rnal of Studies in Economics and Management
ISSN : 2602-6570
Volume 7 Number 1 – june 2024

Towards Maghreb Monetary Coordination and the Establishment of the Unified Maghreb Currency

Nouri Mounira
Department of the University of Batna, mounira.nouri@univ-batna.dz

Date of receipt: 11/03/2024 Date of acceptation:09/05/2024

Abstract :

This study aims to explore the possibility of establishing Maghreb critical coordination by examining the degree of convergence in the monetary policies of Maghreb countries in light of critical convergence criteria and the experience of the European Monetary Union. The study concludes that Maghreb countries do not converge in their monetary policies, making it difficult to establish critical coordination among them. It remains the responsibility of monetary authorities to take measures that would achieve convergence in monetary policies among Maghreb countries, thereby opening the possibility of forming a monetary union and adopting a unified Maghreb currency.

Keywords : Monetary Policy; Inflation; Monetary Reserves; Critical Coordination.
Jel Classification Codes : E52, E31, N1

1. INTRODUCTION:

The coordination of monetary policies among Maghreb countries is essential for the success of the Maghreb economic integration project. In this context, central banks in the region must work towards harmonising their strategies in terms of selecting the objectives and tools of monetary policy. This is aimed at maximising the benefits of entering a monetary union for member countries and reducing the cost of relinquishing monetary sovereignty in favour of a common institution, namely the Maghreb Central Bank. The latter would be responsible for formulating and implementing a unified monetary policy.

Studying the experiences of countries in this field is essential to identify positive elements and avoid negative factors that may pose challenges when implementing a unified monetary policy. One of the most significant experiences in this regard is the European Monetary Union, from which lessons can be drawn for the countries of the Arab Maghreb. This research paper addresses the following questions:

What is the degree of convergence in the monetary policies of Maghreb countries? And is it possible to establish Maghreb monetary coordination and achieve a unified Maghreb currency? To address the posed questions, the study relies on three main axes:

1. **The First Axis:** The degree of convergence in the monetary policies of Maghreb countries in light of monetary convergence criteria.
2. **The Second Axis:** The gradual development and timeline of establishing the monetary union.
3. **The Third Axis:** Advantages and disadvantages of the Unified Maghreb Currency.

2. The degree of convergence in the monetary policies of Maghreb countries in light of monetary convergence criteria.

The convergence and similarity of economic policies among a group of countries aiming for economic integration are considered one of the most important criteria. This can be adopted to establish fixed exchange rates between their national currencies and eventually form an optimal currency area among them, culminating in complete economic integration.

The presence of convergence and coordination among these policies, particularly in terms of means and objectives, especially monetary, fiscal, and trade policies, will not raise any problems or conflicts in national goals and interests when economic integration takes place among these countries.

In the context of coordinating and unifying monetary and financial policies, the Maghreb Banks Union has proposed criteria for economic convergence related to monetary and financial stability. By achieving these criteria, the Arab Maghreb countries can establish a monetary union among themselves (Maghreb Banks Union, s.d.). These criteria are inspired by the European Maastricht Treaty, known for its nominal convergence criteria, which are divided into: (Rainer, 1997, p. 3) (Paul de, 1996) (fiesolana)

- Monetary convergence criteria consist of inflation rates, interest rates, and exchange rates.
- Financial convergence criteria are related to the budget deficit ratio and the public debt ratio.

The monetary convergence criteria are closely related to monetary policy, so the study will rely on them to clarify whether there is convergence in the monetary policies of the Maghreb countries and, consequently, the possibility of establishing monetary coordination among them, ultimately leading to a full economic union.

2.1. Inflation Rate Criterion Test

Consider the stable and low inflation rate as a necessary condition for the success of any monetary integration project globally. This is because the variation in inflation rates among the member countries in the integration and its volatility pose a significant challenge to managing monetary policy by the common central bank within the integrated region. Conversely, if inflation rates are convergent, it will not pose difficulties at the level of the unified central bank in formulating and implementing monetary policy and achieving price stability within the optimal utilisation of economic resources (chrysost, belhadj, & jedlan, 2007, p. 16), thus achieving economic stability. Therefore, adopting the inflation rate as part of the convergence criteria is necessary for establishing a monetary union, as stipulated in Article 109 of the Maastricht Treaty. The inflation rate in the member country should not exceed 1.5% or 2% above the average inflation rates of the three least inflationary countries in the region in the previous year of the test.

