ACTA UNIVERSITATIS DANUBIUS. ŒCONOMICA

Volume 11, Issue No. 3/2015

ISSN 2065-0175
E-ISSN 2067 – 340X
Acta Universitatis Danubius. Œconomica

The quality of the articles is ensured by a blind review process with minimum three (3) national and international reviewers.

Publication frequency: 6 issues per year

The journal is included in international databases: REPEC; EconPapers; Ideas; DOAJ; IndexCopernicus; Proquest; EBSCO; Genamics; Cabell's Directories.

Contact data
Address: 3 Galati Boulevard, 800654
Galati, Romania
E-mail: actaoeconomica@univ-danubius.ro
Website: www.journals.univ-danubius.ro
Telephone: + 40372361140

Information about the Publishing House
Danubius University Press
3 Galati Boulevard, 800654
Galati, Romania
Telephone: + 40372361140
Website: www.editura.univ-danubius.ro
Email: editura@univ-danubius.ro
danarobu@univ-danubius.ro

The journal is financed by Danubius University of Galati, Romania
Website: www.univ-danubius.ro

Cover: Doru Trandafir
Printed at **Zigotto** Printing House, Galati, Romania

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Analysis of the Post-Crisis Economic Performances in the European Union

Madalina Ecaterina Popescu[1], Maria-Isadora Lazar[2]

Abstract: The effects of the economic crisis continue to impact the world economy even if the most difficult period of the crisis seems to have passed. In this context, the analysis of the economic performance becomes stringent in that it not only allows for the identification of the economic environment, but also due to the fact that it brings value by determining the automated correction of any decision or direction in the difficult economic context of today. The paper represents a study of some of the main macroeconomic performance indicators for the European Union countries, such as: economic growth, current account balance, labour productivity, employment and average net earnings. Based on a cluster analysis we identified the position of each E.U. member state via an economic performance view and a country level particularization was then achieved. After grouping the countries into two clusters based on their economic performances, we built two distinct equations using panel data models that could explain the economic growth variations for both the case of highly performing and less performing E.U. countries. The results of the analysis actually incorporate some main components that will help formulate economic growth measures, employment and labour productivity.

Keywords: economic performances; European Union; post-crisis analysis; cluster analysis; econometric modelling

JEL Classification: O47; O11

1 Introduction

As shown by the current economic crisis, macroeconomic instability, such as persistent current account and trade deficits can seriously undermine a country's tolerance to economic shocks. According to Orszaghova et al. (2013) and to Rahman (2008), maintaining and enhancing external competitiveness has thus become a must to all European Union (E.U.) member states.

The necessity to explore the differences in the European economies, when

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considering aspects of competitiveness, growth and sustainability is becoming more stringent and building effective economic growth models has become a true challenge in the recent years, because of the high economic instability and degree of uncertainty. The macroeconomic developments of the last years had drawn attention on the main competitiveness gaps between the European economies (see Spahn, 2013; Lazar et al., 2013; Holinski et al., 2012; Gros, 2012; Ailenei et al., 2012; and Jaumotte et al., 2010).

Important competitiveness gaps can also be detected within the European Union due to differences in productivity and labour market indicators, as highlighted by the recent crisis (Andreica et al. 2014; Matei et al. 2014; Davidescu, 2014; Aparaschivei, 2012; Ileanu et al., 2008).

Therefore, we decided to extend the empirical research in the field and drew on several macroeconomic performance indicators, such as: economic growth, current account balance and several labour market indicators consisting of labour productivity, employment rate and average net earnings in order to study the post-crisis economic performances in the European Union. Moreover, based on a Hierarchical Cluster Analysis we will try to identify the position of each of the European Union member states via an economic performance view, with country level particularization for the E.U. state members. The results will allow us to classify the 28 E.U. member states into two main clusters, one corresponding to highly performing countries and the second one to countries with lower economic performances.

Based on this classification, we will then distinctly model the robust dependencies between economic growth, current account balance, as well as labour market indicators for the two E.U. country clusters for the period 2000-2013 using panel data methodology. The econometric results are consistent to the economic theory and highlight several particularities corresponding to the two E.U. country clusters.

To summarize, the structure of the paper is the following: in Section 2 a comparative post-crisis analysis of the 28 E.U. member states based on economic growth and competitiveness grounds is presented, while Section 3 is dedicated to the econometric analysis. The conclusions are presented in the last section.

2. Comparative Post-Crisis Analysis Of The Economic Performances in the E.U. Countries

In our study we measured the economic performances of the 28 European Union member states for the year 2013, based on the following macroeconomic variables: GDP growth rate (%), current account balance (% GDP), labour productivity (calculated as a ratio between real GDP and the employed population), employment rate (%) and average real net earnings. The main data sources were the Eurostat databases.

The effects of the economic crisis continue to impact the world economy even if the most difficult period of the crisis seems to have passed. European countries have been heavily challenged during the last years and the differences among them are still visible in the post-crisis period. For instance in 2013 there are only 11 countries with economic growth below the 28 E.U. average (0.1%).

However, most of the E.U. countries registered only slight improvements in the GDP growth rate, as compared to the previous year, while Romania is one of the five countries that registered the highest growth among Latvia, Lithuania, Malta and Luxemburg. Although socking at a first glance, we should note that this annual GDP growth of about 3.5% for Romania is not based on sustainable economic grounds, but rather on a favorable agricultural year and increased exports.

Another possible explanation for the high economic growth in Romania can be drawn on consumption growth, especially since in 2013, the turnover of market services provided to enterprises increased by 8% as compared to 2012. Moreover, according to the central bank, direct investments of non-residents in Romania increased in 2013 by 26.8% compared to the previous year.

However, in Romania the economic growth is not properly perceived, since it mostly comes from a decrease of the deflator, due to lower demand deficit, while the nominal GDP still keeps a decreasing trend. Although 2013 was an excellent agricultural year for Romania marked by a higher production supply with positive effects on GDP in the most recent quarters, an economic growth of 3.5% should be viewed with caution since it is not based on sustainable economic grounds.

Moreover, based on the current account levels registered in the year 2013 the European Union countries can be separated in two main groups, as there are only ten E.U. member states that registered current account deficits, out of which United Kingdom is by far in the worst situation regarding this indicator, with a 4.4% current account deficit as percentage of GDP. Other European countries that register negative current account balance are: Cyprus (-1.9%), Belgium (-1.6%) and Czech Republic (-1.2%), while at the opposite pole are the Netherlands, with a 10.4% surplus of the current account, followed by Germany (7.5%), Denmark (7.3%) and Ireland (6.6%).

When considering the labour market determinants, the main differences in 2013 are noted in labour productivity levels, as Spain, United Kingdom, Belgium, Italy, Sweden, Netherlands and France are above the E.U. 28 average in terms of labour productivity, while Luxemburg is by far the most productive country of the European Union, with a ratio of around 155, based on its high GDP level and low number of employed population. At the opposite pole are Bulgaria, Romania, Latvia and Poland with the lowest levels in the European Union, having in 2013 ratios of real GDP to employed population below 20.

These findings suggest that although all E.U. countries are steadily recovering from the recent economic crisis, some E.U. member states are by far more competitive and form a distinct cluster. Therefore, we applied a Hierarchical Cluster Analysis, in order to better count for the competitiveness gaps between the E.U. countries. For that we used an unsupervised learning method that assigns a set of observations into subsets (called clusters) based on their similarities.

The cluster technique was built on the Ward's method, whereas the intervals were calculated using the squared Euclidean distance. Based on labour productivity, current account balance and GDP growth rate levels, we were able to classify the E.U. member states into two main country clusters, based on their macroeconomic performances. According to the dendrogram presented in Fig. 1, the two main E.U. country clusters corresponding to either highly performing countries or to lower performing E.U. countries are the following:

- *The cluster of the highly performing countries:* Denmark, Sweden, Ireland, Spain, United Kingdom, Germany, Netherlands, Belgium, France, Austria, Finland, Italy and Luxemburg.
- *The cluster of the less performing countries:* Bulgaria, Romania, Latvia, Lithuania, Hungary, Poland, Croatia, Slovakia, Czech Republic, Estonia, Cyprus, Portugal, Greece Slovenia and Malta.

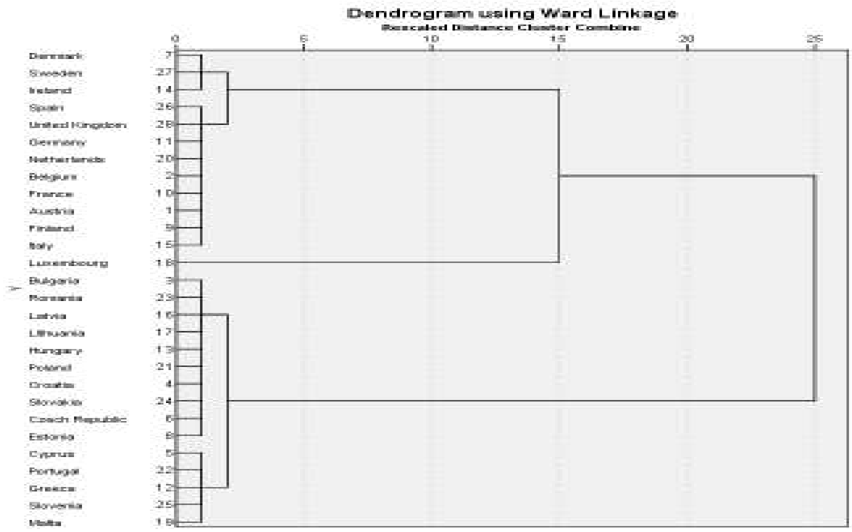

Figure 1. Dendrogram of the 28 E.U. countries

In order to check the accuracy of our classification of the E.U. countries between highly performing and less performing economies, we applied a t-test for equality of means that could indicate whether there are any mean differences between the main economic indicators of economic growth and competitiveness that were considered in the analysis. The results are presented in Table 1.

Table 1. Mean differences for E.U. countries

	Mean		Mean differences	
Variables	Highly performing E.U. countries	Less performing E.U. countries	t-test for Equality of Means	Sig.
GDP growth	0.1	0.33	-,282	0.78
Current Account	3.0	0.74	1.75	0.09
Employment rate	66.8	60.5	2.695	0.01
Labour productivity	72.5	24.3	6.55	0.00

Source: Author's own calculations

We notice that there are relevant statistically significant differences with a 99% confidence level between the highly performing E.U. countries and the less performing ones in 2013, in terms of labour productivity and employment rate, while the mean differences in the current account balance are statistically significant at a 90% confidence level. Moreover, the tests also highlights an insignificant difference in mean for the GDP growth rates between highly versus less performing E.U. country groups, suggesting that the economic shocks affected all E.U. countries and their negative effects got propagated over the GDP growth rates as well. However, the unexpected surprise of a higher GDP growth in some of the European countries, such as Romania lead to a mean difference reduction in terms of economic growth between the two E.U. country groups, but one should note that this favourable static image of the year 2013 is not expected to last on long terms because of the lack of sustainable economic grounds.

3. Econometric Results

After grouping the E.U. countries into two clusters based on their economic performances registered in 2013, we decided to extend the period of analysis and to build two distinct equations that could explain the economic growth variations for both the case of highly performing and less performing E.U. countries. For that we used the macroeconomic data set for the period 2000 – 2013 and panel data methodology in order to model the robust dependencies between economic growth and competitiveness between the 28 E.U. countries. The following indicators were considered as explanatory variables: the current account balance, the labour productivity, the employment rate and the real net earnings.

The panel data estimation was made using the STATA software. According to Baum **(2001)** a Hausman test was first applied in order to check whether we are dealing with a fixed-effects model (FE) or a random-effects model (RE), where the individual effects are assumed to be no longer correlated with the explanatory variables as compared to the FE. The results of the Hausman tests confirmed in both cases of highly performing and less performing E.U. country clusters that the FE model is more appropriate than a random-effects model.

Further on, we checked the validity of the two panel data models, by controlling if the standard errors are independent and identically distributed, homoskedastic and not autocorrelated. Several tests were therefore used in order to check these assumptions. For instance, when checking the homoscedastic hypothesis, a modified Wald test, implemented in STATA by Baum (2001) was used for group wise heteroskedasticity in the FE model. Secondly a serial correlation test proposed by Drukker (2003) was applied in order to check the autocorrelation hypothesis. The results of both tests were similar for the cases of highly performing and less performing E.U. country clusters and indicated, however, that the errors were both autocorrelated and heteroskedastic. In order to overcome these problems, the regression models were then re-estimated based on robust fixed-effects (within) technique, using Driscoll and Kraay standard errors (Hoechle, 2007).

The results of the robust fixed-effects estimation describing the GDP growth rate equations for the two E.U. country groups are presented in table 2. Our results from the comparative econometric analysis of the two cluster equations indicate that the main similarities between the two country clusters consist in the positive impacts of both the employment rate and the labour productivity. These findings are consistent with the economic theory, since an increase in productivity naturally stimulates economic growth, by inducing a growth in the autonomous supply of goods and services at an either unchanged or even lower level of inputs, such as capital, time and human resources. Moreover, an increase of the employment rate suggests an improvement of the labour market equilibrium and should normally stimulate the production of goods, contributing therefore to the economic growth.

Table 2. Results of the robust estimations for the E.U. countries

GDP growth equation	Highly performing E.U. countries		Less performing E.U. countries	
Explanatory variables	Coeff.	Driscoll and Kraay std. errors	Coeff.	Driscoll and Kraay std. errors
Constant	-26.79	9.29***	205.455	56.599***
Current Account (t-1)	0.246	0.095**		
Employment rate (t)	0.239	0.084***	0.353	0.115***
Labour productivity (t)	0.159	0.085*	1.269	0.404***
logEarnings (t)			-29.91	8.205***
No. obs.	*169*		*No. obs.*	*181*
F statistic	*10.07****		*F statistic*	*8.5****
Within R^2	*0.146*		*Within R^2*	*0.340*

Source: author's own calculations

Where *** stands for 1% significance level, ** stands for 5% significance and * stands for 10% significance level.

However, the relationship between labour productivity and economic growth seems to be more pronounced for the case of the less performing countries, were also the real net earnings fluctuations play a disincentive role, as an increase in earnings that is not properly correlated to the labour productivity could have negative effects on the economic growth. The relation between the two indicators can easily by understood by the situation of some European Union member states, as Greece, in which the although productivity had increased, the pace was surpassed by the higher increase in labour costs, that eventually resulted in low competitiveness and lower economic growth. The losses regarding cost competitiveness were an important factor for the decline in GDP growth rate.

Another aspect that could be drawn from the econometric results highlights the fact that the current account balance has a positive influence upon economic growth, but with a one year delay and only for the case of the highly performing E.U. country cluster, but turned out to be statistically insignificant for the case of the less performing countries. According to the statistical significant coefficient for the first cluster equation, we can state that the GDP growth rate will be expected to rise with

2.46 percentages points in case the current account balance increases with 10% in the previous year, while keeping all the other variables constant.

4. Conclusion

The effects of the economic crisis continue to impact the world economy even if the most difficult period of the crisis seems to have passed. In this context, the analysis of the economic performance becomes stringent in that it not only allows for the identification of the economic environment, but can also bring value by determining the automated correction of any decision or direction in the difficult economic context of today.

The paper represents a study of some of the main macroeconomic performance indicators for the E.U. countries, such as: economic growth, current account balance, labour productivity, employment and average net earnings in the European Union. Based on a Hierarchical Cluster Analysis we identified the position of each of the European Union member states via an economic performance view and a country level particularization was achieved for the E.U. member states. The results suggested that based on labour productivity, current account balance and GDP growth rate, the 28 E.U. member states can be classified into two main clusters, one corresponding to high economic performing countries and the second one to countries with lower economic performances.

Based on this classification, we then distinctly modelled the robust dependencies between economic growth and current account balance as well as labour market indicators for the two E.U. country clusters using panel data methodology. The econometric results highlighted both some similarities as well as some specific differences between the two country clusters. More precisely, the analysis indicated the positive impact of both the employment rate and the labour productivity as a main similarity between the two countries clusters, although the relationship between labour productivity and economic growth seems to be more pronounced in the case of the less performing countries, were also the real net earnings fluctuations play a disincentive role, as compared to the case of the high performing countries, where it was statistically insignificant.

Secondly, the current account balance had a positive influence upon economic growth, but with a one year delay only for the case of the highly performing E.U. country cluster, but turned out to be statistically insignificant for the case of the less performing countries.

The results of the analysis incorporate some main components that will help formulate economic growth measures, employment and labour productivity. The limits of the research are connected to the number of indicators taken into consideration. The valid model obtained through this analysis explains the dynamics of both groups of countries and further research should be conducting considering also other aspects related to economic performance that could have influenced the results obtained by the European Union member states. Moreover, the econometric models could further on be used in order to formulate scenarios regarding the future evolution of the EU economic performance space as a whole.

5. Acknowledgement

This paper was co-financed from the European Social Fund, through the Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/138907 "Excellence in scientific interdisciplinary research, doctoral and postdoctoral, in the economic, social and medical fields – EXCELIS", coordinator The Bucharest University of Economic Studies.

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Overview of Major Issues of Tax Treaties Law in Kosovo

Bedri Peci[1]

Abstract: The aim of this research is to analyze and find out the major issue of tax treaties law in Kosovo. In this analysis we have used the research method of case study. The results of research show that the legal framework for the elimination of double taxation, after 1999, initially started its establishment journey from the United Nations Administration Mission in Kosovo (UNMIK). Taking into consideration the specifications of the political status, the process for the establishment of the unilateral and bilateral legal framework has been made with mistakes, slow and with delays. Following its declaration of independence, Kosovo has paid greater attention to tax treaties. Although double taxation relief in Kosovo may be obtained either unilaterally or under a tax treaty, there remains a lot of work to be done for the completion of the necessary framework for elimination of double taxation. The double taxation relief provided by a tax treaty prevails over the domestic relief. The study is of particular relevance to scholars, tax practitioners, expatriates who work and invest in Kosovo, etc.

Keywords: tax treaties; unilateral; bilateral; domestic law

JEL Classification: H20

1. Introduction

Every country is free to choose, create, adopt and implement a tax system to comply with its needs and development. However, in spite of different characteristics, tax systems in general are based on several basic principles, that are created with time and improved continuously from the development in the hundred year tax theory and practice of the world. The international tax law and the domestic tax laws are constructed on the basis of respect of double taxation elimination principle. In this aspect, there prevails the idea that in order to increase economic efficiency it is necessary to eliminate double taxation.

Therefore, amongst the economic instruments for promoting the attractiveness of a state for investment are international agreements on taxation, which are usually concluded in the form of tax treaties. Avoidance of double taxation is still the main purpose of tax treaties. Looking at their provisions, other purposes appear to include the prevention of tax evasion and avoidance (Sasseville, 2002, p. 96). Tax treaties

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aim to provide certainty to taxpayers as to their potential tax liability in foreign countries. They allocate taxing rights between treaty partners regarding the persons and taxes covered under the treaty. To this end, tax treaties offer a range of tax advantages which countries agree to grant to each other in order to prevent double taxation and eliminate the barrier that double taxation would create to cross-border trade, investment, movement of persons, etc. (Baker, 2013, p. 3)

Although many taxes have been continuously implemented since 1999, Kosovo is still in the initial stages of developing its tax treaties network and there is significant work that needs to be done to fully design its double taxation relief. Up to the moment of this thesis, Kosovo had only eight treaties for double taxation elimination in power.

Double taxation is a significant issue, because of the large number of Kosovars is working in foreign countries, as well as the significant number of foreigners coming to work or invest in Kosovo. The absence of tax treaties gives rise, in particular, to cash flow problems and excessive bureaucracy, and is most acutely experienced by expatriate workers whose time is divided between Kosovo and other countries. Further, without the exchange of information provisions in tax treaties, Kosovo is at a disadvantage in terms of enforcing its domestic laws when an international company is conducting economic activities in Kosovo. (Peci, 2009a, p. 222) Therefore, the aim of this analysis is highlighting some of basic specifics which characterize major issues of tax treaties Law in Kosovo, with particular emphasis on Kosovo tax treaties and relationship between tax treaties with domestic law.

In this analysis we have used the research method of case study. The research is based on analyzing Kosovo tax treaty relief for avoidance of double taxation and domestic tax law through different papers which talked about international tax law, whereas as the main source of data for analyses we used IBFD publications.

Apart from introduction, paper is laid out as follows: Part II analyses development of Kosovo tax system. Part III analyses tax treaty relief in Kosovo. Part IV presents the overview on relationship between tax treaties and domestic law. At the end conclusions are given.

2. Development of Kosovo Tax System after 1999 War

In the long historical context, the policy and tax systems of Kosovo were followed during their evolution by many changes that were made based on the challenges of the political and socio-economic structure of Kosovo (initially as part of a federal system and later following the deployment of the United Nations Interim Administration Mission in Kosovo (the UNMIK). The first phase covered a long time period, including the years from 1945 until the dissolution of the former Yugoslavia in the 1990s. The second phase included the period from the 1990s up to the deployment of the UNMIK in 1999. The third phase runs from 1999 until the Kosovo declaration of independence on 17 February 2008. The fourth phase runs from 2008 onwards the future time perspective.

Kosovo, in distinction to other Balkan countries, made the economic transition, including tax reforms, under the influence of quite specific political factors and circumstances (Peci, 2009b, p. 46). Reformation of taxation systems constituted only one of the main components of the reforming process within the social-economic transition. The transition process, which in early '90s encompassed many countries of South-eastern Europe, found Kosovo initially in a situation of an undeclared war, which broke out in 1998 and ended by the Kumanovo Agreement (Military Technical Agreement) on 10 June 1999 (Peci, 2009c, p. 285). On 10 June 1999, the UN Security Council approved Resolution 1244, by which United Nations Administration Mission in Kosovo (UNMIK) was created and therewith the sovereignty of the SFRY over Kosovo was abolished. Until final status settlement (2008), resolution 1244 vested UNMIK with legislative, judicial and executive powers. Upon UNMIK installation in Kosovo, the Central Fiscal Authority in cooperation with World Bank, the European Commission and the International Monetary Fund, started the work in formulation of measures and strategy for creating an efficient tax system in the spirit of the overall economic and social development of Kosovo. The creation of the policy and tax system in Kosovo by UNMIK is a sui generis case, as it was created in practice without any internal influence and without a political dialogue of Kosovo actors (Peci, 2013, p. 71).

The highest authority of the fiscal power in Kosovo from 1999 to the Declaration of independence of Kosovo, on 17.02.2008, was the Special representative of the Secretary General (SRSG) of the UN together with the Fiscal Economic Council as an advisory body to the SRSG for fiscal policy issue.

After proclamation of independence , the fiscal sovereignty moves from UNMIK to the Kosovo Institutions, respectively in the Parliament of Kosovo, as the greatest taxing power in applying taxes through tax laws. In this way, Kosovo institutions inherited a policy and tax system designed from UNMIK, which mainly had fiscal functions. This, due to the fact that the main objective of policy and tax system was gathering funds for financing foreseen public costs, by not giving importance to the economic and social functions which can be achieved through policy and tax system. So, policy and tax system inherited by UNMIK had a very limited function vis-à-vis socio-economic needs of Kosovo and trends of taxing competition in Balkan countries. In such a situation, designers of tax policy of independent Kosovo were forced to consider the reformation of system and tax policy. In December 2008, the Government of the Republic of Kosovo took the first steps in changing the tax system inherited from the UNMIK. The measures that were taken are only related to reducing the tax rates on the main taxes, with the objective of stimulating foreign investment and allowing taxpayers to pay less tax so as to minimize evasion (Peci, 2010, p.46). In this context, since 1st January 2009 changed only tax rates of main existing taxes, respectively has reduced tax rate of Corporate Income Tax (CIT) from 20% to 10 %, has reduced tax rate of Personal Income Tax (PIT) from 0%, 5%, 10% and 20% to 0%, 4%, 8% and 10%, which means that the highest rate of this tax will be 10% for taxpayers' and business activities. In contrast to above mentioned taxes, tax rate of VAT was increased from 15% to 16%. The Kosovo tax system includes corporate income tax, personal income tax, withholding tax real estate tax, VAT, excise tax, and customs duties (Peci, 2009a, p. 222).

Following its declaration of independence, Kosovo has paid greater attention to tax treaties. In this regard the Office for Legal Issues, Treaties and Human Rights was established within the Ministry of External Affairs in 2008. This office deals with treaty issues regarding the elimination of double taxation.

3. Tax Treaty Relief in Kosovo

The state in various methods may apply measures in order to eliminate double taxation. Depending on the fact whether there are undertake these measures as one-sided legal actions by a country or as cooperation between two or more states, these measures may be classified as: unilateral and international measures (bilateral and multilateral). Unilateral relief expresses granting of relief from the effects of international double taxation on the basis of domestic legislation rather than the provisions of a tax treaty (IBFD International Tax Glossary, 2009, p. 462). Relief typically takes the form of an exemption or credit or in some cases simply a deduction of foreign taxes. Bilateral relief express granting of relief from the effects of international double taxation on the basis of provisions of an international treaty or similar instrument (e.g. within EU, by way of the Parent-Subsidiary Directive). Model treaties are usually bilateral but some multilateral models exist. Multilateral tax treaties are concluded between more than two treaty partners. Examples include the Arab tax treaty, the CMEA tax treaties, and the Nordic Convention. Nations worldwide have adopted the text of Art. 2 ("Taxes covered") of the OECD Model Double Taxation Conventions in concluding bilateral treaties to prevent international double taxation in the area of taxes on income and capital, and taxes on estates, inheritances and gifts. (Brandstetter, 2010, p. 1) Bilateral tax treaties were originally developed to prevent double taxation of income, primarily double taxation arising from the combination of residence and source taxation. The measures undertaken by Kosovo to eliminate double taxation are unilateral and international. Kosovo, as the newest country internationally recognized by 106 countries, is in the process of creating the framework for elimination of double taxation. The legal framework for the elimination of double taxation has started by the UNMIK. Taking into consideration the specific political status of Kosovo until the declaration of independence, the process for the establishing the unilateral and international legal framework has been deficient, slow and with delays.

3.1. Unilateral Measures

For eight and a half years (1999-2008), respectively for the duration of the interim administration, there prevailed unilateral measures for elimination of double taxation.

Unilateral measures to eliminate double taxation are based on domestic laws that follow the principles contained in the OECD Model Tax Convention (OECD Model).Because the Kosovo does not have an established comprehensive tax treaty network, the ordinary credit method is applied in order to eliminate from double taxation. Thus, in the absence of a tax treaty, unilateral relief is granted in the form of an ordinary tax credit for income taxes paid abroad. The credit is limited to the lower of the foreign tax and that part of the Kosovo tax which is attributable to the income that has been taxed abroad. A non-resident person with a Permanent Establishment in Kosovo can obtain an official document from the Kosovo tax administration certifying the amount of taxes they have paid, which can be used to obtain a credit abroad (Peci, 2010, p. 46).

With respect to taxes on income and capital the Kosovo government introduced Art., 40 of Law No. 03/L-071 on Tax Administration and Procedures to provide for relief from double taxation in the absence of a tax treaty. Art. 40(1) provides that:” where the existing taxation laws of Kosovo relative to international taxation do not address taxation of international transactions, they may be supplemented by application of the principles of the OECD Model Tax Convention on Income and Capital, in order to avoid double taxation of such income and capital”. Sec. 40(2) further provides that: “Where the existing tax laws relative to the international juridical double taxation of income and capital of persons in the Republic of Kosovo do not address such taxation, the principles of the OECD Model Tax Convention on Income and on Capital shall apply in order to avoid double taxation of such income and capital”. Referring to the OECD Model makes the problem easier but does not resolve it (Peci, 2010, p. 46). As it says Klaus Vogel as a rule, however, unilateral measures are insufficient to avoid double taxation because they generally do not cover all situations giving rise to double taxation, and they may apply to double taxation situations inconsistently depending on which state's measures are applied (Vogel, 1986, p. 10).

3.2. Bilateral Measures

During the UNMIK administration (1999-2008), the Kosovo authorities did not take an official position regarding the tax treaties signed by the former Yugoslavia. Unofficially, however, they did not recognize these tax treaties.

After deceleration of Independence State of Kosovo take an official position regarding the tax treaties signed by the former Yugoslavia. In Art., 9 of the Declaration of Independence, Kosovo accepted the validity of all international agreements that the former Yugoslavia made in the name of Kosovo Art., 9 provides that Kosovo will: "undertake the international obligations of Kosovo, including those concluded on our behalf by the United Nations Interim Administration Mission in Kosovo (UNMIK) and treaty and other obligations of the former Socialist Federal Republic of Yugoslavia to which we are bound as a former constituent part, including the Vienna Conventions on diplomatic and consular relations" (Kosovo Declaration of Independence,17 February 2008). Further, on 9 April 2008, the Assembly adopted the Constitution of the Republic of Kosovo, which entered into force on 15 June 2008 and, similarly, provides that all international agreements will be respected.

The former Yugoslavia signed tax treaties with 20 countries between 1975 and 1990 as follows: France (1975), Sweden (1981), Denmark (1981), Belgium (1981), the United Kingdom (1982), the Netherlands (1982), Czechoslovakia (1982), Italy (1983), Poland (1983), Norway (1985), Cyprus (1986), Sri Lanka (1986), Finland (1987), Romania (1987), Hungary (1987), Germany (1988), Egypt (1988), China (1989), the Philippines (1990) and Malaysia (1990). Given the significant socio-economic changes that have occurred since these treaties were signed, as well as changes in tax legislation, the existing treaties clearly need to be revised or renegotiated (Peci, 2010, p.45). During the UNMIK administration, Kosovo has entered into a tax treaty with Albania, which is effective from 1 January 2006. No other tax treaties have been concluded by the UNMIK administration.

Following its declaration of independence in 2008, Kosovo has paid greater attention to tax treaties. In this regard the Office for Legal Issues, Treaties and Human Rights was established within the Ministry of External Affairs in 2008. This office deals with treaty issues regarding the elimination of double taxation. After declaration of independence, Kosovo and several European countries have enacted several agreements signed by the former Yugoslavia. The president of Kosovo has signed the respective decrees for the approval of these agreements, including double taxation treaties. Thus far, Kosovo has ratified five such tax treaties, those with Belgium, United Kingdom, Germany, the Netherlands and Finland. The treaties signed by the former Federal Republic of Yugoslavia are, however, not recognized as applicable by Kosovo (Kosovo Declaration of Independence, 17 February 2008).

Tax agreement signed by Kosovo are based on a project type approved by the Government, which is drafted based on the international basic models drafted for this purpose by the United Nations Organization, UNO (United Nations Model Double Taxation Convention between Developed and Developing Countries, New York: United Nations, 2011) and by the Organization for Economic Cooperation and

Development, OECD (Model Tax Convention on Income and on Capital, Paris, OECD, 2010).

4. Relationship between Tax Treaties and Domestic Law

Tax treaties are "dual" in nature in that they are agreements under international law but also form part of the internal laws of the contracting nations (Brandstetter, 2010, p.1). Whereas, with regard to the relation of treaties for the elimination of double taxation with domestic tax laws of countries, in general, the international treaties shall prevail in application. However, it is possible to come across situations when the legislative authority of a contracting state overrides the provision of the international treaty. There are two facts essential in understanding the relation between treaties for the elimination of double taxation and provisions of the domestic tax legislation.

First, treaties do not provide taxation rights to the contracting states but only limit their taxation rights. Respectively, the taxation power of the contracting states cannot, based on the provisions of treaties, state that it has the right to tax any certain income only because so it says in a certain provisions of the text of the treaty, whereas at the same time, in the domestic tax legislation of the contracting country, such a form of incomes is not taxed. Thus, the treaties do not create the right on taxation but only limit them. Such a restriction through treaties shall be made to states as the source of incomes (e.g. dividend tax in the source country to a certain level) also countries of residence of the taxpayer (e.g. the tax calculation obligation paid abroad in accordance with the provisions of the treaty) (Finnerty, Merks, Petriccione & Russo, 2007, p. 13).

Secondly, the definitions from the agreement may be different from those that are used in the national tax provisions of the contracting countries. E.g. certain incomes of one contracting country can be treated as an income from the author's right but this does not mean that it will be treated same in the provisions of the treaty. Thus, sometimes, the provisions of the treaty refer to the national tax provisions of the contracting countries and sometimes not. (Finnerty, Merks, Petriccione & Russo, 2007, p. 13) Regarding the relationship between tax treaties and domestic law in Kosovo exist monist approach. Under monist approach international law and domestic law are part of one system in which international law always prevails over domestic law (Popovic, 1997, p. 250). The priority accorded to treaties is constitutional requirement, in which case rules for the application of a treaty raise issues of constitutional validity.

The relationship between tax treaties and domestic law is generally regulated by the Constitution. Pursuant to the Kosovo Constitution, international agreements made in accordance with the Constitution are an integral part of domestic law (Constitution of the Republic of Kosovo). Ratified international tax treaties are an integral part of the Kosovo legal system and they derogate particular tax rules provided in domestic legislation. In the case of a conflict between domestic legislation and an international agreement, the latter generally prevails. “Ratified international agreements and legally binding norms of international law have superiority over the laws of the Republic of Kosovo” (Art. 19(2) of the Constitution of Kosovo).

In Kosovo the Constitution is the most supreme legal act of the state with which all laws, by-laws, as well as international agreements entered into by Kosovo must be compatible. By-laws and any other secondary legislation must adhere to the laws on which they were based. Except with constitution supremacy of tax treaties vis-à-vis domestic law is expressed and by law. According to Law on International Agreements “If a International Agreement of the Republic of Kosovo which has entered into force establishes norms other than those established by the laws, other legal acts of the Republic of Kosovo which are in force at the moment of conclusion of the International Agreement or which entered into force after the entry into force of the International Agreement, the provisions of the International Agreements of the Republic of Kosovo shall prevail”. (Art. 15(2) of Law of International Agreements) Double tax treaties shall be ratified upon signature of the President of the Republic of Kosovo (Art. 10 (4) of Law on International Agreements). The request for ratification of the treaty is submitted by the Ministry of Foreign Affairs to the President. The treaty ratification decree issued by the President of the Republic of Kosovo refers to the relevant provisions of the Constitution of the Republic of Kosovo based on which the international agreement should be ratified.

5. Conclusion

Kosovo tax system does not have yet an established comprehensive tax treaty network. Kosovo is still in the initial stages of developing its tax treaties network and much remains to be done in regards to relief from double taxation. Kosovo should intensify efforts to establish comprehensive tax treaty network. Kosovo can achieve this through the signing of the bilateral treaties for elimination of double taxation, with priority, with its major trade partners, with which it does not have any treaties yet, in order to facilitate its involvement in the international division of labour and to intensify its economic and financial relations in the global economic environment.

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Re-examination of Advertising Effectiveness in Selected Soft Drink Companies in Lagos State, Nigeria: A Descriptive Analysis

Adefulu Adesoga[1], Van Scheers Louise[2]

Abstract: The paper reexamined the effectiveness of Advertising in Selected Soft Drink Companies in Lagos, Nigeria. The study linked with past researches through its extensive conceptual, theoretical and empirical literature review. The methodology adopted was survey research design. The study population was the staff in marketing positions in the selected companies. Questionnaire was administered on samples from the selected Companies. The weighted means and percentage values of the respondents were used in the analysis and decision making. The findings showed the need for a better understanding of organizational factors that determine the commitment of organizational resources to drive achievement of advertising goals because of its impacts on customers' awareness and product adoption. The study concluded that advertising is a potent and veritable tool for achieving marketing goals. The study recommended that firms should identify the best advertising program to achieve its advertising goals. By implication, marketing decision maker should incorporate advertising expenditures in the marketing budget in appreciation of its role.

Keywords: Advertising; Promotion; Marketing; Customer's awareness; Product Adoption

JEL Classification: M3; M31; M37

1. Introduction

The economic policy changes which opened the country to the world market and global competition from different multinational companies made most business houses in Nigeria to realize the need for being proactive in communicating their product offerings to the consumer. Advertising and other forms of promotions have, since then, increased in Nigerian business society. According to Jobber and Lancaster (2006), all Businesses need to communicate to the customer what they have to offer. Impacted by the economic downturn in 2008, many consumers have cut back much of their discretionary spending. In response; marketers have stepped

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AUDŒ, Vol. 11, no. 3, pp. 24-34

up their promotional efforts and one of such efforts is the application of Advertising. A survey of the Nigerian daily newspapers, magazines, and television stations shows that a large percentage of the manufacturers are largely in the habit of stimulating the consumers to ask the retailers for the product or emphasize creating demand for the brand. 7up (Seven-Up Bottling Company), Coca-Cola (Nigerian Bottling Company) and other soft drink companies in the food and beverages industry are into promoting their products through the pull strategy [*http:www.thecoca-colacompany.com/investors*]. Coca-Cola in particular primarily uses advertising and sales promotions to communicate with its customers [*http:www.the coca-colacompany.com/investors*]. The promotional tools used by Coca-Cola were reported in the following percentages: advertising (50%), sales promotions (30%), public relations (10%), others (10%) [*http:www.thecoca-colacompany.com/investors]*. This implies that half of the promotional budget is expended on advertising

Marketing decision makers are increasingly aware of the importance of the shareholder's value maximization, which calls for an evaluation of the long term effects of their actions on product-market response and investors' response. (Amit and Dominique, 2010) Marketing literature to date has focused on the sales or profit response of marketing actions. (Amit and Dominique, 2010) The effectiveness of advertising in terms of commanding awareness, interest, and evaluation of the product, trial and adoption has not been examined. It is the focus of this study to fill this gap by evaluating the effectiveness of advertising program in selected soft drink companies: determine the extent to which advertising program affect awareness, interest, evaluation of the product, trial and adoption of product, evaluate the extent to which advertising objective command market reach and assess the relative competing performance of advertising on awareness and adoption of products. Following this introduction, section two of the paper considered the review of Literature, section three discussed the methodology of the paper, and section four presented the analysis, results and discussion while the last section dwelled on the conclusion and recommendations.

2. Literature Review

2.1 Conceptual Review

Advertising is any paid form of non-personal communication about an organization, good, service or idea by an identified sponsor (Berkowitz et al., 2000). Advertising, unlike personal selling is impersonal. It carries a monologue message to the audience from an identified source (Owaga, 2002). Benette (1995) defined advertising as any paid form of non-personal communication about an organization, a good, service or an idea by an identified sponsor. Advertising Practitioners Council of Nigeria (APCON) defines advertising as a form of communication about products, services, or ideas paid for by a sponsor and implemented through the media. American Marketing Association defined advertising as any paid form of non-personal presentation and promotion of ideas, goods and services by an identified sponsor for the purpose of imparting information to the customer. According to Adetayo (2006), advertising can be broken down into two basic types. These are product advertising and institutional advertising. Product advertising is the promotion that focuses on selling specifically identified goods and services. The second broad category of advertising is the Institutional advertising which focuses on the image of a company or an industry association rather than a specific brand. The advertising media is divided into print (Newspaper, Magazines, Journals, Outdoor advertising) and the broadcast media (Television and Radio).

2.2. Theoretical Review

The study adopts the hierarchy of effects theory by Lavidge and Steiner 1961 cited in Osuagwu 2002 and the strong theory of Advertising as its theoretical basis.

2.2.1. Hierarchy of Effects Theory: The theory describes the steps through which consumers typically pass when contemplating the purchase of a product, posits that consumers move from being unaware to being aware, to having knowledge, to liking & preference, conviction and purchase. The theory describes the effectiveness of advertisement to jump start the sequence of event needed before a consumer will buy a product and ultimately achieve the marketing objectives. The sequence involves the following steps: Awareness (the individual is aware of the product's existence), Knowledge (the individual knows what the product offers), Liking (the individual has favorable attitudes toward the product), Preference (the individual's favorable attitudes have developed to the point of preference), Conviction (preference is coupled with a desire to buy and confidence that the purchase would be used), and Purchase (attitude is translated into actual buying behaviors).

The consumer must first be aware that the product exists. He or she must then be motivated to give some attention to the product and what it may provide, then the consumer needs to evaluate the merits of the product, hopefully giving the product a try. A good experience may lead to continued use. It should be noted that the consumer must go through the earlier phases before the later ones can be accomplished.

2.2.2 Strong Theory of Advertising: The theory holds that advertising can persuade someone to buy a product that has never been bought before and it can accomplish long term buying behavior. The theory holds that advertising is believed to be capable of increasing sales and has a direct or positive impact on sales. Belch (2001) opined that advertising can be used to create brand images and symbols for company or brand. Advertising can create brand image and increase the sales. Advertising is a strong promotional element which works by persuading people to buy, creating and building brands, differentiating between brands and increasing sales.

2.3 Empirical Review

Dekimpe and Hanssens (1995) showed that temporary increases in advertising have a long term carry over effect on the brand's performance in some, but not all the stores.This view was supported by Metawally (1997) who concluded in his study that growth in advertising expenditure is strongly correlated with the growth in sales and that movement in market shares exerts a significant effect on the growth in advertising expenditure. Andras and Srinivasan (2003) concluded on marketing communication effect that consumer product organizations have higher advertising intensity while manufacturing product organizations have higher R&D intensity and that higher advertising intensity and R&D intensity leads to higher profits.

Joshi and Hanssens (2004) postulated that advertising spending has positive and long-run impact on firms' market capitalization also through the share price In the same year, Frankenberger and Graham (2004) studied the effect of recessionary advertising spending by using cross sectional time series regression on a sample of 2662 firms and concluded that increasing advertising spending during recession led to higher benefits than doing so during non-recession times. Kim (2007) focused on the positive effect of advertising and publicity on corporate reputation and sales revenue and the study concluded that advertising and publicity have significant effects on corporate reputation for certain companies. In another study, Sharma and Sharma (2009) evaluated the effectiveness of advertisement expenses on sales of selected companies operating in India over a period from 1992-93 to 2006-07 using panel data and found out that the advertising elasticity was more for Type II companies, that is, Type II companies sold more for the same level of advertisement as compared to Type I companies. They also hypothesized that the effect of advertisement on sales was more for manufacturing companies and less for non-manufacturing companies, which was a reflection of the study made by Andras and Srinivasan (2003)

3. Methodology

To reexamine Advertising effectiveness in the selected organization, a survey research was designed. Primary data were collected from Nigerian Bottling Company (NBC) and Seven-Up (7UP) Bottling Company, Lagos, Nigeria. The population of study was the people in marketing positions in the selected companies totaling 220. (NBC- 120, 7UP-100).The two dominant players were selected because of their active and intensive engagement of advertising as a strategic tool to gain competitive edge. A sample size of 172 (NBC-90, 7UP-82) determined by Yamane formula was selected using stratified sampling technique to accommodate different levels of positions occupied by the commercial staff of the organization. The questionnaire was developed based on existing literature and pretested with selected marketing staff to ensure clarity and comprehension, as well as to gauge average completion time. Minor revisions were made in question wording and order as a result of the pretest. Because of careful monitoring, the total of 172 questionnaires were returned representing 100% response rate. To assess the internal consistency of the instrument, Cronbach's alpha was estimated and a reliability coefficient of 0.836 resulted. The instrument was validated through content validity. The instrument was structured and multi-chotomous in design using the Likert scale type of responses ranging from Not at all, to very slight extent, to a moderate extent, to a great extent and to an extreme extent.The Yamane formula adopted is stated below:

$$n = \frac{N}{1 + Ne^2}$$

Where n is the sample size, N is the population size and e is the error margin calculated at 0.05%. The weighted mean and the percentage value of the respondents were used to determine Advertising effectiveness in the organization.

4.1. Analysis, Results and Discussion

The perception of the respondents on the effectiveness of advertising program in Coca- Cola and 7UP Companies on the various subscale measured are analyzed and discussed below:

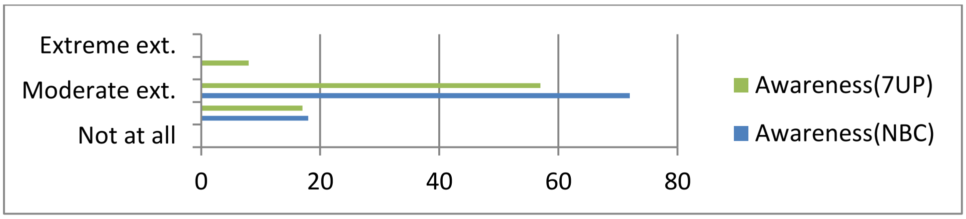

Figure 1. Extent to which advertising program commands awareness

Source: Field survey result, 2013

In figure 1 above, the analysis of respondents' perception of the extent advertising program commands awareness is presented. In NBC, 72(80%) respondents opined that advertising program commands awareness among the consumers to a moderate extent while 57(70%) respondents in 7UP equally opined that advertising program creates product awareness among the consumers to a moderate extent. About the same numbers of respondents in NBC (18) and 7UP(17) agreed that advertising program influenced awareness among the consumers to a very slight extent. In 7UP,8(10%) respondents described advertising program to have high level impact on awareness of the consumers while in the two companies,no respondents denied the influence of advertsing program in commanding awareness among the consumers . In the same manner, extreme influence of advertising program on awareness among the consumers in the two companies cannot be determined in the midst of other promotional programs.To test the reliability of the scale, alpha cronbach was computed and the value was found to be acceptable at 83% for both NBC and 7UP. The mean value of respondents in NBC was 2.80 and 7up was 2.89 indicating a relative moderate influence of advertising programs on creating awareness among the consumers. This also implies that advertisng programs have above average influence in creating awareness among the consumers as suggested by the mean value obtained for the two companies.

