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Albania economy toward official euroisation

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Abstract. The euroisation issue in European Integration context, is a continuous process of discussions between different researchers and regulatory institutions. Nowadays, different aspects of collaboration and integration processes between countries in the region, are extended in all politics, economic and security dimensions. In this study, we are going to treat one of the aspects of this process integration for Albania: the possibility of substituting the Albanian Lek with Euro, beginning with the explanation of the concept of euroisation. Also we are going to identify the actual non-official replacement level of lek and how it is expected to be realized in the future. Albania like other developing countries is lack of a currency with which people can buy abroad and which can be used in short-run and long-run credit contracts. On the other hand, the exchange rate represents an important risk, especially for the business which realizes transactions in foreign currency. Here in we are focused on the measurement of the money replacement level in Albania through three main methods. For this purpose is used the regression analysis in order to test the hypothesis under evaluation in two directions: endogenous and exogenous potential factors affecting this replacement. Through the factor analysis identifying the pro and cons of the euroisation phenomenon, we will give the potential alternative in our county economy conditions. Finally, the replacement rate cannot be assessed without being related to the degree of money in circulation replacement and the degree of assets replacement and without being connected with the exchange rate between currencies.

Keywords: asset replacement, money replacement, OMA theory, exchange rate, Albania.

1 Background of euroisation process, factors and forms

Eroisation is the process of euro currency adaption from a country that is not yet a member of the EU, but currently uses euro as their national currency. This process can be realized implementing some of the approaches mentioned below which can be impelemented in different perceived situations. First, the non-official form can occur when the population of a country does not have faith on the actual national currency and prefer more and more using euro for economic transactions without any prior approval.

In cases when the foreign currency, actually euro, is legally approved but it still has a former role against to national currency, is the semi-official approach. Finally, when the government of a country gives up from issuing, printing and using the national currency and uses only euro, in all classical form of money, that's the case of official approach.

As usually occurs, the euroization process has two important effects on the society entirely taken. The implementation process should be followed by a special analyse of the weighted positive and negative effects. Below we have listed the advantages that may arise from euro implementation and adoption:

- *Transaction cost reduction- costs that are significant in an economy like Albania which mainly is supported by imports.*

- *Interest rate decrease- that will stimulate the increase in investments which in turn have positive effects in fiscal policies reducing the cost of debt.*

- *Reduction of the effect of exhange rate volatility, which will increase the price stability, security from investors point of view etc.*

Despite the profits, the euroisation process represents cost for the economy, which are mentioned below:

- *Decreasing role of Central Bank- as through euroisation, goverments accept the independence loss for monetary policy application, as the Central Bank does not have the instruments available to realize it.*

- *Loss of the right to realize a revenue (seignoirage) that arises from the transmission of the currency with a nomial value greater than their fair value. As a result, the government can earn a revenue from the sovranity of the currency that belongs to the Central Bank. So if a government decides to use a different currency from its national one, actually it gives up from this revenue.*

- *The lender of last resort- as we know, the CB has an important function, that of the lender of last resort, as its the last opportunity for second tier banks that has financial difficulties. In this case a CB can protect the banking system from reducing the opportunities that the difficulties of a certain bank became the difficulties of the entire system. In case of euroisation, the CB cannot fulfill this function, that mean that the banking sector of that country is more vulnerable and sensitive.*

The factors which influence the euroisation process are known as endogenous and ekzogenous.

When speaking for endogenous factors of euroisation we have in mind the money replacement and asset replacement. Money Replacement (MR) happens when assets in foreign currency are used as payment means, while Asset Replacement (AR) happens when assets in foreign currency are used as means of value keeping. For MR measure usually is used the ratio between the deposits in foreign currency and M1. While for AR measurement is used the ratio between the deposits in foreign currency toward M2. There are some different sources how to measure the replacement level. Below there are mentioned three of them:

- from customs reporting,

- net exchanges reported from the exchange offices,

- through macroeconomic variables used in ratios like: Foreign Deposits/M3[1], Foreign Debt/GDP and Foreign Currency Debt/Total Debt.

As we know in developing countries, the money outside the banking system is relatively high as there are a lot of cash transactions. As a result the foreign currency used as payment mean is relatively difficult to be measured and may be that the substitution level of money and wealth is greater than it can be perceived.