The following table illustrates the inflation rate test as a convergence criterion for the five Maghreb countries for the period from 2005 to 2022, based on data from the International Monetary Fund and the central banks of the Union member countries. The convergence criterion for the inflation rate is calculated as follows: *Convergence Criteria for Inflation Rate = the arithmetic average of the inflation rate for the member countries for the year prior to the test + 2%*

Table 1. Inflation Rate Test as a Convergence Criterion for the Period (2005–2022)

Data	Inflation rates					Convergence criterion
	Tunisia	Algeria	Libya	Morocco	Mauritania	
2005	2.02	1.38	2.65	0.98	12.10	5.02
2006	4.49	2.31	1.46	3.28	6.24	3.46
2007	3.42	3.67	6.25	2.04	7.25	4.35
2008	4.92	4.86	10.40	3.71	7.35	5.04
2009	3.52	5.73	2.46	0.99	2.22	6.49
2010	4.42	3.91	2.80	0.99	6.28	3.89
2011	3.54	4.52	15.50	0.92	5.64	4.56
2012	5.14	8.89	6.06	1.28	4.94	4.99
2013	5.80	3.25	2.61	1.89	4.13	5.78
2014	4.9	2.92	2.4	0.43	3.54	4.58
2015	4.8	4.78	10.4	1.56	3.3	3.91
2016	3.6	6.4	25.9	1.6	1.5	5.21
2017	5.3	5.6	25.8	0.8	2.3	4.23
2018	7.3	4.3	13.20	1.8	3.1	4.8
2019	6.7	2.0	2.2	0.3	2.3	5.06
2020	5.6	2.4	1.4	0.7	2.4	3.5
2021	5.7	7.2	2.9	1.4	3.6	3.06
2022	8.3	9.3	4.5	6.7	9.5	4.63

Source: (Data from the World Bank, s.d.)

It appears from the table data that the Maghreb countries have experienced inflationary pressures in some years, except for Morocco, which has maintained stability in the inflation rate at low levels. This decrease in inflation has been accompanied by an increase in the economic growth rate, which is a favourable outcome for Morocco. In all years, inflation rates remained below the convergence criterion, except for the year 2022.

Similarly, Tunisia achieved a low inflation rate in the first year of the study, remaining below the convergence criterion. However, it experienced an increase in the inflation rate in 2006, surpassing the convergence criterion due to rising prices of food and energy. Subsequently, the inflation rate in the following years (2007, 2008, and 2009) remained below the convergence criterion. After the events of the Jasmine Revolution in 2011, the country witnessed disturbances and instability, leading to an upward trend in inflation rates in the four years following the revolution, surpassing the convergence criterion. The inflation rate then decreased again in 2016 but witnessed an increase in the subsequent years, moving away from the convergence criterion.

Regarding Algeria, it is evident from Table (1) that the inflation criterion was not met in the years 2010, 2012, and 2015. However, the recorded inflation rates in these years did not deviate significantly from the convergence criterion, except for 2012. In that year, inflation worsened, reaching the highest rate in Algeria during the studied period at 8.89%, which is considerably higher than the estimated convergence criterion of 4.49%. The increase in the inflation rate in 2012 is primarily attributed to the rise in the money supply, contributing to an 84% increase in the inflation rate, the highest contribution during the study period. Additionally, there was a strong increase in prices for the food industry. In 2012, there was a considerable increase in wages, leading to increased demand (Bank of Algeria, 2012). The recorded inflation rate remained below the convergence criterion until 2014. In the years 2015, 2016, 2017, 2021, and 2022, inflation rates were higher than the convergence criterion. However, the years 2018, 2019, and 2020 witnessed inflation rates below the convergence criterion.