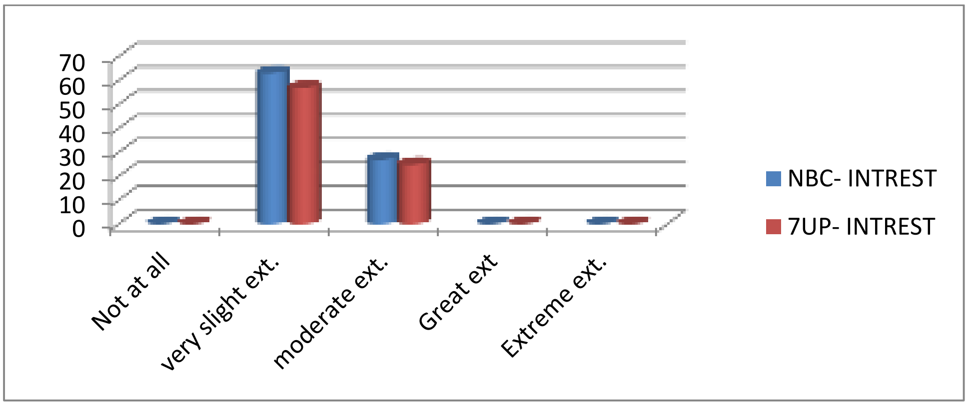

Figure 2. Extent to which advertising program commands interest in products.

Source: Field survey result, 2013

In figure 2 above, the analysis of respondents' perception of the extent to which advertising program provokes customers interest in the products is presented. In NBC, 63(70%) respondents out the 90 surveyed opined that advertising program commands interest of the consumers to a slight extent while in 7UP, 57(65%) respondents out of the 82 surveyed expressed that advertising program slightly affect interest in products. Almost the same numbers of respondents in NBC (27,30%) and 7UP (25,31%)expressed a moderate impact of advertising program on interest. None of the respondents in NBC and 7UP denied the effectiveness of advertising program on interest in the two companies. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83.1%. The mean value for the respondents (NBC &7UP) was 2.30 which is far less than average indicating the slight impact of advertising program to provoke interest in product decision.

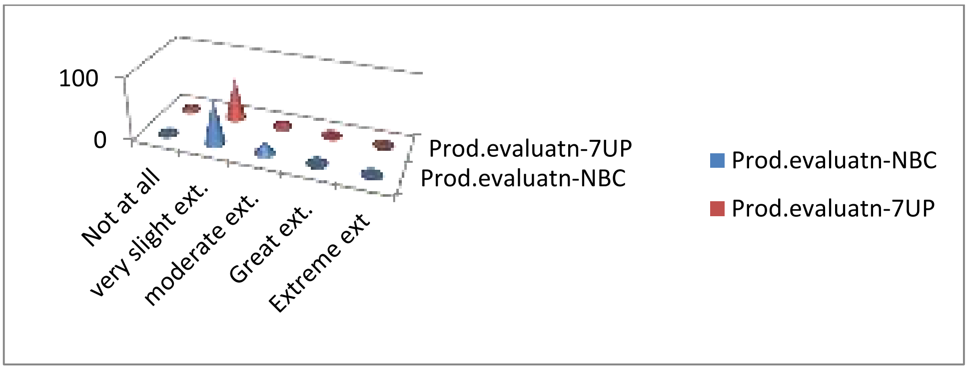

Figure 3. Extent to which advertising program commands evaluation of products

Source: Field survey result, 2013

In figure 3 above, the analysis of respondents' perception of the extent to which advertising program commands evaluation of product is presented. In NBC, 72(80%) out of 90 respondents surveyed opined that within the operational framework, advertising program to a very slight extent influence evaluation of products while in 7UP 66(80.5%) respondents of the 82 surveyed expressed the same feelings that advertising to a slight extent command evaluation of product. Also in NBC, 18(20%) respondents indicated that advertising program has moderate impact on the evaluation of product while only 8(10%) of the respondents in 7UP agreed that advertising program affects evaluation of product In NBC, there is no denial of the impact of advertising program on evaluation of product but in 7UP, 8(10%) of the respondents opined that advertising program did not impact product evaluation. The mean value for the respondents in NBC was 2.20 while that of 7UP was 2.00 indicating that advertising program has a very slight impact on evaluation of products. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83.7%

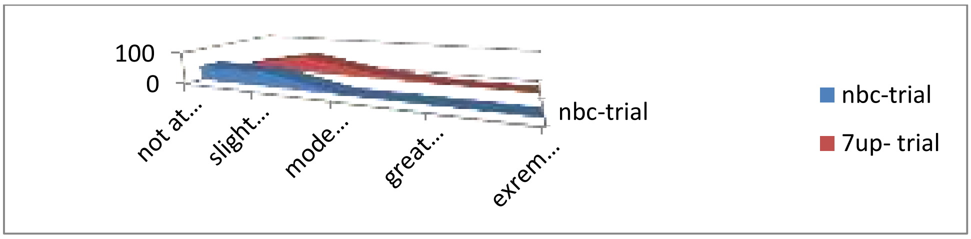

Figure 4. Extent to which advertising program commands trial of products

Source: Field survey result, 2013

In figure 4 above, the respondents perception of advertising program influence on product trial is presented. In NBC, 63(70%) of the respondents are of the opinion that advertising program influenced product trial while in 7UP 66 (80.5%) of the respondents said that advertising program influenced product trial to a very slight extent. The moderate impact of advertising program on trial was acknowledged by 18(20%) of the respondents at NBC while 16(19.5%) of the respondents in 7UP equally affirmed the moderate influence of advertising program on trial of products. However, 9(10%) of the respondents at NBC opined that advertising program did not have any influence on product trial. The mean value for the respondents in NBC was 2.10 while that of 7UP was 2.20 indicating that advertising program has a very slight impact on evaluation of products. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83.4%

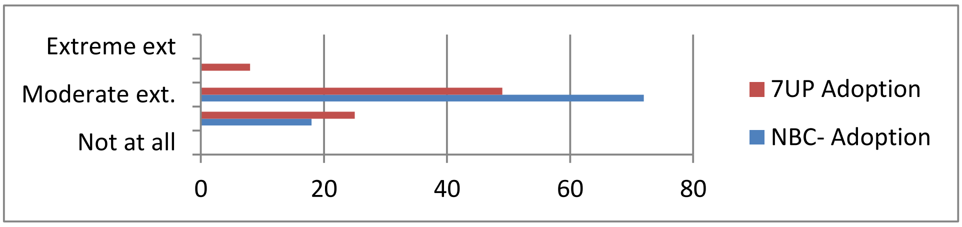

Figure 5 Extent to which Advertising commands adoption of products

Source: Field survey result, 2013

In figure 5 above, the respondents perception of the extent to which advertising program influence product adoption is presented. In NBC, 72(80%) of the respondents are of the opinion that advertising program influenced product adoption to a moderate extent while in 7UP, 49(60%) of the respondents said that advertising program influenced product adoption to a moderate extent. 25(31%) in 7UP, and 18(20%) in NBC claimed that advertising affects adoption to a slight extent. None of the respondents denied the command of advertising program on adoption in the two companies, however 8(10%) of 7UP respondents claimed that advertising has great influence on adoption. The mean value for the respondents in NBC was 2.80 while that of 7UP was 2.74 indicating that advertising program has a moderate impact on adoption. This implies that advertising program has above average influence on adoption. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83.4%

4.2. Relative Competing Performance of Advertising on Awareness & Adoption of Products

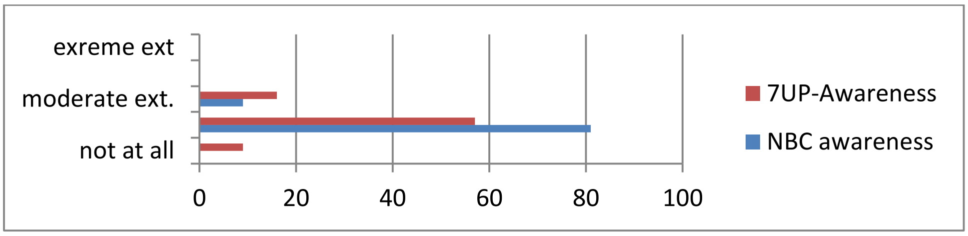

Figure 6. Awareness

Source: Field survey result, 2013

In figure 6 above, the respondents' perception of the organization's advertising program performance on awareness relative to the competitors in the industry is presented. In NBC, 81(90%) of the respondents opined that advertising performance on awareness relative to competitors is to a slight extent while in 7UP, 57(61%) of the respondents agreed that advertising performance on awareness relative to competitors is to a slight extent.The mean value for the respondents in NBC was 2.10 while that of 7UP was 2.09 indicating that the relative performance of advertising on awareness in the two companies is within the same range but more respondents in NBC indicated the influence of advertising is slightly higher in NBC than 7UP. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 82%

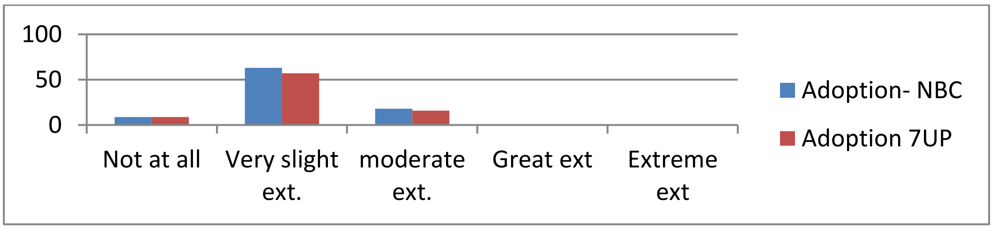

Figure 7. Adoption

Source: Field survey result, 2013

In figure 7 above, the respondents' perception of the organization's advertising performance on products adoption relative to the competitors in the industry is presented. In NBC, 63(70%) of the respondents opined that advertising performance on product adoption relative to competitors is to a slight extent while in 7UP, 57(70%) of the respondents agreed that advertising performance on adoption of product relative to competitors is to a slight extent. The mean value for the respondents in NBC was 2.10 while that of 7UP was 2.09 indicating that the relative performance of advertising on adoption in the two companies is within the same range but more respondent's in NBC indicated that advertising performance is slightly higher in NBC than 7UP. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83%. The opinions of the other respondents are shown in the figure.

4.3. Extent to which Advertising Objective command market Reach.

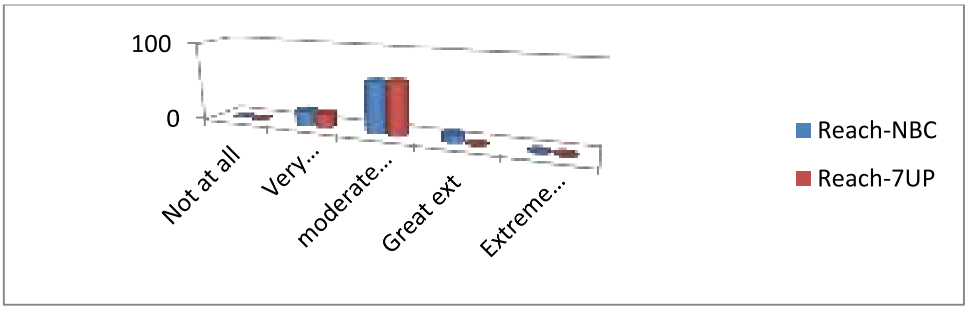

Figure 8. Reach

Source: Field survey result, 2013

In figure 8 above, the respondents' perception of the organization's advertising objective in achieving the expected reach of the market is presented. In NBC, 63(70%) of the respondents opined that advertising objective achieved the expected reach to a moderate extent while in 7UP, 65(79%) of the respondents agreed that advertising objective achieved expected reach of the market to a moderate extent. Eighteen of the respondents in NBC claimed that advertising objective achieved expected reach to a slight extent, only 9 (10%) claimed a great impact of advertising objective on reach. In 7UP, 17(20.7%) claimed that advertising objective achieved expected reach to a slight extent. The mean value for the respondents in NBC was 2.90 while that of 7UP was 2.79 indicating a moderate achievement of advertising objective on reach within the two companies. To test the reliability of the scale, alpha cronbach was computed and the value obtained was found to be acceptable at 83%. The finding is consistent with those of Dekimpe & Hansen's (1995), Andras & Srinivasan (2003), Kim (2007) and Sharma & Sharma (2009).

5. Conclusion and Recommendations

The importance of advertising effectiveness study suggests the need for a better understanding of the organizational factors that determine the commitment of organizational resources to drive the achievement of marketing plan. TAdvertising effectively connect the selected companies to their target market and consequently improve the fortune of the business. This paper therefore concludes that Advertising is a potent tool to command awareness, adoption of products and to reach expected target market at an adequate numbers of times. Advertising is a strategic option that could determine the survival of any organization. Consequently, the paper recommends that organization should identify the best advertising program that is suitable to its operations and effective collaboration with Advertising agency.

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The Inflation and Economic Growth: Evidence from Romania

Mircea Asandului[1], Dan Lupu[2]

Abstract: The main purpose of this study is to establish the existence (or not) of a relationship between inflation and economic growth in Romania, the study lasting from 1970 to 2013. The methodology used in this study is the one specific to time series: structural break test using Zivot-Andrews test, the stationarity test using Augmented Dickey-Fuller (ADF), and then Granger causality testing. Test results showed that for the analyzed period, there was a cointegrating relationship between inflation and economic growth for Romania. Finally, to establish the econometric model of the two variables, it has been developed an ARDL model with two different periods of lag.

Keywords: inflation; economic growth; granger causality; ARDL

JEL Classification: F10; F11; F31

1. Introduction

Any macroeconomic problem has both a positive side, balanced, and a negative side, imbalanced. As regards inflation, as the negative side for a monetary economy, it interferes with all the negative aspects of the contemporary economy: recession crisis, unemployment, and budget deficits, external deficits (trade and payment).

Economic theory characterizes monetary indicators as key factors in influencing both inflation and economic growth. The classic example of this approach lies in Fisher's equation; the money is directly proportional to the price and volume of transactions, reflecting the output. However, empirical data, especially for emerging economies and those in transition, shows deviations from this principle. If, between money and output is kept interrelated relationship, then inflation is determined mainly by other factors, such as: lack of competitive environment, low productivity, exchange rate movements and import prices. However, these records do not

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constitute an argument for excessive easing of monetary policy. In terms of economies with a non-functional structure, the monetary policy should be directed to avoid inflationary risks that can arise from excessive growth of the money supply. Correlation between inflation and economic growth turns out empirically to be inversely related: high rates of inflation are usually accompanied by negative rates of growth.

A first stage of inflation falls to Revolution of 1989, the stage mainly characterized by contradictory consequences of keeping prices under control. The second stage of inflation is until the onset of action of price liberalization. This stage was characterized by a relatively constant price level of goods and services but by the explosive growth of consumer income, which emphasized the gap between the supply of goods (steadily declining) and money (increasing). The third stage of inflation is marked by the transition to a liberalized price system. But price liberalization before the abolition of monopoly situations of most industrial enterprises and the establishment competitive system on the market principles, the rapid growth of imports over exports, rigorous inefficient management of the national currency by the central bank, outside pressures, led to sustainable event galloping inflation.

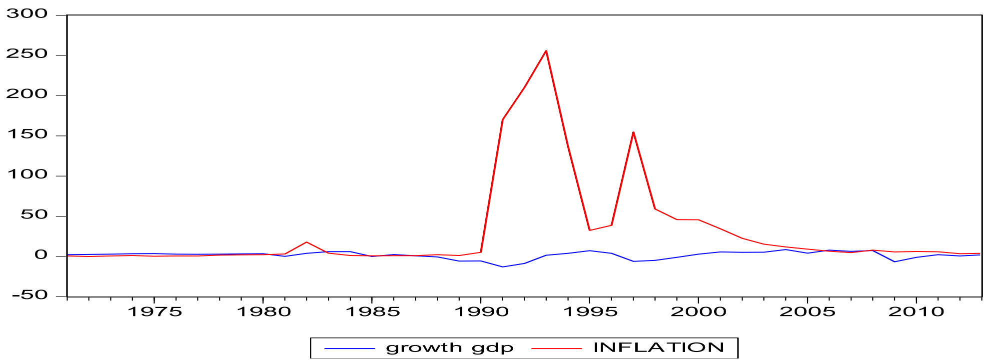

Figure 1. Evolution of inflation and economic growth in the period 1970-2013

Source: Own calculations using INSSE data

In Romania, after a period when high rates of inflation have coincided with the economic downturn in 1995-1996, there has been a certain growth. This unhealthy increase was driven, due to its structural weaknesses, to violent inflationary pressures. The fight against inflation has been accompanied, in the following years, by a significant decline in gross domestic product. Currently, we are dealing with a certain increase in gross domestic product, economic growth accompanied by medium rates of inflation, with a particular increase in unhealthy, bad sectors, wage distortion and low efficiency.

Extensive theoretical and empirical research examined the relationship between inflation and economic growth, both in developed countries and in developing countries. This section provides a brief overview of the main studies in this field.

Barro (1995), Bruno and Easterly (1998) explored the relationship between inflation and increasing economic growth, using an extensive sample of 100 countries for the period 1960-1990. Their empirical findings show that there is a negative relationship in terms of statistically significant between inflation and economic growth, in sense of reduction of economic growth with 0.2-0.3% in case of inflation increasing with 10%.

Sarel (1995), Khan and Senhadji (2001), Burdekin et.al (2004) reexamine the question of the existence of threshold values in the relationship between inflation and growth, using new econometric techniques. Inflation reaches a threshold level, different for developed (inflation less than 5%) and developing countries (less than 15%). The authors found a significant negative relationship between inflation and growth, for inflation rates above the threshold level.

Kremer, Bick, and Nautz (2013) use a dynamic threshold model to highlight the impact of inflation on economic growth in the long term. The empirical analysis is based on an extensive data set panel, made up of 124 countries for the period 1950-2004. For industrialized countries, the authors' results confirm the inflation targets of 2% set by many central banks. For non-industrialized countries, it is estimated that inflation impedes economic growth if it exceeds 17%; for values below this threshold, however, the impact of inflation on growth remain insignificant. Therefore, the results contradict the authors' assertion that inflation stimulates economic growth in developing countries.

This study aims, by keeping interdependence aspects investigated, to analyze the following dimensions: the evolution of the inflationary process in our country, the influence of inflation on GDP growth and the correlation between economic growth and inflation.

2. Econometric Methodology

The study uses a series of econometric methods to obtain empirical results. In a first phase, we use Zivot-Andrews test for structural breaks in the series analyzed. Subsequently, ADF methods are used to establish stationarity issue, and Granger to establish correlations. Finally, ARDL method is used to determine an econometric model for the influence of inflation on economic growth in our country.

Looking at Figure 1, it is easy to see that in the period 1990-2000; inflation rates were abnormally high, implying the possible existence of structural breaks in time series analysis. In these conditions it is mandatory the use of the method Zivot and Andrews.

The work of Zivot and Andrews (1992) provides the methods that can detect the occurrence of structural breaks in the time series. By using Zivot and Andrews's model, we arrive at the results shown in Figure 2; values sets as the structural breaks will be removed from the time series to not distort the results.

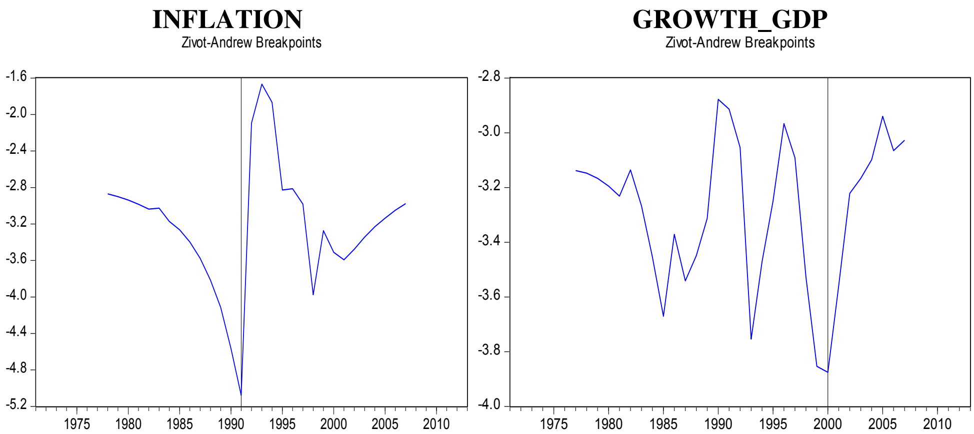

Figure 2. Zivot-Andrews Unit Root Test

Source: own calculations using INSSE data

In order to analyze the two indicators (inflation and economic growth), we perform a series of descriptive statistics on them. Table 1 illustrates the changes in the period 1970-2013 for the two indicators.

Table 1. Basic Statistic about inflation and economic growth during 1970-2013 in Romania

	GROWTH_GDP	INFLATION
Mean	2.421500	10.67447
Median	2.907500	4.040000
Maximum	8.490000	59.10000
Minimum	-6.576000	0.150000
Std. Dev.	3.708141	15.33467
Skewness	-0.796990	1.755676
Kurtosis	3.325130	4.955210

Source: Own calculations using INSSE data

As can be seen from the table above, the average economic growth in Romania was only 2.42, with a maximum of 8.49 and a minimum of -6.57. For inflation, the average is quite high of 10.67 to a maximum of 59% and a minimum of 0.15%.

We will use the Augmented Dickey-Fuller test for the series included in the regression to test the inflation-growth relationship. ADF test has the null hypothesis that the series has a unit root (not stationary). As shown in the figure below, the probability associated with this test is <0.05, then the null hypothesis is rejected and we can say that the series are stationary.

Table 2. The results of Augmented Dickey-Fuller test

	t-Statistic	Prob.*
GROWTH_GDP	-4.163460	0.0294
D(INFLATION)	-5.461060	0.0021

Source: Own calculations using Eviews 7

In order to verify the hypothesis mentioned above, we used ARDL model, an auto-regression vector. This approach is widely used in international practice to determine the implications of monetary policy. We use the ARDL model in order to study the effects of various shocks on the variables in the system. Thus, it can answer questions extremely important from the point of view of economic policy authorities, for example: "How reacts growth to an increase in inflation?" and the reversed question.

ARDL model selected is the (2,3), with the F statistic = 4.674304. As can be seen the value obtained is higher than indicated by Pesaran, so between inflation and growth occurs cointegration relationships. On the other hand, we see a negative correlation between GDP growth and inflation (coefficients are negative -0.303158, -0.007804, -0.009371).

Table 3. The results of ARDL model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.156393	1.011390	0.154632	0.0081
GROWTH_GDP(-1)	-0.303158	0.237487	-1.276525	0.0113
INFLATION(-1)	-0.007804	0.015758	0.495214	0.0239
D(GROWTH_GDP(-1))	-0.067304	0.238516	-0.282176	0.0097
D(GROWTH_GDP(-2))	0.100501	0.197275	0.509448	0.0140
D(INFLATION(-1))	-0.009371	0.017504	-0.535357	0.0062
D(INFLATION(-2))	0.029974	0.016998	1.763377	0.0077
D(INFLATION(-3))	0.015675	0.017073	0.918150	0.0356

Source: Own calculations using Eviews 7

To determine whether monetary variables influence GDP growth, or vice versa, Granger test was used. Granger Causality indicates whether a variable "causes" another variable statistically. This method not expressly indicate whether a variable causes another variable, the test only reflects the predictive capabilities of the variables, but this allows us to make assumptions regarding the existence of causality. Granger test shows better predictive power of monetary variables in relation to GDP. For this reason, the regressions monetary indicators appear as independent variables.

It is observed that the probability associated to the option - GDP does not Granger cause inflation (YT does not Granger cause ...) is high (0.1433 and 0.2245, both greater than 0.05), which makes us accept this hypothesis. On the other hand, we must reject the hypothesis that inflation does not cause GDP statistics, the probability associated with being close to 0, therefore we must accept reverse assumption. It follows that both variables taken into account, inflation and GDP growth are mutually interrelated Granger.

Table 4. Results of Granger causality test

Null Hypothesis:	Obs	F-Statistic	Prob.
D(INFLATION) does not Granger Cause GROWTH_GDP	40	2.05440	0.1433
GROWTH_GDP does not Granger Cause D(INFLATION)		1.55946	0.2245

Source: Own calculations using Eviews 7

In this context, a plausible hypothesis is that inflation was caused by economic growth, and that in turn inflation influenced the growth.

A VAR analysis result is shock response function (impulse - response function). The shock response (IRF) shows how a variable reacts at a shock provided by another variable in the system. IRF follows the trajectory of this effect over time, at different horizons. In our study we treated the shock as a change in one unit of the residual value. As we see, the change of economic growth has little influence on inflation, which varies around 0. Such a situation is typical for transition economies or emerging, relevant in this case are numerous studies that show a low level of correlation between monetary variables and inflation for countries in Eastern Europe. Instead, inflation shows a major influence on economic growth.

However, initially need to identify which component of the relationship is established as "momentum": either increase inflation contributes to GDP growth or conversely increased economic activity increases the monetary variables. This approach on the one hand, it is desirable, but on the other hand has a relative character, because changes in output and inflation influence each other.

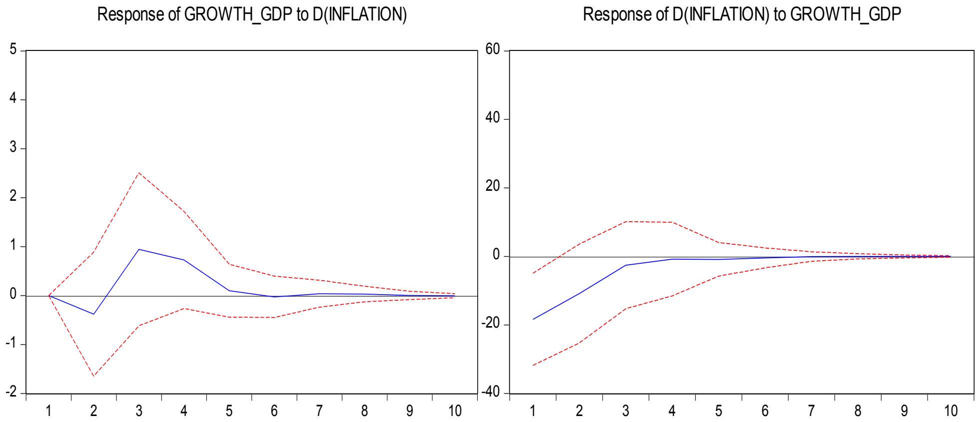

Figure 3. Impulse response function

3. Conclusions

Inflation has a negative influence on economic growth, on the population, but also on business. High rates of inflation affect negatively the economic growth, hyperinflation generates recession and strong long-term declines, and moderate level of this indicator could generate, in some cases, benefits. But most often, it causes negative effects and therefore specialists formulated certain policies to control and stop the inflationary phenomenon. Due to the negative consequences on economic and social organism, inflation is a major objective of macroeconomic policies of all countries with a market economy. Therefore current policies to combat inflation have been developed so as to curb inflation and at the same time, enable growth and limiting unemployment.

4. Acknowledgement

This work was supported from the European Social Fund through Sectorial Operational Programme Human Resources Development 2007 - 2013, project number POSDRU/159/1.5/S/142115, project title — Performance and Excellence in Postdoctoral Research in Romanian Economics Science Domain.

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Exploring the Relationship between Democracy, Corruption and Economic Growth in MENA countries

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Abstract: The objective of this paper is to estimate an econometric model for analyzing the interrelationship among democracy, corruption and economic growth in 12 MENA countries by using simultaneous-equation models over the period 1998–2011. Our empirical results show that there is bi-directional causal relationship between democracy and economic growth, as well as corruption and economic growth, and there is unidirectional causal relationship running from democracy to corruption for the region as a whole.

Keywords: democracy; corruption; economic growth; simultaneous-equation models

JEL Classification Code: B22; C36; D73

1. Introduction

The main potential role of government is to guarantee its citizens the enjoyment of civil, cultural, economic, political and social rights. Democracy goes hand in hand with an effective, honest, transparent and freely chosen government.

For some countries; wealth, democracy and low or moderate levels of corruption are mutually reinforced, while for others, it is noted that; poverty, undemocratic political institutions and high levels of corruption constitute a vicious circle. Therefore, we can say that economic growth, corruption and democratization are closely related.

In the third world countries, abuse of political and administrative power at the expense of citizens remains a problem. The abuse of public office takes many forms. In particular, the receipt of direct payments for political favors by adopting laws for the manipulation of elections, the expenditure of public money for private purposes for groups of friends and voters.

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At the international level, corruption is considered a major problem that must be addressed urgently, especially in developing countries. It tends to impede investment and economic growth (Shleifer and Vishny, 1993; Sekkat Méon, 2005), exacerbates the problems of underground economies (Friedman et al. 2000; Dreher et al. 2009; Bjørnskov, 2011;), exacerbate the difference between the rich and the poor (Gupta et al. 2002; Uslaner, 2008), create barriers to economic and political reforms (Hellman et al. 2003; Shleifer, 1997), and may, in the long run, lead to substantial losses for human well-being (Kaufmann et al., 2005).

The theoretical literature in political sciences and economics has made numerous efforts in this context and stressed the importance of the political institutions in shaping the patterns of the government corruption. However, the corresponding empirical literature is relatively rare. Democracy can be defined as an institutional mechanism where citizens express their preferences through elections (Schumpeter, 1950). In general, the theory predicts that democracy reduces corruption (Rose-Ackerman, 1999) protects civil liberties and sets up an independent judiciary system that can reduce Corruption (Schwartz, 1999; Treisman, 2000; Moran, 2001; Adserà et al. 2003; Saha et al. 2009; Go Kotera et al. 2012). Thanks to democracy, multiple monitoring instruments, such as free and independent media, free and proper elections will work well, so that the brake and counterweight against corruption by politicians and bureaucrats improve.

In a tradition dating back to the modernization of literature, researchers have suggested that the social, economic and cultural conditions make democratization likely to happen. Therefore, we had better check if economic development leads to democracy (Acemoglu et al., 2008; Benhabib et al., 2011; Yi Che et al., 2013; Moral-Benito & Bartolucci, 2012; Benedikt Heid et al., 2012) or democracy generates and provides the best conditions to promote economic growth (Rodrik & Wazciarg, 2005; Persson & Tabellini, 2006; Papaioannou & Siourounis, 2008). The theory of modernity stated by Lipset (1959) is still relevant in the recent studies, such as (Acemoglu et al. 2009, Glaeser et al. 2007; Freeman and Quin, 2012). Leading journals legitimize our study which has not yet been conducted on panel data of African countries, and mainly the Middle East and North Africa (MENA).

2. Literature Review

Several existing works on the nexus between democracy, corruption and economic growth carried out on a piecemeal basis without a comprehensive model in mind ignore the potential interaction between the series. Thus this paper reviews the literature under three subsections, i.e. (1) economic growth and democracy; (2) economic growth and corruption (3) democracy and corruption. We discuss them below.

2.1. Economic Growth and Democracy

The relationship between economic growth and democracy has been intensively analyzed empirically over the past two decades.

A proposition of major and perennial interest to both economists and political scientists is if economic development promotes democracy. Many studies have reported a positive association between income per capita and the degree of democracy (see, for example, Lipset, 1959; Barro, 1997, 1999; Papaioannou and Siourounis, 2008). However, establishing the causal impact of economic development on democracy is challenging, because there could be unobserved factors influencing both economic development and democracy (i.e., the omitted variables issue), and there may also be reverse causality running from democracy to economic development. We see many different studies in the literature which analyze the dimension of the relationship between economic growth and democracy. There are many scholars who admit Lipset's assertions and many others who do not. Friedman, who claims that there is a reciprocal relationship between the two, sees democracy as a positive supporter of economic development where more democratic rules will bring more liberal economic rules, which contributes to more economic development. As long as scholars develop new statistical measurement techniques and more reliable data sets regarding democracy and economic growth, the results vary evenly. In this regard, I demonstrate the conflicts and findings in the literature.

Several empirical studies tend to confirm the advantage of the authoritarian regimes in the process of economic development (Gerring et al. 2005; Booth, 2012; Kelsall and Booth, 2013). However, others suggest a beneficial effect of democracy on economic growth (Tavares & Wacziarg, 1997; Rodrik and Wacziarg, 2005; Persson and Tabellini, 2008; Fayad et al. 2012; Acemoglu et al. 2014). On the others hand, others only able to include any influence of democracy on economic growth. This is proved, for example, through the work of Efendic et al. (2011) who have synthesized meta-analysis the results of previous tests that analyze the effect of democracy on economic growth and have concluded the absence of an agreed outcome.

The assumption of modernization theory says that economic development and education are indispensable conditions for democracy (Lipset, 1959, 1994). Wealth and education can influence the likelihood of democratization through many channels. Since the pioneering work of Lipset (1959), economic growth has stimulated the democratization of political regimes (Przeworski et al., 1997; Barro, 1999; Przeworski et al., 2000; Epstein et al., 2006; Papaioannou et al., 2008; Acemoglu et al., 2008; Boix, 2011).

The non-linearity in the relationship between economic growth and democracy (Acemoglu et al., 2008) is evident against the hypothesis supported by (Gundlach & Paldam, 2009; Benhabib et al., 2011; Treisman, 2011). We argue that the effect of economic growth on democracy may be different for different levels of economic growth. This could be explained by the fact that the stability of institutions is strongly correlated with economic performance (eg, North, 1990; Cheng and Feng, 1996; Jong-A-Pin, 2009). Therefore, democracy in poor countries with weaker institutions will be affected by changes in economic development. For this reason, the relationship between economic growth and democracy in developing countries is nonlinear. However, in rich countries, where institutions are more stable, the evolution of the economic development has no effect on the level of democracy, which shows that this relationship is linear in the developed countries.

We will therefore seek the prerequisites of democracy and analyze the role that economic development can have in the political structure.

The question is whether the authoritarian political regimes if the countries in the MENA region have survived the waves through democratic growth and economic development.

As already shown above, economic growth depends on democracy (Rodrik and Wazciarg, 2005; Persson and Tabellini, 2006; Papaioannou and Siourounis, 2008). Thus, democracy depends on GDP (Acemoglu et al., 2008; Benhabib et al., 2011; Benedikt Heid et al., 2012; Moral-Benito & Bartolucci, 2012; Yi Che et al., 2013). Indeed, these variables are endogenous. We therefore believe that a model of simultaneous equations is more appropriate to address the problem of endogeneity.

a. Economic Growth and Corruption

Not only corruption affects economic growth but also economic growth is likely to act on corruption. Economic development enables the authorities to have the necessary resources for the development of good institutions and the fight against corruption (Knack, 1999). The expected negative correlation between economic growth and corruption was documented by empirical research. Most studies that deal with corruption include economic development as an independent and critical variable.

Usually, studies have found a strong negative correlation between economic growth and corruption (Ades and Di Tella, 1999; La Porta et al., 1997, 1999; Treisman, 2000; Fisman & Gatti, 2002; Persson et al., 2003; Serra, 2006). Only a few studies in the literature contradict these findings (Braun & Di Tella, 2004; Fréchette, 2004) arguing that economic growth increases corruption. Difficulty has been established within the meaning of causality between economic growth and corruption. In order to control potential endogeneity, Treisman (2000) argues that the levels of the perception of low corruption are high in economic development. A similar strong negative correlation between economic development and corruption is obtained by La Porta et al. (1999).

Ades and Di Tella (1999) found that such a relationship is bidirectional, meaning that economic performance itself is affected by the quality of institutions.

Similarly, Serra (2006) and Seldadyo and de Haan (2005, 2006) used reliable methods to control the sensitivity of the estimates of the regressions with alterations in the target information. They found a strong association between strong growth and low corruption.

b. Democracy and Corruption

Across the world, the evidence shows that there is an inverse relationship between democracy and corruption. With democratic governments, countries lean towards low levels of corruption. The idea that democracy has a negative impact on corruption seems indisputable (Sung, 2004).

However, the degree of influence of democratic reform at the level of corruption is not simple and uniform. The main reason for the disagreement between researchers lies in the characteristics of the multidimensional nature of "democracy" and "democratization" (Coppedge, 2002; Sung, 2004).

Yet, empirical analyzes mainly support the negative association between democracy and corruption (Goldsmith, 1999; Sandholtz and Koetzle, 2000; Treisman, 2000; Montinola and Jackman, 2002; Sung, 2004; Bohara et al. 2004), but some of these analyzes are different.

For example, studies have considered democracy as freedom of expression that feeds the investigative journalism and exposes and discourages corrupted public activities (Giglioli, 1996; Brunetti and Weder, 2003). Alternatively, other studies show that the relationship between democracy and corruption is nonlinear. Despite the increase if corruption in the intermediate democracies, consolidation of advanced democratic institutions can reduce corruption. On the other hand, the initial political conditions and final democratic achievements determine the extent of political corruption (Montinola and Jackman, 2002; Sung, 2004). In addition, Treisman (2000) points out that long exposure to democracy reduces corruption.

However, Ades and Di Tella (1999) found that democracy has no significant effect on corruption, because countries, such as Hong Kong and Singapore, are experiencing very low levels of corruption, even if they do not have enough moderate political rights.

2.2. Data and Model Specification

The objective of this paper is to analyze the causality between democracy index, CPI, and economic growth using the production function whereby the GDP depends on endogenous variables including CPI and democracy index. This extended production function provides a meaningful framework to explore the three-way linkages between the three variables as additional factors of production.

These simultaneous-equation models are also constructed on the basis of the theoretical and empirical insights from the existing literature. The causal links between democracy– corruption and economic growth, are estimated through physical capital (K), human capital (H), labor capital (L), energy consumption (ENERG), unemployment (UNEM), government size (SIZE), and foreign direct investment (FDI) which included as instrumental variables.

GDP = f (CPI, DEM, H, K, L, UNEM, FDI) (1)

This essentially states that economic growth is a function of index of perception of corruption (CPI), Democracy Index (DEM), human capital (H), capital stock (K), labor force (L), unemployment (UNEM), and foreign direct investment (FDI). We write Eq. (1) in a growth form with a time series specification, as follows:

$$\log(GDP)_t = \alpha_0 + \alpha_1\ CPI_t + \alpha_2\ DEM_t + \alpha_3\ \log(H)_t + \alpha_4\ \log(K)_t + \alpha_5\ \log(L)_t + \alpha_6 \log(UNEM)_t + \alpha_7\ \log(FDI)_t + \varepsilon_t \quad (2)$$

Since our study is a panel data study, Eq. (2) can be written in panel data form as follows:

$$\log(GDP)_{i,t} = \alpha_0 + \alpha_{1i}\ CPI_{i,t} + \alpha_2\ DEM_{i,t} + \alpha_3\ \log(H)_{i,t} + \alpha_4\ \log(K)_{i,t} + \alpha_5\ \log(L)_{i,t} + \alpha_6 \log(UNEM)_{i,t} + \alpha_7\ \log(FDI)_{i,t} + \varepsilon_{i,t} \quad (3)$$

The three-way linkages between Institutional quality–democratization–growth are empirically examined by making use of the following three equations:

$$\log(GDP)_{i,t} = \alpha_0 + \alpha_1\ CPI_{i,t} + \alpha_{2i}\ DEM_{i,t} + \alpha_{3i}\ \log(H)_{i,t} + \alpha_{4i}\ \log(K)_{i,t} + \alpha_{5i}\ \log(L)_{i,t} + \alpha_{6i} \log(UNEM)_{i,t} + \alpha_7 i\ \log(FDI)_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$CPI_{it} = \alpha_0 + \alpha_{1i}\ \log(GDP)_{i,t} + \alpha_{2i}\ DEM_{it} + \alpha_{3i}\ \log(SIZE)_{i,t} + \varepsilon_{i,t} \quad (5)$$

$$DEM_{it} = \alpha_0 + \alpha_{1i}\ \log(GDP)_{i,t} + \alpha_{2i}\ CPI_{it} + \alpha_{3i}\ \log(ENERG)_{i,t} + \varepsilon_{i,t} \quad (6)$$

Where i represents the country (in our study, we have 12 countries[1]); t represents time (our time frame is 1998–2011). The annual data on gross domestic product (GDP) in constant US dollars are used as a proxy for economic growth (GDP). The corruption perception index (CPI) represents the index of perceived corruption published by Transparency International, and the index ranking countries on a scale from 10 to zero, according to the perceived level of corruption. A score of 10 represents a reputedly total honest country, while a zero indicates that the country is perceived as completely corrupt. The democracy index (DEM) which was built by Freedom House, taker the average of the political rights and civil liberties. This variable is rescaled so that the value is stored from 1 (most democratic) and 7 (less democratic). The human capital (H) is measured by gross enrolment in secondary school, the physical capital stock (K) as a proxy gross capital formation (% of GDP) because it took into account the inventory change, and labor capital (L) measured by the rate of participation in the total active population (% of total population aged 15 and over). totals Unemployment in (% of population), energy use in kg of oil equivalent are used as a proxy for natural resources (ENERG), size of government measured by final consumption expenditure of general government (% of GDP) ,and (FDI) is the foreign direct investment (%GDP).

Eqs. (4) to (6) were estimated simultaneously by means of the generalized method of moments (GMM). The GMM is the estimation method the most commonly used in models with panel data and in the three-way linkages between some variables. This method uses a set of instrumental variables to solve the endogeneity problem. It is well-known that the GMM method provides consistent and efficient estimates in the presence of arbitrary heteroskedasticity. Moreover, most of the diagnostic tests discussed in this study can be cast in a GMM framework. Sargan test was used to test the overidentifying restrictions in order to provide some evidence of the instruments' validity. The instrument validity is tested using Sargan test which cannot reject the null hypothesis of overidentifying restrictions. In other words, the null hypothesis of the instruments appropriateness cannot be rejected. The Durbin–Wu–Hausman test was used to test endogeneity. The null hypothesis was rejected, suggesting that the ordinary least squares estimates might be biased and inconsistent and hence the OLS was not an appropriate estimation technique. The GMM estimation with panel data proves to be advantageous to the OLS approach in a number of ways.

2.3. Analysis and Results

Our simultaneous equations are estimated by making use of two-stage least squares (2SLS), three stage least squares (3SLS) and the generalized method of moments (GMM). In what follows, we report the results of only GMM estimation. While the parameter estimates remained similar in magnitude and sign, the GMM estimation

[1] Algeria, Libya, Morocco, Egypt, Kuwait, Iran, Arabia, Jordan, Bahrain, Lebanon, Oman

results were generally found to be statistically more robust. We estimated the three-way linkage between democracy, corruption and economic growth; while the other variables were used as instruments. To do this, we used panel data from 12 MENA countries during 1998–2011. The correlation between the dependent and independent variables is presented in Table 2. Its coefficients suggest that the reported regression models will not be seriously distorted by multicollinearity. The real GDP correlates positively with the democracy, physical capital, human capital and labor capital, but correlates negatively with the index of corruption perception, unemployment and the stock of foreign investment. Then, CPI positively correlates with the size of government, and negatively with the index of democracy. Finally, democracy correlates positively with the energy production.

Table 1. Correlation matrix

		1	2	3	4	5	6	7	8	9	10
1	Ln(GDP)	1									
2	CPI	-0.575	1								
3	DEM	0.389	-0.263	1							
4	Ln(H)	0.034	0.239	0.278	1						
5	Ln(K)	0.005	-0.335	-0.003	-0.268	1					
6	Ln(L)	0.226	0.276	-0.437	0.033	-0.411	1				
7	Ln(ENERG)	0.800	-0.301	0.457	0.436	-0.222	0.284	1			
8	Ln(UNEM)	-0.287	-0.184	0.327	-0.385	0.414	-0.824	-0.386	1		
9	Ln(FDI)	-0.352	0.108	-0.018	0.172	0.090	-0.367	-0.410	0.182	1	
10	Ln(SIZE)	-0.553	0.634	-0.403	-0.043	0.233	0.138	-0.558	-0.057	0.128	1

The empirical results about Eq. (4) are presented in Table 2, which shows that the effect of the index of corruption perception and that index of democracy on economic growth in the MENA countries is positive and statistically significant.

GMM estimation of simultaneous equations.

Table 2. Results for the equation 4

	Eq.(4)
	Dependent variable
	Economic growth
CPI	-0.368(0.038)**
DEM	1.733(0.000)*
Ln(H)	-1.686(0.014)**
Ln(K)	0.827(0.045)**
Ln(L)	2.811(0.042)**

Ln(UNEM)	-0.875(0.009)*
Ln(FDI)	0.013(0.597)
Constant	12.744(0.082)***
Sargan test (p value)	0.000
DWH test (p value)	0.000

Notes: Values in parenthesis are the estimated p-values. Sargan-test refers to the over-identification test for the restrictions in GMM estimation. DWH test—Durbin–Wu–Hausman endogeneity test.

*Indicate significance at 1% level.

** Indicate significance at 5% level.

*** Indicate significance at 10% level.

Table 3. Results for the equation 5

	Eq.(5)
	Dependent variable
	Corruption
Ln(GDP)	-0.284(0.009)*
DEM	0.099(0.536)
Ln(SIZE)	1.250(0.000)*
Constant	7.021(0.026)**
Sargan test (p value)	0.000
DWH test (p value)	0.003

Notes: Values in parenthesis are the estimated p-values. Sargan-test refers to the over-identification test for the restrictions in GMM estimation. DWH test—Durbin–Wu–Hausman endogeneity test.