Despite the endogenous factors mentioned above, the euroisation process in a near future of Albanian economy is determined from some ekzogenous factors. One of these factors is related to the EU integration. This is followed by lots of opportunities for a small developing country like Albania: a more secure environment, stable and prosperous. The eruroisation process should serve to an increased economic growth and employment.

Another important factor relates to the harmonisation of fiscal and monetary policies with the EU

[1] This method is used from IMF for MR level

memeber countries. Last but not least, there are the EU economic variables that will effect Albanian economy like interest rates, exchange rates, business cycle etc. The euroisation process has two important consequences: the elemination of exchange rate risk and the business structures would be more similar.

So, in these circumstances, the research questions that drive this study can be summarized below:

Is the euroisation process a near or far future for Albania? To respond to this question we set the first hypothesis:

H_1: *Euroisation is a near future process for our country.*

The second research question that follows: Which of the Euroisation process method forms corresponds better to the actual conditions of Albanian economy? Can the MR level of lek with euro, be realized without considering the exchange rate?

The second hypothesis

H_2: *The money substitution level of lek with euro cannot be realized without considering the exchange rate.*

The sections below of this study consist on analyzing the OMA , in Albanian economic context, as a precondition to allow further analysis of the problem stated. Followed by the presentation of some related studies in Western Balcan Countries, New Member Countries in EU, CEE Countries etc. The main part of this study consist on testing the hypothesis under evaluation through multiple regression analysis followed by the results and analysis on evaluation the level of influence of endogenous and exogenous factors mentioned above.

2 The optimal monetary area theory. Case of Albania

To understand if euroisation is the best alternative for Albania in the current economic condition, we should identify first if our country is an Optimal Monetary Area. For this reason we refer to the Optimal Monetary Area Theory (OMA).

So here in are listet the criterions this theory is based on and after checking each of them we can state if Albania is an optimal monetary area or not.

- *Schock and business cycle similarity*

Close commercial relationship can lead to converged business cycles, to a greater integration that can be further developed in an unified monetary area. If we refer to Albania, we can emphasize the close relationship with Italy, member of a unified monetary area. This relationship leaded in business cycle convergence. Meanwhile, the foreign direct investments affected the reduction of asimetric economic schocks.

- *Foreign trade openness level*

A country, whose foreign trade takes an important place to GDP can profit from adhering to a monetary area. Foreign trade of Albania as mentioned before consist mostly on imports followed by bower export, stressing in this way the exposure of cusumer prices to exchange rate risk.

- *Product diversification*

A country that exports a wide range of products is less affected from the schocks of certain sectors. As a result, these countries do not use the exchange rate like an adjusting instrument. The diversification

level is not significant in a small country like Albania.

- *Factors mobility (especially for labor force).*

The high labour mobility helps the adaption policy toward asimetic schoks and as a result it is not required the introduction with exchange rates.

- *The level of politic integration*

A high politics integration before become a full member, can result in fewer cost for the countries. Albania in this context signed a SAA with EU in June 2006. Nowadays it has the right of free move without borders in the Chengen area. And, finally Albania won the candidate status for EU membership which will serve as a secure path to a near future integration.

3 Literature review

There are several studies in Western Balcan Countries, Eastern European Countries on euroisation procces.

Habib (2000) realized a study on euroisation process measurement in countries like Chezch Republic, Hungary, Poland, Bulgaria and Romania in the accession to the EU. In this study, the examination of Optimal Criteria Area Theory has been integrated with an analysis of the financial vulnerability of these economies and the estimates of the seigniorage, which is foregone once that a country abandons its currency. The results of the study determine that an early switch to the euro is probably a too risky choice for the front-runners, while only for Bulgaria this option could present a net gain.

Also for Albania there are realized different studies on this issue. The results show that MR is not so high for example according to Feige (2002), the foreign money relative to the total money outside the banks in Albania for 2001 is 14%, while CR is 22.4%. According to Reinhart et al (2003), Albania is classified in those countries where CR is affected by endogenous factors.

Sojli (2006) developed a methodology to estimate the currency replacement, using data on deposits in foreign currency and an evaluation to foreign money observable in Albania from 1999-2002. MR at this time is relatively high, at 36% compared to the IMF standards, which consider important the 30% level in order to intervent in monetary policy.