In 2005, Libya recorded an inflation rate of 2.65%, which decreased to 1.46% in 2006, remaining below the convergence criterion. Subsequently, inflation rates increased in 2007 and 2008, reaching 6.25% and 10.40%, respectively. The upward trend in inflation rates is mainly attributed to expansionary monetary policy following the economy's openness to the external world, improvements in oil prices, and growth in foreign reserves, which is a crucial factor influencing the money supply. Additionally, there was an expansion in government spending (Dagher & Al-Suwayi). As a result, the inflation rate deviated significantly from the convergence criterion. It returned to a decline in 2009 and 2010 due to the global economic recession after the global financial crisis, which relatively impacted the Libyan economy following the decline in oil prices (Alshami, 2014, p. 109). Despite the decrease in the inflation rate, Libya managed to meet the convergence criterion in 2009 and 2010. However, this stability in the inflation rate was short-lived. In 2011, there was a sharp increase in inflation, reaching 15.5%, the highest rate recorded during the study period for the five countries. This was a consequence of the deteriorating economic, social and security conditions in the country after the February 2011 revolution. The inflation rate in the subsequent years of the study remained unstable, meeting the convergence criterion in 2013 and 2014 but not in 2012 and 2015 until 2018, due to the instability prevailing in the country. In the later years of the study, inflation rates witnessed levels below the convergence criterion.

As for Mauritania, it witnessed inflationary trends with varying intensity from year to year, indicating the imbalance between the growth rates of the money supply and the Gross Domestic Product (GDP). The convergence criterion was achieved for several years during the study, namely: 2009, 2012, and consecutively until 2021. However, apart from those years, it did not meet the convergence criterion. The inflation rate deviated significantly from it, especially in the period from 2005 to 2008 and in 2022.

To mitigate the impact of rising prices on vulnerable segments of the population, the monetary authorities in Mauritania implemented a cautious monetary policy. The year 2009 was marked by a moderate increase in prices, coinciding with the downward trend in the prices of primary commodities in the global markets (Central Bank of Mauritania, 2009). The inflation rate shifted towards a decrease, stabilising at a level of 2.2%, compared to 7.35% in 2008. With the return of prices to an upward trend in the global markets, the year 2010 witnessed a significant increase in the inflation rate, reaching a level of 6.28%. However, the decline resumed in the following three years as the monetary authorities continued to pursue a cautious monetary policy and implemented the urgent program 'Hope'[(*)], approved by the Mauritanian government, to alleviate the inflationary pressures on the population (Central Bank of Mauritania, Annual Report , 2012).

2.2. Test of the Reserve Coverage Ratio for Monthly Imports for the Period from 2005 to 2022

The European countries faced significant challenges due to the multiplicity of their currencies and, consequently, the diversity of exchange rates among them. Based on this reality, the Maastricht Treaty for the European Union countries aspiring to join the monetary union obligated them to keep their currency within a narrow range for a period of two years as part of the exchange rate mechanism in the European monetary system. This mechanism allows for fluctuations in the currency exchange rate within the specified limits without resorting to devaluing the currency against any other currency of the Union member states. The treaty also outlined how foreign exchange reserves should be managed and their coverage for monthly imports.

Since the Maghreb countries do not have a unified Maghreb monetary system, we will rely on the criterion of the extent of foreign exchange reserves covering merchandise imports for each country for a period of no less than four months[(**)].

The foreign exchange reserves consist of the state's balance of gold held by the central bank, in addition to official reserves of strong foreign currencies such as the dollar, the pound sterling, the euro, and other currencies held by the central bank. It also includes Special Drawing Rights (SDRs) and the net position of reserves with the International Monetary Fund (Zairi, 2009, p. 47). The foreign exchange reserves serve as a means for official international payments, including financing import operations.

[(*)] In 2012, the Mauritanian government adopted an emergency plan called "Programme Amal" (Hope Programme). The aim was to alleviate unemployment, poverty, and hunger and reduce prices. The programme covered the entire Mauritanian territory and allocated approximately 50 billion Ouguiya for its implementation.