*Indicate significance at 1% level.

** Indicate significance at 5% level.

*** Indicate significance at 10% level.

Table 4. Results for the equation 6

	Eq.(6)
	Dependent variable
	Democracy
Ln(GDP)	-0.854(0.002)*
CPI	-0.495(0.002)*
Ln(ENERG)	0.295(0.000)*
Constant	25.566(0.000)*
Sargan test (p value)	0.000
DWH test (p value)	0.000

Notes: Values in parenthesis are the estimated p-values. Sargan-test refers to the over-identification test for the restrictions in GMM estimation. DWH test—Durbin–Wu–Hausman endogeneity test.

*Indicate significance at 1% level.

** Indicate significance at 5% level.

*** Indicate significance at 10% level.

Eq. (4) shows that the impact of corruption on economic growth is negative and significant at a rate of 5%. The coefficient is -0368, which indicates that when corruption increases by 1%, economic growth declines by about 37%. This result reinforces the idea of Blackburn et al. (2008), Dzhumashev (2009), and Avnimelech Zelekha (2011), and also Fiorino et al. (2012) that corruption leads to an increase in inflation, which in turn reduces capital accumulation and economic growth.

To find an explanation of the differences between the countries of the world, we will try to find institutional justifications for economic growth. Some institutional and policy variables were previously used as, for example, respect for property rights in Clague, Keefer and Olson (1996), Democracy in Barro (1996) and political instability in Alesina and Perotti (1994). For this reason, we choose the index of democracy as an institutional variable that determines economic growth. It must first be noted that the DEM proxy used in our model as the measure of democracy is inversely related to the latter, that is to say an increase in DEM indicates an increase in the autocracy and the country is becoming less free.

The DEM variable is positively and significantly related to the variable real GDP at a rate of 1%, that is to say, the more we approach the authoritarian regime, the more economic growth improves. Then, we can say that a relatively low level of democracy in the countries of the MENA region is a determinant of a better economic performance. This is affirmed by Karl Schweinitz (1959) which provides that the least developed countries "must grow economically and limit participation in political affairs".

In fact, maintaining a more or less authoritarian practice is considered essential for the preservation of strong economic growth for the country to benefit from greater prosperity and greater stability. This result corroborates those of Haan and Siermann (1995), Bhagwati (2002), Drury et al. (2006), Kelsall and Booth (2013) and Booth (2012) which provide that non-democratic countries can achieve economic growth.

This is also consistent with the work of Barro (1996) who found that democracy has a negative effect on economic growth after considering the empirical link for 100 countries over a period which runs between 1960 and 1990. Actually, he demonstrated that "too little" and "too much" democracy disadvantage economic growth through reducing the rate of accumulation of physical capital and increased public spending. Peev and Mueller (2012) show that democracy can have a negative effect on economic growth by increasing the size of the public sector and the public deficit may lead to higher taxes. The study notes that the former communist countries that were in transition to democracy have experienced higher levels of growth. Their results also suggest that democracy brings with it certain institutional changes that hinder economic growth. Democracy is also unable to implement measures to increase investment, because it forces people to reduce their consumption levels. However, authoritarian regimes are able to take such measures (Rao, 1985).

Moreover, proponents of this view argue that democracies are often unable to limit public social spending to stimulate growth distribution dealing with pressures (Haggard, 1990).

Furthermore, Przeworskiand and Limongi (1993) find that democracy undermines property rights of security by allowing some groups that have political power to make wealth of property owners. Therefore, this process leads to economic uncertainty and reduces economic growth. Therefore, it may be that the form of government adopted by the countries of the MENA region has been particularly favorable to economic growth. This cuts the overall impression of a strong confidence in the democratic institutions of these countries, and a search for stability and economic development through authoritarian regimes.

Based on the increased Solow model, the variable of physical capital (K) is positively related to economic growth. The same is valid for Chen and Fleisher (1996), Gundlach (1997), Li et al. (1998) and Li and Choi (2000) Henderson et al. (2007). This makes us say that physical capital is found to have a leading role in economic growth in the MENA region, and the physical capital investments help build infrastructure capable of stimulating economic growth.

Thus, working capital (L) has a positive impact on economic growth in the MENA region in the sense that it is in this cycle as the development of skills feels about economic growth. In addition, the results are consistent with the theory of economic growth, and show that the labor capital and physical capital are two crucial factors in economic growth.

The variable “human capital” coefficient is negative and significant at 5% indicating that this variable is not able to explain the evolution of the economies of the MENA region, since labor productivity in these countries is weak. The negative impact exerted by the gross secondary enrollment growth of most economies in the MENA region should encourage governments in the region to spend an important part of public spending on education. For Aghion and Cohen (2004), developing countries need to invest more in primary and secondary education.

Finally, the unemployment variable (ln UNEM) is negatively and significantly correlated with economic growth. In other words, two variables vary in opposite directions to each other when unemployment rate increases by 1%, economic growth falls by 87%. In fact, when unemployment is high and persistent, there are economic costs that can become detrimental to long-term growth. Unemployment is not only a high social cost for the individual but also a high economic cost for the society (Sanchis-i-Marco, 2011) .This result is consistent with that of Herwartz and Niebuhr (2011), and Mauro Carmeci (2003); Okun (1962) which state that deep economic reforms are needed to create jobs and spur economic growth.

According to **Eq. (5)** economic growth is negatively and significantly related to corruption at a rate of 1%. This empirical result can be an explanation for economic growth that may be the favored vector of developments towards the establishment of democratic regimes and reduction of corruption in the MENA countries (Knack, 1999; Serra, 2006; de Haan and Seldadyo, 2006).

The coefficient of the index of democratic accountability is not statistically significant. This is explained by the fact that developing countries are characterized by less democratic political institutions and sometimes undemocratic which, do not influence corruption. This means that in these countries, less democratic political institutions, high levels of corruption and low levels of life together form a vicious circle. Therefore, among the reasons for the high level of corruption that eventually cause the poor economic performance of the developing countries, is the presence of less democratic or sometimes undemocratic political institutions in developing countries (Ades & Di Tella, 1999).

The relationship between the government variable size and the perception index of corruption is positive and significant at 1%. However, this variable is approximated to the final consumption of public administrations of countries in the MENA region where the government is deemed by low wages for public officials, which leads to corruption. Poorly paid officials manage demand programs, budgets, taxes, customs regulations ... and there is an almost irresistible temptation to impose bribes (Goel and Nelson, 1998; Ali and Isse 2003; Alesina and Angeletos, 2005; Zhou and Tao, 2009).

Eq. (6) shows that the ratio of real GDP is significantly negative as expected based on the theory of modern Lipset (1959). The negative sign shows that with increasing economic growth, DEM variable, which is inversely related to democracy, decreases. This empirical result shows that the economic performance of countries in the MENA region led to a strengthening of democracy and that it is only possible after prior stage of development as often asserted by authoritarian states. In fact, the statement by Moore (1966), which says “no bourgeoisie- no democracy” again confirms what we have shown empirically.

A general increase in economic growth has made improvements in institutions. Stability and institutional quality are highly correlated with economic performance (eg, North, 1990; Cheng and Feng, 1996; Jong-A-Pin, 2009). Therefore, democracy in poor countries with weakest institutions will be affected by changes in economic growth. However, in rich and developed countries, institutions are more stable and thus the evolution of economic growth has no effect on the level of democracy. Over 70% of all democratic relapses occur during economic stagnation. In fact, economic downturns also present dangers for democracies. Therefore, signs of economic stress because of their potential impact on Africa's ability to maintain a positive democratic impulse.

The strong conclusion, which is politically important in our results, is that developing countries are likely to transform their political systems to democracy by increasing real GDP. Actually, this does not mean that all countries become democratic once they have reached a certain level of development, but a political change towards democracy as countries become richer and the improvement of living standards, measured by real GDP, increases the chance of a country to adopt a democratic system. The empirical results show that economic growth is one of the essential pillars of democracy. It would become possible and also essential beyond a certain level of economic development. These results also confirm the modernization theory which shows that higher levels of prosperity will predict when and to what extent countries are ready to leave authoritarianism and become stable democracies.

The variable measuring the production of energy, which is the variable that measures approximately natural resources, is positively correlated with the index of democracy.

It has already been known that the countries of the MENA region are rich in natural resources, and are assisted to the accompaniment of political violence and the income from this wealth has been used by public policymakers to block the establishment of democracy (Jensen and Wantchekon, 2004). In other words, the exploitation of natural resources leads to annuity catches by policy makers who establish institutions interested in ensuring the expropriation of these annuities for their own profits at the expense of the whole society and perverse political incentives. Thus, the rich natural resources exacerbate competition for takeover, synonymous with the control of these resources. This confirms, for example the results of Atkinson and Hamilton (2003) Bulte et al. (2005) Brunnschweiler (2008), Barma et al. (2012) and Ross (2012).

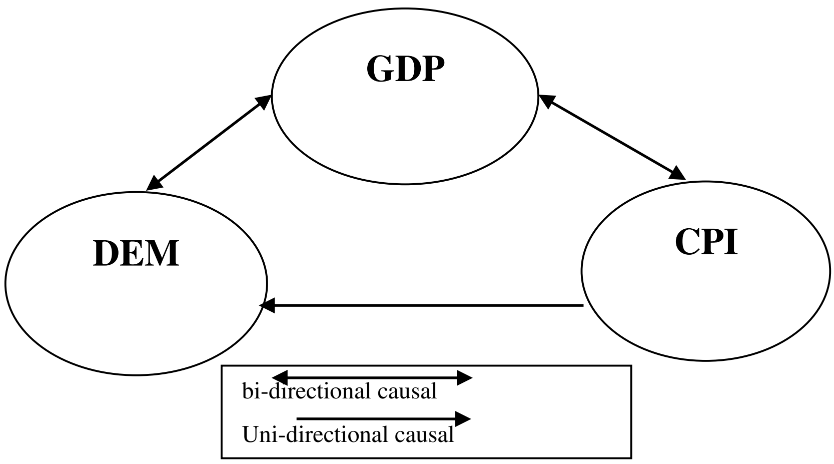

Figure 1. Interrelationship among GDP, CPI and DEM for MENA countries

Therefore, according to the overall results, we can conclude that: (1) there is a two-way causal relationship between economic growth and democracy; (2) there is bidirectional causality from economic growth to the index of perception of corruption; and (3) there is unidirectional causal relationship between democracy and the index of corruption perception for the region as a whole. Fig. 1 summarizes the GMM panel data results of Table2, 3 and 4. These results support a three-way link between economic growth, corruption and democracy over the period of 1998 - 2011 study.

3. Conclusion and Policy Implications

While the literature on the causality links between democracy, corruption and economic growth for individual countries and for panels of countries has increased over the last few years, there is no study that examines this interrelationship using a growth framework and simultaneous equation models. The objective of the present work is to fill this research gap by examining the above interaction for 12 MENA countries over the period 1998–2011.

Our analysis suggests that (i) there is bi-directional causal relationship between economic growth and democracy; (ii) there is bi-directional causal relationship between economic growth and the index of perception of corruption; and (iii) there is a uni-directional causal relationship from democracy to index of perception of corruption.

The main new policy implications of our study are as follows.

Regarding the impact of economic growth on corruption, we found that this relationship is negative and significant for the MENA countries through this; we can say that economic growth may be the favored vector of development towards the establishment of democratic regimes and the reduction of corruption in the MENA countries.

The high level of corruption subsequently causing poor economic performance of developing countries is due to the presence of non-democratic institutions. This notifies that in these countries, non-democratic political institutions, high levels of corruption, public expenditure, which are subject to rent-seeking and low living standards, evolve in parallel. It is therefore necessary to implement the reforms that stimulate policy development and the need to reflect on progress, challenges and prospects of the project of democracy and good governance for the countries of the MENA region.

Ultimately, we can confirm that our analysis helps to encourage the governments of the MENA region to implement programs for economic growth similar to the Chinese one to increase the chances of transforming authoritarian regimes in to democratic systems. Through this change, they will fight corruption that hinders the proper functioning of institutions, the efficiency of public spending, so that the resources that come from the government serve the purpose for which they were intended and should achieve high rates of economic growth and stop to think that the lack of democracy is an obstacle to their own development.

We believe that future research should explore issues of civil conflict, religion and economic crises that may also play a key role in the democratization of countries.

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Income Tax on Wages and Factors Affecting their Tax Evasion - the Case of Kosovo

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Abstract: This paper addresses the factors causing tax evasion on income from wages in Kosovo, who have contributed to revenue shortfall at a satisfactory level for government also affects the welfare of the employees when they will reach retirement age because Kosovo has organized pension system in a way that accounts for the Employed Individual pensions are means each pays and collects about themselves for retirement income. For this reason, the Employed who are not involved in the informal economy and do not shirk from income tax will have a strong base of income to increase their personal welfare but also the welfare of the country in general. To achieve this, this study was focused to answer the question: What are the factors that push businesses in Kosovo that their work activities to engage employed undeclared for tax purposes? Why Employers avoid taxes on wages even when the Employed are notifying the tax authorities? This paper will address exactly that, their deficiencies and Employed businesses and the problems they encounter. The basic method used is survey data and then are further processed and analyzed by descriptive statistical methods different charts. Also work builds on a theoretical analysis by developing a comparative analysis and descriptive.

Keywords: personal welfare; pension contributions; informal economy; informal employment

JEL Classification: H26

1. Introduction

Throughout the study the optimal tax system should also be considered tax evasion which has two key moments to analyze: first tax evasion arising from failure to register in the database of entities and persons, and second tax evasion stemming from tax avoidance which is a result of the relationship between taxpayers and tax inspectors.

Kosovo entered the group of countries with very high degree of informality and consequently and tax evasion. Informality figures go up to 40%, which indicates that efforts to reduce this evasion could provide significant resultant effects even in the short term. I think that the assessment and the government's objective to increase

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revenues by reducing tax evasion is completely feasible and positive effects if it was the willingness of tax administration officials and political will to fight corruption and the rule of law.

As explained by Gjokutaj (2014), in the last ten year old all are witnessing large fiscal developments worldwide. In the largely European countries have made changes in fiscal administrations by reforming their tax systems, coupled with tax reform in the way the value of labor, pension contributions and their use in order to increase the welfare of the citizens increasing levels of income per capita.

2. Review of Existing Literature

Today there are a number of definitions and authors who have addressed the issues of the informal economy and tax evasion. Many studies and scientific papers have shown that fighting informal economy is an important factor that affects the growth of the welfare of individuals and therefore economic growth of any country. Informality is a very widespread phenomenon, but its presence is greater in developing countries. As cited by Arturo (2014), Schneider and Enste (2000) have detailed the informality can be explained by many factors. The burden of taxes and pension contributions are typically identified as one of the important factors to explain informality. Based on these findings are sometimes motivated governments to reduce taxes on income from wages, to promote labor formality.

Gutmann (1977) is first calculated the size of the informal economy and the informal economy defined as large amounts of undeclared income and undeclared work and employment. He also showed that participants in the informal economy are anyone who engages in transactions with cash.

Schrage (1984) and Thomas (1992) defined as the informal economy: A number of economic activities in principle but not exercised legally declared as legal economic activities and as such are not subject to payment of taxes and not included in the value of income national the Informal Economy the Concept and Causes.

The informal economy is present as in developing countries as well as underdeveloped, but when it comes to informal employment, the difference lies between informal employment, voluntary and involuntary. As noted by Kucera and Roncolato (2008), this difference depends on the level of development of the state because in developed countries social security is higher and the unemployed can easily choose to be unemployed than to be employed involuntary informal, while the unemployed in underdeveloped countries where social security is very high poverty are forced to engage in informal work without their will. Despite what has been said above, various authors have identified several factors as determinants for inclusion in the informal economy as well employed to employers. So, for example Lehmann and Muravyev (2012) in their empirical research have found that the burden of taxation and employment regulations have great effect on the level of the informal sector of each country. While, Schneider (2007) notes that besides the tax burden, the determining factor informal economy adds poor quality of public services, corruption of public officials and unfair treatment of taxpayers by tax administration officials.

3. History of Tax on Wages in Kosovo

Since the establishment of the new tax system in Kosovo in 2000, especially in the last ten year old are continuously reform the tax system both in administration and in tax rates including the income tax. However, despite the reforms undertaken in connection with these results in the collection and their growth is not at the level to be desired, although the rate of taxation in Kosovo wage tax is among the lowest in the region and in EU countries that in general. This made to understand that the solution of this problem is not the tax burden but some other factor such as low income per capita, low fiscal culture, non- coordination clear economic laws fiscal, an informal surrounding environment, almost all of these factors caused by the presence of high corruption and nepotism public officials followed by political instability prevails in the country.

As was stated above one of the factors affecting the informality of income taxes on wages are low income per capita in Kosovo, caused by low wages and high unemployment rate.

The minimum wage in Kosovo until April 2011 was € 78, and since that period is 130 € for persons under 35 years old and 170 € for persons over the age of 35 years old. Besides Albania, Kosovo record low minimum wage in the region and EU countries (MLSW, 2013)[1].

The average net salary annually in state administration in 2003 was € 167 and had a slow growing every year, so in 2013 the average net wage was € 364. Also the unemployment rate remains the highest in the region and the EU. In 2003 the unemployment rate was 49.7% and since that time there has been a slow decrease, so in 2013 the unemployment rate in young (15-34 years old) was about 56%, while the average unemployment rate for the all age groups was 30% (SAK, 2014)[2].

Also, tax rates and the overall tax rates on wages in particular are the lowest in the region and despite this degree of informality of the labor force and the rate of evasion of taxes and pension contributions is very high.

[1] Ministry of Labour and Social Welfare in Kosovo.
[2] Statistical Agency of Kosovo.

Table 1. Income from wages and tax rates in% in Kosovo

Amounts in €	Tax rates in %	
Monthly salary	Until 2009	After 2009
Up to 80	0%	0%
80-250	5%	4%
250-450	10%	8%
Over 450	20%	10%

Source: Tax Administration of Kosovo

As shown in Table 1, in January 2009, there was a progressive decrease in the rates of personal income tax in Kosovo, which was aimed at stimulating business and employees to declare their income, but despite the lowering of rates tax informality workforce and tax avoidance has become a phenomenon on the rise.

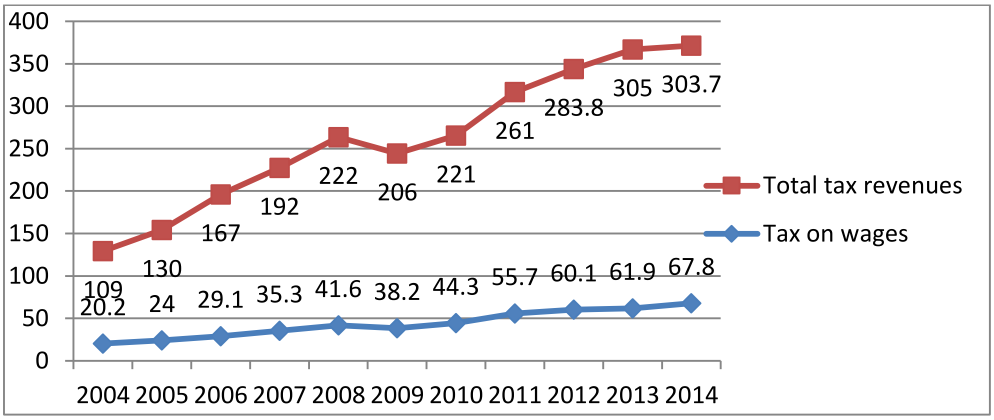

Figure 1. Performance of Wage Tax to Total Tax Revenues, in millions

Source: Tax Administration of Kosovo

As shown in Figure 1, revenues from income tax, ranging from 2004 to 2014 have shown increased in numbers, although not large, except when in 2009 there was decrease not only in this category of income but also the total income tax, it happened because of lowering tax rates. Dynamics of this category of income in relation to total income had no significant difference over the years.

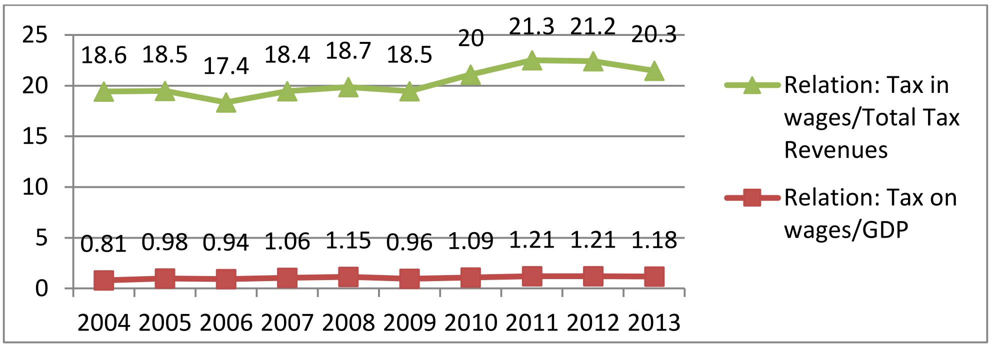

Figure 2. Relation between Tax on Wages/GDP and the relation between Tax on Wages/Total Tax Revenue in% - Case of Kosovo

Sources: Tax Administration of Kosovo and SAK

As shown in Figure 2, the relation of tax on wages to total tax revenue in 2004 was 18.6%, while in 2013 was 20.3%, i.e. increase in margin of 1.7%. Also, the relation between tax on wages/GDP has not undergone significant difference over the years, this relation was 0.81% in 2004, while 18.1% was in 2013, i.e. an increase of 0.37% of their margin within 10 years. Also, as seen from the chart participation in wage tax to GDP is very low.

Table 3. Tax rates on wages in the region country

Country	The Tax Rates	Country	The Tax Rates
Bosnia & Herzegovina	10%	Croatia	12% 25% 40%
Montenegro	9%	Serbia	12%
Macedonia	10%	Albania	10%

Source: Tax authorities of the countries concerned, 2013, edited by author

As shown in Table 3, progressive tax rates applicable wage tax in Kosovo from 0%, 4%, 8% and 10% are the lower rates in the region. Progressively higher rate applicable in Kosovo of 10%, which applies to wages in value over 450 € per month is equal to the applicable fixed rates in Bosnia and Herzegovina, Macedonia and Albania. While, Croatia tax rate higher than threefold with Kosovo.

Table 4. Wage tax rate in EU countries (single average income worker)

Country	The Tax Rates	Country	The Tax Rates
BE	22.0	LT*	10.3
BG*	7.4	LU	15.1
CZ	8.8	HU	12.5
DK	35.8	MT*	11.3
DE	16.0	NL	14.3
EE	13.0	AT	12.6
IE	13.3	PL	5.9
EL	7.1	PT	13.1
ES	12.8	RO*	9.7
FR	10.4	SI	9.4
HR**	-	SK	7.1
IT	16.3	FI	18.4
CY**	-	SE	13.7
LV*	16.2	UK	13.3

Note: 100% of average wage; *Data for non-OECD-EU countries (BG, LV, LT, MT and RO) are only available for 2012. For these countries, changes in tax wedge refer to 2011 - 2012. ** No data is available for HR and no recent data for CY.

Source: Commission services, OECD.

In table 4 show tax rates on wages in EU countries, but apply only to taking the average salary Employed and if we calculate tax on wages average salary in Kosovo that is somewhere 390 € (gross) applicable rates (progressive) Kosovo would still pick the amount of tax payable in Kosovo average wage is less than the amount which would be payable in any EU country. E.g. the amount of tax that must be paid in Kosovo to pay 390 € (after deduction of pension contribution) is 16.44 €, while the same salary the amount of tax payable in Poland (which as shown in the table has the lowest EU tax) is 21.86 €.

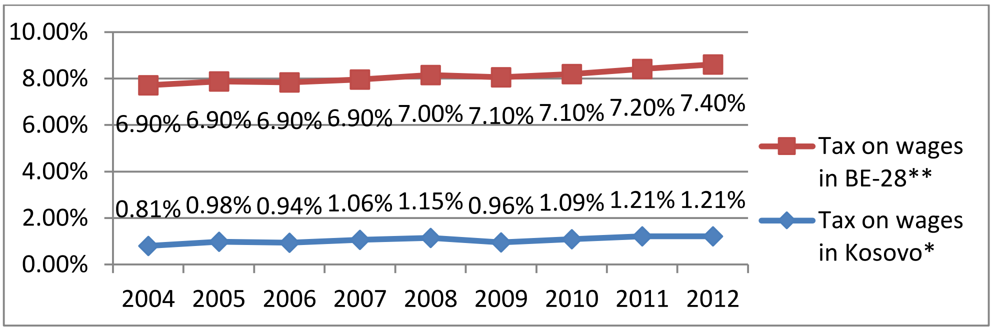

Figure 3. Labor income (not including social contributions) in Kosovo and the EU, as% of GDP

*Source: * Data for Kosovo were obtained from the Tax Administration of Kosovo and SAK. ** Data for EU countries were obtained from the European Commission.*

As shown in Figure 3 the amount of wage tax as a% of GDP is very low in relation to the participation of this type of tax in EU countries.

4. Results of the Survey

To get acquainted with the best situation in Kosovo informal economy and especially its workforce informality and evasion of tax on salaries have developed (the author) a survey with businesses in Kosovo. The survey was conducted with 776 people mostly business owner and manager. Results are presented with statistical method by means of graphs.

1) When asked which issues listed below represents the major obstacle to doing business and simultaneously pushes businesses to become part of the informal economy, the businesses have shown causes to be presented in graph the following:

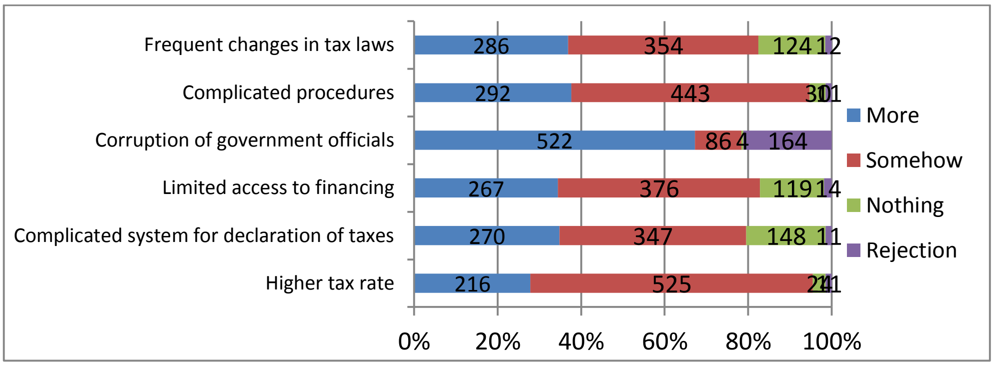

Figure 4. The causes of the informal economy in Kosovo

Source: Survey conducted by the author with businesses in Kosovo, in December of 2014.

As shown in the graph biggest obstacles to doing business and that just pushes businesses informal economy is the corruption of public officials, of 776 respondents, 522 or 68.3% of them think that corruption is the main cause of informality, while 21.1% of have refused to talk to this phenomenon, which shows that even by businesses not willing to fight this phenomenon, as other cause great impact on the complicated array informality 37%, frequent changes in tax laws 36.8% , complicated system for paying taxes 34.8%, 34.4% limited finances and higher tax rates 27.8%. The second group of causes of informality but with little impact on small rank higher tax rates 67.6%, the complicated 57%, 48.4% limited finances, frequent changes in tax laws 45.6%, complicated system for declaration of tax 44.7% and 11% corruption. While not constitute an obstacle at all: complicated system for declaration of taxes for 19% of business, frequent changes of tax laws for 16% of business, limited access to financing for 15% of businesses, complicated procedures for 3.9% of businesses, higher tax rates to 3% of businesses. While they refused to respond to the aforementioned factors 1.8% of respondents, with the exception of this phenomenon for which they have refused to answer 21.1% of respondents.

2) In the question of how much is the total number of employees in the businesses and how many of them have declared for the purposes of payment of tax on wages and pension contributions shown in the following figure.

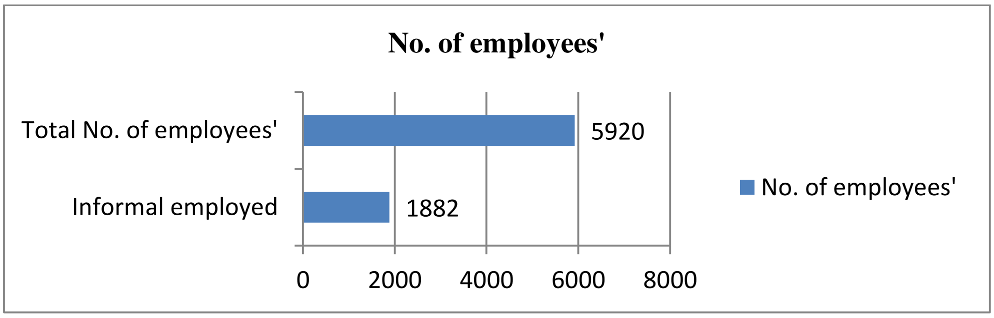

Figure 5. Number of formal and informal employees

Source: Survey conducted by the author with businesses in Kosovo, in December of 2014

In figure No. 2 shows that of 5920 persons as is the total number of employees’ to the businesses in 1882 or 31.8% of them are employed informal, i.e. not registered with tax authorities and pay no tax on wages and pension.

3) In case of Employed is not registered, according to respondents, it happens by the will of the employees in 70.3% of cases, with the will of employer occurs in 6.9% of cases, while 22.8% of respondents have refused to answer this question. However, what is the reason of non-declaration or understatement of the salary of employees, expressed as respondents, will be shown in the chart below:

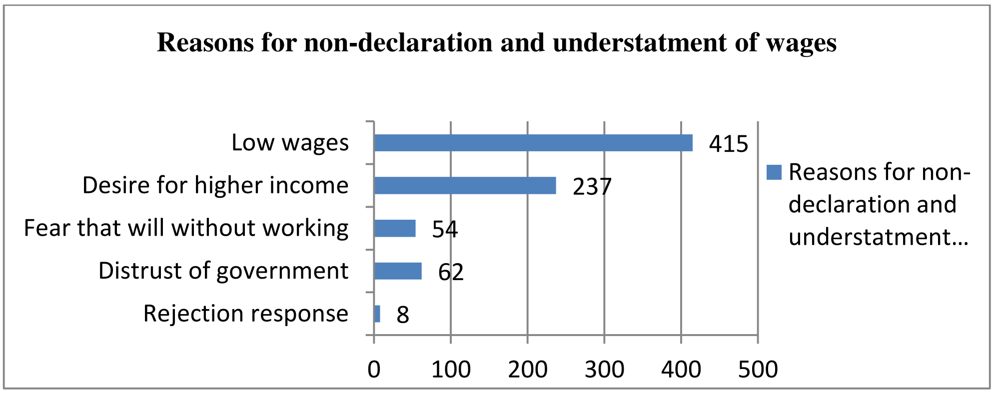

Figure 6. Reasons for non-declaration and understatement of wages

Source: Survey conducted by the author with businesses in Kosovo, in December of 2014.

In the figure no. 3 indicated that the biggest reason for the failure to file or pay understatement is the low level of wages in Kosovo, 415 people or 53.5% of respondents say this; 237 or 30.5% of respondents therefore have a desire to higher income; 54 or 6.9% fear they will lose their job; 62 or 8.1% do not trust the government, while 8 or 1% of the respondents refused to answer.

4) To understand how much are the monthly salaries for employees and how they are declared for the purposes of payment of tax on wages and pension contributions of respondents have taken data which will be presented in the following figure.

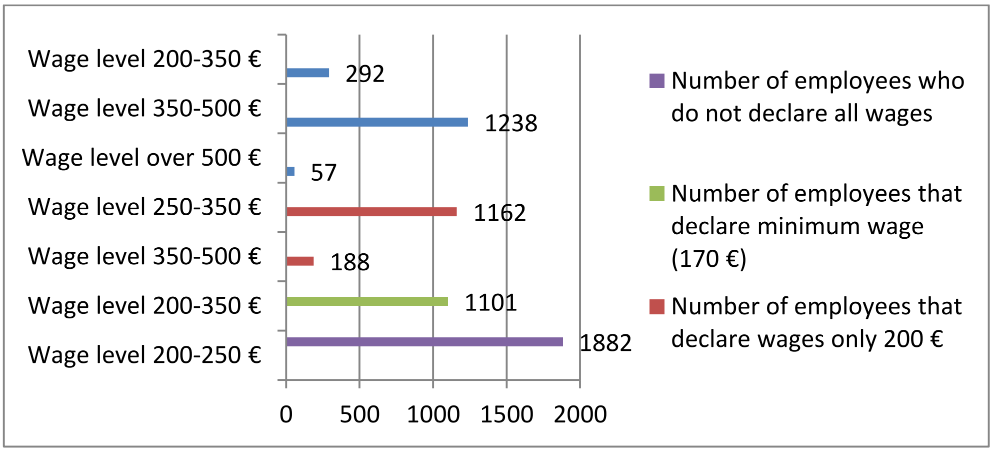

Figure 7. The rate of wage tax evasion in Kosovo

Source: Survey conducted by the author with businesses in Kosovo, in December of 2014.

As shown by the data presented in the chart above, the number of employees who receive wages from 200-250 € and never declare them altogether for tax purposes is 1882 or 31.8% of the total number of employees in the businesses and it appears to be that their wages are lower than the average wages in Kosovo. Another category of 1101 persons or 18.6% of the total number of employees in the businesses who receive wages 200-350 € declare them in many of 170 € for the purposes of tax on wages and pension contributions, so their wages is declared just as much it quotes the minimum wage in Kosovo. Category of employees from 1162 persons or 19.6% of the total number of employees who receive wages from 250-350 € and another category of 188 persons or 3.2% of total employees who receive wages 350-500 € disclose their wages 200 € for tax purposes. While, as research shows only 26.80% of employees declare their wages amounting true, the extent paid. Most of these employees have wages of 350-500 €, pay over € 500 is only 0.97% of the employees who have been the subject of research. This shows that the rate of tax evasion tax on wages is quite large, ie, 31.8% appears to be the extent of non-registration of employees while 41.4% is the rate of tax evasion in salary and pension contributions.

5. Conclusions and Recommendations

The conclusions arising from the realization of this paper dealing with the identification of the causes of informality of the labor force and its consequences in the implementation of important income tax on wages and pension contributions. These conclusions result from a survey carried out by businesses in Kosovo. From the survey results it appears that the main cause of the informal economy by businesses is the corruption of government officials which list businesses with great constraint, followed by complicated administrative procedures, frequent changes in tax laws, complicated system declaration of taxes and higher tax rates. Only about 28% of businesses consider higher tax rates, as the major obstacle when it is known that the tax rates in Kosovo are among the lowest in the region and EU countries. While, in 2012, in Kosovo wage tax share in GDP is 1.21%, in EU countries this share is 7.4%. While pension contributions in Kosovo are not at all part of the state budget, but they are managed by an independent institution called Pension Savings Trust. While watching the part of employees, 53.5% of the main reasons for declaring the low wages they pay, then 30.5% say that the reason is the desire for higher income, 6.9% of them are afraid that they will remain without work. As a result of the aforementioned occurrences illegal sector and tax evasion rate is very high; all of these can be explained as a consequence of not rule of law. Since 2004 the participation of tax from wages in GDP, compared to 2013 increased only by 0,37 %. Results of the survey show that 31.8% of employees are informal, ie. are not registered with the tax authorities and pay no tax on wages and pension contributions, to the Kosovo budget of causing millions of euros in losses each year, also employed each of his loss itself causes 10% of his monthly salary to preserve the retirement pension; 41.4% is the rate of tax evasion in wages and pension contributions, while only 26.8% real declare and pay tax amounts.

Given the findings and identification of negative phenomena that cause tax evasion recommend as follows:

- To act rule of law as public officials as well as businesses involved in illegal activities.
- The government should stimulate employed financially fiscal administration depending on the growth of fiscal revenues and combat tax evasion.

The fight against informal economy and tax evasion should be a priority not only of the tax administration but should be done in coordination and local governments, businesses and citizens.

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Eco-Economic Model Regarding the Human Possibility Food Consumption in the Context of Realization the Ecosanogenesis

Nicolae Ipate[1]

Abstract: In our study we developed one model for descript the interrelation from consumption of human calories, the population growth and the possibility for pay the food in Romania. The economy is in conflict with the environment and realization the ecosanogenetic balance. Eco-economy development is influenced by essential factors with different contributions to decrease or increase the level of degradation of the environment, including biodiversity and ecosanogenetic balance. In this direction for realization the ecosanogenesis it must reconsider the relationship between biodiversity and economy as mankind consumes more food than it produces because the global grain stocks were reduced to less than half, leading to food shortages and start a food crisis imminent in the world. The econometric model developed can highlight the need for calories at the individual level is approximately constant, being influenced by specific biological factors, and population and GDP influences consumption of calories, which directly influences can have negative impacts on ecosanogenesis and agro ecosystems.

Keywords: eco-economic model; analysis; ecosanogenesis

JEL Classification: Q270

1. Introduction

The field of eco-economy developed basing any decisions aimed at ensuring productive and social capital in accordance with the characteristics of natural capital, including counting based on ecological, economic and social, both short term and long term. The idea dependence environmental quality (or the degree of deterioration) the level of economic development has occurred because research economist Simon Kuznets who theorized that there is an inverse relationship between environmental damage and economic development, which means that environmental degradation is amplifies the beginning of the development process and then to fall with a certain level of development. Concerns in the vast ecosanogenesis are primarily related to the implications of technology and various health products, because their effects are far more extensive and generalized. The objectives of concept aims ecosystem management and quality production correlated

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with environmental requirements. These objectives are linked to interest consumers and producers and the environment. Achieving equilibrium ecosanogenetic requires effective management of ecological systems can be achieved by applying the principles and methodologies ecosystem management.

Economic development is influenced indirectly by key factors: the level of economic activity or the size of the economy, the structure of the economy, the latest technology, the application of legislation on environmental policy and spending ambient. For conservation and environmental protection in the business or economy size we can say that the higher a country's economy is more developed, while the other factors remain constant, the more rapid depletion of natural resources and pollution level is higher. The type and level of resource depletion and pollution depends also of the regional structure of the economy. Thus, economies that depend heavily on agriculture and other primary sector industries tend to suffer from a rapid depletion of natural resources, deforestation and land erosion, but suffer less industrial pollution. Ecosanogenesis concept requires that an objective requirement, because man can only survive in a healthy environment. If health depends on the human - product - nature, and promote better health will depend on the relationship optimal functionality. This concept involves problematic man to major human actions and their results, nature and society, material and spiritual culture in a global relational context (Hoffman, et al., 1990) refers to both. The field of ecosanogenesis is the workplace health, the health of consumers, and the environment. The costs of biodiversity loss and degradation are very difficult to determine, but studies to date worldwide shows that they are substantial and growing. In a study on understanding the causes that led to the loss of biodiversity are referred to the economic valuation of ecosystems and biodiversity at international level and it is estimated that the annual loss of ecosystem services is equivalent to EUR 50 billion and that, by 2050, cumulative losses in terms of welfare will rise to 7% of world GDP. We can say that a certain economic phenomenon is influenced positively or negatively by the time variable if the latter does not suffer significant changes that disturb phenomenon (economic and financial crises occurring in the period under review, and not before it, the fundamental legislative measures can change inside phenomenon, the fiscal policies determined by the dramatic events etc.) or changes that occur are normal grade of economic developments so far. Half a century ago, Barten (1964) and Theil (1965) formulated the theory, which today is known as the Rotterdam model. This system of equations has allowed the first effective test of the theory in relation to consumer utility maximization. Few works in the economy have a long period of use and citation even after almost half a century. The basis of this theory was the two works, which were published in Econometrical in 1964 and 1965. These documents were integrated and became known as the “Rotterdam model”. For the first time, this model has become an important tool for econometric analysis of consumer demand model and test-maximized utility theory. The Rotterdam led to an extensive literature and occupies a status similar consumer demand linear expenditure system (LES, Stone, 1954), TRANSLOG (Christensen et al., 1975) and Deaton and Muellbauer application system, 1980. The Rotterdam-income social describes the minimum required coverage of consumption which is a linear function of real income variation for varying prices. The model is an equation for each variable, but includes a system of n equations that relate the changes for each of the successive periods T. The answer to the question, if the person's income amounts dollar, as this is spent in really? The determined values of certain variables, called endogenous combined dependent variables in the model are simultaneously determined by relations model. In this case minimal consumption and income are endogenous variables, which can be explained or predicted. The model also contains other variables, called exogenous, which are determined outside the system, but which influence the damage values endogenous variables. The model also contains certain parameters which are generally estimated using econometric techniques and relevant data. The econometric model can be defined as a special type of algebraic model, because it includes one or more random variables (random variables). Econometric model can be linear, in which case it is called linear parameters. The assumption of linearity is important because, on the one hand, it allows theorem proving mathematical statistics such models and, on the other hand, provides easy calculation of values taken by variables. The model is linear in the parameters, when income and prices are taken as exogenous variables and can be estimated as a system of seemingly unrelated regression equations. The Rotterdam follows a different path that involves a three-step process: start with a general system of differential equations specific application. Then you have performed a constraint of these equations so that they meet the characteristics of homogeneity and symmetry. These constraints may result from the solution to the maximization of the utility budget, but specific functional form is unspecified. At this stage, “coefficients” are not constant demand equation approach is general and in accordance with any algebraic form of the utility function or cost. In the last stage, infinitesimal changes are replaced by finite changes and the model is parameterized to become constant coefficients defining Slutsky. Therefore, the coefficients of the equations are coefficients Rotterdam utility function as algebraic form. The Rotterdam is the simplest example of the general system of differential demand. According to this model, the coefficients of equations de- shares represented marginal revenue flexibility, Slushy coefficients and coefficients of price - are all constant. However constancy of marginal actions can be problematic, especially for food when there are large variations in income.

2. Material and Methods

For implement the systematic study of the methods used to cross-seeking aspects of phenomena and processes at a time and longitudinal methods, which aim processes, while issues. Were used statistical methods and casuistic methods. Data collection method will be particularly quantitative because it is an objective method, deductive and generalized. These quantitative approaches will be made in the methods concerned. It will use both sequential methods, each method (quantitative or qualitative) research will be addressed at the same time, as well as theoretical and methodological triangulation method for determining the indices. Numerous bibliographical sources were analyzed by experts in the field, FAO expert reports, scientific papers and documents of the Official Monitor.