Rainer and Haiss (2010) analyse the phenomenon of credit euroisation in the region and link the literature overview to their own econometric analysis of thesample of 13 countries in the region. Their findings put forward the already described causes and catalysts ofcredit euroisation, particularly the fact that when foreignsources are easier to access, credit euroisation becomes more significant, regardless of whether the banks channel these sources in domestic or foreign ownership.

Chailloux, Ohnsorge and Vavra (2010), performed a study on the euroisation process in Serbia. In their paper they put forward the factors that force the euroisation procces in Serbia, followed by the identification of the problems arised from the global crises that effect this process. The lack of foreign funding in this respect and the volatile exchange rate has directed the borrowers toward local currency borrowing. They conclude that if the macroeconomic policies gain credibility, the euroisation process could discontinue in the future.

Galac (2012), analysed the evolution of credit euroisation in Croatia from 1995 to early 2010 to identify its possible causes. Based on the analysis made he discussed possible measures to encourage credit de-euroisation in the country. Based on the results, if economic policy makers decide to encourage de-euroisation actively and assuming that the existing monetary policy framework he

recommended that the emphasis be put on - the public sector should increase its borrowing in the domestic currency, second a levy should be introduced on the interest paid on non-kuna loans to encourage a gradual substitution of foreign currency-denominated loans by kuna loans and third, various reserve requirement or remuneration rates should be applied to kuna and non-kuna deposits to encourage deposit de-euroisation.

4 Measurement methods of MSI [2]

Here are presented the implementation of the methods for MS. We will show the substitution level according to each of the methods for Albania and choosing the current best alternative.

Currency replacement index measurement according to IMF

In the table below there are given the necessary data for MRI, ARI and CRI. As we can see from the table, the RI is increasing through years.

Table 1 MRI, ARI, CRI.

Year	Deposits -foreign currency	M1	M2	M3	MSI=X1	ASI=X2	CSI=Y
2004	115.8	172.8	391.5	507.2	0.670139	0.295785	0.228312
2005	151.9	227.7	426.2	578	0.667106	0.356405	0.262803
2006	189.09	242.39	477.372	666.467	0.780106	0.396106	0.28372
2007	251.472	242.6	506.1	757.6	1.03657	0.496882	0.331932
2008	260.699	282.8	555	815.7	0.921849	0.469728	0.319602
2009	293.28	284.5	578.2	871.5	1.030861	0.507229	0.336523
2010	376	275.4	604.5	980.3	1.365287	0.622002	0.383556
2011	423	276.9	647	1070.1	1.527627	0.653787	0.39529
2012	454	281.2	669.6	1123.4	1.614509	0.678017	0.40413
2013	467	295.9	693.2	1149	1.578236	0.673687	0.40644

Source: Deposits, M_1, M_2 , M_3- Bank of Albania, Indexes- authors calculation

Currency replacement index : Foreign debt / GDP

Another way how to measure the CS level is the ratio of Foreign Debt to GDP. This method is not as accurate as other methods since it takes on account the foreign currency cash flows that arise only from foreign financing. Below there are given the results for measuring the substitution level through years.

Table 2 Foreign debt to GDP

	2005	2006	2007	2008	2009	2010	2011	2012	2013
BJ/PBB	57.4	57.8	56.5	53.4	54.7	59.4	58.5	59.4	60.92

Source: Bank of Albania

According to Reinhart et al (2003), this ratio can be used as a measure of substitution level. Observing

[2] MSI – Monetary Replacement Index

the trend of this ratio from 2005-2013, despite some little fluctuations, the index shows a constant increase. This represents a direct relationship of our economy with the foreign currency flows which have an increasing trend implicating an increase in the substitution level too.

Currency replacement index: Foreign debt/ Total debt

The ratio between the foreign debts toward total debt also shows the possibility to measure the currency substitution index. The analyse comprises the same period as the two methods applied above.

Table 3 Foreign debt/ Total debt

	2005	2006	2007	2008	2009	2010	2011	2012	2013
BJ/BT	30	30.2	28	34	38	43	41	42	42.63

Source: Bank of Albania

For this ratio too, we can state that its increase is followed with the increase of CRI, since debt represents one of the main sources of foreign currency in the country.

Among the three methods presented herein, the one used from IMF is used more since it includes the monetary base M_3. We must mention again that the three methods have one important limitation, that of using for evaluation only the money that is measured from the banking sector. The money outside the banking sector is yet significant in the form of informal economy, and that is the reason why the substitution level can be higher than that calculated above.

