the boosting production needs more workers.

As can be seen below, in case of Ghana, Guinea and Nigeria the line of net migration does not reflect on the GDP growth development at all which indicates that the motives for migration are rather cultural, political, social or other. On the contrary, in case of Liberia, Sierra Leone and partly the Gambia, there is an evident relationship between the two indicators which suggests that in the those countries, majority of migrants are moving in or out of the country in response to the labour demand of domestic economy. In Liberia and Sierra Leone, high fluctuations of 10% and 20% show that up to one fifth of the population was willing to move to another country.

However, from a logical point of view an argument is obvious – the economic performance reflects also the political situation in the country. Therefore the graphically presented migration which mirrors the GDP growth can actually be caused by violent political conflicts which have the same negative effect on the output. Hence, there is no conclusive result as to why migrants move to another country, whether it is due to a job. Moreover, the data available are not detailed enough to show if the labour migrants move predominantly between the WAMZ countries or outside the region.

The possibilities of high labour mobility in the region are achievable with a proper support of labour market integrations among the WAMZ countries. Certain assistance was already introduced by the ECOWAS initiative which eliminated visa requirements but even though, the troubles with establishing a residency in a foreign country still bears many difficulties with the administration. That has to be the first place of interest for the future reformation of the system if it is to facilitate higher labour mobility.

Although this last analysis does not give any satisfactory conclusion, this chapter as a whole suggests that the migration between the WAMZ countries is higher than in the Euro Area.
Integration of financial markets

The banking sector in WAMZ countries is generally very much localized and cross-border transactions are limited, mostly due to the diversified laws and regulations which create obstacles to entering into a foreign market. Only nine banks within the WAMZ have international presence.\(^57\)

The assessment of this last criterion of the OCA theory in WAMZ region is made very difficult by the lack of proper data on the financial system in the zone. Still, some basic insight can be gained from the statistical data on financial development although it is only available for Ghana and Nigeria and it does not look specifically on the international linkages of financial sectors. The results of Financial development Report\(^58\) are presented in the graph below.

Even though one could expect that the Sub-Saharan countries will perform on a much lower level than the developed states on the Eurozone, Nigeria and Ghana’s score prove that the generous funds\(^59\) aimed at building a stable banking and financial system within WAMZ really did have a positive impact in the area. When it comes to the liberalisation of financial market, Nigeria even surpasses the EMU states. However the stability of financial sector in both Nigeria and Ghana is less favourable and the overall financial development index which hovers below the value of 3 (where 7 is the maximum) is a clear indicator of persisting shortcomings on the financial sector design.

The problem is not in the structure of the system itself but in the ever present corruption which is a general problem of all governance areas in African countries,

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\(^{57}\) Oshikoya, 2010.
and the limited access to the system by majority of local population which is usually predominantly using ready money\textsuperscript{60}.

Alternative methodology of evaluating the integration of financial markets presents Sy\textsuperscript{61} who applies this technique also to the African regional co-operations. In his theory, the level of linkages between national financial markets is reflected in the interest rates spread (difference between the lending and deposit rate). Ultimately, convergence of these spreads can be understood as a signal of increased integration of financial markets.

Graph 7: Interest rate spreads in WAMZ countries.

The data on interest rates is missing for Ghana and Guinea so only the other four countries of WAMZ are evaluated. Certain convergence tendencies could be seen in 2009 but previous development does not explicitly show clear converging movements. Plus, Nigeria is still significantly below the average of the other three countries.

These analysis of indices and interest rates spread show that there is still a lot of space for improvement in the functioning of the banking and financial system and its integration between the WAMZ states.

**Summary**

Even though, the six WAMZ states started off from very similar position in the 1960s after the end of colonial rule, it is safe to say that nowadays these countries create a diverse bunch of individual national states that differ in number of characteristics.

\textsuperscript{60} Payments system study in the West African Monetary Zone (WAMZ): strategy and policy framework, 2004.

\textsuperscript{61} Sy, 2006.
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Structures of the economies are not converged enough and especially Liberia shows high dependence on the agricultural sector and also other countries need to focus more on the transition to the industrial and service based output. Also the development of the business cycles synchronisation is not too promising given predominantly negative correlation between WAMZ states. Moving on to the trade aspect of the OCA theory, all the countries can be described as relatively open with the minimum of 40% trade to GDP but the closer look at the international trade linkages showed that the goods and services traffic within the WAMZ area accounts for less then 20% which can significantly reduce the benefits of monetary union establishment. Finally, the labour mobility of WAMZ countries looks rather promising with high fluctuations, although as was indicated before, it is not possible to conclude whether these movement occur mostly within the WAMZ region or outside.

Table 5: Fulfilment of the OCA theory by WAMZ countries.

<table>
<thead>
<tr>
<th>Openness of economy</th>
<th>Diversified structure</th>
<th>Synchronisation of cycles</th>
<th>Labour mobility</th>
<th>Flexible prices and wages</th>
<th>Integrated fin. markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>


Although the six countries do not fulfil perfectly the OCA criteria, it is valid to say that according to some theories, the compliance with those does not have to be necessarily achieved before the creation of the monetary union. Actually none of the presented historical monetary unions were an optimum currency area. Also authors suggest that the adoption of common currency itself has the potential to bring the countries to the OCA conditions ex post\(^{62}\). From the principle of this opinion, it is clear that this can only be proved by an empirical analysis after the WAMZ is running for certain period. Nevertheless, the experience of the existing Eurozone can pose as certain indication of future scenario and this question will be closely focused later on in this thesis.

The preceding assessment of the six WAMZ countries revealed the dominant position of Nigeria which is the largest country in the group, which mirrors in many aspects of WAMZ establishment, and will be looked at in one of the later chapters.

Analysis of West African Monetary Zone convergence criteria

In 2000, following the introduction of two-track approach of building a monetary union in West Africa, the West African Monetary Institute (WAMI) was established as the main institution to address the technical issues of creating the West African Monetary Zone. Currently, the most important task of WAMI is to support and control the member states’ adaptation to the convergence criteria which is the fundamental condition of further progress of the WAMZ integration. Achieving a prescribed level of satisfactory fulfilment of this measure proved to be more challenging to the member countries than expected at first. Several suspensions of WAMZ launch date since 2001 is a clear evidence that WAMZ convergence criteria might be a tough match.

Table 6: West African Monetary Zone convergence criteria.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>single-digit</td>
</tr>
<tr>
<td>Fiscal deficit to GDP ratio</td>
<td>≤ - 4%</td>
</tr>
<tr>
<td>Central bank financing of fiscal deficit (as a % of previous year’s tax revenue)</td>
<td>≤ 10 %</td>
</tr>
<tr>
<td>Gross external reserves to months of import cover</td>
<td>≥ 3 months</td>
</tr>
<tr>
<td>Non-accumulation of payment arrears</td>
<td>&lt; 0</td>
</tr>
<tr>
<td>Tax revenue to GDP ratio</td>
<td>&gt; 20 %</td>
</tr>
<tr>
<td>Salary mass to total tax revenue ratio</td>
<td>&lt; 35 %</td>
</tr>
<tr>
<td>Public investment from domestic receipts</td>
<td>&gt; 20 %</td>
</tr>
<tr>
<td>Real interest rate</td>
<td>&gt; 0</td>
</tr>
<tr>
<td>Exchange rate stability</td>
<td>± 15 %</td>
</tr>
</tbody>
</table>

Source of data: Accra Declaration on Creation of a Second Monetary Zone (2000).

The first inflationary criterion should ensure the stability of domestic prices because
the price stability is specified as the cardinal objective of the common monetary policy of the future West African Central Bank. The requirement of minimal foreign exchange reserves should serve to secure that the domestic currency is stable against price changes of foreign currencies. The rule on fiscal deficit was chosen to prevent excessive fiscal expenditures which would jeopardise the price stability as the ultimate goal of the WACB. The same motives are to be found behind the fourth criterion on limits of the central bank financing of the government deficit. This last conditions is also meant to prepare WAMZ countries that the common WACB will not fund any national deficits in the future.

The following pages assess the four primary WAMZ convergence criteria compliance since their formulation in 2000 to 2010 (or 2011 when data is available). All founding countries – the Gambia, Ghana, Guinea, Nigeria and Sierra Leone – are included in the analysis. Even though Liberia did not join the WAMZ agreement until 2010, its statistics are also added, when available, in order to provide some view of its past development as a basis for future predictions for the whole WAMZ area.

**Price stability**

Graph 8: Inflation in WAMZ countries.

![Graph of Inflation in WAMZ countries](image)

*Source of data: IMF World Economic Outlook (2012).*

The first criterion sets the desired level of inflation, represented in the graph by the green line and below. Looking at some extreme inflation rates in the observed
Establishment of West African Monetary Zone

countries, the single-digit target can seem unrealistic, especially considering how short periods were planned for fulfilling the criteria before the 2015 delay. But the regional average rate in Sub-Saharan Africa in 2000-2010 is 9.7% and showed very stable decreasing tendencies since 2005 and so the WAMZ goal inflation has a reasonable foundations. Moreover, once the WAMZ will have to merge with the UEMOA, the target inflation will be lower than 5%. So to get to the single-digit scale seems like a good first step. Yet the statistical data show that except for the Gambia which managed to maintain the single-digit inflation since 2004, all the other countries have unstable oscillation of their rates from the “green” to the “red” zone with inflation close to 20% as a standard state. In the last four years of the observation certain confluence of the inflation rates among the six countries and moving closer to the 9.99% limit can be seen but the tendencies are rather unstable and still do not sufficiently promise the fulfilment of the first requirement.

**Budget deficit**

Graph 9: Budget surplus/deficit in WAMZ countries as a percentage of GDP.

Considering that the Sub-Saharan average in the period 2000-2011 for the budget deficit was only -0.6% of GDP, the limit of -4% for WAMZ countries is rather benevolent. The chosen bench of -4% was taken over from the proposed convergence criteria for ECOWAS into which should the WAMZ and UEMOA countries merge into in 2020. But just like in the case of the first criterion, the budget deficits and
surpluses in WAMZ show high oscillation and unclear tendencies. All states experienced a negative rise of budget deficit in 2008 or 2009 as a response to the global crisis which effected western Africa mainly through the reduction of trade flows to the European Union. Before this drop, the budget figures expressed a divergent development in the six economies. However the outlook in this regard is more optimistic than with inflation rates. Even countries that were running budget deficit in the pre-crisis period did not drop below -8 % of GDP and were improving since 2008. Hence it may be expected that if the WAMZ countries manage to overcome the unfavourable consequences of the crisis, they have good chances to come to compliance with the budget deficit limitation requirement.

Central bank financing of government budget

Third convergence rule demands that states limit the financing of government deficits by the national central bank. This requirement reflects the “zero-financing culture” which is being promoted in western Africa economic integrations.

Graph 10: CB financing of government budget (% of previous year’s tax revenues).

This criterion is directly linked to the future functioning of the monetary union. There will be a common central bank established for all the WAMZ countries, responsible for the issuing of Eco and management of the common monetary policy. Therefore individual national banks, even though they will not banish will have restricted powers. That is why the ability of governments to finance their expenses by

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63 Oshikoya, 2010.
Establishment of West African Monetary Zone

different means than issuing new money into the economy or getting loans from the NCB is essential to the accession to the monetary union. The borderline of 10 % for this criterion was taken from the design of future ECOWAS integration criteria.

The statistical results in the observed countries do not reflect on the gravity of compliance with this one requirement. Although some positive development occurred in past ten years, namely in case of Sierra Leone, only Nigeria satisfyingly managed to keep the central bank funding under the set limit of 10 %. On the other hand, rest of the countries fight quite hardly with this condition since they all exhibit the share of central bank financing around 50% and the Gambia and Guinea reach even 100% and 150%, many times more than the allowed level. These states will find the handover of their sovereign monetary policy to the common CB very costly.

To prevent this, those governments will have to restructure their budget financing, either by decreasing the expenditure component or most likely through a tax reform that should ensure higher revenues. The administration of tax collection in all WAMZ countries is in a need of reformation. More effective bureaucratic apparatus and improved monitoring of economic activities, will probably rise the tax revenues itself and there might not be an urge to change the tax rate systems as such.

Graph 11: Seigniorage (annual growth of monetary base to GDP ratio\(^{64}\)).

Looking closely on this aspect of the monetary union, the biggest cost of the abandonment of national currency is the loss of seigniorage which is included in the funding of the government expenses by the central bank.