3. Rezults and Discussion

Linear regression can describe the time evolution of calories, where the independent variable x would represent time and the dependent variable y calorie consumption. In most economic research, regression models containing both types of variables: quantitative and qualitative. Often requires the introduction of qualitative variables in the regression. One of the types most commonly used qualitative variables are dummy variables in regression. These take the value 1 if a certain condition is true and 0 otherwise. These models are called models of analysis of covariance (ACOVI). If a qualitative variable has m variants are introduced m-1 dummy variables. Dummy variables are used to correct abnormal values (outliers) for consideration of qualitative variables and analysis of seasonality. Dummy variable= dependent variable influenced by: quantifiable variables (income, production, prices, costs, etc.) qualitative variables, eg - gender, race, religion, nationality, - the occurrence of catastrophic events caused by man or nature, such as wars, earthquakes, seasonality caused by the seasons special events such as strikes, restructuring, or the life of the nation. The following example will be estimated and a regression equation to illustrate a model calorie consumption, GDP and population in Romania, using annual date for the period: 1990-2012. Series used: first quality-calorie pop.-population, GDP growth rates. For a description of the analyzed phenomenon we built a model of the form:

D(CALORII) = C(1)*D(POP/1000) + C(2)*PIB + C(3) + C(4)*T + C(5)*T^2 + C(6)*@ISPERIOD("1993") + C(7)*@ISPERIOD("2007")

When playing multiple linear regression model was used data on calories/day/person, population, GDP, since 1990 with the data source: www.insse.ro-Tempo-online database. After estimating the parameters in EViews, we obtained the equation: Estimation Command:

========================
LS D(CALORII) D(POP/1000) PIB C T T^2 @ISPERIOD("1993") @ISPERIOD("2007")
Estimation Equation:
========================
D(CALORII) = C(1)*D(POP/1000) + C(2)*PIB + C(3) + C(4)*T + C(5)*T^2 + C(6)*@ISPERIOD("1993") + C(7)*@ISPERIOD("2007")
Substituted Coefficients:
========================
D(CALORII) = -0.0914584788317*D(POP/1000) + 4.33863*PIB - 211.669 + 39.005*T - 1.44211917141*T^2 + 270.1314*@ISPERIOD("1993") - 180.7934*@ISPERIOD("2007")

Dependent Variable: D(CALORII)
Method: Least Squares
Date: 06/09/14 Time: 00:28
Sample (adjusted): 1991 2012
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(POP/1000)	-0.091458	0.046731	-1.957131	0.0692
PIB	4.338632	1.441005	3.010837	0.0088
C	-211.6698	33.39412	-6.338535	0.0000
T	39.00533	5.930936	6.576590	0.0000
T^2	-1.442119	0.218631	-6.596132	0.0000
@ISPERIOD(1993)	270.1315	33.73819	8.006697	0.0000
@ISPERIOD(2007)	-180.7934	31.02446	-5.827447	0.0000

R-squared	0.927192	Mean dependent var	10.45455
Adjusted R-squared	0.898069	S.D. dependent var	92.36456
S.E. of regression	29.48897	Akaike info criterion	9.859281
Sum squared resid	13043.99	Schwarz criterion	10.20643
Log likelihood	-101.4521	Hannan-Quinn criter.	9.941059
F-statistic	31.83679	Durbin-Watson stat	2.652824
Prob(F-statistic)	0.000000		

For each independent variable and constant EViews program reported standard error of the coefficient t-statistic test and the associated probability. Assuming that it works at 5% level of relevance, as in the example above statistical t-test probabilities are attached below this level variables D (POP/1000), C, T ^ 2 and ISPERIOD

("2007") coefficients are considered statistically significant. It is also reported F-statistic and its associated probability. Since this probability is less than the level of relevance in this assay that at least one coefficient of the regression line is statistically significant. Were tested by the equation errors View/Residual tests/Correlogram - Q Correlogram of Residuals

Date: 06/09/14 Time: 09:33
Sample: 1991 2012
Included observations: 22

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
***|. |	***|. |	1	-0.382	-0.382	3.6727	0.055
. | . |	.**| . |	2	-0.061	-0.243	3.7711	0.152
. |**. |	. |* . |	3	0.265	0.179	5.7257	0.126
.**| . |	. *| . |	4	-0.301	-0.164	8.3789	0.079
. | . |	. *| . |	5	0.046	-0.109	8.4453	0.133
. | . |	. *| . |	6	-0.037	-0.196	8.4906	0.204
. *| . |	. *| . |	7	-0.100	-0.135	8.8416	0.264
. *| . |	.**| . |	8	-0.067	-0.288	9.0128	0.341
. |* . |	. | . |	9	0.141	-0.018	9.8147	0.366
. *| . |	.**| . |	10	-0.169	-0.261	11.073	0.352
. |* . |	. | . |	11	0.124	-0.054	11.813	0.378
. | . |	. *| . |	12	0.046	-0.180	11.924	0.452

According to this test, for all lags of errors no serial correlation of errors (autocorrelation coefficient does not exceed the rated range in the chart). The existence of autocorrelation test is invalidated and the Q-statistic and the associated probability. Hetroscedasticity test was applied and revealed that there is a direct relationship between calories and GDP. GDP coefficient of the regression model is = 4.338, standard error = 1.44 m and statistic = 3.01, shows that GDP is an important factor influencing the consumption of calories. Population coefficient is -0.0914, standard error 0.04, and statistical = -1.95. The sign parameter does not influence the result of comparison between t and t calc tabled for consideration because it utilizes the estimated value of probability is here absolute- 0.07. The value of t calc (1.95) is less than the value of t table (2.365) so the population is not an important factor of influence of calorie consumption. Theoretically with GDP growth should increase the number of calories, but up to a certain level.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.729850	Prob. F(6,15)	0.1820
Obs*R-squared	8.997176	Prob. Chi-Square(6)	0.1737
Scaled explained SS	2.670012	Prob. Chi-Square(6)	0.8490

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/09/14 Time: 09:37
Sample: 1991 2012
Included observations: 22

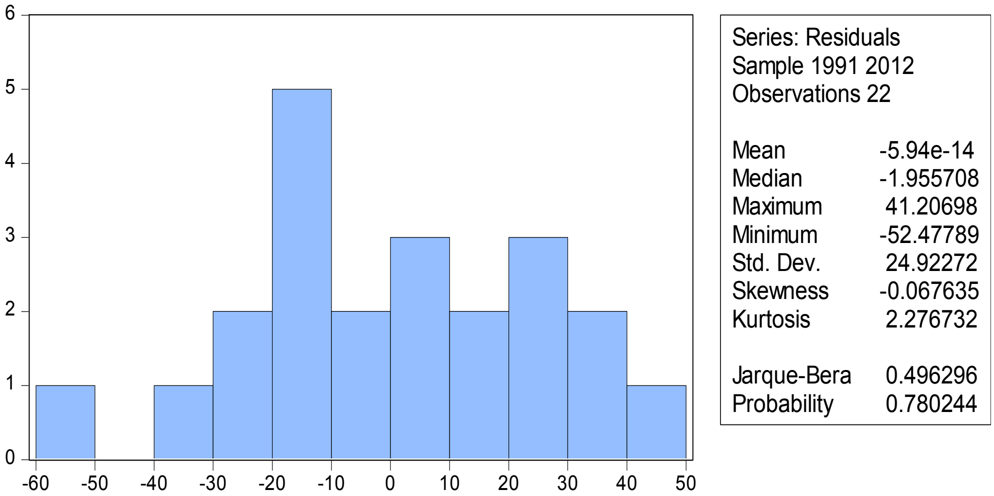
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2479.783	706.3523	3.510689	0.0032
D(POP/1000)	-0.399426	0.988452	-0.404093	0.6918
PIB	71.01215	30.48013	2.329785	0.0342
T	-343.1370	125.4511	-2.735225	0.0153
T^2	12.03292	4.624482	2.602005	0.0200
@ISPERIOD("1993")	-1419.744	713.6299	-1.989469	0.0652
@ISPERIOD("2007")	-668.0547	656.2291	-1.018020	0.3248

R-squared	0.408963	Mean dependent var	592.9085
Adjusted R-squared	0.172548	S.D. dependent var	685.7081
S.E. of regression	623.7504	Akaike info criterion	15.96275
Sum squared resid	5835968.	Schwarz criterion	16.30990
Log likelihood	-168.5902	Hannan-Quinn criter.	16.04453
F-statistic	1.729850	Durbin-Watson stat	2.062305
Prob(F-statistic)	0.182038		

D(CALORII) = -0.0914*D(POP/1000) + 4.3386*PIB - 211.66 + 39.005*T - 1.442*T^2 + 270.131*@ISPERIOD(1993") -180.79*@ISPERIOD("2007")

In the model developed there is a direct relationship between calories and GDP, and a statistically insignificant relationship with the population. In a growing population calorie consumption will decrease by 0.09%, so the calories/individual is not significantly influenced by population growth.

F-test comparing the F probe (31.83) with the F tab (3.47) we see that the calculated value is higher, so the null hypothesis refused, the no significantly, which confirms the model as valid in the sense that general parameter estimates are statistically significantly. The Durbin Watson test serial correlation of errors. In this case, DW = 2.652824, is close to a value of 2 and therefore no autocorrelation of errors, so it is not affected quality estimators.



Histogram – Normality test analyzes (similar distribution analysis of a series) distribution of errors from regression. It is noted that skewness = -0.067 and kurtosis = 2.276, likelihood test is = 0.78, so we can say that we accept the null hypothesis that the regression ie it follows a normal distribution.

Homoskedasticity relates to the assumption of regression model that states that errors should have the same variance model: for any t = 1, ..., n. The presence or not of heteroskedasticity can identify both graphically and by means of statistical tests. From the chart we can safely not waste any homoskedasticity existence nor the random heteroskedasticity. Variable (residual) ε is zero mean and its variance is constant and independent of X - homoskedasticity hypothesis, on which it can be accepted that the link between Y and X is relatively stable. Check homoskedasticity hypothesis error for this model will be Breusch-Godfrey test using Serial Correlation LM Test. Applying the test involves the following steps: initial model parameter estimation and calculation of estimated residual variable, u; construction of an auxiliary regressions based on assumption of a relationship of dependency between square error values, exogenous variable included in the initial model and the square of its values: and calculating the coefficient of determination, R2, corresponding to the auxiliary regressions; check the significance of the model parameters newly built and one of them is insignificant, then the error heteroskedasticity assumption is supported. Variants of the test strip: use LM test, calculated as the product of the corresponding model number of observations, n, and the coefficient of determination, R2, corresponding to the auxiliary regressions. In general, the LM test is asymptotically distributed as a χ for which the degrees of freedom is given by: where k = number of exogenous variables, namely: LM = nR2 ~ χ If LM> χ, errors are heteroskedastic, otherwise, are homoskedastic or assumption invalid parameters is known accepted. The White's test is the test that tests the following hypotheses:

Null hypothesis: for all i = 1, ..., n. Alternative hypothesis: for at least one index i. New errors are normally distributed and independent vi of εi. In these circumstances you have the null hypothesis: the alternative: not all parameters α are zero. If we accept the null hypothesis when we accept the hypothesis of homoskedasticity, and if there are different parameters 0 heteroskedasticity accept. For this table Output obtained by regression model apply new meaning t test for each coefficient separately. The F test probability is quite high and again within the range of uncertainty, p = 0.59. Considering the value of p we can say that we reject the null hypothesis (presence of heteroskedasticity) with an error of 40%, therefore, we can accept the null hypothesis (presence of the homoskedasticity) with an error of 60%.

4. Conclusions

The economic value of biodiversity is evident by direct use of its components: non-renewable natural resources - fossil fuels, minerals etc. and renewable natural resources - plant and animal species used as food or energy production. Achieving the ecosanogenetic equilibrium requires effective management of ecological systems can be achieved by applying management principles and methodologies involving dependence of the ecosystems. The ecosanogenesis health report "man - product - nature", a phrase that leads to the promotion and strengthening of human health status, but and animals, plants and nature as a whole. In our research conducted to estimate a regression equation to illustrate a model calorie consumption, GDP and population in Romania. The series used were: first quality-calorie pop.-population, GDP growth rates. Theoretically with GDP growth should increase the number of calories, but up to a certain level. The econometric model to reveal the calorie needs at the individual level is approximately constant, being influenced by specific biological factors and influences population and GDP calorie consumption, which directly can have negative impacts on biodiversity agro ecosystems.

5. Acknowledgements

This paper has been financially supported within the project entitled "SOCERT. Knowledge society, dynamism through research", contract number POSDRU/159/1.5/S/132406. This project is co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. **Investing in people**!

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Hungarian Small and Medium Enterprises' Strategies and their Effects on the Economic Performance

Florin Nitu[1]

Abstract: The impact of large company's strategy on its performance constitutes an interesting subject for the strategic management research. There is little attention given to the analysis of this relationship at the small and medium enterprise (SME) scale and even less studies published to examine it from a regional perspective. The aim of this study is to empirically investigate the link between strategies and performance of SME's. Data for the research were obtained primarily from a survey of SMEs conducted in Hungary. Results indicate that the different indicators of financial performance of SMEs are having a strong link with the firm's strategy, while the firm regional location may have a limited influence, depending on financial indicators. The findings of this study might be useful to managers of Hungarian SMEs, while contributing to the SMEs field research.

Keywords: Hungarian SMEs; Small and medium enterprises' strategy; Economic performance

JEL Classification: L22; M21

1. Introduction

Restricted management resources of SMEs (Small and Medium-size Enterprises) corroborated with a relatively low activity makes unlikely for them to have the same strategic footprint as the larger enterprises have. However, because usually the decision is made by a restricted number of peoples, they could change their strategy much faster than a large enterprise could do- their strategy can be built on this ability to respond quickly to economic uncertainty, to environmental change, both external and internal, despite their lack of resources. However, the SME and the large strategies are proudly much similar; essentially, differ substantially from those of larger companies. SME strategy, at enterprise level, is future-oriented and comprises a set of defined actions to be taken in order to improve the economic indicators, to use their resources efficiently and strengthen their position on the market. From a business perspective, SME strategy should deal with competitiveness and the better use of competitive advantage so as to compete effectively on their market. Functional strategy comprises adopting measures to employ resources efficiently and

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implementing new processes or technologies. A clear strategy would be very helpful to a firm's management in facing any situation - for example, the need to take an immediate decision which will have a long-term effect, in which case agreed strategic boundaries will act as a guide. From the many forms of management strategy practised by SMEs, this paper attempts to search for relevant and realistic strategies which are actually followed by SMEs and also to examine the implications for economic results in general. An interesting new field of research is to define the strategy of Hungarian SMEs by examining those factors that contribute to SMEs' approach to generic strategy - to market and cost reduction strategy. In addition, it will be valuable to assess the benefits offered by strategies, by examining their impact on a firm's overall performance at different levels. The simple fact that SMEs actually follow strategies is not in itself sufficient to reach their economic goals, which is why the results must be examined. If strategy is budget-related, then this has associated costs, and it is vital, even for the SMEs, to determine the outcome of their resource allocation and investments in strategy. Even without being formulated in detail, the strategy to be adopted differs from company to company, depending on a variety of factors such as company size, area of activity, years of existence, type of management and so on - and also by geographical location, at regional, national or EU level. At the same time SMEs cannot afford to waste their limited resources by following multiple strategies simultaneously without losing efficiency. Focusing on a limited number of compatible strategies seems more likely to produce success in terms of financial results.

Little research is to be found on SME strategies and performance, and we challenge us to fill the gap by determining those strategies which are easy to carry out.

2. Strategies in Small Enterprises

2.1 Strategic Management and Strategic Planning

The literature is full of articles pointing out the differences in terms of strategy and management between large companies and SMEs. Strategic management is long-term strategy, a doctrine concerned with the firm's external environment, customers, competitiveness, company success (Kvint, 2009). Strategic planning is an instrument which could be used as a guide to reach the firm objectives, since it offers the opportunity to recognise trends in the shorter term, as opposed to strategic management which deals with concepts such vision, mission and objectives (Kraus et all). The field of strategic management and international business is defined by the focus on performance; managers are interested in gaining competitive advantage and sustaining it in time and across borders (Peng 2009).

Knowledge of the business environment of the industry where the enterprise is operating is very important when a choice of strategy is to be made, with direct repercussion on its existence. De Kluyver (2010) argues that industry growth is limited in developed markets but offers high opportunities in developing markets which are not mature. For SMEs management is a good opportunity to turn their enterprise towards profitability if following marketing strategy for immature markets where competition is not so fierce and where the margins might be higher than in developed markets, but in niche markets, where volume is not important and where high customization of products or services is required. SMEs are also important players from global and regional perspectives as they are the backbone of the large multinationals; they are part of the integrated supply chain of large MNCs (Rugman et all, 2006). SMEs can benefit from any economic upsurge of larger companies (and eventually from knowledge spill over) if they settle in their vicinity. In the same way, SMEs need to define strategy to re-engineer themselves continuously as a response to changes in their internal environment that are not static but dynamic. These changes represent the trigger for strategy modulation, directed to exercising control of those factors that are within direct reach of the firm: financial means, technology, human resources, processes, organization culture and assets (Hunger, Wheelen, 2010).

2.2 Specifics of SME Strategy

Developing methodologies to formalize strategy for managing SMEs is often met in academic papers. SMEs have limited resources and their low managerial capacities along with their financial limitations constitute a barrier in their international development (OECD, 2009). To increase their competitive advantages the SMEs will have to implement measures to make the survival of enterprises more plausible. Grouped in the form of strategy, these actions are representing the enterprise vision for dealing with their challenging environment (Porter, 1985). When facing the larger enterprises, the SMEs could gain advantages building up on their recognized entrepreneurship, creativity, innovation (Knight, 2000). One interesting characteristic of SMEs in private family ownership is that they do not always have as their objective the creation of profit, but something different, and in that case their strategies will be different (Szerb, 2007). In an attempt to formalize the SMEs' strategy, Miles and Snow (1987), proposed a four dimension typology: prospectors[1], analyzers[2], defenders[3], and reactors[4]. This typology is largely widespread in SMEs literature (Sanchez & Sanchez 2005; Pittino & Visintin 2009; Parnell & Wright 2005). The strategies of SMEs, whether domestic or foreign, generally include such

[1] Companies *focusing on new markets using innovation and willing to apply the newest technologies* (Miles and Snow, 1987)

[2] *Companies might take "prospector" or "defender" actions depending on the environment conditions* (Miles and Snow, 1987)

[3] *Companies concentrating on niche which are defending their market share* (Miles & Snow, 1987)

[4] *Companies that are not capable to act properly to their environment* (Miles & Snow, 1987)

attributes as promptness, responsiveness in taking decisions - together with essential quality and innovation. All of these should make up a solid core of competitive advantage. They are, in general, likely to be less competitive in marketing, in generating capital and in technology. An appropriate strategy could be to strength their Firm-Specific Advantages (FSA), whilst, at the same time, improving their competitiveness in those areas which are generally less developed by the very nature of SMEs. If their activity is manufacture, they need to adapt quickly to new technologies and processes. Their structure has to permit them to implement strategies rapidly to respond to the challenges from their environment. This could be achieved by a flexibility strategy. The factors which have an impact on flexibility and competitiveness strategy are grouped into three categories: internal, external and enabling factors (Gunasekaran et al 2011). Internal factors comprise organizational behaviour, managerial characteristics and quality. The organizational behaviour and characteristics of managers have a direct relationship with the quality of goods and services which the SME delivers. Internal factors act on the efficiency of enabling factors - and can be changed by external factors. Enabling factors include: the use of technology, supply chain integration, the generation of capital, location and marketing. According to Gunasekaran *et al* (2011), globalization is identified as an external factor.

2.3 Strategy and the Firm's Performance

The analysis of economic results such as sales growth, earnings before interest and taxes (EBIT), profit after interest (PAI), return on assets (ROA), operating profit (OP), weighted average cost of capital (WACC) are important factors when adopting strategy. Taking strategic decisions based on the performance of these indicators is good practice and may help to acquire competitive advantages for the firm. In our study we will examine whether these findings on strategies and performance could be applied to Hungarian SMEs. In an empirical study on SMEs from Japan and Sri Lanka carried out by Pushpakumari and Watanabe in 2009, to determine if strategies really improve the SME performance, the authors found that, certainly, performance can be explained by the SME management's choice of strategy (defined as 'strategy orientation'), but the other factors that contribute to performance cannot be ignored. Recently the authors of two separate researches on the strategy of SMEs, one on the Austrian SMES (Leitner & Güldenberg, 2010), the other on the Chinese SMEs (Tang & Hull, 2011), claimed that a combination strategies produces better results than concentrating on only one strategy.

In many SMEs, as well as in large companies, performance is monitored continuously using different tools such as, for example, the balance score card in which all activities are listed and measured through key performance indicators for financial, and non-financial activities such as production, sales, human resource, technical components (Kaplan & Norton, 1996). The balanced scorecard (BSC), in the classic view, is the *link* that communicates effectively the company mission to departments and makes possible the strategic management out of performance measurements' (Kaplan & Norton, 2001). We saw above that a combination of differentiation strategies such as marketing, and cost reduction, are among those employed by SMEs aiming for success in their industry. SMEs may have no strategy at all, or their management may adopt reactive strategies in response to events, or take proactive strategies - in which case they anticipate the trend and prepare themselves with a pre-defined set of actions (Pushpakumari & Watanabe, 2009). Implementing a proactive strategy had a positive effect on some important performance indicators such as annual sales, profit, employee numbers, changes in market share, reinvestment - as was found in SMEs in Japan and Sri Lanka - while apparently, adopting reactive strategy decreased these indicators or had had no impact at all (Pushpakumari & Watanabe, 2009). Clearly, between the two types of strategy it is very difficult to draw a demarcation line; they may co-exist and/or overlap at various times and at various amplitudes (Pushpakumari & Watanabe, 2009).

In regional SMEs, the reactive type of strategy dominates, changing the course of action as a response is the most frequently used strategy among SMEs, whilst the proactive strategy (which implies initiative and assumes a higher risk) is found in fewer (Julien, 2007). The same author argues that, in a given area, some 10% of firms are proactive, approximately 20% are active and the remaining 70% are reactive firms - which are catalogued as defensive by Miles and Snow (1987). Further, the proactive firms, "*the gazelles*", the source of "*regional dynamism*" are defined as taking the higher risk when facing uncertainty. In spite of a lack of information, they act according to their manager/owner's instinct, as he aims to win most of the time, giving priority to adventure and to analysis. The active firms are more balanced in that respect, willing to take their time to acquire enough information to make a correct decision, but acting rapidly enough to avoid losing the opportunity. The third type of firm, the reactive, apparently takes no risks, preferring stability to the possibility of higher profit (Julien, 2007). Pursuing this line and to grasp the relationship between SME strategy and performance, our research model is based on identifying SME strategy in aspect of two factors; on proactive and on cost-reduction strategies and their impact on performance.

3. Research Data

To investigate whether SME strategies are related to performance, a survey was employed conducted in 2012-2013 on SMEs from all Hungarian regions. The survey was designed not only to reflect the economic environment in which Hungarian SMEs work, but also to pose questions relating to strategies and financial indicators. The questionnaires were completed during face to face interviews by university students on field visits to business managers - one interview per company - and then manually entered into data sets through a webpage interface with individual login credentials. The interviews were carried out with the owner, manager or director of the company – whoever was most knowledgeable about the business. The survey comprised 1,074 questions, and data was gathered from 799 respondents.

To maximise the response a mixture of closed and open-ended questions was employed in the interviews, producing a compilation of quantitative and qualitative data. The dataset used contained general data on the size of the company, field of activity, organization type, region, county, city and year when established, together with information on their strategy, their financial situation, organizational structure, personnel and management skills.

By type of entity, the majority of SMEs (591 firms) are Limited Liability Companies (Ltd. or, in Hungarian, “Kft”) followed by 118 “Partnerships” (the Hungarian, “Bt”), whilst the association form being the least present. The distribution of SMEs presented in survey based on their size over the regions size of Hungary. The most interviewed SMEs are originated from the Central Hungary followed by Southern Transdanubia region. With respect to size of the firms, the micro-firms are best represented in Central Hungary region followed by the Southern Transdanubia while the small firms four times less than former, are relatively better represented in Southern Transdanubia, in Central Hungary and also in Southern Great Plain regions. As for the medium firms we see a less representative presence in the survey. The survey succeeded to capture the dominant distribution of micro-firms in Hungary. With the respect of SME’s industry the collected data shows a massive presence of 50% of the firms activating in G sectors–whole sales and repair, repair of motor vehicles and motorcycles and R-services activities. The other important sectors are: F Construction, Other activities and Manufacturing. The scale of the above distribution is not changed when the data is plot by Hungarian regions.

4. Analysis and Discussion

4.1 Research Questions and Hypotheses

The principal research questions are:

- Which management strategies do Hungarian SMEs follow? Are they concerned with strategic management or strategic planning in terms of proactive strategy?
- How effective are their strategies? Do these strategies have a measurable impact on the firm's overall performance?
- Should SMEs concentrate their resources on one strategy or on several?
- Whether regional location or company size play a role in performance-related strategy.

As shown in several empirical research projects, there is a strong relation between strategic planning and company performance (Rue & Ibrahim, 1998). To measure one dimension of strategic planning, proactive strategy as opposed to reactive strategy is employed in our study.

These questions are the basis for our hypotheses, which are then tested by quantitative methodology:

Hypothesis H1: *For Hungarian SMEs, a combination of cost reduction and proactive strategies has a positive effect on the possibility of improving financial performance. In this respect, regional location is irrelevant.*

Financial strategy is one of the pillars of value creation in the company regardless of size - whether a large company or an SME. The potential to raise funds is determined by its ability to generate profit and positive cash flow. An SME with positive financial results will be able to raise funds more easily. Consequently, for a SME with a poor cash flow or low profitability, it will be more and more difficult to obtain credit from the banks, and so financing strategy determines the future of an enterprise – both its existence and its ability to grow.

Hypothesis H2: *For the Hungarian SMEs, a strategy of applying for programme assistance could enhance the chances of improving results.*

4.2 Method for Testing Hypotheses H1 and H2

The research uses binary logistic, correlation and linear regression methods on multiple models to test the hypotheses. To be able to build a significant model in which the indicator of strategies could affect the financial performance, attention was paid carefully attention to the selection of those questions that are in relation with generic strategies: differentiation quality-cost, differentiation niche, differentiation marketing.

Table 1. Variable description

Variable type	**Variable name**	**Variable description**	**Measure type**
Dependent variable	Sales growth in 2012	Measures the relative growth in sales in 2012, dividing the firms into two categories: positive or negative sales growth.	Categorical, 0= no or 1=yes.
Independent variable	Proactive Strategy (**Strategy_proactive**)	Categorizes firms as following or not proactive strategies. If reactive strategy is chosen, the firm cannot follow at the same time, reactive strategy.	Categorical, 0= no or 1=yes.
	Reactive Strategy (**Strategy_reactive**)	Categorizes firms as following or not reactive strategies. If reactive strategy is chosen, the firm cannot follow at the same time, proactive strategy.	Categorical, 0= no or 1=yes.
	Market strategy: quality and reduction of cost (**Strategy_CostReduction**),	Categorizes the firms into following or not cost reduction strategies. If reactive strategy is chosen, the firm cannot follow in same time, differentiation, or niche strategy.	Categorical, 0= no or 1=yes.
	Tender submission for assistance programs (**SubmitedTender**)	Evaluates either the firm submitted tender for assistance program.	Categorical, 0= no or 1=yes.
	Regional component: (**STRegion, CHregion, SGPregion**)	Indicates SMEs location in a Hungarian region: STRegion for Southern Transdanubia, CHregion, for Central Hungary and SGPregion for Southern Great Plain	Categorical, 0= no or 1=yes.
	Firm size (**Microfirm**)	Indicates if the SMEs' size falls in Microfirms category (0-9 employees)	Categorical, 0= no or 1=yes.

Dependent variable: Assesses firm's overall financial performance for year 2012 (Table 1). It measures the relative growth in sales in 2012. Its value positive or negative is discrete (0, 1) and not continuous - the reason for using logistic regression. Seven models were proposed, based on their significance and representativeness in respect of our research.

Model 1: Predicted logit of SalesGrowth2012=- Strategy_Reactive* β_1 + Strategy_CostReduction* β_2

Model 2: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction* β_2

Model 3: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction *β_2 + SubmitedTender* β_3

Model 4: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction *β_2 + STRegion* β_3

Model 5: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction *β_2 + CHregion* β_3

Model 6: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction *β_2 + SGP* β_3

Model 7: Predicted logit of SalesGrowth2012= Strategy_Proactive* β_1 + Strategy_CostReduction *β_2 + Microfirm* β_3

In Table 2 we show the results of running the logistic regression on the models presented before, the variables of models being described briefly in Table 1.

Table 2. Logistic regression

Model	Model 1 (Hungary)	Model 2 (Hungar y)	Model 3 (Hungar y)	Model 4 (Southern Transdanu bia region)	Model5 (Central Transdan ubia region)	Model 6 (Souther n Great Plain)	Model 7 (Micro-firms)
Predictability of the model (%)	82.3	82.3	82.2	82.3	82.3	82.3	83.0
-2 Log likelihood	880.36	833.4	782.24	825.1	824.2	811.8	552.2
Cox & Snell R Square	0.20	0.25	0.26	0.26	0.26	0.27	0.32
Nagelkerke R Square	0,27	0.34	0.35	0.35	0.35	0.36	0.43
Beta of 1st variable/p-value	1.68/0.00	1.28/0.0 0	1.13/0.00	1.17/0.00	1.180.00	1.04/0.00	0.7/0.00
Beta of 2nd variable/p-value	1.38/0.00	0.91/0.0 0	0.82/0.00	0.84/0.58	0.86/0.02	0.8/0.00	0.8/0.00
Beta of 3rd variable/p-value			0.851/0.0 0	0.5	0.5	0.7/0.00	0.9/0.00
First variable//Exp(B)	5.4	3.6	3.11	3.25	3.26	2.83	2.03
Second variable//Exp(B)	3.9	2.5	2.28	2.32	2.37	2.25	2.25
Third variable/Exp(B)			2.35	1.7	1.72	2.14	2.62

In this analysis, and for all models, the probability of the model "chi-square" for all the models has the p value p= 0.00, therefore all models are statistical significant. Model 7 has the smaller statistic 2 Log Likelihood which makes it better than the other models. Further, based on the value of "2 Log Likelihood", Model 2 which employs the proactive strategy it is a better fit than Model 1 which has reactive strategy as dependent variable. Model 7 has the highest value of these pseudo-coefficients, followed by Models 2 to 6. In Model 7 the Nagelkerke R Square value indicates that 43 % of the total variance of the dependent variable the relative increase in sales of 2012 for the SMEs could be explained by the fact of adopting a combination of strategies composed by cost reduction, proactive strategies and by the fact that the SME's size in terms of number of employees is micro-firm (0 to 9 employees).

The probability of the Wald statistic was 0.00 for all three models, which supports the conclusion that the sales growth is more likely to be related to the combination of strategies. In Model 3, keeping constant the variable for generic strategy (cost reduction), the value of first variable/Exp(B) was 3.1, which tells us that this model predicts that the odds for having positive sales growth are 3 times higher for those SMEs following proactive strategy than those which are not - which implies that a one unit increase in this variable for strategy increased the odds of a positive sales growth by 100%. This confirms the statement of the amount of change in the likelihood of belonging to the modelled group of the dependent variable associated with a one unit change in the independent variable, age. Standard Error (SE) values for all three models for beta indicate that there is no multi-collinearity among the independent variables. In Models 4, 5 and 6 a regional component was introduced into the equation to examine the role of a firm's location on the firm's strategy in relation to their performance. This component is set to the South Transdanubia region for model 4, to Central Hungary region in model 5 and to the Southern Great Plain in model 6. As could be seen, the "-2 Log likelihood" decreased slightly from 833.4 to 825.1 which makes these three models with regional dependent, a better fit, while the Nagelkerke R Square is almost the same. Therefore, it can be said that the regional nexus of the SMEs has a negligible role for the study of Hungarian SME strategy. At the same time, based on the same method of comparison, the models, the value of '-2 Log likelihood' coefficient dropped from 833.4 in Model 2 to 552.2 in Model 7, which indicates clearly that the firm's size is an important control factor for SME strategy and performance. The predictability of the model (%) allows us to correctly classify the 82-83% of the subjects where the predicted event (sales growth in 2012) was observed.

We found a statistically significant overall relationship between the combination of independent variables (SMEs' proactive, cost reduction, program assistance funding strategies, firm size) and the dependent variable represented by sales growth in 2012. No evidence of numerical problems in the regression was observed. This helped us to conclude that hypothesis H1 and H2 are proved. Indeed, the combination of proactive and cost reduction strategies for the regional SMEs led to achieving better financial results for SMEs such as sales growth in 2012 (see Model 2), which is clearly expressed by hypothesis H1. If SMEs also follow a strategy for applying for funds from programs available at regional level, the likelihood of better financial results is even higher (see Model 3).

5. Limitations and Further Research Questions

This study entailed various limitations that need to be dealt with in our future work. It is assumed that the questions formulated to investigate the strategy and those related to firm financial indicators were well understood and answered accordingly. Therefore our analysis could not employ entirely the information and should be confined to a lower scale. Further research is needed to investigate such control factors as years of activity, membership of SME networks, innovation effect and field of activity.

6. Conclusions

The SME sector is continuously developing in the EU and Hungary, and its share of employment and value added is huge. In Hungary, in recent years, SMEs have faced difficult times, their environment drastically changing. To be able to face increased competition, and to react quickly to changes in their environment, SME management needs to follow suitable strategies. SMEs, however, have limited resources and adopting inadequate or multiple strategies could raise the costs of strategy implementation if SME management cannot share their resources efficiently. The research attempted - successfully - to find those strategies relevant for SME management and to performance. The study was carried out keeping in mind that only those strategies are worth analysing which has an impact on SME performance.

The studied literature revealed that the relation between the strategy and performance of enterprises depends on the industry sector and also on the size of the enterprise. The SME are encouraged to take the opportunity to develop strategies for niche or non-maturated markets which are more accessible and profitable. In addition, we found that SMEs should follow more than one strategy - in fact, a combination of strategies - which varies from author to author. As the outcome of this study partially in line with the findings of SME scholars, adopting combination of strategies is more efficient than relying on one only. Firstly, the results demonstrated that, by adopting a proactive strategy, a market strategy of quality and cost reduction, Hungarian SMEs should improve the likelihood of achieving a positive growth in sales, which means also an increase in market shares. With respect to the regional perspective of a firm's strategy, as shown in our results, the location of SMEs in one of the three regions studied does not greatly affect these findings. Our findings support our clear conclusion that, if SMEs in the region adopt a combination of strategies, this may well have a great impact on their performance.

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Accounting and Auditing

Audit Risk Assessment in the Light of Current European Regulations

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Abstract: Recent European reforms on audit regulations have been motivated by efforts to increase audit quality, functioning and performance. We believe the adoption of Directive 2014/56 and Regulation 537/2014 strengthened the role of independent audit and risk committees, which will positively contribute towards audit quality. This paper aims to critically assess the status quo of audit risk assessment in current European standards and regulations, by conducting a theoretical analysis of different aspects of audit risk. Our main objective is to stress the importance of detecting inherent and control risk, which lead to material misstatement at the assertion level. They need to be assessed so as to determine the nature, timing and extent of further audit procedures necessary to obtain sufficient appropriate audit evidence. These pieces of evidence enable the auditor to express an opinion on the financial statements at an acceptably low level of audit risk. Therefore, we point to the fact that researchers as well as practitioners and policymakers have to be careful when using audit tools and assessing risk levels, as their conclusions continuously shape the regulations.

Keywords: audit opinion; material misstatement; financial statements.

JEL Classification: M42

1. Introduction

The Global Financial Crisis in 2008 triggered a series of regulatory responses from EU Member States and the need for a consistent supervision of the European financial markets. All EU reforms were meant to reinforce the independence and the quality of the external auditors in their work in certifying the financial statements. On 3 April 2014, the European Parliament adopted the revised Directive as well as the Regulation, published in the Official Journal of the EU on 27 May 2014 and now known as Directive 2014/56 and Regulation 537/2014.

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AUDŒ, Vol. 11, no. 3, pp. 94-105

There is a two year transition period which means that the legislation will become applicable in the 28 Member States of the EU in 2016 and the changes that this new legislation will bring about are significant. This is a substantial modification of the original text as there is a shift of focus to external audit and the certification of the financial statements. It is important to be aware of that the amendments made in the Directive 2014/56 and Regulation 537/2014 are focused on the consequences for audit committees of new legislation for external auditors.

Compared to the existent specialized literature on the subject, it is important to stress that Directive 2014/56 and Regulation 537/2014 set a series of principles that enhance the importance of audit risk assessment, therefore this paper is set to be one of the first on this subject matter, under the new European regulations. The specialized literature on the subject of audit risk is quite extensive, as audit risk assessment has a significant influence on the auditor in expressing an appropriate audit opinion on the financial statements.

First of all, all studies on this subject are to start from the contents of the *International Standard on Auditing 315 - Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment*, which should be read in conjunction with *ISA 200, Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing*. As set by ISA 315, the objective of the auditor is to identify and assess the risks of material misstatement, whether due to fraud or error, at the financial statement and assertion levels, through understanding the entity and its environment, including the entity's internal control, thereby providing a basis for designing and implementing responses to the assessed risks of material misstatement.

Key terms and examples of test of controls are presented by Arens, Alvin A. and Loebbecke James K. in their famous *Auditing: an Integrated Approach*, published by Pearson Education Inc. for the first time in the year 1980 and already reaching its 8th edition. A high-esteemed Romanian specialist is the late Professor Mircea Boulescu, whose contribution to the studying of audit risk can be inferred from his many papers in several Romanian accounting journals. He is also remembered for his *Auditing Fundamentals*, written in collaboration with Ghiță, M. and Mareș, V., and published in 2001.

Furthermore, the existing international journals provide a lot of support on this subject matter. Specialized articles on auditing and audit risk are to be found in the *European Accounting Review,* in *Issues in American Education* and in *Current Issues in Auditing*, published by the American Accounting Association, as well as many other international journals. Another resource that we hold important is the ACCA *Paper F8, Audit and Assurance* which helps explain the components of audit risk and the risks of material misstatement in the financial statements.

All these considered, this paper is set to discuss audit risk in terms of identifying, analyzing, clarifying and concluding on different possible errors and deviations, in order to achieve a correct audit opinion. It is this particular subject that we intend to examine and we shall focus on current issues concerning types of audit risk and their impact on the certification of the financial statements.

Further research should be focused on methods to improve the detection of audit risk and therefore the functioning of risk committees. The new and broader view of risk and the need for improved risk management after the financial crisis has resulted in boards considering the need to create risk committees. The main purpose of the risk committee is to assist the board in ensuring that the company has an effective risk management process, which includes the management of the key risks the company is facing and the follow up of risk appetite, risk tolerance, risk framework and risk strategy.

2. Audit Risk according to ISAs

In order to correctly stress the potential risks inherent to the financial auditor's work, we will take into account the International Standards on Auditing (hereinafter, ISA), which delineate three main categories of risk: inherent risk [IR], control risk [CR] and detection risk[DR]. Their product is the audit risk [AR], as in this risk model: AR = IR x CR x DR.

The ISAs include objectives, requirements, along with applications and other explanatory material that are designed to assist the auditor in obtaining reasonable assurance. ISAs require the auditor to exercise professional judgment and keep their professional skepticism throughout the audit planning and conducting, among other things:

• to identify and assess the risks of material misstatement, whether due to fraud or error, based on understanding the entity and its environment, including the entity's internal control;

• to obtain sufficient appropriate audit evidence whether material misstatements exist, through the development and implementation of appropriate responses to the assessed risks;

• to form an opinion on the financial statements on conclusions drawn on the basis of audit evidence.

The standards define audit risk as the risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated. Audit risk is a function of the risks of material misstatement (which may be inherent risk or control risk) and of detection risk.

Detecting any errors would not be possible without the exercise of professional judgment, which is essential for appropriate auditing. This is because of the interpretation of relevant ethical requirements and of the ISAs, while the informed decisions required in the course of the audit cannot be taken without applying the relevant knowledge and expertise on facts and circumstances.

Professional judgment is required especially in connection with decisions related to:

• materiality and audit risk;

• the nature, timing and extent of audit procedures used to meet the ISAs requirements and gather audit evidence;

• assessing the extent to which sufficient appropriate audit evidence was obtained and the extent to which further actions are necessary in order to achieve ISAs objectives and, through them, the auditor's general objectives;

• assessing the management's judgment in applying the applicable financial reporting framework;

• drawing conclusions on the obtained audit evidence, for example, assessing the reasonableness of accounting estimates made by the management in preparing financial statements.

The auditor should use professional judgment to assess audit risk and to set audit procedures, so as to ensure that risk is reduced to an acceptably low level. Audit risk is maximum 10%.

3. The Risks of Material Misstatement

The risks of material misstatement may exist at two levels:

• in the financial statements in general; and

• in the assertion level of the classes of transactions and account balances.

The risks of material misstatement in the financial statements generally refers to risks of material misstatement which in turn are related strictly to the financial statements as a whole and have a potential effect on the assertions.

The risks of material misstatement at the assertion level are assessed to determine the nature, timing and extent of further audit procedures necessary to obtain sufficient appropriate audit evidence. These pieces of evidence enable the auditor to express an opinion on the financial statements at an acceptably low level of audit risk.

Auditors use various approaches to achieve the objective of assessing the risks of material misstatement. For example, the auditor could use a model that expresses the general relationship between the components of audit risk in mathematical terms to arrive at an acceptable level of the detection risk. Some auditors consider such a model to be useful when planning audit procedures.

The risks of material misstatement at the assertion level consist of two components: inherent risk and control risk; they exist independently of the financial statements auditing.

Inherent risk is the susceptibility that the account balance or class of transactions contains a misstatement that could be material, individually or together with misstatements in other balances or classes, assuming that there were no related internal controls.

Control risk is the risk that a misstatement, which could occur in an account balance or class of transactions that could be material individually or together with misstatements in other balances or classes, will not be prevented or detected and corrected on a timely basis by the accounting and internal control systems.

3.1. Inherent Risk

In the general development of an audit plan, the auditors assess inherent risk.

Inherent risk is the extent to which auditors assess the likelihood that some erroneous financial statements will occur in practice, as a result of weaknesses of the internal controls. If the auditor concludes that there is a high probability that errors in the financial statements may not be detected by internal controls, it means that he or she considers a high inherent risk.

Including the level of inherent risk in the audit risk model assumes that auditors will try to predict segments of the financial statements showing the lowest and highest probability of being erroneous. This information affects the size of audit evidence needed to be collected by the auditor and influences the auditors' efforts in the work assigned to the collection of audit evidence.

When assessing inherent risk, the auditor will consider the following factors:

- previous audit results;
- initial commitments, as compared to the results;
- unusual or complex transactions;
- professional judgment when determining account balances and transaction recording;
- assets that are susceptible to misappropriation;
- population characteristics and sample size;

- changes in leadership and reputation;
- nature of entities, including the nature of production and offered services;
- nature of the data processing system and the use of modern communication techniques.

To assess inherent risk, auditors should conduct an analysis of the environment of the audited entity, as well as of the features of audited operations by taking interviews with the management so as to acquire knowledge of its business, gathered also from previous audit reports.

The auditors assess the above factors to determine inherent risk specific to each cycle of transactions, account and audit objective. Some factors are likely to influence many or probably all classes of accounts, while other factors, such as unusual transactions, will affect only certain classes of accounts (specific). For each entity or class of accounts, the decision to properly assess inherent risk mainly depends on the auditor's judgment. Most auditors establish an inherent risk of 50%, even in the best circumstances and of 100% when the likelihood of material error is high.

Typically, auditors resort to the preparation and completion of a list of questions and after that, based on the responses received and on professional judgment, they assess inherent risk as high, medium or low. Inherent risk may be expressed in quantifiable terms (as percentage) or non-quantifiable terms (as high, medium, low).

In developing the overall audit plan, the auditors assess the inherent risk of the financial statements. For the audit program, the auditor must make the connection between such an assessment and the account balances and significant classes of transactions at the assertion level, or assume that inherent risk is high for a certain assertion.

To assess inherent risk, the auditor uses professional judgment to evaluate numerous factors, examples of which are:

- *in the financial statements*:

  - management integrity;
  - management experience and knowledge, as well as changes in management during the period, for example, the managers' lack of experience may affect the financial statements of the entity;
  - unusual pressures on management, for example, circumstances that might predispose management to misstate the financial statements, such as the failure of numerous entities that work in the industry or an entity that lacks sufficient capital to continue operations;
  - nature of the activities of the entity, for example, potential technological obsolescence of its products and services, the

complexity of its capital structure, the importance of related parties, locations and geographical spread of production facilities of the entity;
- factors affecting the industry in which the entity operates, for example, economic and competitive conditions as identified by financial trends and indicators, as well as changes in technology, consumer demand and accounting practices common to that specific industry.

- *in account balances and transaction categories*:

- financial statement accounts likely to be susceptible to misstatement, for example, accounts which required adjustment in the prior period or which involve a high degree of estimation;
- the complexity of main transactions and of other events that might require the services of an expert;
- the degree of judgment involved in determining account balances;
- susceptibility of assets to loss or misappropriation, for example, assets which are very necessary and having a high degree of movement, such as cash;
- the completion of an unusual or complex transaction, particularly at or near the end of the period;
- transactions that are not ordinary.

Inherent risk is higher for some assertions and related classes of transactions, account balances and presentations, than for others. For example, inherent risk may be higher for complex calculations or for accounts consisting of amounts resulting from accounting estimates that are likely to have a significant degree of uncertainty about the estimate. External circumstances that give rise to business risks may also influence inherent risk. For example, technological developments might make a particular product to become obsolete, thus creating the possibility that stocks are subject to an overestimation.

Factors in the entity and in the environment that are related to some or to all of the classes of transactions, account balances or presentations may also influence the inherent risk related to a specific assertion. Such factors may include, for example, a lack of sufficient working capital to continue operations or an industry in decline characterized by a large number of business failures.

3.2. Control Risk

After obtaining an understanding of the accounting and internal control systems, the auditor should make a preliminary assessment of control risk, at the assertion level, for each material account balance or class of transactions.

The auditor should gather audit evidence through tests of controls so as to support any assessment of control risk is at a level less than high. The lower the assessment of control risk, the more evidence the auditor has to gather so as to support the fact that accounting and internal control systems are suitably designed and operate efficiently.

The auditor should make management aware, as soon as possible and at the appropriate level of responsibility, of material weaknesses in the design or operation of the accounting and internal control systems that have been detected. After assessing the internal control system, the auditor communicates in a letter addressed to the management or to the internal audit committee, indicating the discovered deficiencies that may affect the financial statements or allow fraud.

The preliminary assessment of control risk is the process of assessing the effectiveness of the entity's accounting and internal control systems in preventing and detecting material misstatements. There will always be some control risk because of the inherent limitations of any accounting and internal control system.

The preliminary assessment of control risk for a financial statement assertion should be high, unless the auditor:

- is able to identify internal controls relevant to the assertion which could prevent or detect and correct a material misstatement;
- plans to perform tests of controls to support the assessment.

Various techniques can be used to document information relating to accounting and internal control systems. Selection of a particular technique is a matter of the auditor's professional judgment. Common techniques, used alone or in combination, are: narrative descriptions, questionnaires, checklists and diagrams of information flows. The form and extent of this documentation is influenced by the size and complexity of the entity and by the nature of the accounting and internal control systems of the entity. Generally, the more complex the accounting and internal control systems and the auditor's control procedures, the more extensive the documentation will need to be.

Management often reacts to inherent risk situations by developing accounting and internal control systems able to prevent or detect and correct misstatements and, therefore, in many cases, inherent risk and control risk are highly interrelated. In such situations, if the auditor attempts to assess separately the inherent risk and control risk, there is a possibility of inappropriate risk assessment. As a result, in such situations audit risk may be more appropriately determined by making a combined assessment.

The level of detection risk relates directly to the auditor's substantive procedures. The auditor's assessment of control risk, along with the assessment of inherent risk, influences the nature, timing and extent of substantive procedures to be performed to reduce detection risk, and therefore audit risk to an acceptably low level. Some detection risks will always be present even if an auditor were to examine 100% of the account balance or class of transactions.