5 Results and analysis

Internal factors

This type of analysis helps us understand the relationship that do exist between replacement of Albanian currency with euro [3] and two internal factors [4]. Through regression analysis we are able to calculate the rate of replacement; to determine how much of replacement expressed in percentage is justified by internal factors; to understand the linear relationship between them; to predict future rate and other important implications.

From the results, the coefficient of correlation is very close to 1, reflecting a very strong correlation between variables. Meanwhile the coefficient of determination is about 0.999, a very high value, which means that about 99.9% of the variation in the degree of currency replacement is explained by the variation of internal factors with a standard error of only 0.1%. While the value of R^2 = 0999> 0.8 indicates a good fit to the data.

From the ANOVA's table (Apendix) we get two components regression and residual: regression, which represents the explained variation and residual, which represents the unexplained variation. We have calculated also: degrees of freedom, the total variation, the variation of residual, regression variation and squares average. All these elements serve finding the F-statistic for assessing the hypothesis.

From the calculations we obtained the information about the coefficients of the regression line, their standard errors, t-statistics, and finally the p value.

[3] Replacement of Albanian currency is measured by CRI – currency replacement index which is equal to deposits in foreign currency / M_3

[4] For further informations also see the issue of internal factors that we explained above

$$y = 0.087 + 0.96 * 0.612 * x_1 + x_2 \quad (1)$$

Coefficient 0.087 is intercept where the regression line cut Y axis. Value 0.96 of the X_1[5] variable coefficient indicates a major variation about 96% in currency replacement rate resulting from a change in the degree of money in circulation replacement. Meanwhile coefficient 0.612 shows a degree of currency replacement about 61.2% resulting from one unit variation in the degree of assets replacement. Another result, we see that the estimated rate of currency replacement is expected to grow over the years. And if the projections are realized in practice then it just implies the growing importance of euroization in our economy. The increasing of the unofficial euroisation weight may be acceptable to some point, otherwise if exceeded acceptable level may arise serious problems for the economy. In these conditions it appears that the most likely options are: deeuroization or official euroisation. But taking into account the high degree of replacement in nowadays, we should strongly consider official euroization.

Correlation matrix serves to identify strong relations. As shown in the matrix, replacement rate with the euro has a very strong relation with the two variables with a very close correlation to 1. However the strongest relation exists with the degree of assets replacement.

Global Control - Internal factors

Global Control serves to verify whether the regression model is valid. This case serves to verify the first hypothesis, which we posed at the beginning of the paper. Below are submitted necessary steps to verify this hypothesis. Step 1 involves setting hypotheses which are basic hypothesis: $\beta1=\beta2=0$ and alternative hypothesis: not both β are zero. In the step 2 we determine the level of significance that in our case is $\alpha = 0.05$ and in the step 3 we define the statistics used for making decision. We will use statistic F but we can take decision based also on the value p. The next step considers the rule of making decision. The decision rule: If $p < \alpha$ we reject the basic hypothesis and say that the variables have an impact on CRI, the opposite occurs if $p > \alpha$, then we accept the basic hypothesis with a significance level $\alpha = 0.05$. The rule formulated using the F statistic is : If the calculated F is greater than the critical value , we reject the basic hypothesis and say that the variables have an impact on CRI, if the opposite happens, then we accept the basic hypothesis with a significance level $\alpha = 0.05$. And the last step is making decision. P = 0.000 (approximately) and $\alpha = 0.05$; since p <alpha then we reject the basic hypothesis with significance level α and say that the variables have an impact on CRI. F = 48.32 and the critical value = 4.74 ; since F is greater than the critical value, we reject the basic hypothesis with a significance level α and say that the variables have an impact on CRI. Indeed we expected this decision, because logically rate of assets replacement and cash replacement influence on the degree of currency replacement with the euro.

External Factors

Currency replacement is influenced by several external factors such as : exchange rates, external debt, inflation rates, changes in interest rates between Albania and the Eurozone, remittances, etc. All these factors influence the movement of the euro, that's why they are related so closely with currency replacement.

Fluctuations in exchange rates and euroization

We used the data in table 9 (Apendix) to complete the regression analysis. The analyzes show that the correlation coefficient is not so high about 0.346. This means that the coefficient do not demonstrates a strong link between variables. While the determination coefficient is 0.119. This fact means that about 11.9% of the variation on the replacement rate is explained by fluctuations in the exchange rate.