\(^{64}\) Masson and Pattillo, 2001.
On one hand, the graph above seems less alarming than the percentages provided for the general CB financing of governmental budget. However it has to be mentioned that the seigniorage is measured to the GDP. If a change of monetary base is put to the government revenue, the figures worsen – for the Gambia, Ghana and Guinea to 37% average 2001-2011, 20% for Nigeria and Sierra Leone and alarming 1724% in case of Liberia, proving serious misgovernance. Moreover, a growing tendency can be seen over the last twenty years which is definitely a negative phenomenon given that the states will have to give up seigniorage all together after the introduction of common currency that will be issued by a common central bank.

For comparison, the average seigniorage level in the twelve original Eurozone countries in the five years before their transfer to Euro was 0.1%, a ratio that is far from the current experience in WAMZ. All the six countries have to seriously lower the portion of funds provided by the national central bank in order to prepare themselves for the monetary take-over by the West African Central Bank.

**Foreign reserves**

The last requirement is to secure the prices of national currencies through the foreign reserves held by the central banks. The minimum desired security is three months of the imports value which is slightly liberalized rule from ECOWAS where six months imports value is required.

![Graph 12: Foreign exchange reserves in months of import in WAMZ countries.](image)

*Source of data: World Economic Outlook IMF (2012), World Bank (2012), WAMI (2011).*

The fourth criterion is the least problematic one from the set of WAMZ accession rules judging by the statistical data available from the six countries. Except for
Guinea which did not comply with the requested three months minimum since 2003, the remaining countries gradually brought their foreign exchange reserves to the aimed level. In case of Liberia only the last observed year’s reserves satisfied the requirement but again it has to be taken into account that Liberia only joined the WAMZ efforts in the beginning of 2010 and so it did not have any official incentives to aspire to this level of reserves beforehand.

Summary

To summarize the results from this chapter, the table below offers an overview of how many requirements were satisfied by individual countries since the integration started in 2000.

As highlighted in the table, only one economy ever achieved fulfilment of all four criteria – Nigeria in 2006 and 2007. This chart clearly demonstrates why the postponement of the monetary union introduction into practise was necessary in 2005 and 2009. Although there is certain positive progress until 2009, then a dramatic fail in compliance in most of the countries in 2010 reflects the unfortunate effects of the global crisis.

Table 7: Number of primary criteria satisfied by individual countries (4 is maximum).

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Gambia</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ghana</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Guinea</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Liberia</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>


As a comparison, the sheet below shows how many countries fulfilled individual criteria in the same period. As was already said, the best record has the minimum foreign exchange reserves, even in the period after the crisis. On the other hand, a negative turn after 2008/2009 is evident in the budget deficit and CB financing of government budget limit.

In the Accra Declaration from 2000 the Gambia, Ghana, Guinea, Nigeria and
Sierra Leone agreed to satisfying this set of convergence requirements as a prerequisite to establishment of WAMZ. Later on, when the postponement of the launch date was necessary, it was redefined that for the introduction of the common currency *Eco* it does not have to be upon the condition of complete gratification of these convergence rules. For the actual establishment of WAMZ operations it is enough if at least three countries meet a minimum of three primary and three secondary criteria directly before the commencement of the union.\(^{65}\)

### Table 8: Number of countries in compliance with the criteria (6 is maximum).

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>Inflation</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Budget deficit</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>CB financing of budget deficit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>External reserves</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Reduction of domestic arrears</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Exchange rate (de/appreciation) to WAMZ ERM</td>
<td>na</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Public investment from domestic receipts</td>
<td>na</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>3</td>
</tr>
<tr>
<td>Real interest rate</td>
<td>na</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>Salary mass/total tax revenue</td>
<td>na</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Tax revenue/GDP</td>
<td>na</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Source of data: World Economic Outlook IMF (2012), World Bank (2012), WAMI (2011).*

As it can be seen in the table above, since the beginning of unionisation efforts there was only one year when at least the first condition of primary criteria was fulfilled. In 2006, four countries were within the given limits of inflation, budget deficit and external reserves, giving the green light to the activation of monetary union functioning. Unfortunately, the lack of compliance with the secondary criteria reversed this promising situation and since then the convergence statistics turned to a downward pace. Focusing on the secondary set of rules, in the whole period 2000-2010 there never was a situation when the requirement of at least three criteria were satisfied. The worst performance is evident in case of the ratio of tax revenue to

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\(^{65}\) Balogun, 2008.
GDP which only Ghana managed to keep over 20% in 2003-2005. This unsatisfying figures support the previously specified problem with the tax collection administration in West African states.

Table 9: Number of secondary criteria satisfied by individual countries (6 is maximum).

<table>
<thead>
<tr>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Gambia</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ghana</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Guinea</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Liberia</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Nigeria</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Source of data: WAMI (2012).

Just like in the analysis of the primary criteria, it is Nigeria that achieved the best results in compliance with convergence requirements in the last ten years, meeting as many as four in some years. It should be reminded that in 2006 and 2007, Nigeria also fulfilled all four primary criteria.

These unsatisfactory figures of compliance with both, the primary and secondary, convergence criteria raise a serious question whether the six countries will ever reach the requirements for the actual establishment of West African Monetary Zone. The repeated postponements gave a hint that this issue is a persistent problem. Before the last adjournment of the launch date to 2015, Nigeria and Ghana lobbied for going passed the criteria and starting WAMZ without fulfilment by member states in order to move to benefiting from the common currency. The benefits and dangers of such decision as well and the question of envisioned compliance with the criteria ex post, due to the boosted trade and stable monetary policy in the zone, will be in the focus of following analytic chapter and discussion.
The Governors of Central Banks of WAMZ member states recognized that recent experience in the EMU proved that strict fiscal rules and good understanding and acceptance of central banks' limits are strong pillars of a monetary union structure. Also the actions of monetary authorities alone do not have enough power to ensure low and stable inflation and promote economic growth but that the fiscal policies and structural reforms have to play the role of an anchor to the macroeconomic stability and global competitiveness.  

The comparison of West African Monetary Zone with the monetary union of Eurozone was already outlined in the methodology and theoretical chapter, following the general evaluation of the EMU as the most successful practical implementation of monetary integration. Therefore in this chapter, the European version of convergence criteria will be applied to the WAMZ countries to find out if how would such modification influence the status of WAMZ establishment process.

As another contrast could be used the convergence requirements of the ECOWAS future monetary union which is expected to include the WAMZ states and also thanks to its geographical specification could be seen as more appropriate comparison. However the design of this future union was the base for setting of the WAMZ convergence rules which are very much the same, except for the inflation requirement (<5 %) and external reserves coverage of import limit (>6 months). Hence this comparison would not bring any new point of view on the problem and so in the following analysis, the EMU example will be in the focus.

---

66 24th Meeting of the Committee of Governors of Central Banks of the West African Monetary Zone, 2011.
Table 10: EMU convergence criteria.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>not more than 1.5 percentage points higher than the average of 3 lowest inflation rates among the EU member states</td>
</tr>
<tr>
<td>Budget deficit</td>
<td>not higher than 3% of GDP</td>
</tr>
<tr>
<td>Gross public debt</td>
<td>not higher than 60% of GDP</td>
</tr>
<tr>
<td>Long-term interest rate</td>
<td>not more than 2 percentage points higher than the average of 3 countries with the lowest inflation among the EU member states</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>membership in the EMS and no devaluation in 2 years before entry to the union</td>
</tr>
</tbody>
</table>


Due to the missing data for the devaluation in WAMZ countries the last criterion on the exchange rates will not be assessed in the following analysis.

Inflation

Graph 13: Inflation in WAMZ countries (Euro Area criteria).

Source of data: IMF World Economic Outlook (2012).

The adjustment of more flexible inflation target does not improve the status for any of the countries since the only state that manages to stay under the designed limit is the Gambia which was in the accordance with this maximum ceiling even when the current WAMZ criterion applied. The new target rate actually moves close to the 10% line most of the time. Hence this modification does not bring any acceleration to the convergence process. Still, it is possible to consider the European version of
inflation rule as more fitting since its determination takes into account the economic circumstances in the region, reflecting the possibility of a negative external impacts. So it could be expected that the performance of all states in this area with a flexible inflation target will be better than in case of the rigid single-digit rule. The fact that in reality this expectation is not fulfilled shows that there are rather big differences between countries when it comes to inflation and possibly also the external influences on their economies. This was already sketched by the negative mutual correlations of their business cycles in the OCA criteria chapter.

**Fiscal deficit**

Graph 14: Budget deficit as a percentage of GDP in WAMZ (Euro Area criteria).

![Graph of budget deficit as a percentage of GDP in WAMZ](image)

*Source of data: IMF World Economic Outlook (2012).*

It is not surprising that there is no improvement of the convergence indicator of budget deficit after the introduction of a more severe Eurozone requirement because this criterion was problematic for most of the countries in the WAMZ even under the existing limit of -4% of GDP. Especially after 2008 all the countries dropped below the set boundary, very probably as a response to the crisis which cut down not only the trade relations with the important European partners but also the volume of international aid and other support which still represents a crucial component of national revenue for many African states, WAMZ members as well.
**Debt to GDP ratio**

West African Monetary Zone does not apply any condition on public debt of its member states. However, with a special attention to the recent development in the Euro Area, where the high levels of indebtedness in Greece, Italy and Spain triggered a union-wide negative spill-over effect, the WAMZ authorities should seriously consider an application of a debt-focused requirement on its member states.

Graph 15: Gross public debt as a percentage of GDP in WAMZ (Euro Area criteria).

![Graph 15](image)

*Source of data: IMF World Economic Outlook (2012).*

Except for the Gambia and Guinea all the WAMZ countries satisfied the 60% of GDP maximum in last two years, and even these two non-complying countries show a promising development of this indicator towards the set limit over the last decade.

Particularly interesting is the debt statistics in case of Liberia. According to the IMF, Liberia's public debt was running as high as 930% of GDP in 2003. And even though these figures were gradually decreasing since then, its sudden jump from 172% in 2009 to the 33% in the next year may look suspicious and raise questions about the trustworthiness of Liberia’s statistics. But the explanation is quite simple – in 2010 Liberia managed to get a huge debt relief from the International Monetary Fund which wrote off 90% of Liberia's external debt\(^67\). The fact that this decision of the IMF had an immense impact of Liberia’s macroeconomic statistics supports the already expressed importance of international aid and loans for African countries.

---

\(^{67}\) IMF and World Bank Announce US$4.6 Billion Debt Relief for Liberia, 2010.
Establishment of West African Monetary Zone

**Interest rate**

Graph 16: Interest rates in WAMZ (Euro Area criteria).

![Graph of Interest Rates](image)

*Source of data: World Bank (2012).*

All six countries, with the exception of the Gambia do comply in the long-run with the interest rate boundary (based on three countries with the lowest inflation). However more states briefly exceeded the maximum interest rate in 2009 and Guinea did not satisfy the criterion in 2007-2008. The interest rate is particularly important for developing African countries where the need of investment for further growth is crucial. In this view, high nominal interest rates discourage possible investors since the capital is too expensive. And even less favourable picture is presented in the lower graph with the real interest rates show very low return. Yet, the real interest rate indicator is not part of either criteria set, not for the EMU nor for WAMZ.

Graph 17: Real interest rates in WAMZ.

![Graph of Real Rates](image)

*Source of data: WAMI (2011).*
Summary

The EMU convergence criteria were presented on the preceding pages as a possible inspiration for adjustments and changes to the existing WAMZ convergence requirements in a way that would enable better compliance of the member states and subsequently accelerated the actual introduction of the common currency.

Table 11: Overview of compliance with EMU criteria by country (4 is maximum).

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Gambia</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Ghana</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Guinea</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Liberia</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>


The table above clearly shows that with the application of EMU convergence criteria, the overall situation of WAMZ states does not move closer to their target of introducing Eco. Again, the only country which touched the boundary of all four satisfied criteria was Nigeria in 2007. In the last two observed years, however, most of the states managed to comply with maximum of two criteria which is not a promising progress towards the planned start date in 2015.

Table 12: Overview of compliance with EMU criteria by criterion (6 is maximum).

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Budget deficit</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Public debt</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Interest rate</td>
<td>na</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>


There was no significant improvement of the fulfilment situation in case of inflation where the application of Eurozone version of the criterion showed only small difference from the WAMZ single-digit inflation target. The flexible European boundary was oscillating around this 10 % limit and so the set of countries that comply with the inflation rate did not enlarged. However, the introduction of this modified inflation criterion can be considered as a more “understanding” limit in
case of any future severe negative shocks. Plus it can serve as a partial indicator and encouragement of the convergence of WAMZ states in their economic performance.