In this regard the auditor will consider:

- the nature of the substantive procedures, for example using tests directed rather towards independent parties outside the entity rather than tests directed toward parties or documentation within the entity, or using tests of details for a particular audit objective in addition to analytical procedures;
- the time to perform substantive procedures, for example their performance rather at the end of the period (year) than at an earlier date;
- the extent of substantive procedures, for example using a larger sample.

There is an inverse relationship between detection risk and the combined level of inherent and control risk.

For example, when inherent and control risks are high, the acceptable detection risk needs to be low, so as to reduce audit risk to an acceptably low level. On the other hand, when inherent and control risks are low, the auditor may accept a higher detection risk and still reduce audit risk to an acceptably low level. While tests of controls and substantive procedures are distinguished by their purpose, the results of each type of procedure may contribute to the purpose of others. Misstatements discovered in conducting substantive procedures may cause the auditor to modify the previous assessment of control risk.

The assessed levels of inherent and control risk cannot be sufficiently low to eliminate the need for the auditor to perform any substantive procedures. No matter the assessed levels of inherent and control risks, the auditor will have to perform some substantive procedures for material account balances and classes of transactions. The assessment of the components of the inherent and control risks performed by the auditor may change during an audit, for example, while performing substantive procedures the auditor may receive information that differs significantly from the information on which he or she originally assessed the inherent and control risks. In such cases, the auditor would modify the planned substantive procedures, based on the revision of the assessed levels of control and inherent risk.

The higher the assessment of inherent and control risk, the more audit evidence the auditor must gather from the performance of substantive procedures. When both inherent risk and control risk are assessed as high, the auditor should consider whether substantive procedures can provide sufficient appropriate audit evidence to reduce detection risk, and therefore audit risk, to an acceptably low level. When the auditor determines that detection risk regarding a financial statement assertion for a significant balance of an account or class of transactions cannot be reduced to an acceptable level, the auditor should express a qualified opinion (with reservations) or declare that he or she is unable to express an opinion.

Control risk is a function of the effectiveness of designing, implementing and maintaining internal control, so that the management should consider the identified risks that threaten the achievement of entity objectives relevant to the preparation of its financial statements. However, internal control, no matter how well designed and applied, can only reduce, but not eliminate, the risk of material misstatement of the financial statements due to the inherent limitations of internal control. These include, for example, the possibility of human errors or mistakes, or that controls are adversely affected by plots or violations by the management. Consequently there will always be some degree of control risk.

The ISAs provide the conditions under which the auditor is required to, or may choose to test the operating effectiveness of controls in determining the nature, timing and extent of substantive procedures to be performed. The ISAs usually refer not to control risk and inherent risk separately, but rather to a combined assessment of the "risk of material misstatement". However, the auditor will be able to separate or combine the inherent and control risk assessment depending on preferred audit techniques or methodologies and practical considerations.

4. Detection Risk

Detection risk is the risk that an auditor's substantive procedures will not detect a misstatement that exists in an account balance or class of transactions that could be material individually or together with misstatements in other balances or classes transactions.

In practice, the risk of detection cannot be reduced to zero because of the influence of factors such as:

- the auditor does not examine all the elements of a class of transactions or account balances and disclosures;
- the possibility that an auditor might select an inappropriate audit procedure, or misapply an appropriate audit procedure, or misinterpret the results of audit procedures.

Detection risk relates to the nature, timing and extent of the auditor's procedures that are determined by it in order to reduce audit risk to an acceptably low level. It depends therefore on the effectiveness of an audit procedure and on its application by the auditor. Issues such as: proper planning, correct distribution of staff in the mission team, application of professional skepticism and supervision and review of performed audit work may lead to increasing the effectiveness of audit procedures.

There is an inverse relationship between materiality and audit risk level, namely, the higher the materiality level, the lower the audit risk and vice versa. The auditor takes into consideration the inverse relationship between materiality and audit risk when determining the nature, timing and extent of audit procedures.

For a given level of audit risk, the acceptable level of detection risk implies an inversely proportional relationship with the assessed risks of material misstatement at the assertion level. For example, the higher the risk of material misstatement the auditor believes to exist, the less the risk of detection is acceptable and therefore the more persuasive the audit evidence necessary to the auditor.

Detection risk, however, can only be reduced, not eliminated, due to the inherent limitations of an audit. Detection risk can be reduced by auditors, for example, by increasing the number of sampled transactions for detailed testing. However, a certain detection risk will always exist.

5. Conclusions

In April 2014, the Council of Ministers adopted audit legislation that has been under debate since October 2010. With the passage of the legislation essentially complete, auditors will work to support its successful implementation and to help serve the needs of companies and investors, strengthen the capital markets and enhance confidence in financial reporting. There is a need for a clear overview of the company's risk and control framework which will allow the audit committee to monitor and evaluate the effectiveness of the company's internal control, risk management and reporting. When assessing audit risk, the objective of the auditor is to identify and appropriately assess the risks of material misstatement, thereby providing a basis for designing and implementing responses to the risks of material misstatement - inherent risk or control risk. Such risks may appear due to error or fraud, so the auditor should perform risk assessment procedures to make sure the financial statements are presented fairly, in all material respects, in conformity with the applicable financial reporting framework. Misapplication or omission of critical audit procedures may result in a material misstatement remaining undetected by the auditor. Some detection risk is always present due to the inherent limitations of the audit such as the use of sampling for the selection of transactions.

We continue to have questions, however, as to the legislation's economic costs and its impact on audit quality and shareholder choice, especially in light of already existing national requirements. We look forward to the evolution of the role and relevance of audit and how the audit profession can continue to serve the public interest by contributing to enhanced investor confidence in the capital markets.

6. Acknowledgement

This paper has been financially supported within the project entitled “SOCERT. Knowledge society, dynamism through research”, contract number POSDRU/159/1.5/S/132406. This project is co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. Investing in people!

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IFRS Adoption, Firm Traits and Audit Timeliness: Evidence from Nigeria

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Abstract: Audit timeliness is an important ingredient of quality financial reporting. Stale information might only benefit little to stakeholders in their decision making process. With the recent adoption of the International Financial Reporting Standards in Nigeria, the work of the auditor has seemingly become complicated. The question then emerges, if such adoption affects the timeliness of audit reports. This study empirically investigates the impact of IFRS adoption and other associated explanatory variables on audit timeliness in Nigerian deposit money banks for the period 2010 to 2013. Panel regression analysis reveals a positive significant impact of IFRS adoption on audit timeliness. Results also indicate that firm age, firm size and auditor firm type are significant predictors of audit timeliness in Nigeria deposit money banks. The study recommends that auditor firms should make stringent efforts to acclimatize with the complexities of the IFRS transition process so as to reduce audit report delays. Also reporting agencies should come up with regulations, deadlines and benchmarks for issuance of independent audit reports.

Keywords: financial reporting; audit delay; audit report; annual reports; Nigeria

JEL Classification: M40; M42

1 Introduction

IFRS is an international financial reporting standard issued by the International Accounting Standards Board (IASB), an independent organization registered in the United States of America (USA) but based in London, United Kingdom. They pronounce financial reporting standards that ideally would apply equally to financial reporting by public interest entities worldwide.

The adoption of IFRS in over 120 countries is a matter of global relevance among various countries of the world due to quest for uniformity, reliability and

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AUDŒ, Vol. 11, no. 3, pp. 106-119

comparability of financial statements of companies. Nigeria has joined the League of Nations reporting IFRS with all listed companies and significant public interest entities required complying with IFRS for periods ending after 1 January 2012.

With the adoption in IFRS in Nigeria, the language of business is expected to be one that can be generally known and understood by most local and international investors. Companies are mandatorily required to give more information on the financial statements being reported upon. Nigeria which has her own peculiar GAAPs is now required to comply with the IFRS provisions which may be inconsistent to previously applicable accounting principles. The legal frameworks for preparing financial statements are spelt out by Companies and Allied Matters Act Cap C20, Laws of the Federation of Nigeria, 2004. Businesses in banking and insurance are subjected to banks and other financial institutions Act (BOFIA) and Insurance Act respectively. The IFRS provisions do not obviously recognize these local laws. There is a need to amend these laws if IFRS is to be fully applied in Nigeria.

The inherent challenges in the conversion process for listed companies to IFRS are numerous and have been acknowledged by the Nigerian Stock Exchange. Little wonder a 30 day extension was granted to many listed companies that could not meet up with the deadline for presenting periodic filings in accordance to the provisions of the IFRS (Martins and Akpolo, 2013).

Just like in several other countries, the adoption of International Financial Reporting Standards (IFRS) poses quite a number of challenges. A handful of these areas with seeming hitches to the smooth transition to IFRS have been investigated and various recommendations proffered. However, the extent to which the adoption of IFRS would influence audit efficiency and eventually timeliness remains a lingering question yet to be furnished with answers.

Audit timeliness is well acknowledged as one of the quality traits of corporate financial reporting. It is a pointer which indicates if financial statements can convey information to stakeholders as timely as possible.

It is basically a reflection of the number of hours required to perform the tasks that is influenced by the amount of interim audit work performed, the number of auditors assigned to the engagement and the number of extra hours needed (Lawrence and Glover, 1998). Yaacob and Che-Ahmad (2011) demonstrate that it is usually linked to audit efficiency, which measures how competent the auditors are in performing their duty to arrive at an audit opinion that represents the true picture of company operation. Information asymmetry becomes a factor to contend with when there is an audit reporting lag as there is possible diminution in information that eventually gets to the stakeholders.

The increase in the reporting lag reduces the information content and relevance of the documents (Modugu, Eragbhe and Ikhatua, 2012). As such, the shorter the time between the end of the financial year and the publication date, the more the benefits that can be derived from the financial statements. Little wonder Abdulla (1996) argues that the delay in releasing the financial statement is most like to trigger uncertainty associated with the decisions made based on the information contained in the financial statements. Timeliness in financial reporting is a salient characteristic of accounting information and as such, an essential ingredient for a well functioning capital market. Leventis et al (2005) document that financial reporting timeliness helps in attracting capital and maintaining investors confidence in the capital market. It promotes the efficiency of the market in pricing and evaluation functions and mitigates insider trading.

Audit timeliness has been a concern for several decades; studies into the timeliness of accounting information have become an important issue now than ever as a host of factors that are possibly associated with it have been investigated. Most common factors have been client size, financial performance, debt structure, client complexity, type of industry, ownership structure and auditors international affiliation (Bamber, Bamber & Schoderbek, 1993; Jaggi and Tsui, 1999) and recently corporate governance dynamics (Abullah, 2007).

With the adoption of IFRS in Nigeria, companies are mandatorily required to give information that now comply with IFRS provisions which are quite not accustomed to them. External auditors have vital roles to play in ensuring compliance to the provisions of the standards and therefore a current study on the effect of IFRS adoption on the timeliness of audit reports in Nigeria is in the right direction as there obviously appears to be dearth of literature in this area. This study is propelled to fill this gap.

1.2 Research Questions

This study attempts to provide answers to the following fundamental questions:

i. What is the effect of IFRS adoption on audit timeliness of deposit money banks in Nigeria?

ii. Do firm characteristics impact on audit timelines of deposit money banks in Nigeria?

1.3 Objective of the Study

This study is designed to achieve the following objectives:

i. To examine the concept of audit timelines in corporate disclosures of deposit money banks in Nigeria.

ii. To ascertain the impact of IFRS adoption on audit timeliness in corporate disclosures of deposit money banks in Nigeria.

iii. To investigate the extent to which firm traits impact on audit timeliness in corporate disclosures of deposit money banks in Nigeria.

1.4. Research Hypotheses

In line with the preceding research questions, the following null hypotheses have been formulated:

H_{01}: IFRS adoption has no significant impact on audit timeliness of annual reports of deposit money banks in Nigeria

H_{02}: Firm size has no significant relationship with the audit timeliness of annual reports of deposit money banks in Nigeria.

H_{03}: The age of the firm has no significant impact on audit timeliness of annual reports of deposit money banks in Nigeria.

$H_{04:}$ Audit firm type has no significant impact on audit timelines of annual reports of deposit money banks in Nigeria.

2. Prior Literature

The transition to new standards is a major concern among preparers of financial statements, directors and auditors (Yaacob and Che – Ahmad, 2012). Such is expectedly going to demand more time and effort to provide assurance since it requires increased disclosure (Hoogendoorn, 2006).

According to Ettredge, Li and Sun (2006), the introduction of section 404 of Sarbanes – orley Act 2002 (SOX) demanded greater audit works and consequently expected to increase audit delay. In the US, the SOX 404 has been passed as a mechanism to assess the internal control quality by the management and external auditors. Going by the understanding that timeliness of reports is one of the yardsticks to judge the quality of financial reports, Davis (2007) compares the audit delay between pre and post SOX enactment years. The descriptive statistics demonstrate that the entire sample average audit delay increases from non – SOX period to SOX period by 68% (39 days to 65 days) and the major increase is recorded during the first year of transition (2004).

Ettredge et al. (2006) applied more precision in their study by directly utilizing external auditor assessment of Internal Control over Financial Reporting (ICOFR) by comparing a year preceding (2003) and first year (2004) of Section 404 enforcement. The study documented that reported material weaknesses in internal control over financial reporting (ICOFR) are positively associated with longer audit report lag. Conclusively, the researchers demonstrated that the introduction of new regulation has brought about a significant delay in issuance of audit report.

More specifically, Yaacob and Che – Ahmad (2011) employ a fixed effects regression on a panel data of companies listed on the main board and second board of Bursa Malaysia for the period 2004 – 2008. Results of the regression revealed a significant increase on the length of time to issue audit reports after IFRS adoption in Malaysia. The study demonstrated the complexity of the issuance of the new IFRS indicating that auditors required more know how in performing their audit engagement. The researchers in another related study in 2012 investigated the extent to which FRS 138 (a new IFRS in Malaysia) affected audit efficiency. Results proved a significant positive relationship between FRS 138 adoption and audit delay.

Several works have been conducted on the nexus between firm size and audit delay. Givolry and Palmon (1982) found no significant relationship between the size of the company and audit delay. The sample for their study composed of COMPUSTAT industrial firms in 1973 and 1974. Regression results show that only complexity measure was significantly associated with audit delay while size had no impact.

Owusu – Ansah (2000) investigated empirically the timeliness of annual reporting by 47 non financial companies listed on the Zimbabwe Stock Exchange. Results identified size as a statistically significant predictor of annual report timeliness of sample firms. Furthermore, Fagbemi and Uadiale (2011) in examining the determinants of timelines of audit reports using data from 45 listed Nigerian firms found that company size has a strong negative relationship with timeliness of financial reports. There are some justifications why company size could be negatively related to audit delay. Larger companies may be hypothesized to complete the audit of their accounts earlier than smaller companies since they have stronger internal controls which in turn should reduce the propensity for financial statements errors and thus enable auditors to rely on controls more extensively (Carslaw & Kaplan, 1991). Also, larger firms have the resources to pay relatively higher audit fees soon after the year end and may be able to exert greater pressures on auditors to start and complete the audit in time (Carslaw & Kaplan, 1991).

The auditor firm type has been used by researchers to explain for audit timelines. It is more likely that the larger audit firms (KPMG, Ernst and Young, PWC, Akintola Williams and Delloite) have a stronger incentive to finish their audit work more quickly in order to maintain their reputation (Modugu, Eragbhe & Ikhatua, 2012).

Some researchers opine that the big four have better access to advance technologies and specialist staff when compared to non–big four firms (Dibia and Onwuchekwa, 2013).

As such, differences in well–programmed audit procedures and technologies can lead to differences in audit report lags between the two groups of auditors (Schwartz and Soo, 1996). Al-Ajmi (2008) investigated the timeliness of annual reports of an unbalanced panel of 231 firms - years of financial and non – financial companies listed on the Bahrain stock exchange during the period 1999 – 2006. The study found no evidence to support the effect of auditor type on reporting timeliness. Leventis, Weetman and Caramanis (2005) examined the audit report lag of companies listed on the Athens stock exchange at the time of Greece's transition from an emerging market to a newly developed capital market. The study found a statistically significant association between the audit report lag and the type of auditor. Furthermore, Bonson–Ponte, Flores and Escobar–Rodriguez (2008) analyzed the factors that determined delays in audit report signatures in the Spanish markets for the period of four years (2002 – 2005). They observed that the audit firm type showed no significant relationships with audit delay.

The age of a company has been identified in prior literature as a trait having likely impact on the timeliness of annual reports (Dibia and Onwuchekwa, 2013). The older the firms, the greater the likelihood for them to have strong internal control procedures. Owusu – Ansah (2000) identifies company age as a statistical significant predictor of the timeliness of annual reporting in his study of 47 non – financial companies listed on the Zimbabwe Stock Exchange. According to Hope and Langli (2008), younger firms have less experience with accounting controls and are expected to have more control weaknesses that could trigger reporting delays. Courtis (1976) did not find age a significant attribute in his study of 204 listed companies in New Zealand. However Iyoha (2012) while examining the impact of company attributes on the timeliness of financial reports in Nigeria using annual reports of 61 companies for the period of 1999 to 2008 found age to be a significant influencing factor on timeliness of financial reports.

3. Methodology

3.1 Population and Sample

The population of the study is made up of all deposit money banks quoted on the Nigeria Stock Exchange (NSE). As at January 2013, there were twenty one (21) commercial banks listed on the Nigeria stock exchange. Sample selection is based on a filter. The sample consisted of the nine (9) Nigerian banks that made the Forbes Africa Top 25 companies (2012) in West Africa. These companies were assessed by Forbes Africa as successful risk takers and job creators that have sustained excellence. The Forbes Award was ranked in terms of market capitalization, revenue and profit of the firm. Expectedly, these banks must have demonstrated a high level of commitment and compliance to the commencement of the adoption of IFRS in the Nigerian banking system, more so with the effort made by the Central Bank of

Nigeria in 2010 for partial adoption of IFRS with a view to integrating the banking system into the global best practices in financial reporting and disclosures. The sample makes forty three percent (43%) of the population of deposit money banks in Nigeria. The list is found in appendix 1.

3.2 Data Collection Source

The study uses data from the secondary source. Data were obtained from annual reports of the sample firms since such reports are a source of raw data for firm studies.

Gibson and Guthrie (1996) demonstrate that annual reports are used because organizations commonly signal what they perceive as important through such reporting mechanism, and therein, important issues are featured, reported and discussed. Data were collected from the annual reports for the period 2010 – 2013. This period is considered crucial to this study since it captures two years pre-adoption of IFRS in Nigeria and two years IFRS post – adoption years.

3.3 Tool of Analysis/Model Specification

This study employs the multivariate technique for the purpose of data analysis. A multiple regression model has been structured using the ordinary least squares (OLS) method. The multiple regression is the appropriate method of analysis when the research has a single metric dependent variable (Agbadudu, 2002). The tool permits the extraction of parameter estimates which show the contribution of the various explanatory variables in predicting the dependent variable.

The model uses a single dependent variable audit timeliness denoted by audit reporting lag and four explanatory variables (IFRS adoption, firm size, firm Age and Audit firm type). The equation is stated as follows:

$ARLL = b_0 + b_1\ IFRS + b_2\ FSIZL + b_3\ FAGEL + b_4\ KPMG + b_5\ PWC + b_6\ EAY + b_7\ AWD + eit.$

Where ARLL = Audit report lag
IFRS = IFRS adoption
FSIZL = Firm Size
FAGEL= Firm Age
KPMG = KPMG (Auditor Firm Type)
PWC = Price Water House Coopers (Auditor Firm Type)
EAY = Ernst and Young (Auditor Firm Type)
AWD = Akintola Williams and Deloitte (Auditor Firm Type)
Eit = Random Stochastic Term

3.4 Measurement of Variables

1. ***Audit Reporting Lag:* -** A proxy for audit timeliness is measured as the number of days elapsed between the balance sheet date and the audit report date when the auditors sign – off the audited annual report and accounts. A natural logarithm is applied to this figure.
2. ***IFRS Adoption:* -** This variable is captured as a dummy variable. It carries a code of 1 for period after IFRS adoption and a code of 0 for period before IFRS adoption
3. ***Firm Size:* -** This variable is measured as the sum of the total assets of the bank. A natural logarithm is applied to this sum in order to mitigate problems of heteroscedasticity, which is usually associated with large figures.
4. ***Firm Age:* -** This is measured as the number of years the company has existed. A natural logarithm is applied.
5. ***Auditor Firm Type:* -** This variable is captured as a dummy variable. The code of '1' is assigned if the auditor is any of the big four audit firms in Nigeria (Price Water House Coopers, Ernst and Young, KPMG or Akintola Williams Deloitte) and a code of '0' if otherwise.

Interestingly, all the sample firms employed either of the 'big four' as their independent auditor. In this light when any auditor firm is being investigated, a code of '1' is assigned while other auditor firms are assigned '0'.

4. Results and Discussions

This section deals with the presentation and analysis of the empirical results obtained from the model estimation process. The analyses were carried out with the aid of computer software (SPSS version 17.0).

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ARL	36	46.00	242.00	95.6111	37.82915
FAGE	36	19.00	52.00	29.6111	9.76372
FSIZ	36	1789.00	3599559.00	1.2536E6	9.25102E5
Valid N (listwise)	36				

Table 1 presents the results of number of days taken to complete the auditing process of annual reports of sample banks. Results reveal that it takes a minimum of 46 days and a maximum of 242 days while mean of 96 days was documented. Thus the range of 46 days to 242 days is registered in this study. However it takes an average of 96 days (three months) for Nigerian banks to get financial reports signed by independent auditors. This average still falls around the maximum limit of 90 days set by Corporate Affairs Commission (CAC) and Securities and Exchange Commission (SEC). However, it could get better. The mean of total firm size (total assets scaled by 1 million) is 1.2536E6 with amount ranging from minimum of N1,789 to maximum of N3,599,559. For firm age, the minimum stood at 19 years while maximum was 52 years, average firm age pegged at 30 years.

Tables 2 – 5 display the multiple regression analysis results of the statistical relationship between audit timeliness (natural log of days) as the dependent variable. IFRS adoption is the major explanatory variable; however the model incorporates associated firm characteristics hypothesized to predict audit timeliness.

Table 2. Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	FAGEL, AWD, IFRS, PWC, FSIZL, EAY, KPMG[a]	.	Enter

a. All requested variables entered.

Table 3 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.713[a]	.508	.385	.11768	1.763

a. Predictors: (Constant), FAGEL, AWD, IFRS, PWC, FSIZL, EAY, KPMG

b. Dependent Variable: ARLL

Table 4 ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.400	7	.057	4.128	.003[a]
	Residual	.388	28	.014		
	Total	.788	35			

a. Predictors: (Constant), FAGEL, AWD, IFRS, PWC, FSIZL, EAY, KPMG

b. Dependent Variable: ARLL

Table 5. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.964	.321		6.120	.000
	IFRS	.142	.046	.452	3.103	.004
	KPMG	-.287	.140	-.955	-2.046	.050
	PWC	-.305	.144	-1.005	-2.114	.044
	EAY	-.295	.152	-.628	-1.945	.042
	AWD	-.068	.124	-.145	-.551	.586
	FSIZL	-.082	.030	-.451	-2.753	.010
	FAGEL	.449	.181	.391	2.474	.020

a. Dependent Variable: ARLL

Result from table 3 show that thirty nine (39) percent of the variability in timeliness of audit reports can be explained by the regressors – IFRS adoption, audit firm type, firm size and firm age. The Durbin Watson statistic, a measure of detecting the presence or absence of auto correlation stood at 1.763. Hair et al., (2012) demonstrate that if the value of Durbin Watson is less than 2, there is an indication of the absence of autocorrelation in the model. Along this line our Durbin Watson statistic signals the absence of auto correlation.

The F statistic in table 4 shows the overall significance of the plane; its P value < 0.05 guarantees the statistical significance of the model at 95% confidence level.

Regression results on table 5 indicate that the IFRS adoption variable has a significant positive impact on audit reporting lag. In other words, the adoption of IFRS by deposit money banks has a significant effect on the audit reporting lag. This result support findings from past studies on the impact of new regulations on audit timeliness. The possible explanation for the increase in audit reporting lag is due to the additional workload required to audit more complicated financial statements (Yaacob and Che – Ahmad, 2011). The findings also find support from the works of Ettredge et al. (2006) who document that audit timeliness worsened due to adoption of disclosure requirements under SOX 404.

Firm size was also found to have a significant negative impact on audit timeliness. As such, the bigger the firm, the less the audit reporting delay. This finding is corroborated by the works of Fagbemi and Uadiale (2011) who document in their study that company size has a strong negative relationship with timeliness of financial reports. Bigger firms are expected to have better developed internal controls which would forestall the existence of errors in financial statements.

This research also documents that firm age is a significant positive predictor of audit timeliness. The work of Dibia and Onwuchekwa (2013) lends support to this finding. They demonstrate in their study that the younger the firm, the more the existence of control weaknesses that could trigger financial reporting delays. The finding however contravenes the results of the work conducted by Courtis (1976) who did not find the age of a firm as a significant predictor of timeliness of financial reports.

Auditor firm type has been ascertained in this study to significantly contribute to the timeliness of independent audit reports. The findings of this study showed that audit report lag was significantly reduced when audit firms such as KPMG, Price Water House Coopers and Ernst and Young conducted the audit. The study demonstrated that Akintola Williams and Deloitte had no significant impact on the audit timeliness of study banks. The results of this study finds support in the work of Leventis Weetman and Caramis (2005) who in their examination of companies listed on the Athens Stock Exchange found a statistically significant association between the audit report lag and the type of auditor.

5. Conclusion

The thrust of this paper is to document the results of an empirical investigation of the extent to which the adoption of International Financial Reporting Standards (IFRS) affects the timeliness of audit reports of Nigerian deposit money banks. Associated explanatory factors (Firm age, Firm size and auditor type) of audit timeliness were also incorporated into the model specification.

The study is motivated from the concern of complexities that might arise in the adoption of IFRS in Nigerian banks and the extent to which such could challenge the audit firm's efficiency to produce timely audit reports.

Results of the parsimonious regression model shows that IFRS adoption significantly increases audit report delay and concludes that the adoption of IFRS in Nigerian banks has significantly increased the length of time required to issue an audit report the illustrating the complexity of the IFRS adoption.

In addition, the findings of the study register evidence to the fact that the firm size, firm age and auditor firm type are also significant predictors of audit timeliness.

The study recommends that auditor firms should get themselves apprised and well–equipped with the demands of the effective transition process from local GAAPS to IFRS. The cost of audit reporting delays are huge and should not be trivialized. Auditing regulatory bodies in Nigeria might have to come up with regulations as to evaluating the timeliness of audit exercises amongst their members. Regulatory agencies such as the Central Bank of Nigeria (CBN) and Securities and Exchange Commission should amend relevant laws on financial reporting with a view to reducing the audit reporting lags and stipulating a mandating reporting time for all banks. Non–compliance with such bench mark should attract stiff penalties so as to encourage timeliness in audit reports issuances. It is expected that an adherence to these recommendation would effectively reduce audit reporting delays most especially as it pertains the adoption of IFRS.

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Appendix 1: Sample Firms

1. Zenith Bank Plc
2. Eco Bank Trasnational Incorporated
3. First Bank Nigeria Plc
4. Guaranty Trust Bank Nig. Plc
5. United Bank of Africa
6. Access Bank
7. Union Bank of Nigeria
8. Stanbic Ibtc
9. First City Monument Bank

The Effect of Audit Fees on Auditors Negligence

Segun Idowu Adeniyi[1]

Abstract: The research work examined the effect of audit fees on auditors' negligence. Failure to report certain weaknesses because of the auditors' negligence in his reports to management often affect the performance of corporate organizations negatively. The specific objective is to ascertain whether audit fees influences auditors' negligence. Business analysts, Investors and Academia were used to determine the effect of audit fees on auditors' negligence. Survey design was adopted for this study. Copies of questionnaires were administered to 115 sample respondents. Analysis of variance (ANOVA) was used to analyze data collected statistically at 5% or 0.05 level of significance. Regression analysis was used, with the aid of statistical package for social sciences (SPSS) 20.0 soft ware. The test showed that audit fees lead to auditors' negligence. The researcher recommends that the auditing profession should make significant regulatory pronouncement in this regard. Consequently, there is a need to strengthen the capacity of the regulatory bodies and reviewthe adequacy of statutory enforcement provisions.

Keywords: audit fees; auditor's negligence; professional ethics; competence

JEL Classification: M42

1. Introduction

The auditor, by virtue of his appointment and in course of executing his assignment, should demonstrate some professional skills and competencies as well as upholding requisite professional ethics, competence, fairness, due care, objectivity and independence are some of the requirements. Cullinan, L. (2004) said if the auditor fails to meet the standard of care required and consequently a loss is suffered by any of the affected parties due to auditor negligence, remedy can be obtained against the auditor in a constituted court of law. According to Webster's New College Dictionary (2005), negligence is to exhibit a lack of due care or concern, or to fail to care for or give proper attention. Therefore, audit negligence means some act or omissions which occur because the auditor failed to exercise that degree of reasonable skill and care which is reasonable to be expected in the circumstances of

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the case. What is reasonable is not what a super careful and expert auditor would do but what an ordinary skill man (or woman) would do in the circumstances.

Arens (2002) said, this auditor negligent may lead to audit failure due to a serious distortion of the financial statements that is not reflected in the audit report, and the auditor has made a serious error in the conduct of the audit. Odum, (2010) opines that where a company suffers loss or damages as a result of the failure of its auditor to discharge the fiduciary duty imposed on him by section 368(1) of CAMA 2004, The bankruptcy of Enron in 2001 and the resulting collapse of its auditor, Arthur Andersen, in 2002, Cadbury Nigeria Plc in 2006 have called into question the integrity of audit profession.

1.1. Statement of Problem

There have been series of enormous corporate failures, such as Enron, WorldCom, Hollinger, Nortel, Cadbury Nigeria Plc, Intercontinental Bank Plc in Nigeria, etc. involving fraudulent audited financial statements. Despite the measures taken by the professional accounting bodies in Nigeria to minimize audit failure, the problem still remains. The cry of the users of audit report has invariably been “why are auditors negligent over their duties?” The researcher examines the extent in which audit fees affect auditors’ negligence.

The specific objective for the study is to ascertain whether audit fees influences auditors’ negligence. The research work is guided by this hypothesis:

Ho: There is no significant relationship between audit fees and auditors’ negligence.

1.2. Justification for the Study

The outcome of the study will lead to the formulation of a policy that strengthens the profession position on how auditors are expected to go about their professional duty. It would encourage the professional bodies, such as ICAN, ANAN who gave license to their members to practice as an accounting firm to make a pronouncement about fees to be collected by audit firms in order minimize auditors’ negligence.

1.3. Review of Related Literature

According to Webster’s New College Dictionary (2005), negligence is to exhibit a lack of due care or concern, or to fail to care for or give proper attention. Therefore, audit negligence means some act or omissions which occur because the auditor failed to exercise that degree of reasonable skill and care which is reasonable to be expected in the circumstances of the case. Palmrose, (1988) said If the auditor fails to meet the standard of care required and consequently a loss is suffered by any of the affected parties due to auditor negligence, remedy can be obtained against the auditor in a constituted court of law.

Audit failure occurs when there is a serious distortion of the financial statements that is not reflected in the audit report, and the auditor has made a serious error in the conduct of the audit (Arens, 2002). De Angelo (1981) and Simunic (1984) posit that there is an understanding that auditors face substantial economic cost when there is an occurrence of audit failure.

The audit report is the end product of every audit assignment that the auditor issues to the members of a client company expressing his opinion on the truth and fairness view regarding an enterprise's financial statements. In Nigeria, this statutory duty is provided for in Section 359(1) of the Companies and Allied Matters Act (CAMA), 1990. The auditor has a statutory responsibility by virtue of Section 359(3) of the Company and Allied Matter Act (CAMA), 2004, to issue a report to the members of the audit committee which must be statutorily set up by such a client.

According to Dictionary of accounting (2007), auditors' fees are fees paid to a company's auditors, which are approved by the shareholders at an annual general meeting. Audit fee is a fee or compensation paid by the client to the public accountant as payment for services that have been done. Audit fees are divided into two categories namely the audit fee of the total audit fees paid by the client while the non-audit fee is the cost of other services that are paid out of a total audit fee. Coate, and Loeb (1997), Elitzur and Falk (1996) said, measure the amount of audit fees can be seen from the characteristics of the client (given the complexity of the audit services, audit risk and effort to get the client) and the magnitude of Public Accounting Firm (PAF) (cost structure and size of PAF).

Firth (1997) observed that Knowledge of determinants of audit fees should be of interest and importance to suppliers and users of the audit services as well as the regulators, because, this would assist the auditors to examine their cost structure, predicting future fees and measure audit efficiency. The first studies on auditing fees were performed in the 1980s. Francis (1984) argues that a large auditing firm will charge higher fees to deliver high-quality services in a competitive market in which there is a demand for service differentiation. Thus, auditing fees can be used to analyze auditors' negligence. Dickins, Higgs, and Skantz (2008) note that there are several studies using different models and variables to find the drivers of audit negligence based on audit fees but that there is no consensus in their results.

2. Methodology

Survey design was used to address the problem of this study. The participants are the Business Analysts, investors' and Academia. Audit firms were excluded from the study to avoid conformity bias, which may results when members of a profession are included as participants in the study. Audit fees were measured by the following features; client size, audit risk (leverage), audit firm size and complexity of audit services render to the client. Test items were developed to obtain audit negligent behaviour score.

2.1. Data Collection

Questionnaire was the instrument used for data collection. The structured questionnaire was administered by hand to the respondents. A four point Likert scale was employed to extract the data. The respondents were made to indicate in the questionnaire the extent they agree or disagree to the stated problems.

2.2. Procedure for Data Analysis

The statistical model chosen for the analysis of data is linear regression analysis and analysis of variance [ANOVA], with the aid of SPSS 20.0 software.

The model in its functional form was specified as follows:

AudNeg = f (, F_k)

The null hypothesis is;

There is no significance relationship between audit fees and auditors' negligence.

Audit fees were measured by the following features; client size, audit risk (leverage), audit firm size and complexity of audit services render to the client.

The model to be used to confirm this proposition is presented below:

AudNegj = B0 + B1 F_k + ej -- eqi

Bi > 0; R^2N > 0

Bi measures the impact of audit fees on audit negligence

Where:

AudNeg = Auditors Negligence

F_k = Audit fees

e = Error term

B0 …….. B3 = Coefficient

2.3. Data Presentation and Analysis

The researcher administered one hundred and sixty – two copies of questionnaires randomly to business analysts, academia and investors out of which one hundred and fifteen copies were successfully retrieved representing 71% of the number of questionnaire administered. The test concerning the parameter was carried out using Analysis of Variance and correlation coefficient.

Administration of Questionnaire

DETAILS	NUMBER OF COPIES	PERCENTAGE (%)
COPIES ADMINISTERD	162	100 %
COPIES RETURNED	115	71 %
WRONGLY FILED/UNRETURNED COPIES	47	29 %

Source: field survey 2015.

Categories of the respondents

S/N	Respondents	Total
01	Business Analysts	47
02	Investors	40
03	Academia	28
	Total	**115**

Source: field survey 2014.

The table above shows that 47 respondents are Business analysts, 40 respondents are investors while, 28 respondents are academia. This shows that the respondents understand the concept been researched. This will help to guarantee effective response of respondents to the questionnaire.

Testing of hypothesis

Ho: There is no significance relationship between audit fees and auditors' negligence.

Table 1. Model Summary: Regression coefficient for Auditors Negligence on audit fees.

	B	Beta	T=test
Constant	97.23		T=2.81,p=.048
audit fees	20.82	.96	T=-6.95,p=.002

Note, r^2 .92, F (1,4)=48.35, p= .002

Table 2. ANOVA RESULT: Audit negligence on Audit fees.

Model	Sum of square	Df	Mean square	F
Regression	69907.46	1	69907.46	48.35
Residual	5783.88	4	1445.97	
Total	75691	5		

a: dependent variable; audneg
b: predictor(constant), audit fees

Audit fees explains 92 per cent of variation experienced in auditors negligence, and this result is significant $F(1, 4) = 48.35$, $P < 0.05$.

Audit fees make a positive impact on audit negligence and this is significant, t(6.95), $P < 0.05$. Therefore, as audit fees increases, auditors' negligence increases.

Decision

Based on the analysis above, the null hypothesis (H0) is rejected while alternative hypothesis (H1) is accepted; which state that there is significant relationship between audit tenure and audit negligence.

3. Summary of Findings

Based on analyzed data, the findings in this study include the followings:

1. It was discovered that audit fees explain 92 percent of variation in auditors' negligence, and this result is significant. Big audit firm do protect their big client, because of fees derived from them, during their audit assignment.

2. We discovered that the auditing firm will be more reluctant to indicate errors in financial statements if it knows that this will significantly jeopardize its future profits.

4. Conclusion and Recommendation

Auditors tend to be negligent in performing their audit assignment when they derived higher percentage of their income from a client. Therefore, audit fees do induce auditors to be negligent in performing audit assignment. The recommendation is that the professional bodies, such as ICAN and ANAN, should make a pronouncement about fees to be collected by audit firms in order minimize auditors negligence.

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Macroeconomics and Monetary Economics

Determinants of the Current Account Balance in Nigeria, Ghana and Cote d'Ivoire

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Abstract: This study analyzed the relationship between the current account balance of the balance of payment and its determinants for the periods 1978 to 2008 in Nigeria, Ghana and Cote d' Ivoire. The analysis was based on the saving-investment theory and also in line with the intertemporal approach. Using a linear Vector Autoregressive (VAR) approach, our results show that all the variables, except the relative income (RELY), real effective exchange rate (REER) and domestic investment (INV) for Nigeria, Ghana and Cote'd'Ivoire respectively are important in explaining the long run relationship. However, there was no evidence of short run relationship between the variables and the current account balance in all the three countries. The presence of long run co-movements between the current account balance and its determinants found in this study implies the effectiveness of targeting one of the variables in influencing the long run behaviour of the other variables. The current account imbalance observed in our selected countries was unavoidable and reflected the complexity of the economic problems the countries faced during these years.

Keywords: balance of payments; relative income; reel effective exchange rate; domestic investment

JEL Classification: C52; F32; F41

1. Introduction

A striking feature of the current account balance (CAB) in West African region is the recurrent deficits. A variety of factors have been advanced in explaining these imbalances. Empirical research suggests that an overvalued real exchange rate, inadequate foreign exchange reserves, excessively fast domestic credit growth, unfavourable terms of trade shocks, inflation, low growth in partner countries and higher interest rates in industrials countries influence the occurrence of persistence current account deficits experienced by the majority of West African countries over the years. The decrease in the export prices of cocoa from Cote d'Ivoire and Ghana

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has led to a growing current account deficit in these countries. A fall in the world oil price account for the current account deficits experienced by Nigeria in the late 1980s and early 1990s. Prolonged deficits may become unsustainable, crowd out domestic saving or lead to economic instability with foreign investors unlikely to hold assets denominated in that country's currency (Opoku-Afari, 2005; Osakwe & Verik, 2009).

On the basis of the above, this paper seeks to find out the key economic determinants of the size of the current account balance in three selected West African countries. Although, there abound numerous empirical literature on the behaviour of current account balance, most of the studies are based either on the experiences of a set of developed countries or on the basis of large samples consisting of a mixture of developed and developing countries. With regard to methodological issues, most of the existing empirical literatures have a major focus on cross section and panel data analysis which have been carried out in a multi-country framework without much consideration to their time series dimension. The problem with this approach is that it is based on the assumption of homogeneity in the observed relationship across countries and can only provide a generalized picture for such economies. This paper adopts a linear Vector Autoregressive (VAR) approach to investigate the factors that may influence the behaviour of current account in each of the selected West African countries between 1978 and 2011. The countries are- Nigeria, Ghana and Cote d'Ivoire. These countries are chosen because they are considered the main economic forces of the region.

An understanding of the current account balance and its determinants will therefore, not only aid better policy prescriptions but also help policy makers to determine the main determinants which affect the size of current account balance, and consequently, to create and perform adequate macroeconomic policy measures in order to achieve sustainable level of current account balance.

The rest of this paper is structured as follows: Section 2 presents trends in current account balances of three selected economies in West Africa. Section 3 presents the theoretical, methodological and empirical literature pertaining to current account balance determination. The theoretical framework and the methodology make up section 4. Section 5 contains the estimation and interpretations of the results of the model while the conclusions and recommendations for policy complete the final section.

2. Stylised Facts on Current Account developments of Nigeria, Ghana and Cote‘d’Ivoire

Nigeria, Ghana and Cote d’Ivoire, which are the main economic forces of the West Africa sub-region with more than 80% of its wealth, have experienced varying fortunes. The current account balance in these countries has shown a remarkable variation over time.

For the periods between 1979 and 1981 Nigeria experienced surplus in its current account balance majorly as a result of substantial rises in crude oil prices. Outside these years, the country’s current account showed a deficit pattern over the period 1982-1983. The following three years marked current account surpluses to the magnitude of 10.6%, partly reflecting the tightening of trade controls during 1983-1986 periods when the government introduced the Economic stabilization Act of 1982 and the National economic Emergency Act of 1985. These austerity measures emphasized reduction in aggregate absorption, without much focus on structural issues. Between 1987 and 1988, the country experienced deficit followed by current account surplus for the period 1989-1992. However the following three years recorded deficits, followed by current account surplus up to 1997. Except for 1998, the country has been recording a current account surplus up to 2011 with a peak of 32.5% in 2005. (Figure 2.1)

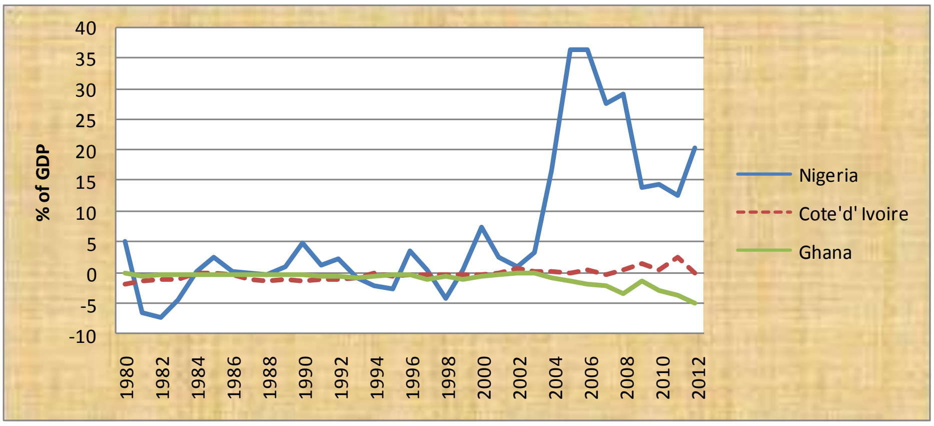

Figure 2.1. Trends in the Current Account balance of Nigeria, Ghana and Cote d’Ivoire: 1978-2012

Source: Africa Development Indicators (ADI), 2013

The current account balance in Ghana has persistently been in deficits since 1981, but with significant variation over the periods (Fig.2.1). For the period 1978-2011, the current account registered an average deficit of -4.9% of GDP. This modest average worsened significantly in the late 1990s where somewhat larger fluctuations and deficits occurred with a peak of 12.5%, 10.3% and 11.7% of GDP in 1999, 2005 and 2008 respectively. Deficits due to the first economic crisis in the 21st century are the largest ever faced by Ghana within the period under analysis and reached their peak in 2008. The deficit in the current account could mean a terms of trade shock, as Ghana's major exports cocoa and gold suffered a sharp fall in world prices in addition to rising crude oil prices on the international market during the periods.

Côte‘d'ivoire's current account balance also reveal deficits. Between 1978 and 1984, the current account balance was in deficit averaging about 12.6% of GDP. This could be attributed to the crisis of 1981-1983 in which the prices of the country's principal exports, notably coffee and cocoa slide considerably (Fig. 2.1). Although the current deficit began to narrow after 1990 currency devaluation, the trend slowed down from 1999 after which it turned surplus from 2002 to 2006 with a drop in 2007. This is possibly the result of rise in the price of cocoa on the international market. The country current account picked up again in 2009 with surplus being recorded.

Another useful way of analysing these current account developments is to cast them in the familiar savings-investment framework, where the deficit on current account is a measure of the gap between investment and domestic savings (a saving gap). An excess of investment over savings indicates that an economy needs to import resources to finance investment beyond the level of capital accumulation in the domestic economy (Osakwe & Verik, 2007).

3. Literature Reviews

3.1 Review of Theoretical Models of Current Account Determinants

A variety of theoretical models have been used to explain the determinants of the current account balance. Each of the models carries with it different economic policy implications. The traditional analysis of current account imbalances and their adjustment was based either on the so-called "elasticity approach" or the "absorption approach", while the intertemporal approach is the more recent approach.

The elasticity approach emphasizes the role of the exchange rate and trade flows in the current account adjustments. The analysis was pioneered by Alfred Marshall (1923), Abba Lerner (1944) and later extended by Joan Robinson (1937) and Fritz Machlup (1939). It is mainly based on the analysis of price elasticity of demand for imports and that of demand for exports, with respect to changes in exchange rate. It thus has the benefit of giving straightforward estimates of the price and income elasticities of exports and imports, making it easy to predict the partial-equilibrium impact on the trade deficit of expected changes in the terms of trade and relative income growth. However, the main weakness of this approach is that it is a partial equilibrium based analysis as it only looks at the traded goods market and ignores the interaction of other various markets in an economy.