[5] Remember that variable X_1 represent money replacement as means of payment

The standard error is about 4.4%. The error rate compared with the analysis of internal factors is high. F- statistic value is 1.0848 and p-value is 0.328. These two values will serve us below for evaluation of hypotheses. Regression equation is presented as below:

$$y = 0.332 + 0.494*x \quad (2)$$

Value 0.494 of the variable X 's coefficient indicates a difference about 49.4% in the degree of currency replacement that comes as a result of changes in exchange rates.

Exchange rate

This case serves us to verify the second hypothesis ,which was filed at the beginning of the paper.

Stages necessary for handling hypothesis are equally treated as the stages of the first hypothesis , so now we pass directly at the last stage - making the decision.

$$F = 1.08 \text{ and critical value} = 5.32$$

Since F-statistics value is smaller than the critical value, we reject the basic hypothesis with a significance level α and we say that changes in exchange rates has no impact on the assessment of CRI. This means that the degree of currency replacement can be evaluated without being related to the exchange rate.

6 Conclusion

At the beginning of the paper was put emphasis on the characteristics of a strong currency that Albanian currency does not fulfill. This constitutes a reason for abandoning Albanian currency and adopt euro. Through literature review and of the theory of Common Monetary Area, it was observed that Albania, with its efforts, represents a growing convergence to the criteria of being a common monetary Optimal Zone.

Therefore a potential euroisation is a good opportunity for our economy. Meanwhile by control of hypothesis we confirmed hypothesis 1 that the replacement rate cannot be assessed without being related to the degree of money in circulation replacement and the degree of assets replacement. Hypothesis 2: "replacement rate cannot be assessed without being connected to the exchange rate" was rejected. Currency replacement with the euro is an inevitable phenomenon while Albania aspires to be part of a common monetary area as other countries of the region and to get benefits in all terms, especially now by winning the candidate status in European community. We believe that euroisation will help Albania with the preparations to accede to European political, economic and monetary structure. Before making decision about euroisation the competent authorities should take a detailed analysis, through which we confront our economy conditions and effects that do come in case of a potential euroisation. Although the elimination of exchange rate risk is an advantage, it should be examined the possibilities of an economic exposure to the conditions of these countries. We conclude that Albania should take the decision of a unilateral euroisation by taking in consideration the fact that a stable foreign currency brings credibility in economy and financial system. Further more, Albania develops most of the foreign trades with countries of the eurozone at about 70%. For this reason the adoption of the euro would bring more trade facilities stimulating productivity.

7 Appendix

Table 4 Summary of regression statistics

Summary	Value	
Regression statistics		
Multiple R	1.000	
R ^{2}	0.999	Goodness of Fit >= 0.80
Standard Error	0.001	
Observations	10	

Table 5 ANOVA

ANOVA					
	df	*SS*	*MS*	*F*	*P-value*
Regression	2	0.03532229	0.017661145	48.32672926	0.000
Residual	7	2.55817	0.365453		
Total	9	0.035347872			

Table 6 Coefficients of regression line

	Coefficients	**Standard Error**	**t Stat**	**P-value**
Intercept	0.087440109	0.003439827	25.41991184	0.000
X1	0.960118699	0.009645345	26.23292332	0.000
X2	0.611844743	0.026066585	23.47237829	0.000

Table 8 Correlation matrix

Correlation	**Y**	**X1**	**X2**
Y	1.000	0.971	0.998
X1	0.971	1.000	0.984
X2	0.998	0.984	1.000

Table 7 Predictive money replacement

Observations	**Predicted Y**	**Y**
1	0.22813	0.228312
2	0.26540	0.262803
3	0.28290	0.28372
4	0.32914	0.319602
5	0.31942	0.331932
6	0.33581	0.336523
7	0.38593	0.383556

Observations	Predicted Y	Y
8	0.39562	0.39529
9	0.40522	0.40413
10	0.40475	0.40644

Table 9 Exchange rates and CRI

X[6]	Y
0.055	0.228312
-0.02984	0.262803
0.008158	0.28372
-0.01457	0.331932
0.016587	0.319602
0.114378	0.336523
0.005871	0.383556
0.001153	0.39529
0.004751	0.40413
0.00437	0.40644

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