The maximum allowed government deficit does not bring any change either, since it is very close to the current WAMZ limit and if anything, it would exclude more countries from the compliance side.

When it comes to the interest rate, introduction of this requirement would mean better score in the overall compliance because except for the Gambia the other three countries satisfy the maximum limit.

Finally, the WAMZ authorities should seriously consider an adoption of the public debt into the settings for member states because high indebtedness of national economies of Eurozone is considered one of the driving forces behind the recent crisis in Europe. Therefore a condition of certain maximum public debt could help WAMZ to prevent similar negative developments which would affect the whole monetary union.

There is one general conclusion from the presented analysis of hypothetical application of EMU criteria in West African Monetary Zone. Mostly drawn from those convergence rules where the baseline target is not rigidly set but is counted from the three best performing countries. The fact that even if a development in the region is reflected in those countries' values, many other states still do not manage to fulfil the required limit. Thus it is clear that there are immense differences between all six states and it can be a signal of insufficient convergence and occurrence of asymmetric shocks in the group.
Establishment of West African Monetary Zone

Analysis of convergence in states of West African Monetary Zone

Although the six countries do not fulfil perfectly the OCA criteria, it is valid to say that according to some theories, the compliance with those does not have to be necessarily achieved before the creation of the monetary union. Horvath and Komarek\(^{68}\) suggest that the adoption of common currency itself has the potential to bring the countries to the OCA conditions ex post through the intensified trade lubricated by the common currency and convergence of business cycles among the participants. These authors are not the only ones coming to similar conclusion. Another support to the experience of enhanced cross-border trade thanks to the integrated markets in EMU is given by Lane\(^{69}\), who also adds that it is mostly effect of trade in goods rather than services which are generally less mobile.

Goncalves, Rodrigues and Soares\(^{70}\) concluded, through a regression analysis, that there really is a higher correlation of output between the Euro Area countries compared to other observed states that are not part of this monetary union. This analysis separated periods before and after the introduction of Euro in 2002, and a considerably large "Euro effect" is evident in the post-launch era. These results do support the theory of \textit{ex post} convergence of states in monetary union.

Another possible hint in this question can be found in the CFA franc zone in Western Africa. An analysis of common currency’s impact on trade by Fielding and Shields\(^{71}\) who concluded that greater distance reduces volume of trade goods except when the observed countries are members of the CFA zone. Then the geographical aspect has no significance. If the countries in question are actually neighbours with shared border then the CFA franc usage has much larger positive effect on the trade flows compared to the mutual trade of neighbouring countries that are not using the

\begin{flushleft}
\textsuperscript{68} Horvath and Komarek 2003.
\textsuperscript{69} Lane, 2006.
\textsuperscript{70} Goncalves, Rodrigues, Soares, 2008.
\textsuperscript{71} Fielding and Shields, 2004.
\end{flushleft}
CFA franc. Overall, the membership in the CFA franc zone has a huge effect on very close neighbours but it is significant for more distant countries as well because it creates an institutional basis for establishment of a trading pattern which would not develop otherwise.

The same result is presented by Rose\textsuperscript{72} whose analysis supports the theory that introduction of a common currency is highly encouraging for trade flows between participating countries thanks to the reduced costs of currency exchange.

However, the correlation of national outputs is not too significantly dependent on the trade links\textsuperscript{73}. Contrarily to the general opinion that the increased trade, one of the promised benefits of the monetary union participation, is driving the synchronisation of economic performances of the member states. So in the CFA franc zone, the participation in a monetary union increases trade but trade does not increase the synchronisation of business cycles.

Looking again to the EMU experience, there is the same result of an insignificant role of trade in the convergence process\textsuperscript{74}. The common currency may bring the synchronisation of business cycles simply through the unification of monetary policy under a common bank which cause a harmonisation of monetary shocks. The result of regression analysis clearly marked the using (or not using) of Euro as a significant variable. High effect of the similarity of monetary policy and shocks under a single bank suggest that the adoption of a common currency can very much help with the convergence of countries and with their synchronisation\textsuperscript{75}.

Balogun\textsuperscript{76} reaches the same conclusion stating that majority of west African countries perform poorly in the inflation control activities. Combining this statement with big differences between inflation rates of individual countries, Balogun expresses serious doubts about the possibility of any convergence of these states under a current national regime. The divergent inflationary results are fuelled by pursuing of different interest rates and non-coordinated monetary policies. Hence, these problems could be overcome by an operation of a single monetary authority which would in a long-run unify the inflation and monetary performance of

\textsuperscript{72} Rose, 2000.
\textsuperscript{73} Fielding and Shields, 2004.
\textsuperscript{74} Lane, 2006.
\textsuperscript{75} Goncalves, Rodrigues, Soares, 2008.
\textsuperscript{76} Balogun, 2009.
Establishment of West African Monetary Zone participating economies.

Hence the common currency really matters while higher trade flows actually seem to cause lesser economic correlation within the union. So the widely promoted requirement of the ex ante convergence and its decisive character in the consideration of launching the currency can be misleading. Moreover it can prevent benefiting from the significant increase of the synchronisation of economies thanks to the operation of one money.

**Factors influencing economic performance in WAMZ countries**

Both presented examples, in Europe as well as in Africa, confirm that the idea of the *ex post* convergence, due to boosted trade links and common monetary policy, in monetary union is probable and should be taken into account during the decision about the convergence requirements. Unfortunately, it is not possible to do the exact same study of WAMZ states because the monetary union is not yet launched and it is therefore impossible to find out whether the common *Eco* will boost intra-WAMZ trade flows and the overall synchronisation in the region. However, a question of the influence of trade and common monetary policy on the economic performance can be assessed. That is the key focus of following analysis – to find out how much trade and monetary policy matters in the six WAMZ countries.

Based on presented analysis when all the authors – Rose, Horvath and Komarek, Golcalves, Rodrigues and Soares – used the capacity of regression analysis, the following part will employ similar methodology.

An econometric model using the OLS method was created for each of the six economies trying to estimate the role of trade (Trade), monetary (MonChan) and fiscal (GovExp) policy in the formation of the economy’s output. In all equations the GDP represents the dependent variable while on the other side stands the government expenditure as a fiscal component, the export plus import of goods and services and the annual change of broad money as a monetary ingredient.

\[ GDP = \beta_0 + \beta_1\text{GovExp} + \beta_2\text{Trade} + \beta_3\text{MonChan} \]

The results of the regression analysis will be the coefficients (β) for each one of the variables which estimate what is the relationship between that particular variable
and GDP. If the coefficient is positive it means that increase of the variable will cause an increase of GDP. A vice versa principle holds for a negative coefficient – if the variable increases, value of GDP drops.

Apart from the coefficients which has the main explanatory value and are the core of representation of the results of the model, there are more values to be found in the OLS model table. Next to each coefficient, a column with stars shows whether given variable is significant for the explanation of GDP movements (maximum of three stars indicates very high significance). Then, the VIF (Variance Inflation Factors) test whether the explanatory and dependent variables are not exhibiting unfavourable collinearity which would spoil the validity of achieved results. VIF value higher than 10 signals serious problem with collinearity.

Figures in the right part of the table relate to the quality of the model. Firstly, the specification of the model have to be tested in Ramsey’s RESET. A basic condition has to be fulfilled in order to agree with the model determination – the probability have to be smaller than the F limit (p-value < F).

Finally, once the specification of the model is confirmed by the RESET test, the last row in the right part of the table represents the adjusted R-squared indicator. This value is important because it represents the overall fit of the model, in other words – how big part of the GDP movements can be explained via the model. Basically, the higher this number the better because the aim of regression analysis is to estimate the development of certain variable to its fullest, so ideally the adjusted R-squared would reach value 1 which would mean that the model covers 100% of formation of the variable and enables to estimate its value for the future very well. However, since there are many factors influencing every development in the economy, it is almost impossible to reach a 100% fit of the model. Generally, adjusted R-squared higher than 0.8 can be seen as a satisfactory result of regression OLS modelling.

78 Hansen, 2012.
Establishment of West African Monetary Zone

Table 13: OLS model for the Gambia (dependent variable: GDP).

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>RESET P-value</th>
<th>F (2,36)</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.493e+08</td>
<td>***</td>
<td></td>
<td>1980-2011</td>
<td>0.4862</td>
<td>0.8151</td>
<td>0.909607</td>
</tr>
<tr>
<td>Government expenditure</td>
<td>1.4363</td>
<td>**</td>
<td>2.767</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0.9391</td>
<td>***</td>
<td>2.592</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money change</td>
<td>-0.942</td>
<td></td>
<td>1.514</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

In case of the Gambia, government expenditure and trade proved significant, and showing positive link to the GDP which means that higher government spending and more intense trade have a boosting influence on domestic output. While the monetary component is not significant at all and is even negatively correlated with the GDP which means that monetary expansion does not provide an incentive to increase of the GDP. The model explains 90.6 % of variance in the observations which makes it a very successful fit for the analysis of the GDP movements in the Gambia.

Table 14: OLS model for Ghana (dependent variable: GDP).

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>RESET P-value</th>
<th>F (2,26)</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.162e+07</td>
<td>***</td>
<td></td>
<td>1977-2011</td>
<td>0.03181</td>
<td>3.94836</td>
<td>0.993371</td>
</tr>
<tr>
<td>Government expenditure</td>
<td>2.4828</td>
<td>***</td>
<td>7.205</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>1.1167</td>
<td>***</td>
<td>7.115</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seigniorage</td>
<td>-4.457e+09</td>
<td></td>
<td>1.032</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

The regression analysis for Ghana shows even better fit of the model with the adjusted R-squared indicating an explanatory ability of 99.3 %. However Ghanian model has the highest VIFs which can raise concerns about the collinearity problem although the critical ceiling of 10 is not breached and so the model can be considered valid. The collinearity problem was also the reason for including seigniorage in stead of the MonChan variable which is used for all other countries. This original variable caused serious excess of the maximum value of VIF and had to be replaced with a different indicator of monetary policy.

Just like in a previous case of the Gambia, monetary policy, in this case represented by seigniorage, proved to be an insignificant feature in the model and has a negative impact on the GDP which could be expected since high seigniorage is perceived as an undesirable influence of NCB’s support of the government spending. Again, trade and fiscal variables have the highest significance and a positive
coefficient of their relationship with the GDP. The same explanation of these results like in the Gambian model applies.

Table 15: OLS model for Guinea (dependent variable: GDP).

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>1991-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.227e+09</td>
<td></td>
<td>P-value(=8.3\times10^{-6})</td>
<td>RESET (F(2,15) = 30.1715)</td>
</tr>
<tr>
<td>Government expenditure</td>
<td>5.57209</td>
<td>3.114</td>
<td>Adjusted R-squared 0.877313</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0.00022</td>
<td>***</td>
<td>1.095</td>
<td>1.095</td>
</tr>
<tr>
<td>Money change</td>
<td>-0.00051</td>
<td>**</td>
<td>3.257</td>
<td>3.257</td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

Guinea’s model is the first one to contradict the previous results of the OLS modelling. The unsurprising positive significance of trade is combined with a high significance of money change which suggest that monetary policy in Guinea has a big impact on the economic performance in the country, although still a negative one. On the other hand the fiscal incentives seem to have almost no influence in the economy. The Ramsey’s RESET test granted a correct specification of the model, just like in all previous regression analysis of WAMZ countries. Also the adjusted R-squared shows a high enough value which indicates that this OLS model is able to estimate 87.7 % of Guinean GDP development based on the chosen three variables.

Table 16: OLS model for Liberia (dependent variable: GDP).

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>2000-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.372e+08</td>
<td>***</td>
<td>P-value (=0.1454)</td>
<td>RESET (F(2,6) = 0.86758)</td>
</tr>
<tr>
<td>Government expenditure</td>
<td>3.7585</td>
<td>1.704</td>
<td>Adjusted R-squared 0.92899</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0.0479</td>
<td>***</td>
<td>4.744</td>
<td>4.744</td>
</tr>
<tr>
<td>Money change</td>
<td>0.0857</td>
<td>***</td>
<td>4.055</td>
<td>4.055</td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

Liberia is the only country where the export and import of goods and services exhibit no significance. This could be caused by a poor development of international trade of Liberia due to a long period of civil war and regional conflicts which sabotaged domestic production and isolated the country from its potential trading partners. The fiscal policy is significant which is understandable since majority of production has to be financed by the government because of the poor state of private entrepreneurship in all industries as a result of mentioned conflicts. Also money change is an important factor in the formation of the GDP so it can be said that the monetary policy and monetization of fiscal budget is used actively in Liberia. The
model passes the specification test and the overall fit is 92.9% of observed variance which is a satisfactory result.