The absorption approach takes cognizance of the fact that current account balance can be viewed as the difference between income and absorption, or equivalently, the difference between savings and investment. It states that if an economy spends more than it produces (i.e. absorption exceeds income), it must import from other countries for its excess consumption and spending and such economy thus runs a current account deficit. On the other hand, if this economy spends less than it produces (i.e. income exceeds absorption), it runs a current account surplus. This approach provides a more inclusive, and less misleading, framework to analyze and forecast the current account than does the elasticity approach by making it easier to incorporate determinants of financial account transactions into modelling the current account balance. Alexander (1959), is one of the most important paper evaluating this effect. Debelle and Faruqee (1996) adopted this approach in their study.

More recent theory tends to analyze current account developments on the basis of models of intertemporal maximization, either of the representative-agent or of the overlapping-generation variety. Sachs (1981, 1982), and Greenwood (1883) first focus on this approach, whileObstfeld and Rogoff (1995) among others, developed extensions to the basic model in several directions. The intertemporal approach to current-account analysis extends the absorption approach through its recognition that private saving and investment decisions, and sometimes even government decisions, result from forward-looking calculations based on expectations of future productivity growth, government spending demands, real interest rates, and so on. The intertemporal approach achieves a synthesis of the absorption and elasticity's view. The approach is widely applied by Isard et al (2001), Chin and Prasard (2003) and Mozy (2009).

3.2. Methodological Review

From the plethora of economic literature reviewed, the main methodologies explored by researchers to determine the effect of sets of macroeconomic variables on the current account balance are: accounting approach, quantity-based approach and Intertemporal Optimal approach

The Accounting Approach is a balance sheet-based approach (BSA), such as the external sustainability approach and determining the equilibrium current account as one consistent with a benchmark for the desired net foreign asset position. The BSA represents a framework for identifying Stock - based vulnerabilities and transmission mechanisms between sectors. Knowledge of balance sheet mismatches can aid policymakers in reducing and identifying appropriate policy response once a financial crisis unfold. One of the key insights of the BSA is that cross-holding of assets between residents can create internal balance sheet mismatches that can leave accounting vulnerable to external balance of payment crisis. This approach is found in the work of Milesi-Ferreti and Razin (1996).

Thequantity-based approach such as the macro-balance approach aims to identify the equilibrium exchange rate that allows for the simultaneous compliance of an external balance and an internal equilibrium, estimate of medium-term current account balances as a function of medium-term characteristics of the economy or fundamentals. One of its main objectives is the estimation of a long-term exchange rate level (or time path) consistent with the underlying fundamentals, thus allowing policymakers to recognize short-term misalignments in exchange rates. This underlying current account balance approach may however indicate an undervaluation of a currency, which nevertheless would be justified once the uncertainty over future policy is taken into account. Isard and Faruqee (1998) and Artus and Knight (1984) are some of the examples under this methodology.

The Intertemporal Optimal Approach provides econometric estimates of a reduced form equation for the current account balance as a function of fundamental variables. These models have been extensively tested using time-series econometric techniques, VAR and Panel data techniques, which use both the time and cross-sectional dimension to the data. The intertemporal approach, as it is founded on utility maximizing decisions by economic agents, it provides a better way to judge sustainability of the deficits than an approach based on aggregate relationships between saving and investment. Large deficits according to the intertemporal approach can be optimal and sustainable and therefore not a cause of concern for policymakers. Debelle and Faruqee (1996), Calderon, Chong and Loayza (1999), Chin and Prasad (2000), Gruber and Kahn (2007) are examples under this methodology.

3.3. Empirical Review of Literature

Evidence from past studies indicates that there are conflicting results on the same data sets of variables that determines the current account balances.

Aristovnik (2007) used a (dynamic) panel-regression technique to characterize the properties of current account variations across selected MENA (Middle East and North African countries) economies between 1971 and 2005. The results indicate that higher (domestic and foreign) investment, government expenditure and foreign interest rates have a negative effect on the current account balance. Chinn and Ito (2007, 2008) in their extended research of the work of Chinn and Prasad (2003) find that the standard determinants, such as demographics and income variables, used in the work of Chinn and Prasad (2003) cannot alone explain the upswing in Asian countries' current account. Therefore, they augment Chinn and Prasad (2003) specification with indicators of financial development and legal environment that are likely to affect saving and investment behaviour and economic growth. Gruber and Kamin (2007), using a panel data of 61 countries over the period 1982-2003 and including the standard current account determinants such as per capita income, relative growth rates, fiscal balance, demographic factors and international trade openness find that the Asian surpluses can be well explained by a model that incorporates, in addition to standard determinants, the impact of financial crises on current accounts. However, their model fails to explain the large U.S. current account deficit even when the model is augmented by measures of institutional quality. Saqib et al (2007) utilized cointegration and error correction techniques in estimating the long and short run behavioural relationship between Pakistan's current account balance and difference economic variables. The empirical results advocate that there exists a significant relationship between the current account balance and the balance of trade, domestic saving, total consumption and workers remittances during the period 1972-2005. Doisy/Hervé (2003) estimates a benchmark for current account positions applying a solvency constraint and also identifies determinants of the saving-investment balance. They include the fiscal balance, the share of the private sector in value added, the per capita income, the ratio of capital income to wage income and the openness of an economy. Mozy (2009), results reveal that factors that matter in determining current account balance in oil countries are fiscal balance, oil balance, oil wealth, age dependency and the degree of maturity in oil production. Calderon, Chong and Loayza (1999) also investigated empirical relations between current account developments and a large number of macroeconomic variables proposed in the literature on the panel sample of 44 developing countries during the period 1966-1995. They adopt an econometric methodology that controls for simultaneity and reverse causation through a reduced-form approach rather than adopting a particular structural model and distinguishing between within economy and cross-economy effects. They observed the following: current account deficits are moderately persistent, increase in GDP causes increase in current account deficit, temporary increases in the level of public or private savings has a positive effect on current account balance (while permanent increases are not significant), temporary shocks due to worsens in terms of trade or real exchange rate appreciation causes increase in current account deficits (while permanent impacts are no significant), increase in the level of economic growth in developed countries and increase in the level of world interest rates reducing the level of current account deficit of developing countries.

Yang (2011) examines both the long-run and short-run impacts of initial stock of net foreign assets, degree of openness to international trade, real exchange rate and relative income on current account balances for eight selected emerging Asian economies over the period 1980-2009, making use of the cointegrated VAR (Vector Autoregression) methodology. The paper finds that current account behaviours in emerging Asian economies are heterogeneous. Initial stock of net foreign assets and degree of openness to international trade are important factors in explaining the long-run behaviour of current accounts. Belke and Dreger (2013), uses a panel econometric techniques to examine the determinants of current account imbalance in the Euro area. The analysis show that lack of competitiveness was responsible for the external deficits of the Euro countries experiencing external deficit cum debt crisis while the evidence is not feasible for surplus countries.

4. Theoretical Framework and Model Specification

Economic theory provides an established theoretical /conceptual framework for analyzing the determinants and the implications of current account balances. Since a country's current account balance is the counterpart of the difference between the country's total savings and total investment expenditure, its determinants must be found among the factors that may cause saving and investment within a country to differ in any period of time.

Following the work of Herrmann and Jochem (2005), this study attempts to empirically test some of the determinantsof the current account as suggested by saving-investment theory, also in line with the intertemporal approach as a benchmark to define the factors that affect the current account in our selected countries.

The starting point of the empirical analysis is the accounting identity of the current account (CA) which is equal to the difference between domestic saving (S) and investment (I).

Taking the equation for national income

$$Y = C + I + G + X - M \qquad (1)$$

Defining gross domestic savings as S =C + I + G, equation (1) becomes

$$CA = X - M = S - I \qquad (2)$$

This study aims to focus on pattern of domestic savings and domestic investment and basic identity is:

$$C = S - I \qquad (3)$$

For normalization purposes and to remove heteroskedasticity that usually plaque the estimation of nominal variable equation, all variables are expressed as ratios of GDP (Y) and thus we have:

$$\frac{CA}{Y} = \frac{S}{Y} - \frac{I}{Y} \qquad (4)$$

We specify the domestic saving to GDP ratio (S/Y) as a function of different economic variables, including domestic real GDP per capita (Y/ N) relative to the real GDP per capita of a reference country (Y */ N*) , the real effective exchange rate (REER) and the ratio of domestic investment to GDP (I/Y). It is obvious that domestic investment plans by private agents will affect private saving ratios to the extent that these are financed domestically.

Our basic private saving specification is the following:

$$\frac{S}{Y} = f\left[\frac{Y}{N}\Big/\frac{Y*}{N*}, REER, \frac{I}{Y}\right] \qquad (5)$$

In addition to the basic specification, the following financial and demographic factors are considered to explain the domestic saving rate: (i) the financial deepening (M2) (ii) the dependency ratio (DER). The extended domestic saving specification reads as:

$$\frac{S}{Y} = f\left[\frac{Y}{N}\Big/\frac{Y*}{N*}, REER, \frac{I}{Y}, M2, DER\right] \qquad (6)$$

The national real per capita income (Y/N) in relation to the real per capita income of the world or of a reference country (Y*/N*) represents an important factor in explaining the current account and characterizes an economy's stage of development. Anticipating real convergence and expecting a higher income in the future, consumers in emerging economies take on debt in order to smooth their long-term consumption.Besides the consumption smoothing the comparatively high capital productivity provides an important explanation for the fact that current account deficits are typical of catching-up countries. However, by considering fixed investment, this component will explicitly be taken into account below. Therefore the estimated influences of the relative per capita income exclusively reflect consumption effects.

Substituting equation (4) into accounting identity of current account yield

$$\frac{CA}{Y} = f\left[\frac{Y}{N}\Big/\frac{Y*}{N*} REER, \frac{I}{Y}, M2, DER\right] - \frac{I}{Y} \qquad (7)$$

Domestic investment is taken into the equation both as determining factor of private saving, as well as an autonomous variable influencing directly the current account balance.

A linear representation of equation (5) can be written as:

$$\frac{S}{Y} = \beta_0 + \beta_1 \left[\frac{Y}{N} \Big/ \frac{Y*}{N*} \right] - \beta_1 REER + (\beta_3 - 1)\frac{I}{Y} + \beta_4 M2 + \beta_5 DER \qquad (8)$$

Where

$(\beta_3 -1) = 0$, and fixed domestic investment is assumed to be completely financed by domestic savings (Feldstein-Horioka hypothesis).

4.1. Model Specification

Following the above analysis, we estimate a model which may be expressed in the following general form:

$$CAB = \beta_0 + \beta_1 RELY + \beta_2 REER + \beta_3 INV + \beta_4 M2 + \beta_5 DER + \mu \quad (9)$$

Where: CAB is current account balance, RELY is relative income (Real gross domestic Product), REER is real effective exchange rate (log), INV is domestic Investment, M2 is Financial deepening and DER is a dependency ratio

4.2 Definition of variables and Source of data

- **Relative Gross Domestic Product (RGDP):** It is defined as per capital income of the countries to the U.S dollars. This variable captures the stage of development effects. The stages of development hypothesis for the balance of payment suggests that a small open-economy that starts from relatively low domestic income is expected to have low saving, as the optimal consumption levels are high relative to current income.We expect relative real GDP per capita to be positively related to private saving and current account as the economy catches up and a higher level of development is achieved.
- **Real effective interest rate (REER):** Changes in the real effective exchange rate play an important role in the relative income and asset position of an economy.Thus, an increase in REER is expected to decrease private saving and the current account. However, a temporary real appreciation should result in an improvement of the current account according to the consumption smoothing hypothesis. Overall, the link between the real exchange rate and saving ratio can only be determined empirically.
- **Domestic Investment (INV)**: It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital. It has the effect of reducing the current account balance. So a positive relationship is expected between current account and Investment

- **Financial Deepening (M2)**: Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition of money supply is frequently called M2
- **Dependency ratios (DER)**: Age profile of the population is likely to be a structural determinant of domestic saving. An increase in the dependency ratio will decrease the saving ratio because, according to the life-cycle hypothesis, the young and the old are net consumers. However, other factors like the desire of the elderly to leave bequests, the uncertainties about the lifespan after retirement and the financial support that will be required, as well as the public-pension portion of their incomes, may urge them to save rather than spend. Consequently, the effect of the demographic variable on private saving and the current account may be positive or negative.

The study uses annual data series for analyzing current account determinants for the three selected West African countries: Nigeria, Ghana, and Cote d'ivoire. The main data source is the African Development Indicators (ADI) 2013 and the IMF's World Economic Outlook (WEO), 2012.

5. Estimation Techniques

In order to determine the potential relationships among the various variables that determine the current account balance through the inter-temporary approach, the Johansen cointegration and error correction methodology is to be applied. This test, however necessitates that variables used in a given model be stationary (i.e. have no unit root) which means that their stochastic properties are time invariant. A number of studies have shown that models with nonstationary variables tend to result in spurious or "nonsensical" regressions and unreliable test statistics. Yet, a non-stationary variable can, if appropriately differenced, achieve stationarity (Granger, 1986). The appropriate number of differencing is called the order of integration. That is, if a time-series Z becomes stationary after being differenced d times, it is said that Z is integrated of order d, denoted by Z~I(d).

In this study, therefore, we employ vector autoregressive (VAR) based cointegration tests using the methodology developed in Johansen (1991, 1995). The purpose of these cointegration tests is to determine whether the variables in our current account balance model cointegrated or not. The presence of a cointegration relation(s) forms the basis of the vector error correction model (VECM) specification.

6. Presentation of Results of the Model

6.1 Unit Roots Test

Table 6.1. Unit root/Stationarity tests (with intercept and Trends)

	Augmented Dickey Fuller (ADF) Test								
	Nigeria			Ghana			Cote d' Ivoire		
Variables	Level	1st Difference	Order I(d)	Level	1st Difference	Order I(d)	Level	1st Difference	Order I(d)
CAB	-3.302	-6.259	I(1)	-3.921	-4.111	I(0)	-3.342	-6.049	I(1)
RELY	-5.866	-6.588	I(0)	0.292	-8.671	I(1)	-4.267	-11.074	I(1)
LREER	-2.588	-4.004	I(1)	-3.175	-6.981	I(1)	-4.439	-6.512	I(0)
INV	-6.502	-5.719	I(0)	-3.930	-6.50	I(0)	-3.513	-4.671	I(1)
M2	-0.943	-4.826	I(1)	-1.839	-5.672	I(1)	-2.078	-3.511	I(1)
Critical Values: 1% = -4.296729 and 5% = -3.568379									

Source: Extracted from E-Views 7 Output

	Phillip-Perron (PP)Test								
	Nigeria			Ghana			Cote d' Ivoire		
Variables	Level	1st Difference	Order I(d)	Level	1st Difference	Order I(d)	Level	1st Difference	Order I(d)
CAB	-2.770	-8.0175	I(1)	4.068	-11.682	I(0)	-3.475	-7.265	I(1)
RELY	-5.866	-32.002	I(0)	-2.341	-6.871	I(1)	-4.274	-12.99	I(1)
LREER	-2.721	-3.975	I(1)	-3.200	-18.139	I(1)	-4.712	-6.59	I(0)
INV	-8.929	-7.0424	I(0)	-3.92	-14.875	I(0)	-3.548	-4.620	I(1)
M2	-1.183	-4.832	I(1)	-2.057	-5.675	I(1)	-2.078	-4.579	I(1)
Critical Values: 1% = -4.296729 and 5% = -3.568379									

Source: Extracted from E-Views 7 Output

The results for the ADF and PP statistics show that variables RELY and INV achieved stationarity at level in case of Nigeria while CAB and INV achieved stationarity at level in case of Ghana and achieve level stationarity in the case of Cote'd'Ivoire.. However, when other variables were differenced once and subjected to ADF and PP tests, the test statistics exceeded their critical values at the 1% and 5% significant level respectively. These results suggest that the series for each of the countries are integrated of order one *I(1)* and at level, I*(0)*. As mentioned in section 3, *I*(0) and *I*(1) variables could be cointegrated,. The variable DER was not reported as its integration pattern cannot be determined and as such cannot be carried into cointegration test.

6.2. Cointegration

The Johansen cointegration procedure performs two tests-Trace (λ_{trace}) and Max-eigenvalue (λ_{max}). In order to save the degrees of freedom, the highest lag length in the testing–down procedure of the lag-length tests was taken to be two for each of the countries. Table 6.2 shows the results of the Johansen tests below

Table 6.2. The results of the Johansen tests

Country	Hypothesized No. of CE(s)	Eigen value	Trace Statistic	5 Percent critical Value	Max-Eigen Statistic	5 Percent critical Value
Nigeria	r = 0	0.688970	73.32668*	69.81889*	36.20387*	33.87687
	r ≤ 1	0.464765	37.12281	47.85613	19.37651	27.58434
	r ≤ 2	0.285366	17.74630	29.79707	10.41551	21.13162
	r ≤ 3	0.147692	7.330789	15.49471	4.954041	14.26460
	r ≤ 4	0.073804	2.376748	3.841466	2.376748	3.841466
Ghana	r = 0	0.760176	100.3330*	69.81889	41.40762*	33.87687
	r ≤ 1	0.567648	58.92538*	47.85613	24.31696	27.58434
	r ≤ 2	0.465936	34.60841*	29.79707	18.18996	21.13162
	r ≤ 3	0.407856	16.41845*	15.49471	15.19616*	14.26460
	r ≤ 4	0.041272	1.222288	3.841466	1.222288	3.841466
Cote d'Ivoire	r = 0	0.745079	90.27090*	69.81889	42.37089*	33.87687
	r ≤ 1	0.546793	47.90001*	47.85613	24.53360	27.58434
	r ≤ 2	0.448823	23.36641	29.79707	18.46665	21.13162
	r ≤ 3	0.145401	4.899755	15.49471	4.870796	14.26460
	r ≤ 4	0.000934	0.028959	3.841466	0.028959	3.841466

*Note: * denote the rejection of the null hypothesis at 5% significance level respectively*

Source: Extracted from E-Views 7 Output

The results indicate that the variables under examination are cointegrated for Nigeria, Ghana, and Cote d'Ivoire at 5% level. Both tests confirm that a long-run relationship exists between the current account balance and other previously given explanatory variables for the three economies. However, the two test statistics provide different results. The λ_{trace} and λ_{max} suggest that, at 5% significance level, there is only one cointegrating relationship for Nigeria. In the case of Ghana, λ_{trace} suggests four cointegrating realationship and λ_{max} shows two cointegrating relationship. In the case of Cote'd'Ivoire, the λ_{trace} statistics λ_{max} indicates two and one cointegrating relationship at 5% significance level respectively. Johansen and Juselius (1990) suggest that for any conflict between max λ_{tmax} and trace λ_{trace}, the λ_{max} result should prevail for inferences. For ease of interpretation, we allow max λ_{tmax} to prevail and we therefore conclude that there is 1 cointegrating relationships in the current account balance model. The other interesting conclusion from this analysis is that there are cointegrating relationships between *I*(0) and *I*(1) variables, thus corroborating Harris's (1995) finding that variables integrated of different orders may be cointegrated.

The number of cointegrating relationships obtained in the previous step, the number of lags and the deterministic trend assumption used in the cointegration test are all used to specify a VECM to distinguish between the long and short run determinants of the current account balance.

Table 6.3. Johansen Cointegrating - Vector Normalized co-integrating coefficients

(Long-run dynamics)

Variables	CAB	RELY	REER	INV	M2	C
Nigeria	1.000000	-0.044438 [-0.19476]	0.927740 [7.15589]*	1.780805 [8.92645]*	-2.209048 [-3.68159]*	-56.12836
Ghana	1.000000	9.262408 [5.81282]*	0.000551 [0.58384]	-0.369886 [-2.46677]*	[illegible]	-3.963879
Cote'd'Ivoire	1.000000	-0.406774 [-3.98824]*	0.026804 [5.21182]*	-0.375336 [-1.54833]	-0.702855 [-5.42541]*	53.75581

Note: Figures in [ ] indicates t-statistics and the asterisk denotes statistically significant at 5%

Source: Extracted from E-Views 7 Output

A number of interesting results emerge from the above. First, the zero coefficient restriction is rejected for CAB for all the selected countries. This indicates that CAB can be used as a valid dependent variable in the normalized cointegrating equation. Second, the results suggest that the independent variables behave quite differently in determining the current account balance in each of the selected economy

The long-run relationship between the current account balance and the relative income (RELY) is negative for Nigeria and Cote'd'ivoire with the coefficient insignificant and significant respectively. This implies that the current account deficit increases as real GDP per capita converges to that of the whole Sub-Saharan African region in Nigeria and Cote'd'Ivoire. The long run relationship of RELY in Ghana however result is positive and statistically significant. In this regard, the stage of development does not matter for Nigeria and Cote'd'Ivoire but it does for Ghana.

Also, the relationship between the real effective exchange rate (*REER*) and the current account balance is positive for all the three countries. The relationship is significant in the case of Nigeria and Cote'd'Ivoire but insignificant in Ghana. This implies that real effective exchange rate seems not to play a role in explaining the evolution of the current account in Ghana model.

Increasing net inflows of (INV) is positive and significant for Nigeria. A negative but significant coefficient is observed in the case of Ghana while the relationship is negative and insignificant for Cote d' I'voire.

The assessment of the relevance of a financial deepening variable (usually proxied by money and quasi money (M2) as a per cent of GDP) shows negative and statistically significant results for the three countries. Indeed, the traditional interpretation of this variable as a measure of the depth and sophistication of the financial system suggests that financial deepening could induce saving relatively more than investment in the long run. The result here however, indicates that saving a channel through which financial deepening influence the current accounts. Again we analyse both the speed of convergence of the current account balance towards its long-run equilibrium level and the fundamentals in the short-run dynamics of the current account. All the results are reported in Table 6.4.

Table 6.4. VECM Current account CAB Adjustment equation

(Short run dynamics)

Variables	Nigeria	Ghana	Cote d' Ivoire
D(CAB(-2))	-0.085185 [-0.32669]	-0.029303 [-0.13460]	0.102411 [0.46432]
D(RELY(-2))	-0.234905 [-0.95609]	2.910531 [0.90414]	-0.179259 [-1.58816]
D(LREER(-2))	-0.025403 [-0.54069]	-0.000166 [-0.13019]	0.026108 [1.31765]
D(INV(-2))	0.224157 [0.86014]	0.188008 [0.98041]	-0.169965 [-0.46211]
D(M2(-2))	-0.430094 [-0.76972]	0.191418 [0.46658]	-0.981256 [-1.43280]
ECM(-1)	-0.081995 [-0.46633]	-0.617751 [-1.67651]	-0.981256 [-1.43280]
C	0.734275 [0.89310]	-0.511118 [-0.65472]	0.586037 [-0.37630]

Note: Figures in [ ] indicates t-statistics and the asterisk denotes statistically significant at 5%

Source: Extracted from E-Views 7 Output

One important finding is that the coefficients of the error correction term is correctly signed (i.e. a negative sign) for the three countries. However, the coefficients of the error correction term were not statistically significant for the three economies. The non-significance of the error correction term indicated that the current account balance was weakly exogenous, implying that deviations from equilibrium were not corrected in the short run, as there was no tendency for the current account to return to equilibrium.

6. Conclusion and Policy Recommendations

This study analyzed the relationship between the current account balance and its theoretical determinants for the periods 1978 to 2010 for the three economic forces of West African countries; Nigeria, Ghana and Cote d' Ivoire. The analysis was based on the saving-investment theory, also in line with the intertemporal approach, as a benchmark to define the factors that affect the current account in the long run. Using the Johansen cointegration and error correction methodology, the finding indicates that the current account balance is subject to permanent changes as a result of changes in its fundamentals. Evidence of cointegration allowed the estimation of VECM, which simultaneously provided the parameter estimates for both the long and short run relationships. The result shows that RELY is not significant in explaining the variations in the current account balance of Nigeria. REER, is also not important in explaining the current account balance of Ghana while INV is insignificant in specifying the long run relationship of the current account balance of Cote'd'Ivoire while the variables coefficients alternate between positive and negative indicating structural differences of the selected countries All the variables except the relative income (RELY), real effective exchange rate (REER) and domestic investment (INV) for Nigeria, Ghana and Cote'd'Ivoire respectively are important in explaining the long run relationship. However, there was no evidence of short run relationship between the variables and the current account balance in the three countries. The main conclusion is that the current account imbalance observed in our selected countries was unavoidable and reflected the complexity of the economic problems the country faced during these years.

The results of this study have a number of policy implications. First, the presence of long run co-movements (cointegration) between the current account balance and its determinants found in this study implies the effectiveness of targeting one of the variables in influencing the long run behaviour of the other variables. If this interpretation holds and given the significant long run relationship between the current account and the savings –investment variables as well as financial variable uses in this study, it would justify the stance taken by the government and monetary authorities in Nigeria, Ghana and Cote d' Ivoire of pursuing a sound economic monetary policy.

Second, liberalizing trade (more openness) is one of the tools in the policy maker's arsenal to avoid overvaluation both in the short and long run. This finding further confirms the stance of the monetary authorities of our selected economies acting on the fundamentals of the real exchange rate instead of directly managing the exchange rate of their domestic currency.

Third, strong saving and investment fundamentals alone are not sufficient to prevent external difficulties. More attention must be paid to the composition of investment, and a bigger effort must be made to better understand the policies that will maintain them. In particular, care must be taken to prevent their quick reversal when growth weakens and confidence wanes. With inadequate policy settings, including persisting distortions in the trade structure, productivity growth could not be sustained for long, and economic fundamentals can quickly erode

Finally, from a policy perspective, current account imbalances are neither good nor bad. They are merely the result of the interplay of demand and supply inside an economic area. While one might want to tackle distortions that could lead to sub-optimal decisions regarding the appropriate amount of savings and investment, macroeconomic policies should be directed at sustaining economic growth with low inflation rather than some current account target. A word of caution is sounded however that as the effects of shocks vary from one country to another, there is no universal solution to the problems of fluctuations in current account balance.

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A Series of Macroindicators Relevant for the Identifycation of Potential Tensions on Money Market in Romania

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Abstract: Financial and monetary stability represent elements of maximum importance at international and national levels, through risks borne by neglecting this subject, both for practitioners and for academic environment and researchers. Lack of financial and monetary stability can lead to the manifestation of tensions, vulnerabilities and risks which might seriously affect the process of financial intermediation and even growth. The problem of tensions can be formulated by the reverse analysis of monetary and financial stability, covering multiple aspects of institutional nature, of payment systems, but also of the sphere of financial markets functioning. For this reason, an exogenous-endogenous analysis, allowing the identification of internal and external tensions, vulnerabilities and risks of money market, plays a crucial role in ensuring financial and monetary stability, monetary indicators being able to contain, in their developments, stabilizing or destabilizing elements for monetary and financial markets and for economy. Therefore, this article seeks to analyze, both temporally and in some cases between countries, a series of macro indicator of money market in Romania to see whether and to what extent they may involve tensions which might affect the country's monetary and financial stability. The obtained results don't indicate important imbalances of the Romanian money market, although this faces a number of issues.

Keywords: monetary stability; financial stability; monetary indicators; vulnerabilities, risks;

JEL Classification: E44; E5; G01

1 Introduction

If about uncertainty, vulnerabilities and risks, in the context of the stability or financial instability, there are numerous studies, about tensions which might evolve in risks doesn't speaks or when it does, "tensions" means rather an exogenous factor of economic sphere (e.g. geopolitical, social, religious, cultural tensions, etc.) or from outside of the territory of a country, but from in the same field (tensions that occurs between countries) or a vague concept. For this reason, could be considered extremely important an analysis of the potential tensions that manifests on Romania's money market.

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AUDŒ, Vol. 11, no. 3, pp. 146-159

Thus, the present article[1] analyzes mainly endogenous potential tensions that may occur in the money market in Romania, which are elements with rather a structural valence, with direct or indirect connection with the formation of demand and supply of the local currency. However, it should be noted that internal developments can not be removed from general international image, especially that the chosen period 2000 - 2013 (when the 2013 data were not available, the analysis was done until 2012) included at least three important moments generating instability: - global economic and financial crisis - the manifestation of the sovereign debt crisis (in 2010-2011) and the increase of sovereign debt crisis (in 2012-2013) and - cooling of relations between Ukraine and Russia and political and military tensions in Ukraine. The strongest effects have been observed for the onset of the global financial and economic crisis, but also other crisis can be viewed as having a significant impact on the money market in Romania, albeit at a reduced scale rather regional or local. General context, including global or regional should not be excluded, but a close look at national level can facilitate the identification of the causes and the effects of positive or negative manifestation of certain phenomena that have shaped the current structure of the national economy and the money market developments in Romania and can help us identify possible tensions, vulnerabilities or risks that may occur on it.

Thus, this article seeks to analyze a series of macroeconomic indicators that can help identifying potential instability generating tensions in the money market from Romania.

2. Literature Review

Numerous studies deal with the concepts of stability, instability, vulnerability, risk, fluctuation. For example, Mishkin (1999) defines financial stability in report to the presence or absence of pronounced episodes of stress and significant disruptions in the functioning of the financial system. Padoa-Schioppa (2003) notes that the financial stability must confer resistance of the financial system to external shocks. On the contrary, Schinasi (2004) believes that the financial system itself can be a source of shocks and confidence in financial contractual relations play an important role in ensuring financial efficiency, but is also an element of fragility of the system.

But financial instability, being better observed and more concrete, can be defined more easily than financial stability. For example, Borio & Drehmann (2009a) define financial instability as a „situation in which normal-sized shocks to the financial system are sufficient to produce financial distress, i.e. in which the financial system

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[1] This work represents a partial valorification of the “Money Market Tensions in Romania” project (coord. Alina Georgeta Ailincă) conducted at the Centre for Financial and Monetary Research “Victor Slăvescu” in 2014.

is “fragile”. Financial stability is then the converse of financial instability.” Furthermore, they found that „the performance of ex ante measures of financial instability is generally rather poor, although some are more useful than others. Most techniques provide thermometers rather than barometers of financial distress”.

Multiple definitions of financial instability are making almost impossible a consensus on what should be the concrete operational manner in order to ensure financial stability or to diminish financial instability.

A temporal evaluation, which takes into account the signals of monetary and financial markets, can allow on the one hand finding moments of instability from the past, and on the other hand, based on a structural fragility of the financial system, the extent to which instability episodes may occur now or in the future. Therefore, there are a number of indicators that take into account financial market signals and signal monetary or financial instability adversities such as: indicators that indicate excessively low risk premiums, credit expansion and the boom in asset prices (Borio & Lowe, 2002a,b). However, it should be noted that there is still no satisfactory models and tools for measuring financial instability, many of them being unable to contain and explain elements of behaviour (Upper, 2007).

There may be periods when the fragility and instability unfold, some tensions and vulnerabilities might be present at that time but shocks do not occur (only after several years) (Borio & Drehmann (2009a). Furthermore, there may be a so-called “paradox of instability” in which fragility is masked and financial system seems strong though is not (Knight, 2007). Early identification of tensions, vulnerabilities and risks, taking into account certain structural weaknesses, may provide efficiency to the strategies and policies of financial (in) stability management.

3. Problem Description and Methodology

The article aims at achieving a practical study on the most important indicators of monetary market (and not only) of Romania, in order to identify tensions generating instability. The paper uses the database of the National Bank of Romania (NBR) and the World Bank and the information is analyzed during the years 2000 - 2012 or 2013, depending on data availability. The methodology consists of using statistical analysis, comparative in time and space, sometimes descriptive, in order to grasp the most relevant developments in the indicators analyzed. Thus, the article treats: the evolution of the gross savings and gross capital formation as the percentage of GDP, the evolution of the money and quasi-money growth rate, the monetization of the economy (%), the financial depth (%), the coverage of monetary aggregates through international reserves (%), the bank capital to assets ratio (%),the bank nonperforming loans to total gross loans (%), the real interest rate (%), the risk premium on lending (%), the interest rate spread (%).

Based on the analyzed indicators can be signalled some problems, tensions and vulnerabilities to financial stability in Romania, at the same time being useful information for managers responsible for macroeconomic policies, which have between their responsibilities financial stability issues.

4. The Analysis and Results

Analysing the gross savings relative to the gross capital formation (as % of GDP) (or the investment rate) (see Figure 1), we see that although the two rates fit on the same trend, the internal saving do not fully supports the investment process. The aspect can be seen as a decoupling of financial intermediation from the domestic saving process, knowing that financial intermediation facilitates the transfer of capital and risks between creditors and debtors. Lately, there has been a considerable improvement in domestic savings, which allows financing the economy to a lesser extent through foreign liabilities. This is especially gratifying, in the context of evolution of foreign liabilities which suffered a strong decrease after the expiration of Vienna Agreement I, in the spring of 2011. The agreement stipulated that the most important nine banks[1] with foreign capital of Romania, were obliged by the IMF, European Commission and the National Bank of Romania to maintain there level of exposure on the Romanian market at the level of March 2009 (when the agreement was signed) and their subsidiary solvency ratio above 10%.

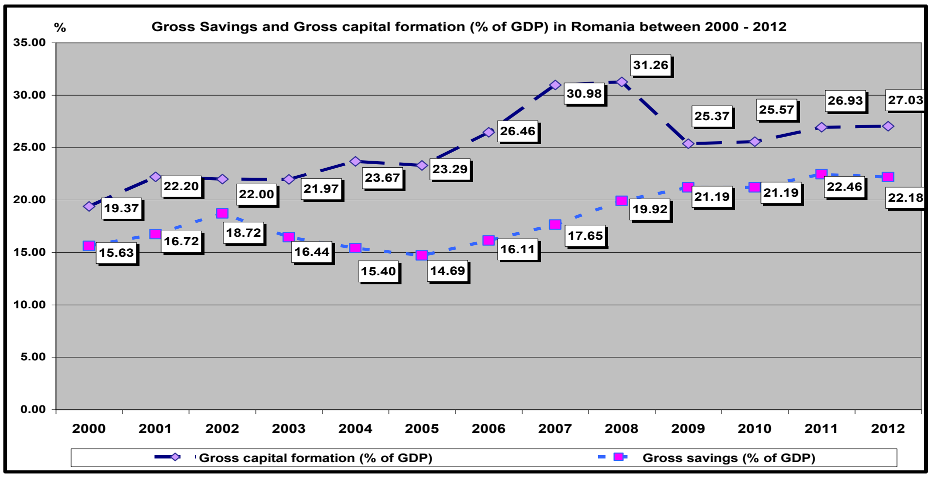

Figure 1

Source: World Bank data, author's processing

[1] The nine banks were: Erste Bank, Societe Generale, Raiffeisen International, National Bank of Greece, Alpha Bank, UniCredit, Volksbank, Piraeus Bank and Eurobank EFG.

So if we look at the evolution of the growth rate of monetary aggregates (see Figure 2), we can say that although until 2007 it was extremely erratic and stood at significant levels, during the manifestation of economic and financial crisis it has considerably reduced and somewhat stabilized, in 2013 being back on an upward trend, while the evolution of the indicator for Germany continued to have a negative value.

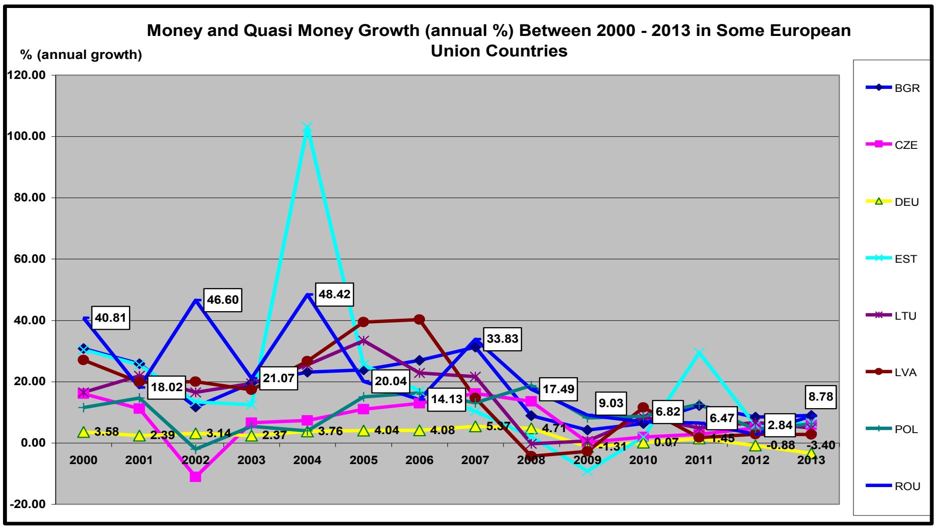

Figure 2

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, DEU – Germany, EST - Estonia, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU - Romania; * Data in frame are for Romania, data for Germany are borderless*

As we know, the growth rate of the money should be appropriate, on the one hand, to the supporting real GDP growth and secondly to maintaining inflation at low levels. So if we look monetization of an economy (see Figure 3), we can say that a low level of monetization, including at the level of the monetary base which is the responsibility of the central bank, implies currency substitution from national currency to foreign currency, increasing the currency risk and producing undesirable phenomena such as dollarization or euroisation of the economy. The phenomenon of euroisation must be correlated with currency savings structure, namely at the level of banking system - an analysis of currency bank deposits, but also with the confidence of individuals and companies in the national currency and with the foreign currency remittances. However, it should be noted that at the time of an external shocks, such as the case of global financial and economic crisis, the foreign currency inflows can record some dramatic decreases, which can lead to a rapid increase in the price of foreign currency or an exchange rate increase in a unexpected, unpredictable and hard to be accustomed manner with the internal money and currency markets.

It should be noted that in times of instability, both the population and companies will focus on having assets in currencies whose rates are stable or are perceived to be stable over time. If the currency with maximum internal stability is the national one, then the deposits are formed mainly in national currency, while loans will be directed to the currencies with high volatility in the sense that it is predicted depreciation or keeping at the same level of these currencies over time. However, for high-value loans and/or with an extended period of repayment, the national currency can be attractive, but only in the case where interest rates are attractive as well.

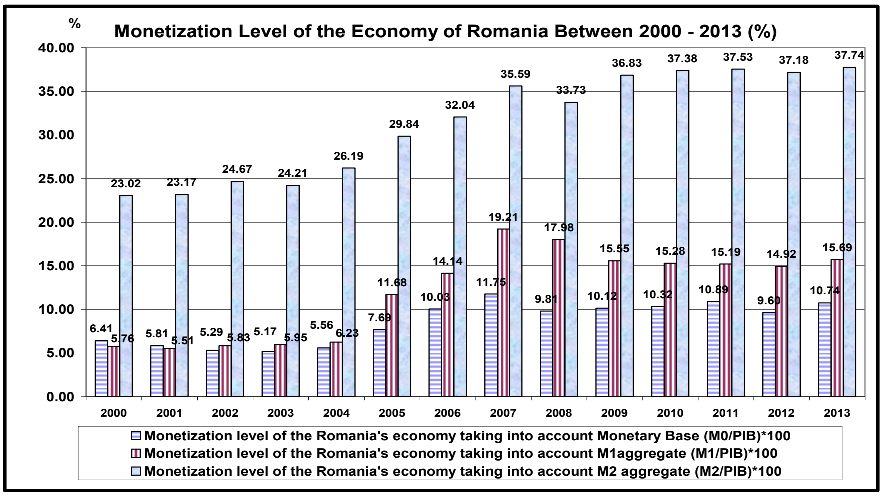

Figure 3

Source: NBR, author's processing

Thus, when analyzing the situation of the financial depth in Romania (see Figure 4) we see that it has increased from relatively lower levels (15%) in the early 2000's to over 50% in the momentum of the crisis (after the year 2009) indicating either, on the one hand, the accumulation of significant imbalances in the economy or, on the other hand, a normal process of increasing financial intermediation and the living standard of the population. One aspect that should be noted is the fact that before 1989, Romania was still under the auspices of the communist regime, when there was not any usefulness and motivation for credit, and the goods, implicitly the durable goods, on the one hand, did not impose the need for change them periodically being built to last throughout life, on the other hand, these goods were in limited quantities and of similar quality and there was no option for imported goods. Therefore, it is to some extent understandable why gradually, and especially after 2000, Romanians' appetite for credit increased, implicitly credit of consumption, being motivated also by some orientation to Western-style behaviour. However, it should be noted that a rapid increase and/or significant growth of domestic credit in GDP, even if it is a transition economy, can not be neglected as a risk indicator or at least an increase of the financial turmoil (Borio & Drehmann, 2009b and Drehmann

& Juselius, 2013); situation observed in the case of Romania, when in 2004-2007 period the indicator increased by over 20 percentage points.

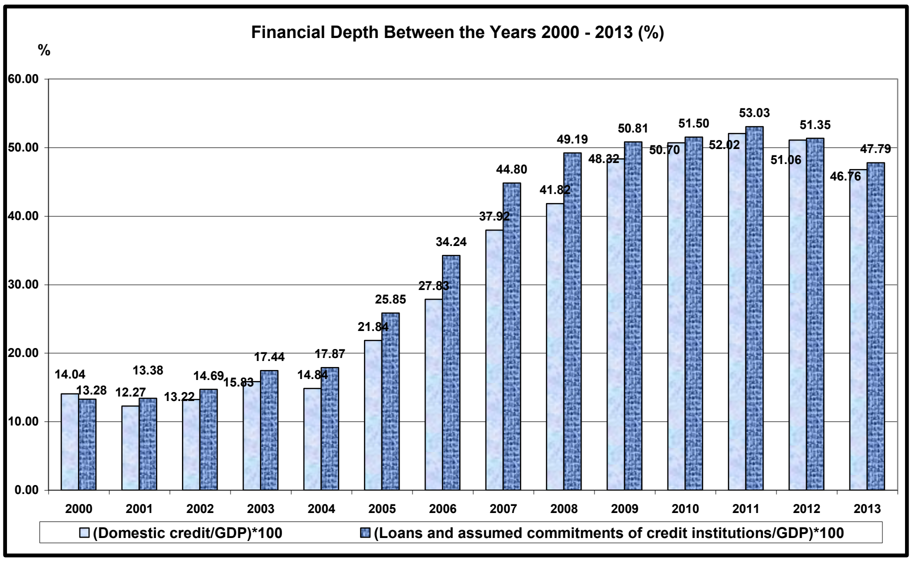

Figure 4

Source: NBR, author's processing

Another indicator that could signal potential tensions, vulnerabilities and risks of the banking system as a whole and especially liquidity problems of credit institutions is the share of money in international reserves. Monetary aggregates can be considered a set of assets with variables liquidity, being the constituent components of money supply, issued and managed by various banking and financial institutions, while international reserves (gold reserves and foreign exchange reserves) are an important element of international liquidity which may constitute a guarantee to cover the state debt, while characterizing the economy of a country in ensuring economic and financial credibility. If we look at the evolution of this indicator for Romania (see Figure 5), we find that although the coverage of monetary aggregates through international reserves declined between 2000 to 2013, however, are at significant levels which can indicate a sufficient coverage of monetary aggregates through international reserves. Note that the decrease of the coverage of monetary aggregates through international reserves may indicate a perception of foreign investors in the sense of a weakening of the economy and especially of the credibility of financial institutions. Thus, this indicator can capture to a certain extent the possible tensions, vulnerabilities and risks to Romania's financial stability.

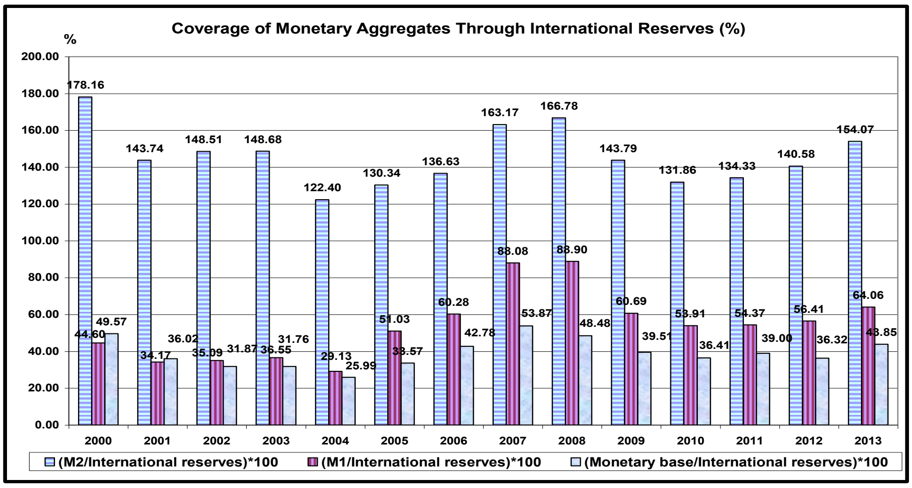

Figure 5
Source: NBR, author's processing

However, the structure of the Romanian banking system is not so adequate, despite good prudentially. For example, if we follow the bank capital to assets ratio (see Figure 6), according to the World Bank, Romania has seen a downward trend of the indicator in the period 2000 to 2013, reaching 7.5%, while many other countries in the region have registered an upward trend with values above Romania (i.e. Lithuania, Slovakia, Latvia, Estonia and Poland). Although the euro area, the European Union and countries like Germany and Spain are still below the level of Romania, but above 3% required by the relevant regulations on leverage, the situation could worsen given that the indicator for Romania will keep the present trend.