[(**)]The same standard was adopted by the Gulf Cooperation Council countries, along with other necessary monetary convergence criteria, to form a monetary union.

The following table illustrates the coverage of foreign exchange reserves for merchandise imports.

Table 2. Test of Foreign Exchange Reserves Coverage for Imports as a Convergence Criterion (Unit: Month)

Data	The number of months of exchange reserves coverage for imports *					Convergence criterion
	Tunisia	Algeria	Libya	Morocco	Mauritania	
2005	4	34	82	9	0.5	4 months
2006	5	45	123	10	2	4 months
2007	5	50	148	9	1	4 months
2008	4	47	126	6	1	4 months
2009	8	50	96	8	2	4 months
2010	4	37	39	4	3	4 months
2011	3	35	79	5	3	4 months
2012	4	34	41	4	3	4 months
2013	3	33	32	5	3	4 months
2014	3	28	29	5	2	4 months
2015	4	26	43	6	3	4 months
2016	3	23	70	6	4	4 months
2017	3	19	59	6	3	4 months
2018	3	16	51	5	3	4 months
2019	5	14	38	6	3	4 months
2020	7	15	65	9	5	4 months
2021	5	14	37	7	5	4 months
2022 *	4	16	_	5	_	4 months

Source: (data from the World Bank , s.d.)

* For Mauritania and Libya, statistics are not available for the year 2022.

Observing the success of Algeria, Libya, and Morocco in meeting the foreign exchange reserve sufficiency criterion, it appears that the coverage for both Algeria and Libya is much higher than the required average of 4 months. In 2010, Algeria's coverage reached more than 3 years, and Libya exceeded 6 years in 2011. These durations are excessive compared to the reserve sufficiency criterion, mainly due to the increase in oil revenues since the beginning of the third millennium. Although there has been a decline since 2014, particularly for Algeria, due to the decrease in oil prices in the global markets.

While Morocco recorded low levels of foreign exchange reserve coverage rates, it remained above the required level. The maximum coverage rate achieved was 9 months in 2020. As for Tunisia, the coverage rate was below the required standard in the years 2011, 2013, 2014, 2016, 2017, and 2018, posing a risk to essential imported goods in the event of an economic crisis. However, in the remaining years, Tunisia managed to achieve the required coverage rate, equal to or exceeding 4 months during this period.

It is evident from Table 2 that Mauritania, the only Maghreb country, failed to meet this condition in most study years, except for 2016, 2020, and 2021, where the coverage reached 5 months, exceeding the required level.

2.3.The degree of convergence between the monetary policies of the Maghreb countries

What can be observed from the previous tables is that the Maghreb countries exhibit some similarity in the general trend of various indicators. To assess the degree of convergence of monetary policies for the countries in question, we will divide the study period into two periods, as outlined in the following table:

Table 3. Degree of Achievement of Monetary Convergence Criteria in the Five Maghreb Countries for the Period 2005–2022

years	**country**	**Cash Convergence Criteria**			
		Inflation Standard		**Monetary Reserves Sufficiency Criterion**	
		achieved	Not achieved	achieved	Not achieved
from 2005 to 2015	**Tunisia**	2005-2007-2008-2009-2011	not achieved in the remaining years	achieved in the remaining years	2011-2013-2014
	Algeria	achieved in the remaining years	2012-2015	achieved in all years	

	Libya	achieved in the remaining years	2007-2008-211-2012-2015	achieved in all years	
	Morocco	achieved in all years		achieved in all years	
	Mauritania	achieved in the remaining years	From 2005 to 2008 From 2010 to2011		not achieved in all years
2016 to 2022	**Tunisia**	2016	not achieved in the remaining years	achieved in the remaining years	2016-2017-2018
	Algeria	2018-2019-2020	not achieved in the remaining years	achieved in all years	
	Libya	2019 to 2022	not achieved in the remaining years	achieved in all years	
	Morocco	achieved in the remaining years	2022	achieved in all years	
	Mauritania	achieved in the remaining years	2022	achieved in the remaining years	2017-2018-2019

Source: The table was prepared based on the previous tables (2.1)

- **The period from 2005 to 2015:** The monetary convergence criterion related to the inflation rate was not achieved by several Maghreb countries, namely Tunisia, Algeria, Libya, and Mauritania, in several years. Morocco is the only Maghreb country that has fulfilled this criterion. As for the foreign exchange reserve sufficiency criterion, it was achieved by Algeria, Libya, and Morocco during this period.