Table 17: OLS model for Nigeria (dependent variable: GDP).

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>2000-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.94e+10</td>
<td>***</td>
<td>RESET P-value = 0.0927</td>
<td></td>
</tr>
<tr>
<td>Government expenditure</td>
<td>0.00237</td>
<td>***</td>
<td>F (2,6) = 3.6292</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0.2271</td>
<td>***</td>
<td>Adjusted R-squared 0.9779</td>
<td></td>
</tr>
<tr>
<td>Money change</td>
<td>-0.00491</td>
<td>**</td>
<td></td>
<td>1.999</td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

In Nigeria, all the included variables proved to be significant for the domestic output in Nigeria. Especially, the trade feature has the highest and positive coefficient which can be justified by a high dependence of Nigerian economy on the export of crude oil which brings nearly 80% of its revenue. Nigeria is in fact the fifth biggest oil exporter in the world. This means that trade is a vital part of Nigerian economic performance. Government's expenditure also has a high significance in the equation but it's coefficient is not reaching the trade's influence. Money change as an agent of monetary policy is a significant feature but again shows a negative relationship with the GDP, meaning that monetary expansion is actually not helping the output at all. The model specification is a successful one and the resulting equation can account for 97.8% of the GDP creation in Nigeria.

Table 18: OLS model for Sierra Leone (dependent variable: GDP).

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>2000-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>5.37e+08</td>
<td>***</td>
<td>RESET P-value = 0.1774</td>
<td></td>
</tr>
<tr>
<td>Government expenditure</td>
<td>-0.000242</td>
<td>**</td>
<td>F (2,39) = 2.3387</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0.000425</td>
<td>***</td>
<td>Adjusted R-squared 0.94918</td>
<td></td>
</tr>
<tr>
<td>Money change</td>
<td>0.000513</td>
<td></td>
<td></td>
<td>4.008</td>
</tr>
</tbody>
</table>

Source of data: World Bank (2012).

Sierra Leone is highly dependent on its trade connections with the surrounding countries, which can be a possible justification of the high significance level for trade variable. However, even though it is significant, the very low coefficient for trade shows that the boosting effect on GDP is not so big. What is interesting in Sierra Leone's results is the negative coefficient of governmental spending which is also a significant component. The fact that higher government expenditure actually lowers the domestic output means that there are serious problems in the allocation of
government resources which is inefficient and does not finance any activities enhancing economic growth. Monetary policies in this last country do not play any significant role. The model explains 94.9% of variations in the GDP which can be seen as a very successful result for its explanatory value.

**Summary**

In this chapter, the method of a regression analysis, concretely the OLS model, was used to estimate how big is the influence of trade, fiscal policy and monetary policy on the GDP. These relationships should help to foretell the possibilities of ex ante and ex post convergence of these states. In order to sum up the achieved results in the regression analysis of the six WAMZ countries a table is presented below.

<table>
<thead>
<tr>
<th>Source of data: World Bank (2012).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table 19: Overview of results of regression analysis in WAMZ (impact on GDP).</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Government expenditure</td>
</tr>
<tr>
<td>Trade</td>
</tr>
<tr>
<td>Money change</td>
</tr>
</tbody>
</table>

When looking on the results from the regression analysis of the GDP formation, some generally valid conclusions can be made about the WAMZ countries.

Firstly, the trade aspect of the model, represented by the sum the exports and imports of goods and services, showed a high significance in all the countries apart for Liberia. This exception was explained by small tradeable production, weak industry structures and isolation of the economy caused by war conflicts in Liberia in recent years. The majority of cases of significant trade supported one of the starting theories that the enhanced trade within the monetary zone can be a medium through which the entry to the currency zone will improve the overall economic situation of its members.

When it comes to the fiscal policy's influence, it definitely has an important place in the output enhancement as it positively influences the GDP and, except for Guinea, it proved to be significant in all WAMZ economies. Just to remind the
negative coefficient of this variable in Sierra Leone – it is important that the countries do use the fiscal budget in an efficient way to promote the GDP growth.

And finally, the money change as a representative of monetary component in the economy has certain significance in Guinea, Liberia and Nigeria but only in Liberia it is positively influencing the GDP as a dependent variable. In the other two cases, expansionary monetary policy has an undermining effect on the output.

Hence, it can be definitely concluded that the government expenditure and trade are the key driving forces of boosting the GDP as it exhibit a high significance in majority of countries and in almost all they have a positive impact.

To apply these conclusions on the question of convergence ex ante and ex post, the trade should be an engine of convergence ex post but as was said before the analysis, some authors argue that the trade is boosted in the monetary union but does not bring the countries in the union closer together in terms of business cycles. In any case, impact of trade on GDP in WAMZ countries is very high and so the launch of common currency, which would boost trade, would very probably improved the economic output of involved countries, whether it would also cause a further convergence or not. However this optimistic outlook take into account a danger of a counter-effect caused by unsynchronised fiscal policies which are also very important in five out of six WAMZ states. So ideally, national fiscal objectives and rules should be harmonised among all states before the launch of Eco so the boosted trade could then work in favour of all countries.
Gainers and losers in West African Monetary Zone

Balogun\(^79\) states that the evaluation of desirability of a country’s entry into the monetary union depends on its ability or inability to use the monetary policy for macroeconomic stimulation. The efficiency of national monetary policy is a sufficient test to decide whether to adopt a common currency or not.

If this condition is used to divide the WAMZ states into the group of potential gainers and losers of a common monetary policy, then the OLS models from previous chapter provide the answers. The money change as a monetary component of the model was highly significant only in the Guinea, Liberia and Nigeria. Therefore these three countries should be expected to lose if they adopt the \textit{Eco} since they would lose the ability to apply their monetary policy which has an impact on the GDP now. But in Guinea and Nigeria, the effect of the money change actually has a negative impact on the output so these two countries could actually benefit even more from submitting their national policies to a more stable monetary management under the West African Monetary Zone. So, although this test was rather simplistic and narrow oriented, it looks like all six Sub-Saharan countries could benefit from the planned monetary integration.

But what would be these benefits? Except for those already explained in the theoretical part, some authors\(^80\) draw a vision of macroeconomic stability, better credibility, enhanced investment and improved welfare and growth. The promise of boosted trade can hardly be disputed since many studies (presented in the beginning of this chapter) reached a clear conclusion that the monetary union really does lead to greater trade flows\(^81\). Plus, all WAMZ countries which are mostly a commodity producers rather than service oriented would benefit ideally from these trade

\(^79\) Balogun, 2008.
\(^81\) Cham, 2009.
establishment of West African Monetary Zone.

To estimate some potential effects of establishment of WAMZ, an econometric analysis of correlation between participation in a monetary union and GDP per capita, debt to GDP and total investment was conducted. Again, the comparison to EMU and CFA franc experience is presented as the basis for the WAMZ future.

In European case, the original twelve countries that adopted Euro in 2002 are analysed, comparing the periods pre and post-Euro launch. But since the European environment differs from the conditions for WAMZ, countries from Sub-Saharan Africa were evaluated as well. Fourteen states using CFA franc in western and central Africa represent the monetary union group while the other countries with their national currencies form the contrast pole.

The correlation coefficient is an econometric method for finding relationship between two variables. Firstly the t-test uncovers whether there is even any dependence. The value of correlation coefficient between the two tested variables can move between -1 and 1. The higher the absolute value of coefficient, the stronger the relationship between the two variables.

Table 20: Correlation between MU participation and selected variables in 1990-2011.

<table>
<thead>
<tr>
<th></th>
<th>correlation coefficient</th>
<th>correlation</th>
<th>t(24)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eurozone</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MU – Debt to GDP</td>
<td>0.434591</td>
<td>no</td>
<td>2.3639</td>
<td>0.0265</td>
</tr>
<tr>
<td>MU – GDP per capita</td>
<td>0.860961</td>
<td>no</td>
<td>7.5693</td>
<td>0.0001</td>
</tr>
<tr>
<td>MU – Investment to GDP</td>
<td>-0.481411</td>
<td>yes</td>
<td>-2.4563</td>
<td>0.0232</td>
</tr>
<tr>
<td><strong>CFA franc</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MU – Debt to GDP</td>
<td>0.28786</td>
<td>no</td>
<td>1.9475</td>
<td>0.0581</td>
</tr>
<tr>
<td>MU – GDP per capita</td>
<td>0.14665</td>
<td>no</td>
<td>0.9613</td>
<td>0.3421</td>
</tr>
<tr>
<td>MU – Investment to GDP</td>
<td>-0.84505</td>
<td>no</td>
<td>0.8791</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Source of data: World Economic Outlook IMF (2012).

Participation in Eurozone proved to be only negatively correlated to the net investment. The same results were also reached by Galí and Perotti as they concluded that except for a diminishing effect on investment, there were no significant changes in any fiscal indicators after the accession to the EMU. And since the investment position of Europe in general is diametrically different from that of Sub-Saharan Africa, there is not much possibility to predict whether the WAMZ

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82 Hansen, 2012.
would have the same effect.

Correlation results in Africa show that the membership of states in the CFA franc zone, the Western or the Central one, has no influence on either the indebtedness, investment or economic output. Apparently, other nation specific conditions are more influential in determination of GDP, debt or investment. Thus it is not possible to reach any conclusive results on what would be certain benefits of entering to West African Monetary Zone in terms of welfare in participating countries.

**Economic distance in WAMZ**

Since it was not possible to estimate the benefits, the next part will focus on identification of who might gain and who might lose in the WAMZ.

Traditionally, the estimation of future costs of entering a monetary union is based on the economic distance between each country and the target country. In WAMZ case, that would be Nigeria for its relative size (geographical and economical) and contributions to WAMZ programme since it was Nigeria and Ghana who are the main initiators of the integration process.

Several theories suggest how to measure an economic distance between states. Some methods use the output per capita and GDP growth as factors of measurement, while others uses the GDP growth against inflation.

**Graph 18: Economic distance between WAMZ states in 2000-2011.**


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84 Patel, 1964.
85 Oshikoya, 2010.
The graphical interpretation of economic distance between WAMZ countries encompasses all three mentioned variables – GDP growth, inflation and GDP per capita (which is shown next to each bubble and determines its size too). There is certain proximity of the three small countries – the Gambia, Guinea and Liberia – in terms of economic growth which is almost three times higher in Nigeria and Sierra Leone. On the inflation scale, there are also persisting differences – from the period average of 7% in the Gambia to Guinea’s 18%. Severe variances can also be observed in the GDP per capita where the two leading states – Nigeria and Ghana – perform much better than the other smaller states which only reach a value close to about one third of the GDP per capita of the two major economies. In any case, if Nigeria manages to lower its inflation rate, which is still not within the boundary of the convergence criteria, while maintaining its promising economic growth, it really could be a good anchor economy within the West African Monetary Zone towards which the other countries would aspire to get closer to. However, in the ideal scenario, all the countries should converge more before the take off of the Eco.

**Nigerian giant in West African Monetary Zone**

Although the economic performance of Nigeria in the previous analysis looked optimistic, there are concerns that a presence of so much bigger member in the WAMZ could become overpowering and endanger the partnership principle in the union. Similar power dynamics work in the Common Monetary Area where South Africa plays the role of a sole leader of the monetary policy since the South African rand is the unifying currency\(^86\).

Balogun\(^87\) as well as Debrun, Masson and Pattillo\(^88\) believe that the sole winner of the future monetary union in Western Africa will be Nigeria. The latter authors explain that given Nigeria’s highly divergent trade shocks and less disciplined fiscal policies, all the other countries would be worse off in a common currency union. On top of that they see a danger of Nigerian size as an incentive for its dominance over the WAMZ monetary policy.

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\(^{86}\) However the other states still have their national currencies which gives them certain degree of freedom and insurance against the hegemony of South Africa which is an option that will be out of reach for the small WAMZ states once they adopt the Eco. On the other hand, Nigeria too will banish its own currency and will have to conform to the WACB.

\(^{87}\) Balogun, 2008.

Indeed, the negative correlation of trade between Nigeria and all other countries was confirmed in the analysis of the OCA criteria application to WAMZ in this thesis. This could really pose a great threat to the stabilisation abilities of the common central bank if it was to react to a severe trade shock in Nigeria which would be very probably quite asymmetrical with respect to the other members of WAMZ. Then given the size of Nigerian economy, the WACB would have to act in response to such disturbance which could harm the other states which would not have similar development due to different trade patterns.