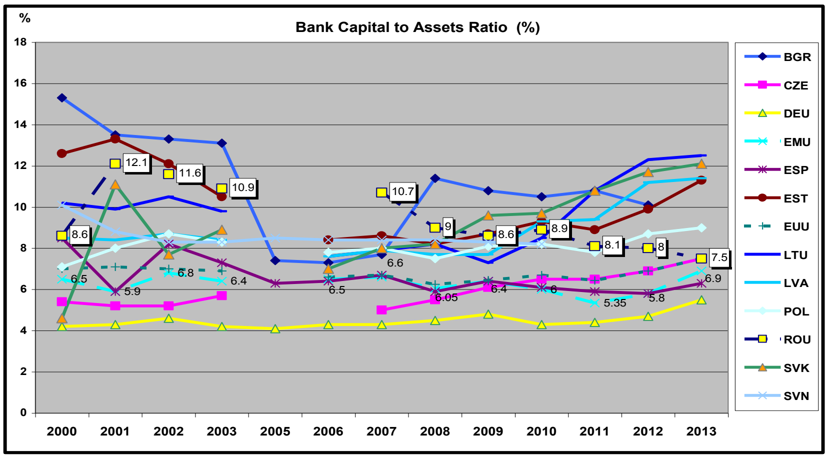

Figure 6

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, DEU – Germany, EMU – euro area, ESP – Spain, EST - Estonia, EUU - European Union, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU – Romania, SVK – Slovak Republic, SVN – Slovenia; * Data in frame are for Romania, data for euro area are borderless*

Likewise, the existence of a significant share of borrowers with a net income below the national average, so with a high degree of indebtedness, may indicate the emergence of tensions, vulnerabilities and even significant risks to the banking system, contributing importantly, especially when the economic cycle is unfavourable, to the increase in non-performing loans (see Figure 7).

Although it can be said that the rhythm of growth of non-performing loans slowed down in the last two years of analysis, and the Romanian banking system solvency and liquidity are beyond prudential requirements, however profitability of the banking system in Romania seems to describe a "boom and bust" cycle with frequent periods of collapse especially concerning capital efficiencies.

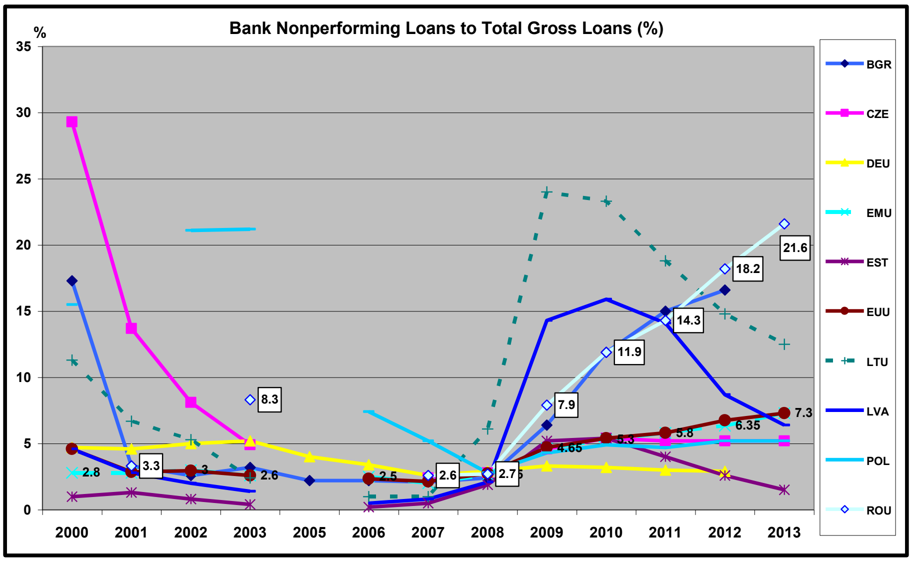

Figure 7

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, DEU – Germany, EMU – euro area, EST - Estonia, EUU -European Union, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU – Romania; * Data in frame are for Romania, data for euro area are borderless*

It should be noted that an important role in determining savings or borrowing decision is price. In this respect, an analysis of the real interest rate on loans in some economies of the Union can provide explanations for lending developments in our country and in regional economies. In the period 2000 - 2013, the real interest rate (the rate adjusted with inflation and measured by the GDP deflator) had a fluctuating trend for most economies analyzed, but especially for Romania. It can be found relatively sudden increase (in years 2002, 2004 and 2009) and rather gradual slowdown trend (2004-2007 and 2009-2012) (see Figure 8). The year 2007 marks a shift in negative territory even for real interest rates on loans in Romania, placing thus the nominal interest rate at a very low threshold. A threshold of nominal interest rates very low, zero or even in a negative territory may signal the beginning of the problems for the banking system. The situation is even more pronounced in the case of Lithuania, Estonia and Latvia. There are opinions that support the idea that it takes negative interest rates to reduce unemployment and even bubbles, or there is the idea that in a time of economic booms inflation should be "pushed" up and kept there, but these ideas can encounter conservative perceptions of central banks or the naturally social perception that it should be a positive rewarding on savings from deposits. If interest rates are approaching or entering into a negative territory for a long time, the economy could be pulled in the "liquidity trap" and savings would be a loss for the economy and not the engine or future resource for development. We can see what happened in the economy in the period 2007 - 2014, including at the global level and the effect of negative real interest rates on loans was not at all the solution, but itself one of the problems of this situation: strong manifestation of the crisis and difficult post-crisis recovery.

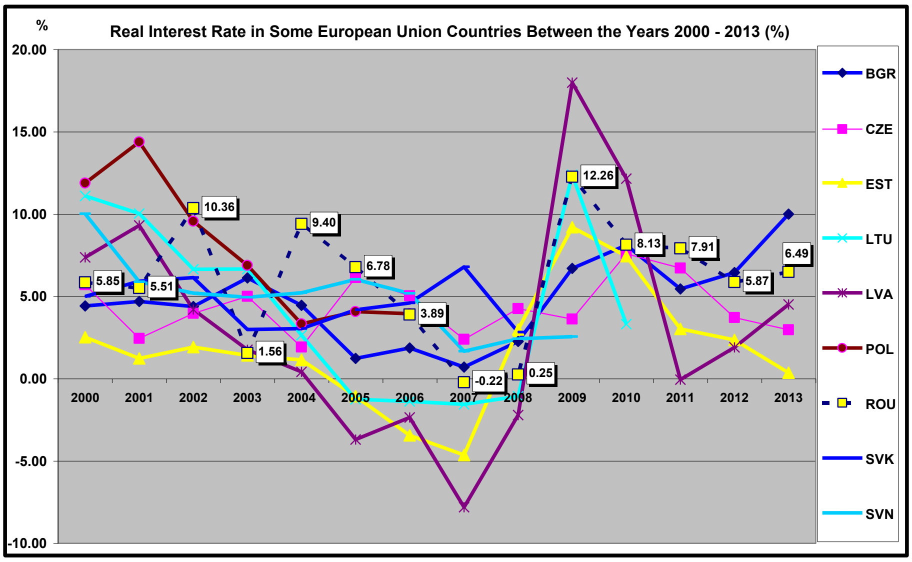

Figure 8

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, EST - Estonia, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU – Romania, SVK – Slovak Republic, SVN – Slovenia; * Data in frame are for Romania, data for euro area, UE, Spain and Germany are missing*

Along with the real interest rate on loans should be analyzed also the evolution of risk premium on lending. This indicator reflects the difference between the lending interest rate and the interest rate on treasury bills, for which the reduction of this indicator in time represents a signal of a smooth evolution of lending, carrying less risk (see Figure 9). In Lithuania, in 2009, the risk premium on lending has become slightly negative, which indicates that the market believes that some customers in the sphere of non-financial corporations presents a much lower risk than the government, in this case treasury bills being perceived as risk-bearing. If we look at developments in the risk premium on lending in Romania, we can see that is well aligned with the indicator at regional level (in particular with that of Latvia and of the Czech Republic) and can be considered a sign some normality.

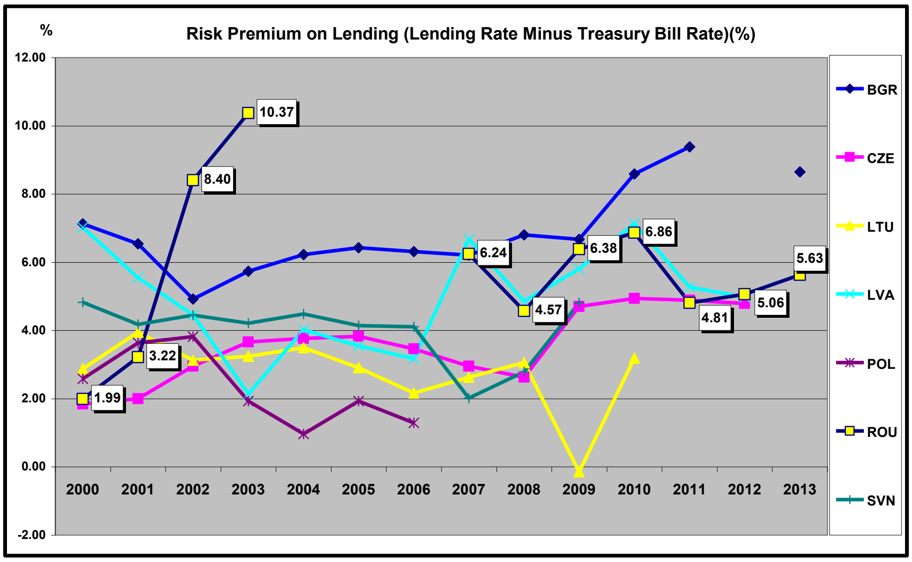

Figure 9

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU – Romania, SVN – Slovenia; * Data in frame are for Romania, data for euro area, UE, Spain, Estonia, Slovakia and Germany are missing*

In addition to the indicator of real interest rate and risk premium on lending, interest rate spread analysis, or more precisely the difference between the interest rate on loans and deposits, is an important indicator for the analysis of the existence of tensions on money market from Romania. According to the World Bank (see Figure

10), it can be seen that during 2000-2012 there was a decrease in the interest rate differential between loans and deposits by more than 14 percentage points in the case of Romania. This reduction in the interest rate differential is positive signal in assessing the financial stability from the perspective of loans and deposits price developments, leaving a smaller place for the manifestation of possible tensions in the monetary market in Romania.

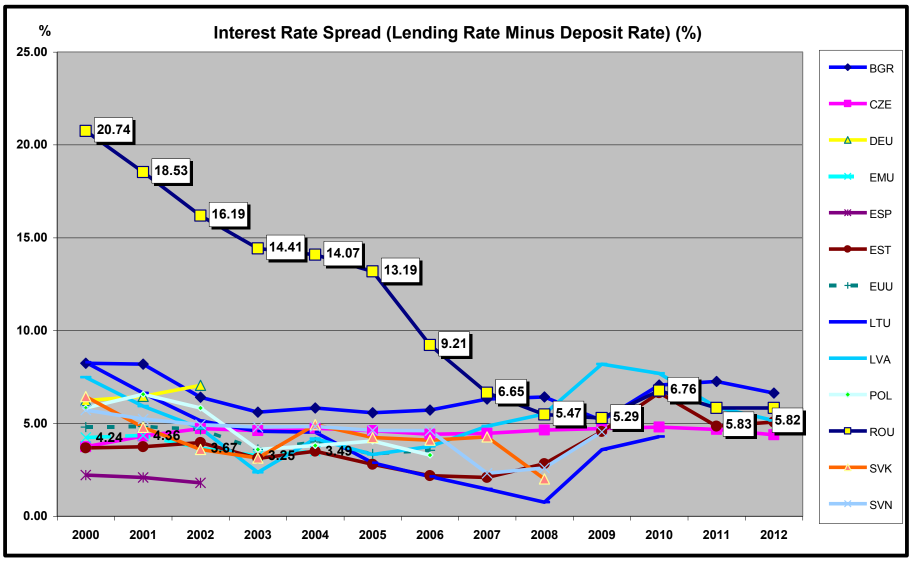

Figure 10

*Source: World Bank, author's processing, Notations: BGR - Bulgaria, CZE - Czech Republic, DEU – Germany, EMU – euro area, ESP – Spain, EST - Estonia, EUU-European Union, LTU - Lithuania, LVA - Latvia, POL - Poland, ROU – Romania, SVK – Slovakia, SVN – Slovenia; * Data in frame are for Romania, data for euro area are borderless*

However it is possible to improve this situation, especially because in some countries in the region and at the level of euro area this interest rate spread is lower than in Romania. Although the transmission mechanism of monetary policy signals appears to have improved over time (the lowering of interest rates on the interbank sector being transmitted satisfactorily on interest rates on new loans and new deposits and the differential between interest rates on new loans in lei and in currency narrowing in recent years), however, in Romania the average interest rate on loans continues to significantly exceed interbank interest rates. This comes outside partly from the configuration of the region, perhaps also because of the relatively high margins between interest rates on loans to non-financial corporations and interbank quotations.

5. Conclusions

Although there is a decoupling of financial intermediation in the domestic saving, lately there has been a substantial improvement in domestic savings, which allows financing the economy to a lesser extent by foreign liabilities, which were narrowed after 2011, amid the expiration of the Vienna Agreement I.

The growth rate of monetary aggregates was strongly fluctuating until 2007, mitigating in 2007-2009 period and afterwards it was swinging again, in 2013 was standing at 8.78%, while in the Western European countries this indicator was showing negative values. Monetization of the Romanian economy after 2007 shows a modest increase of the monetary base, reflecting an adequate behaviour of the central bank leaving to the banking system more liquidity but also a decrease of the share of M1 monetary aggregate in GDP. This phenomenon can be explained by a higher reluctance of using the national currency and its replacement with a stronger currency.

In Romania, the financial depth reflects a tremendous growth in 2000-2007, indicating either, on the one hand, the accumulation of significant imbalances in the economy or, on the other hand, a normal process of increasing the financial intermediation and the need to obtain much higher living standards. In the period 2007 - 2013, the indicator reflected a somewhat fluctuating trend but tempered, in the year 2013 financial depth hovering at around the 2008 year’s value. It should be noted that a rapid and/or a significant increase of domestic credit in GDP, such as in the period 2004-2007 for Romania, can be an indicator element of risks or at least of the financial and economic tensions and vulnerabilities. The contribution of monetary aggregates in international reserves may signal a number of potential tensions, vulnerabilities and risks of the banking system as a whole and especially liquidity problems of credit institutions. For example, although the M1 monetary aggregate was in 2013 at the considerably higher level than in 2000, referring to the M2 component, the indicator reflected a decrease of more than 14 percentage points. This may signal a less positive perception of foreign investors in the sense of an economy with a still weak credibility, especially concerning the financial institutions. This fact is somewhat understandable considering the secondary consequences of the global economic and financial crisis in Europe.

Another possible factor that may signal tensions, vulnerabilities and risks to financial stability is the rate of bank capital to assets ratio. According, the World Bank, Romania has recorded a downward trend of the indicator in the period 2000 - 2013, reaching 7.5%, while many other countries in the region have registered an upward trend with values above Romania. Although the euro area, the European Union and countries like Germany and Spain are still below the level of Romania, considering that Romania will maintain the current trend the indicator situation could worsen.

Another source of vulnerability and tensions for monetary and financial market in Romania is the evolution of the share of bank nonperforming loans to total gross loans, which was increasing over 8 times in 2007-2013 period. The existence of a large number of borrowers with a high degree of leverage can lead to the increase of non-performing loans, also taking into account the adverse developments of exchange rates of currencies which are serving the lending process (ex. the growth episode of RON/CHF exchange rate from the beginning of the year 2015, which increased spectacularly the amounts that must be repaid by borrowers in Swiss francs).

Overall, after a general analysis based on macro indicators selected, we can say that there are some problems that may indicate potential tensions, vulnerabilities and even risks on money market in Romania, but can not be classified as dramatic or alarming imbalances that might raise serious questions on the functioning of the Romanian banking system.

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***National Bank of Romania data base.

Adopting the Euro: A Long Path towards National Consensus within the Euro Area Candidate Countries

Adina Criste[1]

Abstract: The global financial crisis outbreak after 2007 has profoundly changed the course of the history of relations in the world economy, creating a complicated framework of political relations between countries and economic regions. In this context, it is important to depict the economic convergence stage of Euro Area candidate countries and to what extent this crisis has or has not changed the euro adoption objective for these countries. The present paper aimed to shed a light on this issue by analyzing both the state of the convergence process and the public attitude regarding euro adoption in four Euro Area candidate countries which have the same monetary policy strategy (inflation targeting). The research results show the way in which the global financial crisis "deviates" the convergence trajectory of the nominal indicators, but also the political and public sentiment against the euro adoption in the selected countries. The results represent a valuable groundwork for analyzing the way in which National Central Banks candidate to the Eurosystem are implied into the processing for euro adoption during turbulence times

Keywords: Nominal convergence; central bank policy; political view; public opinion

JEL Classification: F15; F36; F45; G01

1 Introduction

Since the establishment of the Economic and Monetary Union, decision-makers from member states of the Euro Area considered that a single currency will promote economic and political convergence between countries (Pop et al., 2011). Nevertheless, the experience of more than fifteen years shows a very convoluted path of monetary integration in Europe. The internal problems of Euro Area have been seen in time, but they have worsened with the European financial crisis outburst, Lehman Brothers collapse being the major shock which generated a series of challenges, including those related to the continuity of the European project (Lupu & Criste, 2013).

After joining the European Union, the Central and Eastern European countries are expected to enter the last stage of Economic and Monetary Union. The first of them,

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Slovenia, have adopted the single currency in a different period (before the global financial crisis outbreak), and Slovakia, immediately after the Lehman Brothers shock. For these countries, euro adoption condition were different (see Criste, 2012) than for the countries which are still candidate countries to the Euro Area. Although the global financial crisis hindered the economies of the Baltic States, they kept up to adopt the euro currency; so that all the three are already member states of the Economic and Monetary Union (Lithuania became recently the 19th member state of Euro Area). The remaining countries (Bulgaria, Croatia, the Czech Republic, Hungary, Poland and Romania) are still on their way to becoming members of this monetary union.

Although the formal condition for entering Euro Area is the fulfilment of the nominal convergence criteria, being stipulated in the Maastricht Treaty, these conditions have not ensured a viable monetary integration in the Euro Area (Pop et al., 2011). Furthermore, the economic convergence process is not an irreversible one, and the developments of the macroeconomic indicators playing the role of nominal convergence conditions must be related to the trends of the real economy. Even though there are such limitations, the nominal convergence remains a precondition for euro adoption and thus it is necessary to be taken into account as a starting point in evaluating the economic convergence process of the European Union countries.

The analysis of the economic convergence offers useful insights, but it could not explain the strategy of euro adoption for the candidate countries to the Economic and Monetary Union. In this context, Dandashly and Verdun (2011) explain that the process for euro adoption include not only a cost-benefit analysis, but also a political one. By the same token, Dyson (2006), Johnson (2008), and Greskovits (2008), assess the euro adoption process taking into account some political criteria such as: the policy learning, the transfer of ideas and knowledge among central bankers, the adjustment to the global pressures and to the Europeanization current, and they conclude that the political features plays an important role in influencing the euro adoption strategy.

Analysing the situation of three of the candidate countries to the Euro Area, namely Czech Republic, Poland and Hungary, Dandashly and Verdun (2011) argue that the euro adoption timing depend on the domestic politics climate. This climate is defined by the domestic problems and the internal conflicts between public institutions (central bank vs. government) and their visions regarding the European project (euro sceptical view vs. euro enthusiastic view).

2. Methodology and Data

The euro adoption process represents the two sides of the same coin, because it implies on the one hand, an economic analysis for evaluating the convergence process (not only the nominal convergence as a precondition imposed by the Maastricht Treaty, but also a sustainable convergence of the real economy) and on the other side, the political preferences. Our analyses resumed to the European emerging countries candidate to the Euro Area which have some common features: they have a similar strategy of monetary policy (inflation targeting), they have a flexible exchange rate and they do not yet enter the Exchange Rate Mechanism II: Czech Republic, Hungary, Poland and Romania. We firstly evaluate the nominal convergence stage and secondly, the domestic climate concerning political preferences and public opinion for euro adoption.

Table 2. The nominal convergence criteria

Criterion	Price stability	Sound public finances	Sustainable public finances	Durability of convergence	Exchange rate stability
Indicator	HIPC inflation rate	Government deficit as % of GDP	Government debt as % of GDP	Long-term interest rate	Deviation from a central rate
Condition of nominal convergence	Not more than the reference value, as the rate of the three best performing Member States plus 1.5 pp.	Not more than the reference value (3%)	Not more than the reference value (60%)	Not more than the reference value, as the rate of the three best performing Member States in terms of price stability plus 2 pp.	Participation in ERM II for at least 2 years without severe tensions

Source: European Commission

In order to spotlight the changes induced by the global financial crisis regarding the euro adoption process in the selected countries, we analyze the stage of the nominal convergence, as an initial condition for euro adoption (the nominal convergence criteria are presented in Table 1) and the attitude of both the citizens and political class concerning the euro adoption in the selected countries. For that purpose, we take into consideration an extended period of time (2004-2014), with Lehman Brothers shock as benchmark for starting the European episode of the global financial crisis. We use Eurostat data for nominal convergence indicators, Flash Eurobarometer surveys and Annual Reports of National Central Banks to extract information regarding the public opinion and the political decisions.

3. Results

3.1. The State of the Nominal Convergence

As it is shown in Figure 1, the reference rate for HICP inflation decreases significantly after Lehman Brothers shock, but the selected countries were at grips with this indicator, especially Romania and Hungary. After 2012, it is remarked a convergence of HICP inflation rates for all these four countries.

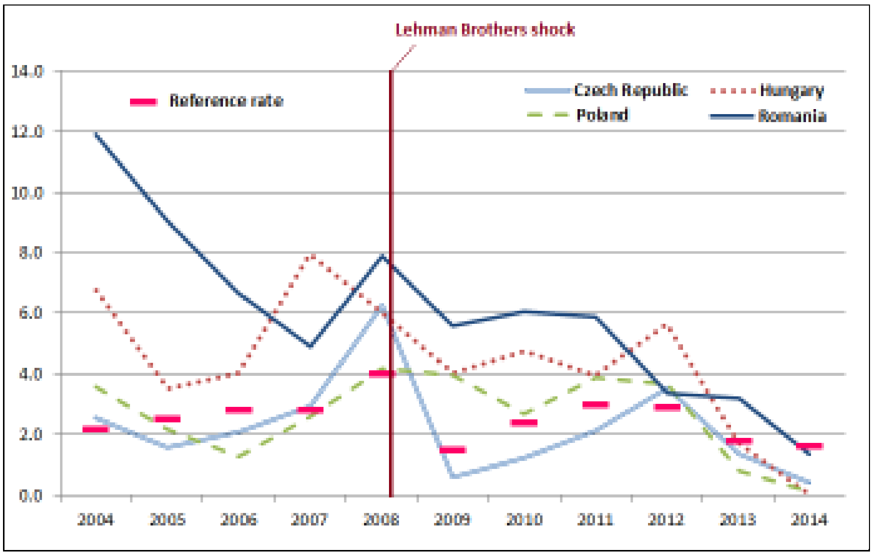

Figure 1. The HICP inflation in the Czech Republic, Hungary, Poland and Romania (12-months' average of yearly rates, %)

Source: Eurostat data, author's calculations

The inflationary pressure has been diminishing since 2009, not as a direct and exclusive effect of the global financial crisis manifestation, but as a result of the Central Banks pursuing of the price stability as their primary objective. One of the main reasons refers to National Banks' aiming at forming and maintaining lower levels of the inflation expectations, during that period.

As concerns the long term interest rate criterion, since 2006, Romania and Hungary registered the highest levels and exceeded the most frequently the reference level: Hungary exceeded seven times, and Romania, six times. As it is depicted in Figure 2, all four countries meet the interest rate criterion in the last two years (in 2013 and 2014).

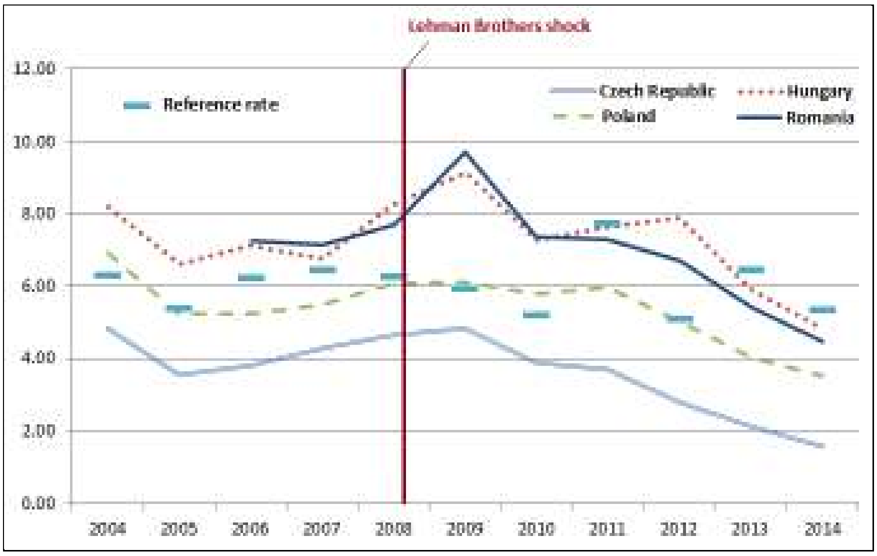

Figure 2. The long-term interest rate in the Czech Republic, Hungary, Poland and Romania (average yields for 10 years government bonds, %)

Source: Eurostat data, author's calculations

The global financial crisis put pressure on the fiscal criteria of the nominal convergence, as the general public deficits have worsened in 2009 (see Figure 3), and the public debt increased at a faster pace during 2008-2011 (see Figure 4).

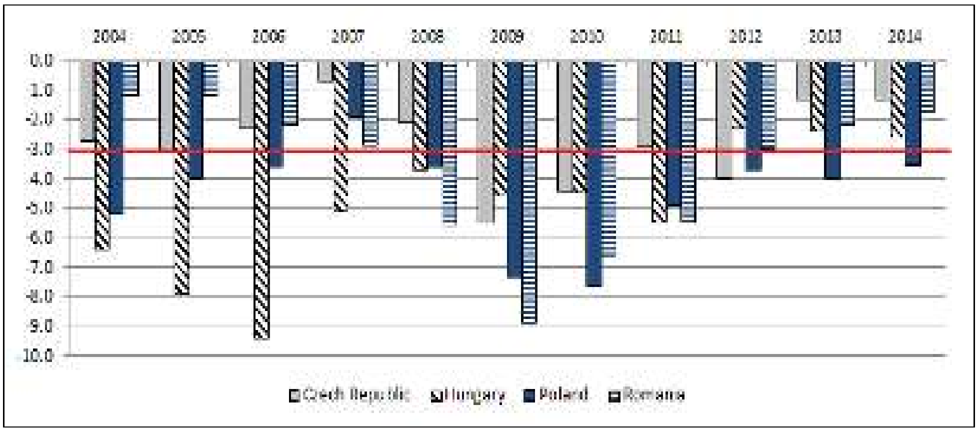

Figure 3. The general public deficit in the Czech Republic, Hungary, Poland and Romania (as % of GDP)

Source: Eurostat data

In 2009-2010, the effects of the global financial crisis were reflected by the huge rates of this indicator in all countries, Romania and Poland being in the worse position. Nevertheless, in recent years, after 2011, there is a tendency for improving of this indicator in these countries, except Poland which is in the Excessive Deficit Procedure, since 2009. Measures taken by the Polish Government are expected to reduce the nominal deficit in 2015 to 2.5% of GDP, below target recommended by the European Council (2.8% of GDP).

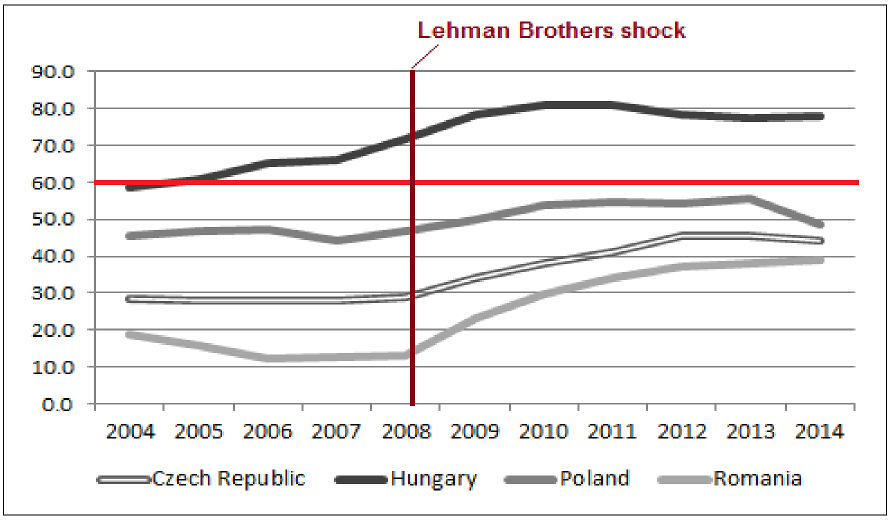

Figure 4 The public debt in the Czech Republic, Hungary, Poland and Romania (as % of GDP)

Source: Eurostat data (for 2004-2013); Ameco data (for 2014)

Concerning the public deficit, Hungary attained the highest levels of this indicator, even before the global financial crisis outbreak, exceeding constantly the reference value (60% of GDP), since 2005. Although the other three countries meet this criterion, the public debt has increased more pronounced during 2008-2013.

None of the four countries participated in the ERM II, but analysing the potential fluctuations of the national currencies, we can assess if the exchange rate developments of the national currencies are enrolled in the admissible band of fluctuation (±15%). As it is depicted in the left panel of the Figure 5, national currencies of Poland, Hungary and Romania exceeded the admissible band, during 2008-2009, but after 2013, all the four currencies had stable evolutions, so that the exchange rate criterion should be currently considered fulfilled.

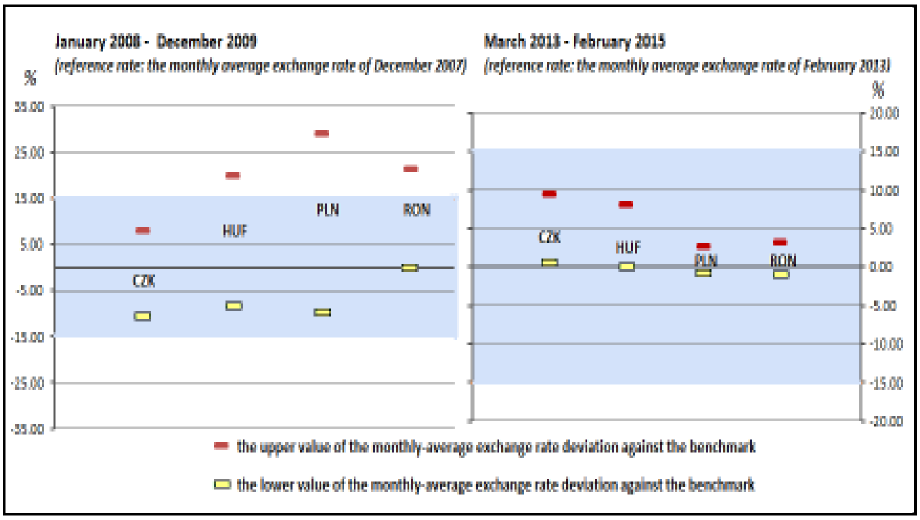

Figure 5. Spread of the exchange rate fluctuations for Euro Area candidate countries

Source: Eurostat data, author's calculations

Note: We consider a two-year period (the minimum period for participating in the ERM II) in order to evaluate the exchange rate fluctuations of the four national currencies against the euro. Because it is not officially announced any central parity for the four national currencies exchange rates, we take as benchmark the monthly average exchange rate level of the previous month of the reference period (i.e. for January 2008-December 20109, we consider the exchange rate level of December 2007; for March 2013-February 2015, we consider the exchange rate level of February 2013).

During March 2013 - February 2015, the Czech koruna (CZK) has a larger depreciation than the other currencies and this is explained by the new "framework" of the monetary policy choosing to use the currency exchange rate as an additional monetary instrument, as the policy interest rate was already at the zero lower bound. Thus, in November 2013, the Czech National Bank Board decided to depreciate the koruna by 4.5%, pursuing to prevent the nominal appreciation under the level of 27 CZK/EUR.

As a general observation of this section of the paper, we can underline that the candidate countries have recently improved the nominal convergence path, although Hungary continue to be in a vulnerable position relative to the public debt (see Table 2).

Table 2. The nominal convergence gap[1)] in 2008 and 2014

	2008					2014				
	HICP inflation gap[2)]	Long-term interest rate gap[2)]	Public deficit gap[3)]	Public debt gap[4)]	The exchange rate fluctuation[5)]	HICP inflation gap[2)]	Long-term interest rate gap[2)]	Public deficit gap[3)]	Public debt gap[4)]	The exchange rate fluctuation[5)]
Czech R.	+2.3	-1.6	+0.9	-31.3		-1.2	-3.8	+1.7	-15.9	
Hungary	+2.1	+2.0	-0.7	+11.9		1.6	0.5	+0.4	+17.7	
Poland	+0.2	-0.2	-0.6	-13.4		-1.5	-1.8	-0.6	-11.4	
Romania	+3.9	+1.5	-2.6	-46.8		-0.2	-0.9	+1.3	-21.3	

Source: author's calculation based on Eurostat data.

Notes: 1) The nominal convergence gap is calculated as the difference between the reference value and the value recorded for each indicator and in each country; 2) The positive values show the excessive levels against the reference value (failure criterion - marked with dark-grey colour); 3) The positive values show the fulfilment of the Maastricht criterion (marked with light-grey colour), and the negative ones show the excessive levels to the limit imposed; 4) The positive values means excessive levels to the limit imposed (marked with dark-grey colour), and the negative ones denote a lower level of public debt than the Maastricht limit; 5) The exchange rate fluctuation of the national currency against euro is calculated according to the methodology described above (the note of the Chart 5). We marked with light-grey colour, if the exchange rate values are within the ±15% limits, and with dark-grey colour, if the exchange rate values exceed those limits.

3.2. Opinions Regarding the Euro Adoption

The effects induced by the global financial crisis on the Euro Area periphery (namely, on the economies of Greece, Spain, Portugal, Ireland) amplifies the fears related to the potential risks of euro adoption in the candidate countries. In fact, the global financial crisis changed the balance between the cost and benefits of euro adoption, enhancing the first ones (costs) and blurring the latter ones (benefits), not only because of the economic and financial vulnerabilities of some member states, but also because of the Euro Area project itself, which is an unfinished project.

Annual Reports of the National Banks from these countries highlight that the euro adoption strategy was one of the main objectives before the global financial crisis outbreak, but the challenges emerged from the new context, after September 2008, have changed the priorities of the national authorities, including the timing for euro adoption.

Based on the National Convergence Programs and Annual Reports of National Banks from the Czech Republic, Hungary, Poland and Romania, we find that the initial target date for euro adoption was pushed forward in an uncertain future (see Table 3).

Table 3. The target dates for joining the Euro Area have changed in time

Country	The last date for euro adoption before the global financial crisis	During the global financial crisis	Currently statements for euro adoption
Czech Republic	**2009-2010** - according to *The Czech Republic's Euro-area Accession Strategy* (2003)	In July 2010, the new Czech government decided not to fix the date for euro adoption	**Not a target date**
Hungary	**2008** - according to the Official euro adoption strategy (August, 2003) **2010** - according to the first Convergence Programme (May 2004)	In 2009, the target date has been postponed again and analysts estimate an adoption of the euro by 2014	**Not a target date**
Poland	**2008/2009** - according to the Economic Pre-aderation Programme (2003)	The Polish Prime Minister Donald Tusk announced in December 2008 that Poland should strive to adopt the euro as early as 2012	**Not a target date**
Romania	**2014** according to the Convergence Programme (2004)	According to its Annual Report 2009, the National Bank of Romania assessments indicated 2012 as a desirable moment for entering in ERM II (**1 January 2015** - the new target date for euro adoption)	**1 January 2019** is a proposed target date by the Government within the Convergence Programme 2014-2017

Source: Author's representation based on the National Convergence Programs and Annual Reports of the National Banks of Czech Republic, Hungary, Poland and Romania

At the political level, these four countries have different approaches regarding the target date for euro adoption. While the Czech Republic, Hungary and Poland use the "wait and see" approach, Romania has already set a target date for euro adoption. Although Romania has a target date and a National Co-ordinator institution, it has not yet a National Euro Changeover Plan, like the other three countries. Furthermore, the Czech Republic and Poland have a more advanced path concerning the technical preparation for euro adoption. Beside the National Co-ordinator institution for euro adoption (since 2005) and the National Changeover Plan for euro (since 2007), the Czech Republic has an updated national strategy for Euro-area Accession (since 2007). In December 2014, the Czech government approved a joint document of the Ministry of Finance and the Czech National Bank regarding the assessment of the fulfillment of the nominal and real convergence of the Czech Republic with the Euro Area. Poland has also a National Euro Changeover Plan (since 2010), a national strategy for Poland integration with the Euro Area. Recently (in November 2014) the National Bank of Poland released a document regarding the economic challenges of Poland's integration with the Euro Area.

However, central banks, including the National Bank of Romania, are more reluctant to a rapid euro adoption, highlighting the importance of both the sustainable economic convergence and the political and social consensus. Like the other central banks candidate to the Eurosystem, the National Bank of Hungary has a major role in monitoring the convergence process of the euro adoption by publishing regularly a Convergence Report. Nevertheless, in the recent years, it seems that the interest for this subject is decreasing, because the last Report was published in 2011. It contains a detailed analysis related to the risks and benefits of introducing the euro in Hungary. The Czech National Bank remains reluctant to set a target date, but this reluctance has increased in the recent years as a result of both the Euro Area sovereign debt crisis, and the political instability between the "periphery" and the "core" countries. The same attitude is seen in case of the National Bank of Poland, which considers that the Euro Area unsolved internal problems represent a major hedge for a future integration of Poland in the Euro Area.

Furthermore, the debates on the early entry of the Czech Republic into Euro Area have recently showed a cleavage between the Ministry of Finance and the Czech National Bank, on the one side, and the Presidency, on the other side. The first ones don't agree with the idea to adopt the euro until at least 2018, while the president and the prime minister want an early adoption of euro. In the same situation, the euro adoption objective became a subject for election campaign in Poland. The conflictive situation in the domestic field amplifies the already precariously conditions for the future of Euro Area enlargement.

The public opinion regarding euro adoption in the selected countries is based on the official data of the Flash Eurobarometer Report (June 2014).

As the Figure 6 shows, these opinions differ among citizens from the four countries, both during or immediate after the EU accession (2007) and after the global financial crisis (2014). Comparing those two moments, there is a downward trend for Czech Republic, Poland and Romania regarding the proportion of people which are in favour of the single currency. Nevertheless, Hungary has maintained a constant level (50%) in this regard. The most obvious falling of this level is registered by the Czech Republic (from almost 50% to 26%), Czechs being the most attached to their national currency. On the opposite side is Romania and Hungary, which maintained higher levels in terms of percentage of responders in favour of euro adoption. Although these results show that the euro is viewed by the citizens of Romania and Hungary as providing a greater protection, it is important for national authorities to inform people not only about the potential benefits of euro adoption, but also about the potential risks generated by giving up to an important shock absorption instrument and by a "too hasty" euro adoption.

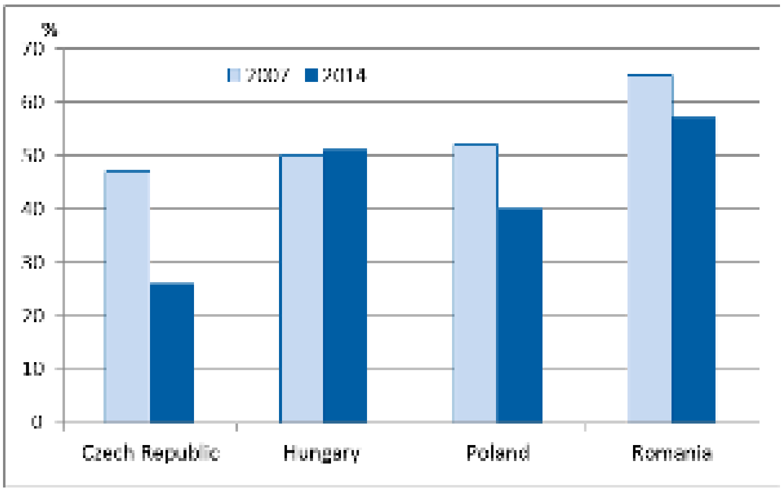

Figure 6. Changing the public opinion regarding the euro adoption Euro Area candidate countries (the proportion of the questioned people who see positive consequences of euro adoption at the national level)

Source: Flash Eurobarometer 400 Report, June 2014

The same Report highlights that the public opinion of these countries views differently the timing for euro adoption. Hence, Romania has the highest percentage of questioned people (44%, in 2014) who are in favour of joining the euro as soon as possible. On the opposite side is the Czech Republic, with the lowest level (6%, in 2014), followed by Poland (11%) and Hungary (22%).

4. Conclusion

One of the general conclusions arisen from our analysis refers to the uncertainty of euro adoption as main objective for these four countries, as the global financial crisis changed their national priorities. During the analysed period, the path of euro adoption has changed. Before the Lehman Brothers shock, the target date for euro adoption was very challenging in these four countries, in spite of the undeveloped stage of some Maastricht criteria fulfilment, at that moment. Conversely, after 2009, the nominal convergence attains an advanced stage in these countries, but the attitude regarding the euro adoption becomes more prudent, as the global financial crisis effects reveal a more complex area of costs concomitant with a reduced area of benefits for joining the Euro Area. The subject of this paper could be developed by including indicators which describe the real convergence of these countries with the Euro Area, as it could depict new features. We also notice that there is no relation between public opinion and the fulfilment of the nominal convergence criteria. Although the Czech Republic meets all five criteria, the public opinion is the most unfavourable to the euro as a national currency. Instead, Hungary has some problem with the public debt, but the public attitude towards euro adoption is more enthusiastic. In the near future, the euro adoption process in the selected countries remains a conflictive subject at the national level. In spite of the economic (nominal) convergence tendency, there is a political divergence between national authorities. From the political point of view, an important objective for the decision-makers is to increase the awareness and to enhance the knowledge of the public concerning the often intricate issues of participation in Monetary Union highlighting not only the benefit, but also the potential risks emerging from the decision to abandon the national currency.

5. Acknowledgment

This work was supported by the project "Excellence academic routes in the doctoral and postdoctoral research – READ" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/159/1.5/S/137926.

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Miscellaneous

Destination Management of Small Islands: The Case of Koh Mak

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Abstract: Koh Mak is a small island in the Gulf of Thailand that is usually visited by tourists as part of a multi-destination tour. It differentiates itself from its neighbours by being positioned as a quiet, family-based location that utilizes a low-carbon strategy. However, it is not currently clear how effective this strategy is. Islands tend to be successful in terms of destination management when they have a diversified economy and some genuine social capital or relations with which visitors can establish a relationship. This is not evidently true for Koh Mak but it might be true if the island can be considered part of a multi-island cluster. This paper uses qualitative research to explore the opinions of tourists and long-stay residents about their experiences on the island and then tests whether existing models of island tourism are borne out in this case. It is found that the current positioning is somewhat contradictory and inevitably limited in time because increasing numbers of tourists will serve to damage and then destroy those attributes which are being promoted.

Keywords: destination management; islands; Thailand; tourism

1. Introduction

This paper reports on research conducted into the issues relating to the promotion of Koh Mak as a tourism destination that is a low carbon destination. Koh Mak is one of a chain of islands in the Gulf of Thailand for which tourism is a significant actual or potential generator of income. In general, islands as tourist destinations go through a life cycle process that begins with tourists wishing to explore a new destination, followed by engagement with the island, exploitation of it and then its maturation. After this, the island's destination managers can take steps to reinvent itself through innovation or else watch the decline into failure. It might be noted that different sets of people can be involved at different stages of the island's development at the same time or different times. For example, it is evident that Russian tourists are now in a

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AUDŒ, Vol. 11, no. 3, pp. 172-196

process of moving away from their previous destinations in Pattaya and Bangkok and now have spread in numbers to Koh Chang. Some have reached Koh Mak (anecdotally, because they have seen it from a cruise and decided to visit) but then have mostly felt disappointed because of the lack of tourist facility development that they found there. These Russian tourists are active at exactly the same time as Western European visitors to Koh Mak who find it – in various ways – enticing and magnetic irrespective of the level of facilities. These tourists can be fully engaged in tourism development on the island while the Russian tourists are at the exploration stage and might want to move directly to the exploitation phase.

This does not mean that there is anything different or unusual about Russian tourists. A decade ago, Chinese tourists to Thailand were characterized by the zero dollar tours concept and their comparative lack of sophistication (as, previously, had been the perception of Japanese and Korean tourists). Now, Chinese tourists are considered to be well on their way to sophistication that their neighbours had previously travelled (although new segments of the market are still being added who are at lower levels of sophistication). Within a few years, therefore, it is quite possible for a source of tourists to be changed significantly in terms of their demand for tourism services.