Tunisia failed to meet this criterion in the years 2011, 2013, and 2014, while Mauritania did not achieve this criterion during this period.

- **The period from 2016 to 2022**: Morocco was able to achieve monetary convergence criteria during this period. However, the rest of the Maghreb countries were unable to achieve monetary convergence criteria in some years. This applies to Tunisia (inflation and foreign exchange reserve sufficiency criteria), Algeria (inflation criterion), Libya (inflation criterion), and Mauritania (foreign exchange reserve sufficiency criterion). These negative results are mainly attributed to the negative impact of the COVID-19 pandemic on the global economy in general and the Maghreb economies in particular.

Based on the above, it can be said that the monetary policies of the Maghreb countries are not consistent over a range of years, while they converge in others. Therefore, it is not possible to achieve monetary coordination among them. However, monetary authorities can take a series of measures to open the possibility of reaching a monetary union and adopting a unified Maghreb currency, as outlined in the second part.

3. The gradual development and schedule for establishing the monetary union.

Considering the experience of the European Union, the gradual development and transition towards establishing a monetary union in its final form go through several stages with well-defined objectives: (Estelle, 2008, p. 19) (Camille, 2015, pp. 246-250)

The first stage: involves the freedom of movement of funds, with the following objectives:

- Achieve the highest possible convergence by developing acceptable convergence schemes among the countries in the region.
- Establish a free trade area by eliminating or reducing customs tariffs between member countries.
- Create a common market by removing all material and fiscal technical barriers hindering its development.
- Eliminate all barriers hindering the freedom of movement of funds.

This stage may take approximately 5 years.

The second stage: involves aligning monetary policies and correcting imbalances in budgets through:

- Strengthening and enhancing cooperation between central banks and coordinating monetary policies, with preparations for establishing a common central bank.
- Ensuring the independence of central banks.
- Coordinating national legislation, the fundamental systems of central banks, and payment systems.
- Providing acceptable conditions for monetary and financial convergence factors.
- Establishing a transitional exchange system or mechanism between Maghreb currencies.
- Using a common currency that circulates alongside other national currencies, pending replacement with a unified currency. This currency is used to settle Maghreb bilateral transactions.

This stage may take approximately 5 years.

The third stage: involves entering into the monetary union while achieving the following objectives:

- Creating a supranational monetary authority represented by the Central Bank of the Maghreb, responsible for formulating and implementing the monetary policy of Maghreb integration. This includes determining legal reserve ratios, interest rates, open market operations, supervising commercial banks, and issuing the unified Maghreb currency. National central banks become obligated to implement the decisions of the Central Bank of the Maghreb and coordinate with it in all matters related to the management of monetary policy.
- Definitive determination of the exchange rate.
- Granting sovereignty in the field of monetary policy to the Central Bank of the Maghreb.
- Introducing the unified currency for circulation, bringing an end to the use of national currencies and the common currency.

This stage may extend for approximately 3 years, completing the gradual development of Maghreb monetary integration.

4. Advantages and disadvantages of the unified Maghreb currency

The unified currency entails advantages and disadvantages, which we will list below: (Camille, 2015, p. 241) (Estelle, 2008, p. 5)

4.1. Advantages: Adopting a unified Maghreb currency will have a positive impact on the economies of the region's countries. These advantages can be summarised as follows:

- The creation of a unified currency leads to the implementation of a unified monetary policy and a shared central bank with complete independence. This imposes discipline on all member countries regarding money supply, credit provision, and banking and financial institution supervision.
- Enhancing transparency and financial discipline on the level of the Maghreb monetary region, which positively reflects on the monetary stability of the region?
- The establishment of a unified currency results in the formation of an economic bloc with global significance, rich in important natural resources such as oil, natural gas, and phosphate. This increases the strategic importance of the region.
- The unified region encompasses a wide market with approximately 100 million consumers, a crucial factor for attracting foreign direct investment and expanding local investments, especially with the absence of currency conversion costs among union countries as everyone operates with a single currency.
- Ease of price comparison when pricing in the unified Maghreb currency, leading to increased competition among institutions operating in the unified market.
- Increased volume of intra-regional trade, expected to multiply by five due to the freedom of movement of goods, services, and production factors. This, in turn, reduces product prices for Maghreb consumers, along with improving the quality of products and services offered.
- Monetary integration facilitates the integration of financial markets and banking integration and directs liquidity more efficiently towards projects with higher returns.

4.2. Disadvantages:

The most significant loss that Maghreb countries may incur upon the establishment of the monetary union and the adoption of a unified currency lies in the sovereign concessions made by these countries, especially regarding the use of monetary policy tools individually. The unified monetary policy falls under the authority of the supranational institution, the Maghreb Central Bank, which considers the interests of the entire region in its formulation, potentially limiting the autonomy of individual countries.

The drawbacks arising from adhering to the performance standards of the fiscal policies of member countries in the unified monetary region, particularly in terms of limiting the use of expansionary tax policies at the national level, This constraint may affect the ability of individual countries to independently implement fiscal policies tailored to their specific economic situations.

5. CONCLUSION:

This research has aimed to highlight the potential for achieving Maghreb monetary coordination by examining the degree of convergence between Maghreb monetary policies. Such coordination is expected to provide a strong impetus for economic integration in the Maghreb region, overcoming monetary obstacles that hinder the movement of goods, capital, and individuals among the region's countries. Among the key conclusions that can be drawn from this study are:

- The monetary policies of Maghreb countries converge to a significant extent in some years and diverge in others, hindering the establishment of monetary coordination among them.
- The coordination of monetary policies is deemed necessary for the success of the Maghreb monetary coordination project. The more aligned the monetary policies of Maghreb countries are, the greater the benefits of entering a monetary union and the lower the costs of relinquishing monetary sovereignty.
- The achievement of monetary union can be realised through a gradual process leading to the adoption of a unified currency, which would have a positive impact on the economies of the region.

- The adoption of a single currency by Maghreb countries would promote the creation of a strong economic bloc that can keep pace with global economic developments.

6. Bibliography List :

Alshami, S. (2014). Analysis of causality relationship between public expenditure and inflation in Libyan economy (1990-2000). *Economic Sciences, 9*(36).

Bank of Algeria. (2012). *Annual Report.*

Camille, S. (2015). *The Maghreb Economic Community: A Work to Build.* Paris: Editions l'Harmattan.

Central Bank of Mauritania. (2009). *Annual Report.*

Central Bank of Mauritania. (2012). *Annual Report* .

chrysost, b., belhadj, a., & jedlan, n. (2007). *toward maghreb monetary unification: what does the theory and history tell us?* african review of money finance and banking.

Dagher, M., & Al-Suwayi, R. (s.d.). The Impact of Money Supply and Exchange Rate on Inflation in the Libyan Economy. *Journal of the College of Administration and Economics*.

Data from the World Bank. (s.d.). Récupéré sur data.albankaldawli.org.

data from the World Bank . (s.d.). Récupéré sur https://data.albankaldawli.org/.

Estelle, B. (2008). The Maghreb Monetary Union Project. *Revue Banque Stratégie*(262).

fiesolana, B. (s.d.). *san domenico.*

Maghreb Banks Union. (s.d.). *Maghreb Integration: The necessary conditions for establishing the Maghreb Economic and Monetary Union project*. Récupéré sur www.ubm.org.tn.

Paul de, g. (1996). The Economics of Convergence Towards Monetary Union in Europe. *EUI Working Paper RSC*(14).

Rainer, S. (1997, 05). The Challenges of Monetary Convergence in Europe. (814).

Zairi, B. (2009). Sufficiency of International Reserves in the Algerian Economy. *Journal of Comprehensive African Economics*.