However the criticized fiscal indiscipline is questionable given that in the observed integration period 2000-2011, Nigeria did perform the best of all six countries in terms of debt and also showed fiscal surpluses and relatively low financing of government by its central bank. A potential danger could occur if Nigeria was to run excessive fiscal deficits which would lead to unsustainable indebtedness. This is quite a current topic with respect to the recent development in the Eurozone where the debt troubled countries like Greece, Italy or Spain already do or might need a bail-out from their stronger partners in EMU, mostly from Germany\textsuperscript{89}. Can Nigeria be seen as a “Germany” of WAMZ or is there rather danger that Nigeria would default and small WAMZ economies would end up bailing it out?

Graph 19: Debt to GDP ratio and seigniorage in Nigeria and rest of WAMZ states.

![Graph showing Debt to GDP ratio and seigniorage in Nigeria and rest of WAMZ states.](source)

The stable development of Nigeria’s debt in past five years which is way below the average of remaining WAMZ countries suggests that the sketched scenario of Nigeria’s collapse due to excessive borrowing is not a likely development.

\textsuperscript{89} Conquest, 2011. Issing, 2011.
The dominance of Nigeria in WAMZ structure is evident in both charts above. Nigeria is responsible for 83% of union’s GDP and 77% of its population. On the opposite end stands countries like the Gambia and Liberia which contribute less than 1% to the WAMZ output and combined represent less than 3% of union’s population. Even the second largest and strongest economy in the group – Ghana – only covers 13% of the GDP which does not give it a sufficient power to balance the power of Nigeria. Even in Europe, when the Euro was launched in 2002, the position of Germany was not as hegemonic as Nigeria’s, since it only took 29% of total EMU GDP, followed by France and Italy with cca 20% and Spain with 10% of EMU’s GDP.

Another problem comes with Nigeria’s effect on a decision-making system in WAMZ. Because if that was to reflect economic weight of participating countries, the dominance of Nigeria may develop which would make those decisions less acceptable to the other five countries.\(^9^0\) Hence a different parameter should be chosen as the weight for establishing the representation of individual states in the decision-making bodies of WAMZ.

A possible approach to dividing the power in WAMZ authorities between member states could be based on the GDP per capita which would provide more even allocation even though Nigeria and Ghana would still be ahead of the rest of the states. Another alternative is a distribution based on how many convergence criteria each state fulfils. This method would also motivate countries to focus on complying with the prescribed rules. Or the most obvious choice – all countries could have the same representation in WAMZ bodies. In fact, that is the current system for the WACB where all six states have two deputies – the NCB Governor and one more

\(^9^0\) Oshikoya, 2010.
established representative. An equal division of policy-forming powers in WAMZ will be necessary for the launch of Eco because without it, the smaller states be reluctant towards tying themselves with Nigeria and Ghana. As was repeated on many occasions, political willingness of all participating countries is crucial for bringing the monetary union to life.

It should be reminded at this point that the West African Monetary Zone is designed as a transit step towards a bigger monetary union with UEMOA in which the strong position of Nigeria will be moderated by presence of other large countries, namely Mali and Niger.

**Summary**

Although the literature sources are quite sure that the only country benefiting from the WAMZ integration project is Nigeria, the results of this chapter are less conclusive. Based on its size and economic output, Nigeria definitely has the potential to become the leading economy within the WAMZ which also brings the danger of its dominance that could discourage other states from joining the union. This negative development has to be prevented through a proper design of WAMZ institutions and balanced division of power between the members. However the institutional area does not seem to be the risky zone.

Bigger potential for future problems of Nigeria’s membership is hidden in its uncorrelated trade and business cycles which could trigger asymmetric trade shocks unshared by other participants. In that case, Nigeria’s size would force the WACB to stabilize the disturbance which could harm the other member economies. It is unlikely that Nigeria’s fiscal policies would present a threat to the stability of the union given its positively developing indebtedness indicator. However, there might be a problem caused by a large economic distance between Nigeria and Ghana, and the four small countries in WAMZ. Based on the monetary policy efficiency under national autonomy, all the states except from Liberia, where the current policy has a positive effect on GDP, could benefit from a stable monetary policy under the WACB.

Overall, which countries and how will benefit or suffer from joining the West African Monetary Union will depend on the level of convergence before the unification, and coordination as well as discipline in fiscal management.
Analysis of fiscal sustainability in West African Monetary Zone

Fiscal discipline is essential for the establishment of a monetary union because of the spill-over effects which can spread negative consequences of one member’s fiscal policies to the other states of the union. Maintaining sustainable fiscal performance is really a sine qua non for the establishment of monetary union, especially so in WAMZ where the danger of debt-repaying obligations crowding out resources for social services would worsen the already alarming poverty situation. Bad long-term fiscal performance undermines the central bank’s ability to secure monetary stability corrupted by financing of government deficit (monetization of the deficit). Fiscal indiscipline is connected to the political instability under which politicians run looser fiscal policies in order to improve economic performance, even if only for a short period, and get re-elected.

An important objective for the fiscal policy is to ensure a sustainable public debt without resorting to monetary financing. National debt can be considered sustainable if it satisfies the solvency condition without a need for major corrections in the financing (meaning any severe cuts in expenditure or raise of taxes). Debt solvency is achieved when the future fiscal surpluses are sufficient to pay back the capital debt and interest. There are several methods of evaluating fiscal stability:

(a) fiscal deficit is considered sustainable if a ratio of debt to GDP is lower than the GDP growth and real interest rates which is expressed in this equation

\[ Ps = \frac{r_i - g_t}{1 + g_t} * b \]

where \( Ps \) stands for primary surplus to GDP, \( b \) for the debt to GDP, \( r_i \) for the real interest rate and \( g_t \) for the GDP growth rate;

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91 Oshikoya, 2010.
93 Cham, 2009.
(b) the accounting approach states that the sustainability of fiscal policy is achieved if the growth rate of the economy is larger than the real interest rate;

(c) if the total debt service to domestic revenue ratio is below 25% and declining, than country’s domestic revenue generation can be considered efficient and sufficient to take care of servicing the debt payments;

(d) and finally, the PVBC method sees the sustainability condition satisfied when the present value of budget constraint is reached without any major corrections in the income and expense balance needed to avoid solvency or liquidity problem. This method was later re-examined and concluded that to satisfy the PVBC, the debt growth should be lower than the interest rate.

For the purpose of assessing the fiscal sustainability in the WAMZ countries, the last three approaches will be applied because the data of primary surplus for WAMZ countries are not available and so the results of the analysis would be misleading.

Graph 21: GDP growth and real interest rates in WAMZ (accounting method).

According to the accounting approach, the group of WAMZ countries exhibit relatively good results. Except for the Gambia in 2005-2006 and Liberia in 2001-2003 and 2009, all the countries managed to reach higher GDP annual growth than the real interest rate over the last ten years. Using the accounting concept, all WAMZ economies, apart from Liberia, satisfied the fiscal sustainability condition in recent years.
The second approach states that a debt service to domestic revenue ratio lower than 25% is an indicator of a sufficient generation of revenue for the satisfaction of debt service payments. The next graph shows the ratios for five economies of WAMZ, Liberian data needed for this analysis are not available.

Graph 22: Debt service to domestic revenue ratio in WAMZ.

Based on this method, the five WAMZ countries have very promising results since the ratio of debt service and revenue is within the limit of 25% since 2007 (and 2008 for the Gambia). A clear decreasing trend is evident as well. However, these immensely favourable results raise a question what role in this development played which factor included in this rather simplistic evaluation. Their WAMZ average development is seen in the graph below.

Graph 23: Selected indebtedness indicators in WAMZ countries, in million USD.

Although, the ratio of debt payments to domestic revenue in WAMZ countries is
decreasing as well as the external debt, the second graph shows that total debt service payments stay basically on the same level since 2001, with the exception of 2005-2006 jump. Domestic debt is growing which is especially worrying because of the monetary financing of government budget by the central bank is a part of this domestic borrowing and, as was already explained, this can have a serious negative effects for the potential members of a monetary union. On the other hand, an increase in tax revenue is a positive sign of better management on the revenue side of fiscal budget.

Graph 24: Public debt growth and interest rates in WAMZ.

The last sustainability evaluation technique compares the public debt growth and interest rate. The analysed countries' results were in a contradiction with the previous outcomes of the accounting method. Only Liberia recorded an interest rate higher than the debt growth over the whole observed period. Also the Gambia achieved higher interest rates since 2004. Other countries only reported a debt growth lower than the interest rate in short disintegrated periods: Ghana in 2004-2006, Guinea in 2007-2009, Nigeria in 2005-2006 and 2008 and Sierra Leone in 2005-2008. Hence, the long-term sustainability of fiscal policies can not be concluded for any of the states with the exception of Liberia and the Gambia.

Not entirely conclusive results of the three evaluations of the fiscal sustainability in the WAMZ do not testify about a sufficient ability of governments to prevent a negative spill-over effect. If a country achieved satisfactory results in all
three methods simultaneously then certain level of fiscal sustainability could be concluded in its macroeconomic management. But the last method applied did not uncover a desirable performance in a majority of WAMZ countries and even closer analysis of the 25% rule raised concerns about the sustainability of fiscal policies in the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone.

Hence, because the importance of fiscal policies was clearly determined in the regression analysis, its impact on the economy of the whole monetary union should not be underestimated. Since the convergence criteria should play the role of a fiscal guarantee of preparedness of the members to enter the monetary union without bringing undesired fiscal instability, the following part will look at them.

**Fiscal sustainability and WAMZ convergence criteria**

As was already stressed in the previous analysis, convergence criteria should ensure a harmonisation of fiscal policies in the individual countries. Since the monetization of deficit will not be within the reach of national governments once they enter the monetary union, it is crucial to focus on ensuring the fiscal stability. Hence, proper coordination of fiscal policies among member states, specifically their targets and tools, is important.

The preparation of stable fiscal environment in all the member states before the accession to the common currency is the main objective of the convergence criteria. The actual rule set applied for WAMZ countries was presented in the preceding chapter. But how relevant these rules really are to ensure the fiscal preparedness of the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone is the key question in the following regression analysis.

Waste literature covers the topic of fiscal sustainability. Wyplosz\(^\text{96}\) sees as the driving forces behind the external debt accumulation primary account, GDP, interest and exchange rates and inflation. But also stresses the importance of tax revenue for the judgement of the debt sustainability. Similar components, with the exception of excluded exchange rate and GDP which was changed for GDP growth, were used to analyse the indebtedness in the US, UK and Germany\(^\text{97}\). In the EU area, the

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\(^{96}\) Wyplosz, 2012.

\(^{97}\) Polito and Wickens, 2005.
regression analysis of debt was build on the impact of terms of trade, government expenditure, GDP per capita, inflation, nominal interest rate and government revenues. Budina and van Wijnbergen used the regression analysis on the public debt in Turkey reaching similar results – the main factors were the primary fiscal deficit, interest rate and costs of external borrowing. An interesting adjustment to the regression analysis of Sri Lanka's debt presented Deyshappriya. Although the variables include expected indicators like interest rate, primary deficit, fiscal revenues and expenditures, exchange rate, reserves of foreign currency and GDP, a less traditional factor was added – the ethnic problem. For the OLS model it was added as a dummy variable, where the values were differed according to whether there was a war in the country in each observed year or not. This variable proved to be highly significant for the debt.

Building on these existing studies is the following regression analysis which again uses the OLS model, which was already introduced in the thesis, to explain the relationship between the debt to GDP as a representative of fiscal sustainability and selected variables. The variables were firstly taken from the presented list, so it included primary account balance (AC), GDP, interest (IR) and exchange rates (ER), inflation (I), tax revenue (T), GDP growth (g), government expenditure (Ex), GDP per capita (GDPpc), government revenues (Rv), fiscal deficit or surplus (DS) and reserves of foreign currency (FR). Secondly, all ten WAMZ convergence criteria – CB financing (CB), real interest rate (RIR), public investment (In) as well as money supply (MS) and interest payments (IP) were added into the formulation of the model.

The intriguing ethnic problem is not added because the war situation in most African countries is rather difficult and even if the country is not officially in war, there are numerous regional conflict situations. The results could then be misleading. Moreover the main objective of this regression analysis is to provide suggestions for adjustment of convergence criteria to WAMZ and from the logical point of view, non-existence of war situation can hardly be defined as one of the requirements for entry into the monetary union. And if it was, in practise it would mean that none of the six countries could join West African Monetary Union due to the mentioned regional fights.

98 Dybczak and Melecky, 2011.
100 Deyshappriya, 2012.
All the listed variables were gradually tested in different combinations and specifications in the OLS model in order to achieve the best fitted equation for explanation of the total debt (specified as debt to GDP ratio):

\[ Debt = f (AB, GDP, IR, ER, I, T, g, Ex, Rv, GDPpc, DS, FR, CB, RIR, In, MS, IP) \]

Those variables that proved to be significant finally formed a model which is presented in the next table. To remind the basics of the OLS model and regression analysis, one should stress that the key results are the coefficients which estimate the connection of each explanatory variable with the dependent variable (debt). Positive value means that higher value of explanatory variable increases the dependent variable and vice versa. The significance is signalized by the stars in the middle column while the VIF values of variables below 10 ensure non-collinearity of variables. The quality of the entire model is judged in the Ramsey’s RESET test which requires the p-value to be lower than the F-limit in order to grant correct specification. Finally, the adjusted R-squared says what is the explanatory value of the final equation, concretely how many percent of observed variance can be explained through the model. The maximum and most desired value is 1 which would mean that 100% of all debt movements are estimable by the model. Akaike and Hannan-Quinn criterion are additional indicators of the overall fit of the model and the lower the value of these two, the better the model is.

Table 21: OLS model of fiscal sustainability for WAMZ (dependent variable: debt to GDP ratio).

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Significance</th>
<th>VIF</th>
<th>Period</th>
<th>2000-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.70708</td>
<td></td>
<td>RESET test</td>
<td>F (2,3) = 1.67038</td>
</tr>
<tr>
<td>Deficit</td>
<td>15.912</td>
<td>***</td>
<td>1.257</td>
<td>P-value = 0.3254</td>
</tr>
<tr>
<td>CB financing</td>
<td>2.34542</td>
<td>***</td>
<td>1.234</td>
<td>Adjusted R-squared = 0.827647</td>
</tr>
<tr>
<td>Inflation</td>
<td>13.4143</td>
<td>*</td>
<td>1.217</td>
<td>Akaike criterion = 7.63788</td>
</tr>
<tr>
<td>Interest rate</td>
<td>4.21247</td>
<td></td>
<td>Hannan-Quinn</td>
<td>5.97821</td>
</tr>
</tbody>
</table>


After testing different variables, specified before, only the public surplus/deficit, central bank’s financing of public budget, inflation and interest rate prove to be significant components of the debt formation:

\[ Debt = -1.707 + 15.912 \text{DS} + 2.345 \text{CB} + 13.414 \text{I} + 4.212 \text{IR} \]

From those, the deficit and monetary financing are the most significant ones, both
with a predicted positive coefficient which says that high values of these two variables contribute to the accumulation of government's debt. In case of the public deficit, its impact on the debt increase is quite clear since the public debt is created through borrowing of government to cover its expenditures. Creating a fiscal deficit then projects directly into the piling up of the debt.

In theory, central bank's financing for government fiscal operations, especially through seigniorage, is a method how a government can avoid external borrowing to cover its expenses. However, central bank must be willing to provide such a support. But this type of financing undermines the credibility of the government which projects in higher costs of external borrowing because the outside creditors perceive country as more risky. So the higher interest then increases the total debt too.

More importantly it creates a danger for the stability of states in the moment of adoption of a single currency when these privileges are passed on to the common central bank which will be less inclined in financing national governments. The positive coefficient in the presented OLS model shows that even before the actual application of the common currency, the usage of central bank's financing has a negative impact on the debt as it enhances its growth.

Similar increasing effect on public debt has inflation and interest rate, the other factors included in the model with the high positive coefficient. It is interesting to mention that real interest rate was also tested in the model as one of the independent variables but proved highly insignificant while the nominal interest rate did not and is included in the final model.

According to the RESET test, the specification of this model is adequate and neither any collinearity problem appeared. Low values of Akaike and Hannan-Quinn criterion are favourable for the overall quality of the model. The adjusted R-squared shows that this model explains 82.8% of the variance in observations which is a satisfactory result. During the testing, a better fit of a model with the adjusted R-squared of 88.9% was reached when an exchange rate was included in the equation instead of the interest rate. However, with exchange rate in the model, majority of variables showed serious collinearity problem which was not possible to cure. Therefore the presented OLS model keeps the interest rate variable but for practical application the exchange rate should be considered as significant.
It is evident, that all the variables in presented OLS model proved to be significant when explaining the debt to GDP ratio as an indicator of fiscal sustainability of national policies. In the light of these findings, the WAMZ authorities should consider modification of convergence criteria and making the identified four significant factors the essential requirements for member states.

**Summary**

The crucial role of fiscal management (next to the trade) for economic performance of all six West African countries was proved in the preceding chapter on convergence. Its vital necessity for an establishment of a successful monetary union is also indisputable since fiscal indiscipline of one member state can spread across the whole zone. Several accounting methods of evaluating fiscal sustainability were applied to the WAMZ countries but exited various inconclusive results. Although one trend about the WAMZ average could be derived – the external debt is decreasing while the domestic one is growing.

In order to see how the target of fiscal sustainability could be incorporated into the convergence criteria to ensure that the member countries do reach certain level of fiscal stability, a regression analysis was used. After testing many variables, suggested in the literature, these four proved to have a significant increasing impact on the debt to GDP ratio – fiscal surplus/deficit, CB financing of government, inflation and interest rate. All these four variables are already part of the convergence requirements for WAMZ members. But, following this result, WAMZ authorities should consider making these macroeconomic indicators all part of the primary and obligatory demands on the joining states.
Institutional design of West African Monetary Zone

Focusing on the planned institutional structure of the union, four main bodies will be introduced – the West African Monetary Institute, West African Central Bank, West African Financial Supervisory Authority and the WAMZ Secretariat. The last part takes a look on the budgetary and financial aspect of building of WAMZ.

**West African Monetary Institute (WAMI)**

The Institute should have operated in the period 2001-2002 after which the West African Central Bank (WACB) was to take off as the key institution of WAMZ functioning. Due to the serious delays in the process of bringing the monetary union into action, WAMI still has an active mandate as the main authority of WAMZ programme and is preparing the grounds for future introduction of the WACB in the year 2015 as the core for WAMZ launch.

The statutes of West African Monetary Institute, as formed in 2000, stated that the objectives of WAMI shall be:

(a) managing all the preparations for the take-off of the West African Central Bank;

(b) monitoring the compliance of member states with the convergence criteria;

(c) adopting price stability as the central objective and coordinating the monetary policies with this objective;

(d) preparations for the launch of common monetary policy and

(e) preparations for the issue of a common currency *Eco*.

Once all conditions for the actual introduction of common currency and common

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101 *A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union*, 2006.

monetary policy in practise are satisfied, the West African Monetary Institute will be transformed into the foundation of the West African Central Bank which will take off in the same moment.

**West African Central Bank (WACB)**

In the future monetary union of WAMZ its central bank – the WACB – is going to stand in the very centre of its organisation. It is the vital organ for a successful launch and functioning of the common currency and common monetary policies. At the moment, the WAMI is preparing the take off of this institution.

However, even though the actual start of the monetary zone and WACB was supposed to happen already in 2003, 2005 and 2009, there is still no binding plan for the WAMZ central bank and its organisation. On a meeting of NCBs’ Governors in 2011, one of the questions was the type of bank that WACB is going to be:

1. **federal system** would preserve individual National Central Banks which would give up their sovereignty to the WACB but would still operate with certain power in their country, participate on the governance of the WACB and share its work via establishment of specialized working groups;

2. under the **unitary model**, the National Central Banks will cease to exist and will continue to operate as branches of the WACB.

Both options have their advantages and shortcomings. If the federal type is applied, the main challenge will be the division of power between the central and national banking sector, especially in the area of financing fiscal operations. Also the proposed system of cooperation via working groups formed by combined stuff of WACB and different NCBs seems to be logistically and organisationally much more demanding and may lead to a low effectiveness of used resources.

On the other hand, the introduction of unitary system will probably lead to certain down-sizing which could become an incentive for a negative view on the WACB and the WAMZ project as a whole. During the establishment of the new banking sector, demanding and radical structural reform would have to be undertaken which could slow down the launch process and cause another undesired

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103 24th Meeting of the Committee of Governors of Central Banks of the West African Monetary Zone, 2011.
delay of WAMZ start date. However, in this unitary structure, it may be easier to separate the authority of the WACB from national interests of member states, as well as any pressures the governments may put on the WACB, and enable it to follow stable monetary policies and impartial targets. Considering that the central bank in UEMOA is running on a unitary principle, it is probable the same model will be applied for the WACB as well in order to facilitate better their future merger.

Under either model, the WACB’s primary objective will be maintaining price stability using the interest and exchange rates and changes in reserves requirements as the main tool set. As was already suggested by the plan to target low inflation, WAMZ authorities are looking for inspiration with the WACB structure to the European Central Bank and it is likely that a similar monetary authority will be created in the WAMZ.104

The Governors, already insinuated that for some periods of time, the WACB can provide credit to the governments under specified conditions which finds support in the original design of WAMZ where a compensation and stabilisation funding of member states is allowed105. However, for an ongoing activities of the WACB a no-financing and no bail-out rule is strictly outlined in the Statutes106.

Another important feature of the common central bank – its independence. It is anchored in the Statutes of WACB, taking inspiration in the European prototype and following literature conclusions107 that only political-influence-free central bank can provide the necessary monetary framework for successful existence of a monetary union and circulation of a common currency.

When it comes to the administrative structure of the WACB, there is a clear outline for its management108:

(a) political Governing Council;
(b) the Executive Board comprising of President, Vice Presidents and two Executive Directors, and

104 24th Meeting of the Committee of Governors of Central Banks of the West African Monetary Zone, 2011.
105 Accra Declaration on Creation of a Second Monetary Zone, 2000.
(c) the main decision-making body – the **Board of Directors** which is formed by members of the Executive Board, Governors of six NCBs and one member appointed from each country.

**West African Financial Supervisory Authority (WAFSA)**

This institution was established with an objective to supervise and regulate banks and other financial institutions in all member states. Its functioning should create a secure financial sector and support the WACB in pursuing its targets through taking over part of the centralised supervision. It should also help with the future merger of the two financial sectors of WAMZ and UEMOA.\(^{109}\)

**West African Monetary Zone Secretariat (WAMZS)**

The Secretariat is supposed to become the administrative backbone of the Zone. Especially it will be responsible for the harmonisation of statistical system between the six member countries and following creation of unified database, as well as monitoring and coordination of national fiscal and trade policies. It should basically take on the role of executive authority.\(^{110}\) Apart from its evidently crucial task of coordinating national policies, it should be stressed that by building a connected and structured system of statistical monitoring, its database will be the informational foundation which will guide decisions of other institutions, including the monetary policy of the WACB.

**WAMZ budget and financial contributions**

All six participating states are supposed to contribute financially to the WAMZ common budget aimed at providing resources for the formation of the monetary union – from supporting the convergence of infrastructure of member states to the actual equipment of WAMZ facilities. Concretely there are three contributions toward different components of the WAMZ budget:\(^{111}\):

\(^{109}\) [A Study on the State of Preparedness of the West African Monetary Zone Countries for Monetary Union, 2006.]


(a) general annual contribution to the **WAMZ budget**;

(b) **Stabilisation and Cooperation Fund** (SCF), designed to help member countries to overcome temporary problems in economic performance, which should receive USD 100 million in total;

(c) the **capital for the West African Central Bank** which was set on a total sum of USD 200 million.

An interesting fact is found in a comparison of WACB capital and the capital of European Central Bank (ECB) – in West African Monetary Union the CB's capital represents 0.074 % of WAMZ's total GDP while the ECB's capital accounts for 0.12 % of Eurozone's GDP (almost double of WACB's share). This unfavourable statistics shows a shortage and a possible problem in the financing structure. If the WACB is supposed to play an independent core role for the future functioning of the Zone it will need a sufficient financial resources to successfully perform its stabilizing function. But the planned capital of less then 0.1 % seems rather unfitting.

It should also be noted that neither the resources for SCF nor the WACB capital have been collected in its full so far. The question of financial contributions to a central budget is a sensitive one in WAMZ which gives a prove that the political will and commitment of individual states in West Africa towards the monetary integration is still lacking.

Graph 25: Contributions to the SCF by member countries.

![Graph 25: Contributions to the SCF by member countries.](image)

*Source of data: Preparedness study (2005).*

Shares of required contributions to the SCF by individual countries were set in the first years of WAMZ programme and their actualised calibration including newly
joined Liberia is not yet available. But due to its relatively small GDP and population within the WAMZ group it will probably cause only minor adjustments. So far, only Ghana paid its part in full. The structure of national contributions to the WACB capital is the same like the presented division for SCF.

However more interesting is the actual operational budget of WAMI which is shown in the next chart.

West African Monetary Zone (represented by WAMI) acquired total budget of 29,923,103 USD in 2011 which was almost double compared to the previous year's budget of 17 million USD. However, what is the most striking fact in the comparison, is the contribution of member states to this budget. Because it was almost even in all three years, the amount financed by members was about 3.5 million USD. Detail division is presented in the graph above where it can be clearly seen that the participating states themselves only provide 13-22% of WAMZ resources, while the African Development Bank is evidently the major sponsor of WAMZ operations with 74-82% share in budget contributions. Even more surprising statistics are revealed if the budget is compared to the GDP of the whole monetary zone. In 2011, central WAMZ budget was equal to 0.0103% of WAMZ GDP. It also means that the six member states altogether contributed only 0.0013% of their overall GDP to the integration process.
Discussion and recommendations

Following the theoretical overview and eight analytic chapters, which looked into various areas of the establishment of the West African Monetary Zone, this final part of the thesis is going to suggest several adjustments. These are concentrated in eight key recommendations which should indicate possible adjustments and focal issues to be addressed by the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone, as well as the WAMZ as a whole. The aim of all the presented propositions is to facilitate smooth introduction of the *Eco* and establishment of a strong and successful monetary union in West Africa.

The authorities of WAMZ countries should take a time to realistically look on all the necessary preparations which need to be done for the take-off of the union in practise, and on the conditions of all participating states. Afterwards a sober decision should be made about how long all these adjustments will take and decide a starting date accordingly because even after several delays, current target of 2015 seems more of a dream goal, especially given how the compliance of states with the convergence criteria was set back by recent crisis.

Moreover, in order to speed up the convergence process, all six countries should try to firstly implement partial cooperation programmes, like an elimination of all barriers on mutual trade.

One of the essential lessons from the EMU history is that actual launch of Euro was preceded by almost fifty years of gradual and systematic integration not only on a monetary level but also in the economic sphere – a customs union and subsequently a single market were created. Whilst in the West African region the first agreement was signed in 1999 and the first target date was set only on two years later. The idea that in two years, six underdeveloped countries with no mutual cooperation would be enough for preparing a necessary background for a successful monetary union was simply naïve.
There is no point for WAMZ countries to announce unrealistic dates although they might evoke a notion that the countries are very committed to the project and desire its soon start. However, when several postponement come, like they did in WAMZ case, it does have exactly the opposite effect on the mentality of the countries as well as the international view on the whole business. It is a clear demonstration of a lack of commitment and bad framework for the unification altogether. From the psychological aspect, every unmet deadline is a failure which slows down the integration process. It would be better to set a later but achievable launch date in the beginning and then define partial targets of convergence which could be a continuous motivation of participating states.

The OCA literature and convergence of states has been one of the key topics in the thesis. Although there are several conditions in the original theory, these should be the main focus in the WAMZ region – diversification of production and integration of labour markets.

In the analysis of WAMZ countries under the OCA criteria, the diversification of economy was a pitfall for all six states. All of them have a very narrow production portfolio and on top of that, there are big differences between the countries which was showed in the negative correlations of trade flows and also business cycles. The danger of such environment in the union was explained – countries suffer asymmetric shocks which are impossible to stabilize by a common monetary policy of the WACB. Especially painful these shocks would be in case of Nigeria for its dominant size which would bring high costs for other countries if the WACB had to adjust to a negative shock in Nigeria. Plus, in this country the danger of such uneven development is endorsed by its specialisation in oil production (90% of its exports) which also Balogun, and Debrun, Masson and Pattillo identify as a risk source for WAMZ. So, all countries and Nigeria especially should work on diversifying their industries in order to create a more balanced output which would lower the probability of occurrence of huge asymmetric shocks.

Closely related is the recommendation to work on further integration of labour markets. As was presented in the previous OCA chapter, labour mobility in the WAMZ is better than the one in Eurozone but there are still many improvements which could help. Those would be the establishment of a single market with free movement of production factors, unified social benefits system, inter-connected
employment office database and higher subsidies for education (to increase number of people speaking English).

On the other hand, the emphasis that was until now put on the development of payment system in WAMZ countries might be tuned down considering that the stabilisation effect of integrated financial markets in Sub-Saharan Africa is seriously limited by a low number of population which has an access to it. The generous funding from WAMI, AfDB and ECOWAS which was provided for it could be maybe diverted towards the proposed areas of structural diversification of economies and integration and refinement of labour market.

As to the profoundly discussed question of ex ante versus ex post convergence, Horvath and Komarek, Rose and Balogun supports the idea of an ex post process through the enhanced trade and unified monetary policies. The empirical survey of Lane says that the boosted trade does not synchronise business cycles while Gonsalves, Rodrigues and Soares claim the opposite.

Taking into consideration the expressed danger with Nigeria’s divergence from the other countries, the synchronisation of business cycles (through the explained diversification of economies) would be the only feature which would be recommended to be fulfilled prior to the launch of WAMZ. This would also lower the economic distance between the six countries and so decrease the costs of entering to the union. As for the other requirements of the OCA theory – none of the existing monetary unions were an optimum currency areas and they are still considered a successful projects. From their experience arises that more important than the OCA theory is the compliance of members with the convergence criteria.

Econometric analysis in different chapters of the thesis proved that the fiscal management of countries has a high significance in their overall performance. Therefore the convergence criteria should be in the focal point of the integration process and certain possible modifications were drawn from the results in this thesis.

Firstly, following the OLS model using the debt to GDP as a dependent variable, those variables which proved to be significant in the formation of the debt should be included in the primary criteria set. Those were fiscal surplus or deficit, central bank's financing of government operations, inflation and nominal interest rate. Except from the last named, all of these indicators are included in the basic set
while only a real interest rate rule is part of the secondary group of criteria. So the nominal interest rate should be incorporated in the first bunch of requirements.

Secondly, a more strict approach to the compliance with the criteria is recommended. At the moment, for the establishment of the WAMZ it is enough if three countries satisfy at least three out of four primary and three out of six secondary criteria. But given how crucial the primary set of rules is for creating a stable environment for the WAMZ’s start, this benevolent attitude should be tightened at least or the primary criteria. Hence all countries should satisfactorily fulfill all four (or five if nominal interest rate is added) primary criteria in order to adopt the common currency.

Moreover, there is no time consistency of economic performance required the participating countries. It is enough if they satisfy the criteria for one year and they can immediately enter into the monetary zone. In the chapter on convergence criteria, the graphs clearly showed that most of the WAMZ countries have a high variance in all the economic indicators, mostly the inflation and central bank financing. With respect to the unstable development of these features, it should be required that the country comply with all the primary convergence criteria for some longer period, at least two or preferably three years, to prove that it was not just a random situation which would suddenly worsen after the entry and could cause an instability in the whole union.

A possibility of taking over the set of EMU convergence criteria was introduced in one chapter of this work but given the fact that the WAMZ is scheduled to merge with the into a full ECOWAS monetary union, which has a similar convergence criteria to WAMZ, it is better to pursue the original set of requirements because all WAMZ countries will eventually have to comply with those once they will be entering the extended currency union.

Extending the problematic of maintaining a stability in the union and the actual take-off of the WAMZ, a question of permanent fiscal criteria for members is next. Again, the experience of the EMU can serve as an inspiration, concretely the Stability and Growth Pact, embedded in the Maastricht Treaty, which imposes a limit of maximum 3 % of GDP on the fiscal deficit and 60 % of GDP as the maximum debt allowed to participating states. These rules are applicable through out the
Establishment of West African Monetary Zone

membership in the union. Following the results of regression analysis and the critical situation in the Eurozone triggered by excessive indebtedness of some member states, it is strongly recommended to implement similar rules, including a clear system of sanctions for breaching the limits, in the WAMZ as well.

The proposed indebtedness limitations are supposed to prevent any problems of fiscal instability and unsustainable fiscal policies in WAMZ countries. However, these dangers can never be entirely eliminated. An if such a case comes, then the WAMZ should be able to deal with the situation for which it will need a sufficient central budget. The analysis of WAMZ budget and participants' financial contribution to the whole integration project were also included in the thesis but the results were very much unfavourable.

The operational budget of WAMZ (at the moment represented by the WAMI) is only 0.0103% of the total GDP of all WAMZ states. Plus, only 20% of this amount is actually contributed by the member states while the rest is financed by the AfDB. The budget of EMU is about ten times higher and from the theoretical point of view, MacDougal insists that for a minimum budget of a union in pre-federal stage should be 2-2.5% of union's GDP. So the WAMZ statistics are absolutely alarming and suggest that a reformation of WAMZ budget is necessary to create a large enough basis for WACB's independent activities, which should be mostly funded by the member states. Financial dependency on external sponsors also undermines the WAMZ as a whole because its future inflow is uncertain.

Hence the advice with respect to the WAMZ budget is to increase it to the proposed 2% of GDP of participating countries and to involve the member states more on in its formation. However this is easier said than done because financial resources is something no state is too thrilled to sacrifice in a shared purse.

This remark leads to the last recommendation for the establishment of the West African Monetary Zone – get a political support of national leaders. It is probably the most important one and unfortunately also the most difficult one to achieve. Yet all historical examples of monetary unification give an indisputable evidence that it is the political commitment of individual countries on which the destiny of any integration project stands and falls. And the WAMZ initiative is no different. So far the governments of the six counties seem to put the WAMZ
integration project on a side track, maybe due to the regional conflicts and troubles national economies especially during recent crisis. Even the numbers of WAMZ budget confirm that the commitment of participating economies is not sufficient, since the states still miss on putting together planned resources for not only the operational budget but the WACB and Stabilisation and Cooperation Fund too.

So it all comes down to this last recommendation of building strong political commitment for the WAMZ project in the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone, without which the union will never be really created. This being said, all analytic chapter in the thesis, including the historical unions review, showed that the economic side of the unification could not be dismissed in politics. Furthermore, unless the West African Monetary Zone wants to follow the path of failed union or get in the same crisis the Euro Area is now dealing with, it should make sure that the WAMZ union is standing on good economic foundations too.

These last four pages picked up on the most significant issues in the WAMZ countries and tried to offer some guidance towards successful development of the monetary integration. However, the establishment of a supranational monetary union is a complicated and very complex problem and it was not in the ability of this thesis to cover all the questions.

Just to give a brief hint about some other aspects of the WAMZ which would have to be studied in more detail, it is important to mention that an attention would have to be given to the Eco itself. Concretely, the setting of its value on the international market and also its relationship towards the national currencies in the six countries. Afterwards, will the full ECOWAS union keep the Eco or will it adopt an entirely new currency? Is Eco going to be pegged to some strong currency, the US Dollar or Euro, and if so, then which one? On that note, wouldn't it be better for the WAMZ countries to adopt the US Dollar or Euro, instead of introducing a new currency?

Many more areas of functioning of the monetary union could be brought up but the ultimate goal of this thesis was the current situation in the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone, and the conditions and possibilities for the creation itself of the West African Monetary Zone.
Conclusion

In April 2000, six states – the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone – signed in Ghana capital the Accra Declaration on Creation of a Second Monetary Zone to facilitate a faster and smoother integration in the region with the future dream of creating a single monetary union in the whole West Africa. Under the guidance from ECOWAS, a new currency Eco was to be adopted the following year. Since then the actual launch date for the monetary union was postponed three times, leading to the current vision of starting an operating WAMZ in 2015. The probability and desirability of this plan is one of the questions in the thesis, together with the analysis of overall design and its potential imperfections of the WAMZ project.

Four existing monetary unions – the Euro Area, Eastern Caribbean Currency Union, Common Monetary Area in South Africa and CFA franc zone – next to the failed Rouble Zone and East African Community were presented to become an inspiration for a successful formation of the West African Monetary Zone. Essentially, a shared historical, cultural and political identity of states is a good prerequisite for unionisation. But it should be reinforced by high economic convergence which makes it easier for countries to enter into the union. However the economically focused OCA theory is rarely a decisive argument and the actual unification mostly depends on the political commitment of national governments. Although this aspect could push through the establishment of a union, it is not capable of keeping the union going if a good fiscal and monetary management is not present as well.

Even though, centuries of British colonial rule gave all six countries the foundation of a common history and language, their convergence in economic areas is less favourable. The revision of the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone under the OCA requirements pointed out some crucial divergences. This is most evident in the structures of economic production and trade. Generally, African countries are oriented of agricultural sector and are dependent on the export of primary commodities. In the WAMZ group, this is the definition of Liberia with
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absolutely dominating agricultural sector. On the other hand, Nigeria’s economy and trade outflows are revolving around the oil mining industry, while the Gambia and Ghana are building a strong service sector. Hence it is not surprising that the national business cycles are not correlated at all which is one of the threats to the monetary union where asymmetric shocks paralyse the stabilisation power of common monetary policy and hit negatively other member states through the spill-over effect. However, it should be pointed to a silver-lining – the relatively high similarity in imports structure dominated in all WAMZ countries by the manufactured goods and food category which creates some common grounds. And even though the mutual trade within WAMZ countries is only about 20% of total national trade, it could be very probably expected, based on the experience in EMU and CFA franc zone, that this number will increase noticeably after the introduction of a single currency. Also the migration and wage flexibility of the labour force could be considered higher than in the Euro Area. But less optimistic is the situation on the financial markets which are used rarely and only by a small portion of the population and their international integration is far from optimal due to administrative barriers and legal differences.

Overall, the OCA conditions in the WAMZ are not fulfilled but following analysis attempted to find out, which of these requirements really matter to the stability of the potential monetary union. The results indicate that, even though trade is highly influential in all six WAMZ economies, the fiscal management could not be overlooked either. Moreover, looking at the recent development in the Eurozone, the importance of a proper fiscal discipline is indisputable. Plus, as was already suggested, trade is very likely to improve ex post after the WAMZ establishment. On the other side, fiscal policy will be under magnified pressure in the union because it will be the only tool left to the national government after the monetary policy will be handed over to the West African Central Bank. That is why, a lot of attention was paid to the setting of convergence criteria which should shape an equalized fiscal level of all states in the moment of their entry, and to the evaluation of fiscal sustainability and its maintenance after the unionisation.

There are four primary and six secondary convergence criteria and in order to start the WAMZ and for states to join in at least three states have to fulfil the minimum of three primary and three secondary criteria at the same time. The
ongoing delays in Eco adoption are explainable by the fact that this described situation have not yet occurred. Nigeria was the only country which managed to satisfy all four primary convergence criteria, but only in 2006 and 2007 and with not enough success in the secondary group. Other states did not even come close to the set limit. The most problematic is the regulation of budget deficit and financing of government budget by the central banks.

But exactly these two requirements proved to be the most significant in the shaping of public debt and consequently ensuring the fiscal sustainability without the danger of a debt crisis. In order to prevent this undesirable development, WAMZ authorities should think about implementing some rule set about the debt (external as well as domestic) and deficit which would be valid not only before the entry into the union but also during the membership too. Especially so, because the analysis uncovered a tendency to reduce external debt – partly thanks to debt relieves from international creditors and also via creating bigger domestic debt.

Part of this trend was the monetization of fiscal deficits which will no longer be possible under the WACB. But the primary loss could be compensated by a more stable monetary policy of the impartial and independent central bank, which according to the econometric analysis could help all six countries. But in order to enjoy this benefit and not jeopardise it, a strong fiscal discipline has to be maintained by all members.

Speaking of benefits, there was a question of Nigeria's participation in the WAMZ and the theory that it will be the only winner in the integration project while the smaller countries will suffer under its dominance, mostly because Nigeria's economy (structure, trade, business cycles) is diametrically different. On the other hand, Nigeria with its large GDP and numerous population (77% of WAMZ population) could just as well be expected to play the role of WAMZ’s “Germany”. Neither scenario can be predicted with a total assurance. But the great potential of Nigeria to be the leader of the pack will in the end depend on its ability to converge economically closer to the rest of WAMZ states, and especially to apply a good fiscal discipline to provide the stability basis for the union. What could be mentioned as a plus point for Nigeria is its commitment to the integration project. Together with Ghana, it was the initiator of the WAMZ programme and it also paid the largest share to the WAMZ budget so far.
This brings the topic of WAMZ financial design and national contributions. As was described in the thesis, the current operational budget for the WAMZ is insufficient and what is worse, it is mostly financed by the AfDB which is a source that could dry out any time, and so the states should take on more of its responsibilities to give an appropriate and stable support to the functioning of the WAMZ institutions – the West African Monetary Institute, the West African Central Bank, the West African Financial Supervisory Authority and the WAMZ Secretariat.

All in all, although the six countries do not form an optimum currency area based on the traditional OCA theory, it does not mean that it is impossible for them to actually create a monetary union. But it will require longer time and intensive efforts in order to ensure a stable conditions for the WAMZ take-off, preparedness of the states and successful functioning of the established union. Some suggestions to achieve these targets were presented in the discussion:

(a) setting a reasonable start date allowing countries to converge more,
(b) building economic cooperation programmes to loosen the barriers between states,
(c) focus on diversifying economy structures and integrating labour markets,
(d) adding interest rate into primary criteria and establishing an obligatory compliance with all the primary criteria before entering to the union,
(e) require long-term compliance with the convergence criteria,
(f) implement permanent fiscal sustainability rule into the WAMZ framework,
(g) collect larger budget with bigger participation of member states,
(h) increase political commitment for the WAMZ project.

Even though a future creation of the WAMZ is a possibility, the planned launch of the West African Monetary Zone in 2015 can be considered an unlikely event and its further success or failure will be determined by the political visions and interests of the Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone.
Sources


[18] COLEMAN, A. Economic Integration and Monetary Union. [online] Treasury
Establishment of West African Monetary Zone


Establishment of West African Monetary Zone


Establishment of West African Monetary Zone

Nationalbank, 2002.


Establishment of West African Monetary Zone


Appendices

Table 22: WAMZ countries basic informations.

<table>
<thead>
<tr>
<th></th>
<th>The Gambia</th>
<th>Ghana</th>
<th>Guinea</th>
<th>Liberia</th>
<th>Nigeria</th>
<th>Sierra Leone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>1 840 454</td>
<td>24 654 402</td>
<td>10 884 958</td>
<td>3 887 886</td>
<td>170 123 740</td>
<td>5 485 998</td>
</tr>
<tr>
<td><strong>Capital</strong></td>
<td>Banjul</td>
<td>Accra</td>
<td>Conakry</td>
<td>Monrovia</td>
<td>Abuja</td>
<td>Freetown</td>
</tr>
<tr>
<td><strong>Currency</strong></td>
<td>Dalasi (GMD)</td>
<td>Ghana cedi (GHS)</td>
<td>Guinean franc (GNF)</td>
<td>Liberian dollar (LRD)</td>
<td>Naira (NGN)</td>
<td>Leone (SLL)</td>
</tr>
<tr>
<td><strong>Official language</strong></td>
<td>English</td>
<td>English</td>
<td>French</td>
<td>English</td>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>11 295 km$^2$</td>
<td>238 533 km$^2$</td>
<td>245 587 km$^2$</td>
<td>111 369 km$^2$</td>
<td>923 768 km$^2$</td>
<td>71 740 km$^2$</td>
</tr>
<tr>
<td><strong>Major religions</strong></td>
<td>Muslim 90%, Christian 8%</td>
<td>Christian 69%, Muslim 16%</td>
<td>Muslim 85%, Christian 8%</td>
<td>Christian 86%, Muslim 12%</td>
<td>Muslim 50%, Christian 40%</td>
<td>Muslim 60%, Christian 10%</td>
</tr>
<tr>
<td><strong>Urban population</strong></td>
<td>58%</td>
<td>51%</td>
<td>35%</td>
<td>48%</td>
<td>50%</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Health expenditure</strong></td>
<td>10.1% of GDP</td>
<td>10.6% of GDP</td>
<td>6.1% of GDP</td>
<td>3.9% of GDP</td>
<td>5.8% of GDP</td>
<td>13.1% of GDP</td>
</tr>
<tr>
<td><strong>Education expenditures</strong></td>
<td>2% of GDP</td>
<td>5.4% of GDP</td>
<td>2.4% of GDP</td>
<td>2.7% of GDP</td>
<td>NA</td>
<td>4.3% of GDP</td>
</tr>
<tr>
<td><strong>Literacy</strong></td>
<td>50%</td>
<td>67.3%</td>
<td>41%</td>
<td>60.8%</td>
<td>61%</td>
<td>35.1%</td>
</tr>
<tr>
<td><strong>Population below poverty</strong></td>
<td>48.4%</td>
<td>28.5%</td>
<td>47%</td>
<td>80%</td>
<td>70%</td>
<td>70.2%</td>
</tr>
</tbody>
</table>

Establishment of West African Monetary Zone

Figure 3: Map of UEMOA and WAMZ countries.

Figure 4: Organisational structure of West African Monetary Institute in 2010.

Figure 5-6: Accra Declaration on Establishment of a Second Monetary Zone (2000).

ACCRA DECLARATION ON CREATION OF A SECOND MONETARY ZONE

DECLARATION ON SECOND MONETARY ZONE


MEETING IN ACCRA ON 20 APRIL 2000

RECALLING the ECOWAS Fundamental Principles and the provisions for the establishment of an economic and monetary union as stipulated in Articles 3 and 4 and 51-55 of the ECOWAS Treaty of 1993;

REAFFIRMING our collective resolve to take all possible measures at the national and regional levels towards the achievement of the economic and monetary union of West African countries;

RECOGNISING the additional effort that our countries require to make to satisfy the ECOWAS conditions for the establishment of a single monetary zone by the year 2004;

DETERMINED to act together in the spirit of regional solidarity to facilitate the process of further restructuring our respective national economies within the ECOWAS framework of regional integration;

ENCOURAGED by the increasing importance that is being accorded regional cooperation and integration by each of the participating countries and our development partners;

EXPRESSING gratitude to the current Chairman of the ECOWAS Authority of Heads of State and Government, His Excellency Alpha Oumar Konaré, President of the Republic of Mali for his presence at the Summit and personal support of the initiatives towards an acceleration of the regional integration process;

UPON RECOMMENDATION by the Convergence Council of Ministers of Foreign Affairs, Finance, Economic Planning, Cooperation and Integration, Trade and Commerce, Governors of Central Banks meeting in Accra on 19 April 2000;

HEREBY DECLARE AS FOLLOWS:

Commitment to Accelerating Regional Integration in West Africa

1. Each Member State is fully committed to the ECOWAS Authority decision taken in

APRIL 2000
Lome on 10 December 1999 to adopt a fast-track approach to ensure an accelerated implementation of ECOWAS integration programmes, as re-affirmed at the Ministerial Meeting in Bamako on 29 January 2000.

Establishment of Second Monetary Zone

2. Member States commit themselves to the creation of a second monetary zone in West Africa by January 2003 based on the conditions adopted by the ECOWAS Authority for the establishment of a single monetary zone.

3. In recognition of the difficult adjustment efforts needed to achieve the targets set for macroeconomic policy convergence, Member States agree to undertake concerted action to attain the following quantitative primary convergence criteria:
   
   (a) single digit inflation rate by the year 2000 and 5% by 2003;

   (b) gross external reserves to cover at least 3 months of imports by end 2000 and 6 months by end 2003;

   (c) central bank financing of budget deficit to be limited to 10% of previous year's tax revenue;

   (d) budget deficit (excluding grants) to GDP ratio of not more than 5% by 2000 and 4% by 2002.

4. The six secondary criteria adopted under the ECOWAS single currency programme will also be observed in support of the above four criteria.

5. Member States undertake to establish an effective macroeconomic data base within each country and at the sub-regional level as essential support for the multilateral surveillance mechanism.

6. In order to accommodate the monetary and fiscal pressures that this regional macroeconomic harmonisation programme will exert on individual national economies, Member States agree to establish an appropriate regional compensation and stabilisation arrangement in support of the commitments to be met under the monetary integration programme.

Modalities of Implementation

7. Member States adopt the recommendations of the Convergence Council including the attached Action Plan which outlines the programme of activities to be undertaken in four stages ending in December 2002, to be followed by the commencement of the Second Monetary Zone in January 2003.

Institutional Arrangements

8. Member States agree on the following institutional arrangements:
   
   (a) Summit of Heads of State and Government

   (b) Convergence Council of Ministers and Governors of Central Banks

   (c) Technical Committee assisted by the Task Force

   (d) Common Central Bank

General Undertaking

9. Member States recognise the need for strong political commitment and undertake to pursue all such other national policies as would facilitate the regional monetary integration process. In this regard, national economic management programmes will be formulated and implemented to reinforce the monetary integration objective. This concerted approach is to be reflected in Member States interactions with all their relevant development partners.