Koh Mak has is marketed as an unspoilt destination that reminds travellers of what Thailand was like two or more decades ago – as one respondent to this research project put it, "Koh Mak is the paradise I have been looking for in Thailand." However, it has an additional characteristic which is potentially an important part of its marketing personality. It is a low carbon destination or, at least, it aspires to being a low carbon destination and currently has a number of demonstration projects those show business owners what can be achieved through a low carbon approach. There is some limited outreach of this approach to tourists at present but lack of resources mean that most tourists remain unaware of the concept at the destination. The low carbon approach is led by DASTA – Designated Areas for Sustainable Tourism Administration, which is a public service sector organization established in 2003 "…with the roles and responsibilities over sustainable tourism operation, through coordination for integrated administration of areas with valuable tourism resources, with more flexibility and promptness in operation than that of government agencies and state enterprises, as an important driving force in the administration of the country's tourism industry both in short and long terms (DASTA, 2013)." As part of its activities, DASTA has chosen Koh Mak to be a low carbon destination and, additionally, DASTA has designated certain other areas in Thailand to receive special treatment, including Pattaya, Sukhothai-Kampaengphet Historical Parks, Loei, Nan old city and U-Thong ancient city. It is involved with a range of product development and research projects aimed at helping develop or rediscover local wisdom or production that can act as genuine social capital and, hence, a focal point for the creative destination concept.

Tourism is one of the most important industries in Thailand. A total of 26.7 million visitors came to the Kingdom in 2013, which represented a nearly 20% increase on the previous year (Tourism Authority of Thailand, 2014). Visitors welcome the opportunity to enjoy beaches, tropical weather and the food which has become increasingly familiar to people around the world as a result of the success of the restaurant export sector. However, it has long been known that the tourism industry has a tendency to produce low-skilled jobs in the service sector in which wages can be variable and seasonal (e.g. Choy, 1995). Further, there is always a danger that money generated within a tourism destination will not remain in that destination but will drain away to distant capital investors who own hotels in the destination or else overseas because of the consumption of imported food and beverages. This has been shown to happen in Luang Prabang in neighbouring Laos, for example (Southiseng and Walsh, 2011). As a result, the ability of the tourism industry to play a part in transforming Thailand's economy is limited. Thailand is currently struggling with the Middle Income Trap. It has achieved rapid economic growth in recent years partly through the use of the Factory Asia concept, which employs low labour cost competitiveness in manufacturing industries that aim at import-substitution and are export-oriented. The limits of growth provided by that approach have now been reached and there is a need to switch to a new paradigm of growth in order to reach the high income status. An example of how this might be achieved is provided by South Korea, which has used creativity and connectivity, alongside greater openness and trust in society, as the means of making process. The Pheu Thai government, elected in 2011, has responded to this challenge by such measures as increasing the minimum wage rate by 40% and unveiling ambitious have highly necessary infrastructure construction plans (currently being blocked by courts). Nevertheless, there remains a need to make the service sector, which includes tourism, also are capable of contributing more to the new paradigm of growth. Various approaches have been tried in this case and one of the more important efforts has focused on the creative space destination (e.g. Richards and Wilson, 2006). This idea is based on developing a wide range of tourism destinations, for both domestic and international customers, while seeking genuine social capital in each place that can be developed to provide a unique experience in each case. Previously, the One Tambon One Product (OTOP) campaign successfully enabled local communities to upgrade production of some local specialities which were then marketed and distributed at home and abroad with government assistance (Natsuda *et al*., 2012).

Of course, just as not every item produced under OTOP has been successful, so too will there be relative failures under the creative space destination concept. It has been argued that success will be achieved with the presence of three factors: genuine social capital, stable allocation of resources and good connectivity (Walsh, 2013). It is necessary that the destinations also display hospitality, although this is a basic service offering and not necessary to include in the model previously described. Hospitality is regularly considered to be a defining feature of the Thai tourism industry and an innate part of the essentialist Thai character. Indeed, there is an element of societal Thainess that is supposed to reflect the willingness of Thai people to defer to authority and to meet any encounter with a welcoming smile.

This report concerns research supported by DASTA into the nature of Koh Mak as a low carbon destination, its appeal to current and potential customers and suggestions for further development of the destination along the lines of sustainable development. The research used qualitative research methods to determine the attitudes of tourists on Koh Mak towards the island and their experience of it, as well as the opinions of longer-term residents who were foreigners (western European) and business-owners or other important stakeholders for the tourism industry on the island.

2. Issues in Island Tourism

2.1. Island Tourism Destinations

The marketing of tourism destinations has become increasingly intense and competitive as more destinations have entered the international market and the willingness of tourists to travel long distances and spend lots of money has been squeezed by the global banking and austerity crisis that began in 2008 and (perhaps to a lesser extent) the desire on the behalf of consumers – particularly but nor exclusively consumers from western Europe – to reduce the carbon footprint resulting from their consumption decisions. Islands are different from other tourism destinations because of their geographical situation: that is, they are specific geographical areas that are bounded in space in a way that mainland areas are not. Islands – especially small islands (defined as having a population of less than one million people) must import some or all of their food and water and transportation costs (by sea or by air) are such that it is always more expensive to operate businesses and take holidays there. This is particularly true of very small islands (defined as having a population of less than one hundred thousand people) on which groundwater resources are very limited and rivers are too short (and may flow only on a seasonal basis) to provide regular supplies of fresh water. This means that water has to be imported from elsewhere which is, necessarily, an expensive undertaking and, further, likely to work in a counter-seasonal manner since tourists are more likely to arrive during periods of sunny rather than rainy weather.

2.2. Small Islands as Peripheral Areas

Since, as described above, small and very small islands are unable to sustain substantial populations because of lack of economic activities and resources, they have tended throughout history to be peripheral areas in terms of politics. Without adequate representation at the national or even the provincial level, small islands have often been left to fend for themselves and, consequently, their interests mostly disregarded. In other words, they have been on the periphery of larger political systems and, like most peripheral areas, they exist to be a source of resources to be extracted by the core. In other words, small islands have, through history, been places where resources have been provided for people from larger places to take away from it.

This effect also exists with regards to social and cultural elements. The cultural life of island people (insofar as it exists in an independent aspect to the dominant mainland culture) will have been considered subsidiary to the main form of cultural expression and treated as less important. The situation is similar to the treatment of ethnic minority cultures and societies. When these areas become incorporated into tourism destination systems, their specific cultures and societies are treated as subsidiary and secondary – in other words, they must conform to what is expected of them by tourists and tourism managers and their personal identity is treated as exotic, different and subject to examination and deconstruction. The experience of tourists on Thailand's island beaches has been described as 'marginal paradises' which are "touristic paradises marginal to both the life plan of the tourists and the ecology and economy of the native society. Contrary to a widespread idea, vacationing youth tourists seek mainly "recreational" experiences, resembling those sought by most mass tourists, and show marked narcissistic tendencies. They have few relations among themselves or with the natives (Cohen, 1982)." Insofar as this continues with present day tourists – and the research suggested that a similar holiday lifestyle persisted with many of the respondents, who spent most of their time in their chosen resort areas and had very limited interaction with any Thai people – this means most interactions that do take place are low-context interactions. That is, they take place in English with people who are used to receiving a comparatively limited amount of requests and know how to respond to them (e.g. 'what time is breakfast' or 'where can I buy medicine?'). As a result, there is little need to develop staff to a high degree, although that might have additional benefits in other ways.

2.3. Categories of Islands in the Context of Destination Management

As previously mentioned, much of the previous research into island tourism destination management has focused on the Caribbean, where the post-colonial element is very important, as it is also in Sri Lanka, Malaysia, Bali and elsewhere. However, there are various different ways in which islands can be categorized and there are different marketing implications for each, as the following table indicates.

Table 1. Categorisation of Islands as Tourist Destinations

Category	Options	Implications
Openness to external influences	Open; semi-open; closed	Open islands actively seek out new tourists and have been internationalized or globalized (e.g. Mallorca). Semi-open islands accept tourists and adapt to a limited extent to internationalization (e.g. certain Greek islands in the Mediterranean). Closed islands deter tourists either because they are not wanted (e.g. privately-owned islands) or because they are very unattractive to tourists (e.g. Orkney islands).
Governance	Microstate; province or semi-autonomous province; district	Microstates (e.g. Caribbean islands) are able to make their own laws; provinces (e.g. Phuket) or semi-autonomous provinces (Hainan) can make regulations at a local government basis; districts (e.g. Koh Mak) have very little influence over the laws and regulations which govern them and may not have effective parliamentary representation.
Size	Small; medium; large	Large islands (e.g. Tasmania) may be self-sufficient in terms of food and water; medium islands (e.g. Phuket) may be self-sufficient in terms of food and water for part of the year; small islands (e.g. Koh Chang) are reliant on imports for food and water and other essential items.
Economic Development	From low to very high	Highly and very highly developed islands (e.g. Singapore) may have extensive internal resources to attract, accommodate and entertain visitors. Low economic development (e.g. many Indonesian islands) mean that there is no effective marketing campaign to attract tourists and, even if they still come, there are few if any resources to accommodate them.

Post-Colonial	Post-colonial, still colonial, not colonised[1]	Post-colonial islands (e.g. Jamaica) may have legal and cultural systems based on those imposed by the colonists; still colonized islands (e.g. Puerto Rico) have legal and cultural systems that are hegemonically controlled from outside; not colonized islands (e.g. Isle of Skye) have legal and cultural systems that have developed indigenously.
Status	Single; chain; archipelago	Single islands (e.g. Sicily) are likely to be tourist destinations in their own right (perhaps along with the mainland); an island in a chain (e.g. Koh Chang) might be part of a multiple destination visit; islands that are part of an archipelago (e.g. southern Philippines) will be likely to have some potential destinations and some undeveloped (semi-closed or closed) islands in a multiple destination visit.
Climate	Tropical; semi-tropical; temperate	Tropical (e.g. Singapore) and semi-tropical (e.g. Phuket) islands are likely to have an outdoor orientation for visitors with the need for air conditioned public spaces and accommodation. Temperate climate islands (e.g. Channel Islands) have different requirements dependent on the season or else a low season when few or no tourists visit.

Source: Author

On the basis of these categorisations, it is evident that Koh Mak is an open, district, small, medium level economic development, not colonial, chain, Semi-tropical Island. That it is open means that tourists are being sought (although there are some limitations on how many tourists and what kinds of tourists), while the not colonial status means it is organized according to Thai laws and systems at the district level, which further means that local leaders have little influence over amending or introducing laws or regulations. As a small island, Koh Mak is dependent on imports of food and water and other essential goods. As a member of a chain of islands, it can expect to be part of a multiple destination visit and, so, should expect to be involved in joint or group marketing efforts. As a semi-tropical island, it will focus largely on outdoor activities for tourists while ensuring air conditioned services for tourists when they no longer wish to be outside. Being located in the Monsoon region, Koh Mak also has some seasonality in its tourist campaigns and it is noticeable that at least some resorts and hotels have begun to differentiate their offerings for an international season (before Songkran) and a mostly Thai season (after Songkran).

[1] It is possible to argue that if one goes back far enough in time then every island has been colonized sooner or later.

2.4. Koh Mak

Koh Mak is an island in the eastern Gulf of Thailand, close to the neighbouring country of Cambodia. It has a circumference of approximately 27 kilometres and is said to have around 800 permanent Thai residents. It is located in a sub-tropical monsoon region, which means that there are considerable variation in weather conditions at different parts of the year. The island is considered to be a tambon (sub-district) attached to Koh Kut, within the confines of the province of Trat. Koh Mak is one of a number of islands within the eastern Gulf of Thailand and has been peripheral to the main trajectory of economic development in the countries nearby.

It is said that Koh Mak was first occupied officially during the reign of King Rama V Chulalongkorn, when an ethnic Chinese man known as Chao Sua Seng became known as the official Chinese resident there, subject to the Siamese throne. It is well-known that a large number of ethnic Chinese people had migrated to southern Thailand and northern Malaysia (then known as Malaya) as coolie labour, entrepreneurs, family members and in other capacities so as to become involved in tin mining, rubber plantations and other activities. Those individuals who were particularly successful were able to invest and re-invest their capital in a variety of activities and, in the case of Chao Sua Seng, could become landowners of areas which were not considered important by the central state. The owner is said to have established a coconut plantation and, at a later date, sold the land to the Taveetekul clan, whose descendants are said to own most of the land of the island until the current day (Kohmak.com, 2014). The adherence of family members to Buddhism has ensured that the island has belonged culturally to the mainland and a part of the Thai rather than the Khmer state.

For much of its subsequent history, Koh Mak has existed as a small-scale agricultural provider of goods for the mainland – including rubber, coconuts and alcoholic drinks (which were until the modern age produced under licence in specific locations). In return, rice and necessary foodstuffs were sent to the island, which indicates that the island was not then and presumably never has been self-sufficient. In the modern age, tourism has become increasingly important to the island and this has intensified the need to import essential goods such as food and water.

One of the principal agricultural activities on Koh Mak is the use of rubber plantations. These range in size but none of them seem to be very large to the extent that their owners could take much advantage of economies of scope and scale. Economies of scale would apply if the plantation were sufficiently large that it could provide a measure of supplier power; economies of scope would apply if plantation growers could use their existing plantation land to grow other crops simultaneously – in fact, some rubber growers do have some pineapples growing between the rubber trees but only to a limited amount.

Interviewees suggested that growing rubber was particularly suited to Koh Mak both because geological and climatic conditions favoured rapid growth of the trees and their early maturation but also because those conditions tended not to favour other types of agriculture. Despite there being an apparent market for locally produced foods, particularly vegetables and herbs, most people felt that the limited amount of land available and the particular conditions of a small island meant that these items could never be grown at a competitive rate compared to food imported from the mainland.

The rubber industry as a whole would not appear to be a very attractive market to try to enter. Rubber prices are very volatile, with potential slumps caused by over-supply and reliance on the global economy for demand for vehicles (for which rubber is used in the tyres). Natural rubber is also subject to competition from synthetic rubber, which is considered to be a superior product in all but specialized applications such as surgical gloves and condoms. Rubber futures in important regional markets recently fell to a five-year low (Bangkok Post, 2014).

On the face of it, tourism can never be a form of sustainable development if viewed at the level of the individual island. However, Koh Mak should be seen as part of a larger system that includes the various islands in the Gulf of Thailand and parent province Trat. When seen as a holistic whole, then tourism could be part of an industry that might provide sustainable development.

3. Methodology

For this part of the research project, a qualitative approach was used. This was because it was judged that the best way to obtain useful information on this subject was to ask people directly about their experiences and permit them to express their opinions depending on those experiences. A semi-structured questionnaire agenda was prepared so that approximately the same question areas were used for each respondent but the respondents were given the liberty to introduce new areas if they considered them to be important or relevant. This is a suitable approach to take when the researchers wish to discover new information based on what were expected to be varied individual experiences. Local hotel and resort managers had been contacted previously and agreed to help facilitate interviewing by recruiting potential respondents for a specified date. Some refreshments were provided at the several different locations used.

The face-to-face in-depth interviews were accompanied by a focus group of long-term foreign residents of Koh Mak. These people were selected based on being well-known as prominent foreign residents with an interest in the development of the island. Koh Mak has quite a small permanent population so it was not difficult to identify these major stakeholders.

The interviewers were recorded and accompanied by extensive note-taking. Transcripts of the interviews and the focus group were entered into a database and subsequently interrogated by a form of content analysis. This was at first exploratory in nature in that the intention was to find categories of information and opinion from the overall body of information gathered. The database was supplemented by the accounts of the researchers (through using the research diary method) and secondary sources as appropriate. Once introductory categories were identified, these were re-examined and refined through further examination of the existing data and then the quantitative research.

Interviews were conducted primarily in English, although there was some supplementary interviewing in Thai language. Most of the respondents had sufficient ability in English to be able to participate in the research and the research team had extensive experience of research in a multicultural setting so as to be aware of any issues arising from differences in languages. One limitation to the research is the lack of non-English speaking respondents. A second limitation relates to the necessarily constrained period of space and time available for fieldwork. Since the interviewing process aimed to obtain a variety of different types of respondents (thereby adhering to the principle of maximum diversity within a sample) and the focus group respondents confirmed that there were few if any other major stakeholders who should be interviewed, then it is believed that the possible problem of non-response bias has been avoided in this case.

3.1. Demographic Details

Since the majority of the respondents were recruited in part by hotel or resort managers and were happy to join the research project, it is evident that the respondents involved would be positive in their attitude. There were few respondents who were not confident in their use of English and those who did lack confidence were accompanied by group members who could assist them. In general, then, the respondents were well-educated and of a good level of income. Taking a holiday in Thailand itself is quite a significant investment but none of the respondents gave the impression that this was an once-in-a-lifetime experience or that they were constrained in their consumption choices by lack of money. Indeed, most respondents expected to return to Thailand or had already visited several times. It was common for a respondent to describe a progress through Thailand, beginning on previous trips with Bangkok and Chiang Mai, then moving on to Phuket and the Andaman Sea islands before moving on to the Gulf of Thailand islands.

Respondents came from a range of European countries, including Italy, Germany, Switzerland, Sweden, the UK and France, among others. Conversations with business and resort-owners indicated that these were the countries from which the majority of international tourists tended to come. It was noteworthy that they were no or comparatively few tourists from North America or Australasia, and very few from East Asian countries. There is scope for further promotion in these markets. Respondents reported that some Russian tourists were starting to arrive but were not usually satisfied with the level of facilities available and tended not to stay long. Research on neighbouring Koh Chang indicated a substantial Russian presence there which might in due course spread to Koh Mak.

Most respondents were travelling as part of a family group, possibly with some friends as well. Children who were present tended to be very young and there were no teenagers in the sample obtained and few in evidence at other locations on the island. The range of ages for respondents was from mid-20s to mid-50s approximately. All respondents were Caucasian. Most had either high-paying jobs or else capital that meant they could travel extensively for lengthy periods during the year. Living in Europe offers the opportunity to save money if regular employment can be found: respondents spoke of friends and family members who would work long hours for six months or a year, spending little, with a view to taking a similar period off work which could be spent travelling. It is not necessary for a person to have a university degree to obtain a job that could help people achieve this goal. In Europe, there is a much lower correlation between wages, family status and educational level. All respondents seemed to be familiar with using the internet and comfortable online. However, respondents did not spend most of their waking lives playing with their smartphones or tablets in the way that Thai tourists continued to do. It may be that this is the result of lack of access to the internet but it seemed to be more of a lifestyle choice.

4. Findings

4.1. Opinions of Tourists

The tourists who were interviewed for this project were nearly always entirely positive about their experiences and held a very favourable impression of the island and its people. This issue is discussed in the following section about overall impressions. However, there were some less favourable impressions and these are joined together in the subsequent section, which concerns a variety of hygiene issues.

One issue that should be highlighted is the importance of the internet in alerting tourists to the existence of Koh Mak and its facilities. A large proportion of the tourists had used the internet to search for information or had consulted forum sites to find out what other people thought about t. Of course, it is not known what sources people who did not visit the island used. It suggests that it is important to have a strong and active web presence so that whenever a potential tourist enters the name ‘Koh Mak’ into a search engine, then the official site or sites are ranked on the first page – research suggests that few customers will search beyond the first page of results.

4.1.1. Overall Impressions

As mentioned above, most respondents were happy with their experiences and particularly valued the peacefulness and tranquility of the island. A telling phrase was ‘this is the paradise I was looking for in Thailand.’ For many of these tourists, the idea of Thailand is a land of virgin beaches, sparkling seas and helpful, naïve local people. When they arrive in locations such as Phuket or Koh Chang, therefore, they feel that something is wrong – it is too loud, they are bothered too much by street vendors and the experience is not authentic based on their imagination. For people such as this, then, they visit Koh Mak in order to find something they had already imagined and are satisfied. Two decades ago, they could have found that vision in other places which have now become, according to the respondents, over-developed. In another few years, they might move on from Koh Mak if it starts to become too busy or lively. According to the life cycle concept presented previously, these tourists are at the explore/engage stage of involvement but if the destination moves towards the exploitation phase, then they will stay away as this is not something they desire.

It is the peaceful environment that is the dominant attractive feature and it leads the tourists into a very quiet lifestyle while on the island – it should be noted that Koh Mak was usually not the sole destination to be visited during the holiday. Tourists were happy to enjoy some peace and quiet on Koh Mak but often wanted to combine it with a livelier set of experiences, which were usually sought on Koh Chang. Diversity between the different islands, in other words, is important in appealing to tourists who are able to be mobile between them.

Since tourists wanted a peaceful time, they did not expect there to be any more night time entertainment than currently existed. There are plenty of restaurants and cafes where people can meet and enjoy each other’s company but no very loud night clubs or rows of beer bars. It was fairly clear that tourists did not want the loudness of such places and, in fact, the presence of night clubs and similar places would contribute to destroying the experience desired. The same is true of any other loud noises (e.g. banana boats or jet skis). Most tourists did not realize that these activities are not permitted on the island but appreciated the fact that they were not present.

Most tourists remained in their resorts for most of the time spent on the island and preferred to take all their meals there. There was general satisfaction with the food and beverages available and most respondents were familiar with Thai food already because of the success of the Thai restaurant export sector – Thai food is now known around the world and, even if the tourists do not often eat it at home (although some did eat Thai food regularly), they knew what it was like and it did not appear to be strange to them. Consequently, exotic food was not a barrier to the tourists on Koh

Mak, since they were more experienced. This appears to be different to the experience on Koh Chang, for example, where it appeared that many Russian[1] tourists wanted to find food more familiar to them and also to try street food that they could recognise (e.g. grilled chicken, fruit) and which would be cheaper than indoor alternatives.

It was found, then, that the respondents were happy with the food and beverages provided and thought the quality acceptable and the cost modest, especially since food costs in Europe are generally much higher. There was little interest in gourmet or five star dining experiences or the introduction of any new types of cuisine. Research indicated that there was a range of western styles of food available in certain restaurants (e.g. Italian, German) for those who wanted to try them, in addition to the Thai dishes sold in the same restaurants. There was no visible evidence of alternative Asian cuisines (e.g. Japanese or Korean) and, equally, few Asian tourists from those countries.

When it came to accommodation, the respondents were again quite satisfied with what they received. A small number would have been interested in a higher level of accommodation (e.g. four or five-star hotels) and would have been happy to pay more to receive that level of service. However, most respondents were satisfied with what they received already and were complimentary about the attitude and helpfulness of the staff. It might be noted that this happiness with service levels was somewhat contradictory to some of the experiences of the research team, since there was more than one instance of poor service in restaurants where it appeared that lack of training or incentive of staff represented a problem. This will be discussed further below in the section on governance.

When asked whether there were additional facilities or services that respondents would have liked to be able to receive, there were few responses and those that were received only from one or two people in each case. Some of these were for beach activities such as surfing, kite-surfing and wind-surfing which are not currently available but which would not make any loud noises or be too intrusive. Another issue was the quality of the internet reception available. In Western countries, it is becoming increasingly common for people to be able to enjoy what is effectively free (or very low-cost) broadband reception just about everywhere – at least in urban settings. As a result, people plan their leisure activities around possession of a tablet or smartphone on which they can watch streaming films, TV and so forth whenever they like. This means they can travel light without DVDs, books, magazines and other media. Some tourists will expect this service to be available to them on Koh Mak and will be disappointed if it does not meet their expectations. If provision of

[1] Some of the 'Russian' tourists may have been tourists from Eastern European countries speaking languages somewhat reminiscent of Russian but which the researcher could not differentiate. In any case, these tourists also had a general lack of experience with travelling and with Thailand.

internet coverage is problematic, then hotel and resort owners will need to be generous in providing alternative sources of entertainment people can enjoy on their own.

4.1.2. Hygiene Issues

A number of respondents were concerned about some hygiene issues concerning the environment, although others were quite happy with the level of cleanliness. There are several issues involved with this. First, there is the issue of the water. Some people felt that the level of cleanliness of the water and, hence, the beach, was sub-standard in some areas. Even those who were unhappy that there was some rubbish or jetsam on the beaches did not think that the whole island had a problem but only certain small parts of it. Most understood that flotsam became jetsam depending on the nature of the tides and currents and that this was not something that people could easily control. Consequently, respondents did not blame anyone for problems with hygiene but simply observed that it existed.

Second, there is the issue of the smell from the recycling centre. Recycling is a standard procedure in most of Western Europe so respondents are not surprised (or particularly impressed) to see some limited recycling taking place on the island. What is surprising is that so much rubbish is gathered together in a central location at which nobody seems to be working and that it gives off such a bad smell continuously.

The third issue relates to sandflies (which are bloodsucking, biting, flying Dipterans of various types). Some respondents have suffered from being bitten and one couple claimed that they would not have visited Koh Mak at all if they had known the size of the problem. Scanning the web forums (e.g. Lonely Planet, Travelfish, Thaivisa), this issue is becoming quite strongly associated with Koh Mak. The people who are likely to post on these forums are those younger people who have less money and so are likely to spend more time on the beaches. Lying with the skin in direct contact with the sand is a means of greatly increasing the risk of being bitten and, since the bites are not immediately obvious, it is possible to be bitten quite often in a short period of time. Some people have had to seek medical treatment as a result and this and the suffering caused by the bites has completely ruined their experience.

Respondents do note the precautions taken to protect people from the sandflies but also noted that most of these precautions were either not properly supported (e.g. the free vinegar supplies have not been replaced) or else that they did not really work. There is not much that can be done about this problem, apart from warning tourists not to touch the sand directly in the absence of a large-scale cleaning programme on every beach on a regular basis. Ironically, what would reduce the threat the most would also ruin the experience of the island: if there were a large number of people walking on the beach regularly, then that would be enough to damage the sandfly eggs and, hence, solve the problem at the expense of ruining the solitude of the island.

A small number of respondents expressed concern about other environmental hazards, for example jellyfish. However, this was not considered to be a serious problem and most people realized that, in a sub-tropical country such as Thailand, it is necessary to be cautious when interacting with nature. This was the same situation with sea urchins, which can cause injury if stepped upon. Respondents felt that tourists generally should realize that spiky sea animals are likely to cause pain if stepped upon and so avoid them. In some swimming or diving activities, contact may be unavoidable but this is why safety clothing and equipment is provided.

One additional point that might be included here is the very high proportion of respondents who smoked during their holiday. The proportion of smokers appeared to be much higher than national averages, although this estimated is based on anecdotal evidence. In Europe, restrictions on smoking in public are now quite severe and this can make it quite difficult for people to be able to find relaxing opportunities to smoke with other people. By contrast, this was very possible in Thailand, where laws prevent smoking only in air conditioned public spaces. There were some respondents who observed that they have given up smoking in their home countries and only do so when on holiday in a country such as Thailand. Of course, not everybody is happy to be part of a smoky atmosphere.

4.1.3. Attitudes towards the Low Carbon Destination Concept

All or nearly all of the respondents were interested in the concept of the low carbon destination but did not realize that it was in operation at Koh Mak. No respondent had noticed any of the existing solar panels and thought recycling and other activities unimportant, because they are so familiar with them in their home countries. Most Western European countries have been educating schoolchildren in the need to adopt a more environmentally friendly lifestyle and implementing relevant policies for some decades and so tourists from those countries are quite used to following them and understand their importance. However, most respondents had not thought about low carbon use in a destination in Thailand and found that there was a contradiction between taking a long-haul flight for a holiday and still thinking about environmental sustainability. When respondents did start to hear about the concept, they were generally supportive but wondered why it was not taking place on a much larger scale. By contrast with, for example, Germany, where the available amount of sunlight is quite limited but the use of solar power and other renewable sources of energy is very extensive,[1] Thailand has very little use of solar power, especially at

[1] Germany produces more solar power than any other country, at 400 MW per million people, with Italy second on 267 MW per million people. In July of 2013, German solar panels produced 5.1 Terawatt hours of electricity in a single month (breaking the record of 5.0 Terawatt hours produced by wind turbines in January of the same year (Kroh, 2013). In Thailand, investment in solar power has

the household level. In Germany, it is possible for individuals and commercial companies who generate electricity from renewable sources to sell some or all of that electricity to the national grid. As much as 40% of renewable energy in the country is provided by individuals (McGrath, 2013).

In other words, tourists would not be surprised to see a very much more obvious use of solar power on Koh Mak as well as everywhere else in Thailand and would be supportive of its use. Incentives to householders and businesses to make more use of solar power cells, perhaps through subsidies, would be likely to be welcomed. There will be some people who object to use of renewable energy on aesthetic grounds – they argue, for example, that wind power generating turbines are noisy and ugly and that solar panels detract from the natural beauty of the architecture and so forth. This, from a destination management perspective, is a matter of the level of expectations and how they can be managed.

4.2. Opinions of Long-Term Residents

A focus group of long-term residents were drawn together for a focus group discussion of issues relating to tourism and the destination management of Koh Mak. The respondents were known to each other and familiar with each other's company, which meant the group took on the characteristics of an affinity group: affinity means people are more likely to be open with each other, be more willing to reveal their feelings and contradict each other without fear of causing conflict because of the sense of group cohesion imparted by the method (e.g. Keddie, 2004). These characteristics were evident in this group who had all been present on Koh Mak for a number of years and, as tenacious if not always wealthy business-managers or owners, had come to understand the way things work on the island and had quite extensive knowledge of Thailand more generally.

4.2.1. Overall Impressions of Koh Mak

Since the respondents had stayed on Koh Mak for a considerable period of time, although they might have interspersed this with periods of residence elsewhere, it is evident that they would have a generally positive attitude towards the island and the experience of living there. There are many reasons for foreigners to live in a location such as Koh Mak, some of which are more honourable than others. As a result, most respondents had a favourable response to the question why they were living on the island. Most spoke about the location, in various contexts, as well as the desire to make a life on it. Making a life on the island does not necessarily mean a permanent residency on Koh Mak but it does mean a serious commitment. In the contemporary

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increased considerably when it was announced that the government would buy solar power from private sector providers at a good price and the country plans to increase its total capacity for solar power to 3,000 MW, by which time its total contribution to the overall power sector will have increased from 8% to 25% (Song, 2013).

world, entrepreneurs and business-owners prefer to keep their assets as liquid as they can and to be ready to move from one place to another in the event of negative external environment event. Foreigners who live in Thailand, therefore, do not always have a deep and unalloyed love of the country or the place where they live but they can enjoy the situation and compare it favourably with elsewhere.

4.2.2. Environmental Issues

Respondents were well-aware of the low carbon destination and generally approved of it, since most if not all people approve of attempts to reduce damaging the environment unnecessarily and taking some steps to mitigating global climate change. Awareness of these issues is, in general, much better developed in Europe, the home of the respondents, and Thailand and, further, information about it is provided to children at all levels of education. What may be new to the Thai residents of Koh Mak (and other DASTA-assisted areas), therefore, might be very familiar to the overseas residents. Indeed, they might feel – as several did express – that the public sector could be doing much more to encourage all residents to do more to protect the natural environment. They are aware that, as a small island relying upon the tourism industry, Koh Mak is in a very vulnerable situation and even current levels of development pose significant dangers to the sustainable development of the island.

Respondents pointed out a number of problems with the low carbon destination concept that arise from the fact that so many environment-damaging activities were going ahead at the same time. One principal issue was with the nature of the vehicles used on the island, which are thought generally to be at a low level of repair and to be needlessly damaging through emissions. These vehicles could be checked by police or other authorities (as happens in other countries) and repaired to ensure efficient use of fuel and reduction of emissions. Respondents presented other options: the use of electric vehicles (or hybrid vehicles) instead of petrol or diesel-powered cars. This would need some investment to ensure supplies of electric power were available and possibly a version of the 'cash for clunkers' policy introduced in the USA and elsewhere which provides some assistance for people wishing to buy a new car and trade in their old, inefficient one. Thailand's government introduced a similar scheme to help people but their first car (thereby helping to sustain demand for automobiles at a time of global economic crisis) and so should be able to manage something similar in this case, especially as it would have a much more positive effect on the environment than the past policy.

It is also possible to use biofuels as an alternative to currently employed fuels but this is not popular in Europe, in general, since it is widely believed that the land used to grow biofuels would be better devoted to growing food and helping to keep prices low. Food is relatively much more expensive in Europe than it is in most of Asia and since a great deal of it is imported, awareness of prices is quite high. Respondents tended to agree with this idea and did not support biofuels. Some did think that the use of cooking oil to power vehicles was a technology that could be used effectively on the island. One respondent gave the story of having bought a tuk tuk from Bangkok which uses an efficient cooking oil approach but reported that he had to have it disassembled and brought to the island piece by piece to escape from some regulations which prevent moving vehicles from province to province.

Respondents also discussed other types of vehicle, including the use of animals. Although there are roads to all parts of the island now, the rapid elevation of the island, together with the climate and soil type, mean that roads can often and rapidly become difficult to travel – this is of course, one of the reasons why people, both residents and tourists, prefer to rely on motor cycles rather than bicycles and powered vehicles rather animals. However, it was felt that there was some scope for use of animals for transportation and that this might at least offer some encouragement to others and to provide a good example.

The respondents were, in general, critical of the cleanliness of beaches. Since they were nearly all year-round residents, they were very aware that items could arrive on different beaches on a wide range of occasions and this was dependent on forces beyond the control of anyone on the island. However, their assessment of the problem was much more critical than that of the tourists. Respondents claimed to have seen all kinds of industrial or medical waste arriving at the island and some blamed unspecified individuals or organisations in Cambodia for doing this, in addition to that material that fell from or was disposed of by boats and ships in the area. Whether this is true or not, the respondents certainly felt there was a strong need to organize clean-up operations on all the beaches on a regular basis in order to reassure customers and all stakeholders that this is a subject that is being taken seriously. Respondents spoke about similar initiatives that are being taken on neighbouring islands (although not all the islands) and extolled the virtues of such initiatives. It was observed that Koh Mak business proprietors have access to low-cost Cambodian migrant workers and they could be used to do this work. Apparently, no special equipment is required (according to the respondents) and there are no serious health and safety issues to be considered. Such an activity would enhance the confidence of all stakeholders and would, as previously mentioned, help to reduce or eliminate the sandfly problem because the regular walking across the beach would damage or destroy the eggs which are lodged in the sand itself.

This cleanliness issue was considered to be of considerable importance to the respondents and they thought it would have a serious impact on whether the island could have a sustainable future. It might be repeated here that the respondents have lengthy experiences with Thailand and its development and have seen other destinations follow the same life cycle and move on (as seen elsewhere) to the exploitation and then decline phases as a result.

All respondents were concerned with the prospect of cable electricity arriving on the island. This had been long promised but long delayed and the promised arrival date (2015) might yet be postponed, it was felt. In general, this would be considered a good thing and would be very popular. However, it would have mixed environmental effects. The removal of diesel-driven generators would be a good thing but the probable impact of removing incentives to use solar power would be a bad thing. Incentives to householders to generate solar power which could be fed into the island grid was considered to be the way to solve this problem.

4.2.3. Facilities

The respondents generally felt that the facilities on the island may be limited but they were just about sufficient to the need of them. In terms of health facilities, there is a small clinic with three nurses attached, although no doctor and no registered pharmacist. It was thought that the nurses could deal with most routine injuries or illnesses and that, in the event of something more serious, an ambulance boat can be urgently despatched from Koh Chang and the patient transferred to the hospital there. The small pharmacies operate from the convenience stores and are quite basic. Since most tourists do not stay on Koh Chang very long, this is considered to be acceptable and, again, in the event of need people can travel to Koh Chang or the mainland daily to pick up vital prescriptions or other materials.

Koh Mak has neither 7-11 convenience stores nor ATMs (although credit cards are accepted). Most people seem to be able to manage this and the places where money can be changed were described as being lucrative and so those business-owners saw no need to introduce ATMs. There is the additional problem that providing an ATM would mean allocating additional resources to the island and this would not be cost-effective at present. A small post office exists to take care of basic needs. Since internet connections are relatively stable, most tourists can generally deal with urgent financial or administrative issues online.

A number of complaints were received about the educational facilities on the island but this is an issue beyond the scope of the current research.

4.2.4. Labour Market

As business-owners, the respondents were familiar with the problems involved with hiring and retaining staff. As is usually the case with business-owners, there was quite a lot of complaining about the quality of the workers, their lack of initiative and loyalty and so forth. Both local Thai workers and imported Cambodian workers were described in unfavourable ways. While respondents appreciated the additional value that well-motivated and well-trained staff could provide, they believed that there was little incentive for them to provide training because the workers treated any job as a short-term assignment which they would simply quit whenever they had achieved their objectives or found a better opportunity. To break this cycle, there would appear to be scope to create partnerships neighbouring vocational schools or universities where students are training in tourism or the service sector more generally.

It was apparent that most of the businesses operating on Koh Mak belonged to or had been operated by people originating from outside the island. Much of the cost of staying on the island depends on paying for imported food and beverages and there is, in other words, a problem involved with keeping the money in the place where it was generated.

4.2.5. Governance and Power

There is a darker side to business management by foreigners in Koh Mak, just as there is in property management of all sorts. The problems are intensified when tourist destinations are involved because these can be highly competitive and offer cash transactions. In the early stages of development, which is similar to what is occurring now on Koh Mak, the foreign investors are more or less ignored as long as they do not threaten the existing architecture of power relations and abide by the patronage networks in place (Williamson, 1992). It is only when the investors threaten the existing system that problems can begin. The respondents preferred to speak about these issues privately rather than as part of a group. Since they mostly had long-term experience of Thailand, people could remember when it was more common for people to use violence against business opponents. This has not happened n Koh Mak, according to respondents, although there was a well-known story of one incoming investor who planned a leisure business that would have been contrary to the noise restrictions. Despite several warnings from some respondents and others, the investor continued to pour millions of baht into the house and business. When finally the day came for the business to open, it lasted for only one day before the owner was convinced it had to be abandoned forever.

No specific individuals or organizations were blamed for this and, indeed, the respondents took the view that the problem was caused by the investor himself who recklessly ignored the signals from the people involved and should have known better how things work. However, although there were some other incidents such as this, the respondents felt that the main issue was the concentrated nature of land ownership among a small number of families and that this represented a means of preventing change. Since the landowning families, it was thought, have more or less agreed among themselves to prevent any substantial changes, then the scope for market activities among the respondents was needlessly restraining their own business opportunities. At the same time, there was some concern about when change would come, perhaps from an inter-generational transfer of responsibility and what it would represent. An arrangement not to change the pattern of development might remain stable but could change very quickly if just one individual decides to change and sell out to move to Bangkok, for example.

Under these circumstances, there is a lack of transparency about the overall management of the destination at the local authority level. This is because it is difficult for outsiders to determine how power is exercised in the junction between the public and private sector and, also, how a sub-provincial unit is governed and the extent to which it can be managed differently from the remainder of the province.

Currently, there is no association of foreign business-owners (i.e. similar to the Chambers of Commerce elsewhere or the Chinese Business Associations) and so the respondents felt both that they had no way to give their opinions about the way the island is being managed and, also, to have a channel to receive information from the authorities on an official or unofficial basis. This would promote harmonious relationships and assist with planning for the future.

One example of the power of rival families in organizing the commercial activities on the island is that different families have, it was reported, created their own integrated resort areas with associated boat service and pier, with other facilities. There are, therefore, several different piers which facilitate what are, effectively, small-scale monopolies. Tourists who have not pre-booked their accommodation are quite likely to purchase a package including boat fare at Trat or another island. As ever, monopolies discourage innovation and provide few if any incentives to improve the quality of service.

5. Implications

Since, in general, island authorities are happy with the current level of tourists coming to the island but would like business-owners the opportunity to generate more income from them, then it is necessary to identify what new goods and services could be offered to tourists that they do not currently receive.

There was very little interest among respondents for a more varied and expensive food and beverage experience, little interest in bars or clubs and little interest in high-street shopping. Within the limitations on space and noise on the island, there is some scope for additional outdoor activities, which might be land-based as well as sea-based. There is also some scope for upgrading accommodation in some areas. Some respondents observed that they would be prepared to pay more for a higher level of accommodation and such a development would help attract new market segments, such as wealthy Russian or Chinese tourists on short visits. It would seem to be impractical to try to organize a large-scale high-end tourism development project such as a yacht marina and attendant complex within the current conditions on the island.

It is necessary, therefore, to identify areas in which local production may take place to supplement the existing marketing offerings. One obvious way to do this would be to grow some small, relatively high-value vegetable items on the island which could be marketed to local providers or food and beverage, perhaps as part of a cooperative. There seemed to be little enthusiasm for this idea and there would be some practical problems to solve in terms of geography and climate. However, it should be possible to grow some fruits and vegetables in controlled environments (e.g. greenhouses or hydroponic systems) as well as some farming of fish and seafood. At the least, this would be worth some further market research to determine what could be done and when the payback time would be achieved.

In addition, there are some other tourism-related services which are available in other resorts (e.g. hair-plaiting, beach massages and so forth) which might be encouraged. In general, the level of service from some of the lower-paid staff members in different locations could be improved and they might be able to generate more income if they could be retained on a longer-term basis and encouraged to participate in some of these value-added service activities.

There is also the need to identify other forms of goods and services which can be generated internally as a means of contributing to social capital on the island. Successful tourism destination management depends to some extent on the stable allocation of resources, the provision of genuine social capital and a good level of connectivity. Since the island is governed to a considerable extent by a group of landowners who have settled on stability as a guiding principle, this is not a problem. In terms of connectivity, this is generally good and likely to become better as time continues and more marketization of the tourism industry takes place. It is already possible to move between the islands, to the mainland and on to Bangkok or else to Cambodia without too much difficulty. There is plenty of information about how to go from place to place and where to stay, which is supplemented by resort representatives meeting visitors arriving by boat. Internet connectivity is acceptable although will need to be improved nationwide in due course. As a result, the most pressing need is for additional social capital that will act as a new form of entertainment to attract visitors and which can, in due turn, be monetized.

The term ‘social capital’ refers to any form of activity involving people which is not market-based and which has existed for some time. The production of handicrafts falls into social capital since these were originally intended for domestic use or small-scale exchange. So, tourists are happy to buy such things. Other activities include organizing festivals, ritual dancing, meeting each other in a communal area such as a park or riverside bank (as happens in Phnom Penh and, to a lesser extent, Vientiane and is being created in Chiang Khan. To some extent, social capital can be invented but it takes some time for tourists to be willing to consider it to be an authentic activity. The naga fireball event on the River Mekong is only a few years old but is now accepted as a real life social capital event. The first step, then, is to identify areas of existing social capital, developing them so that they are accessible and well-known and then seeking ways to monetize them – through merchandising, paying to participate and so forth. Further development is required in this area.

In terms of the low carbon destination concept, it is evident that there is little scope in marketing it to international tourists, although there may be more scope for marketing it to Thai tourists who will be less aware of the issues and technology involved. More activities should take place on the supply side, with business-owners and general residents being encouraged to take on more solar panels and other forms of activity aimed at boosting renewable energy production. Additional steps to promote effective recycling and reducing waste will also be helpful.

6. Recommendations

In Thailand, a great deal of valuable and important research work is commissioned and conducted and the reports received and results noted. However, there is very often a problem that the results of the research are not followed-up through monitoring and evaluation processes. As a result, it can be very difficult for both research providers and the commissioners of research to determine which projects have produced usable and effective results and which have not. The first recommendation, therefore, is that there should be some mechanism instituted which follows-up the current research project to monitor changes and development and to evaluate what differences (according to a variety of perspectives) any subsequent changes have made.

Second, there are various additional research questions which should be investigated and, inevitably, one of the recommendations of a research project is that more research should be conducted.

One of the principal findings of this research project is that tourists, currently, have very limited awareness of the activities contributing to the low carbon destination concept but generally are supportive of them. The level of knowledge varies considerably between those tourists from Europe and those from Thailand (there are, of course, other tourists but these are the dominant cohorts). The European tourists are very familiar with the issues relating to global climate change and the role of renewable energy sources in seeking to combat it. They may not be active in this area but they (generally) do not oppose it. By contrast, Thai tourists know very little about the subject and, although they might be supportive, they do not really know enough to be able to make mature judgments. This means that, for European tourists, informing them of what has been done to make Koh Mak a low carbon destination will be a good thing but will not make much difference to their decision whether to visit there or not. Thai tourists are different in this regard: there is a new sector of Thai tourists who can be made to be interested in environmental issues who might use that as a criterion for visiting. The difficult part of this issue is that these would be tourists who would spend relatively little during a visit.

A second important finding is that the low carbon destination is a good idea and welcomed by important stakeholders but its effects are contradicted by other aspects of family life, such as the use of inefficient vehicles, imports of food and water and other aspects of life which challenge the concept of sustainable development under the current model. More efforts should be made to integrate the low carbon concept on Koh Mak into other forms of environmental protection so that a more combined approach can be promoted. When people become aware of the issues relating to island life, they are (according to the research results) generally understanding and supportive of the issues faced and (just as in other parts of the world) willing to make meaningful and practical changes to try to improve the situation. DASTA, as well as supporting stakeholders, can take bold steps to promote environmental awareness and willingness to change in the knowledge that such approaches are supported by all important stakeholders – in some countries, regions or provinces, promoting environmental awareness represents a challenge to existing political power structures but research suggests this is not the case for Koh Mak. Consequently, it can be expected that influential local people can be brought onside to support pro-environmental campaigns because these can be used to promote their own interests.

Thirdly, it seems that the good which is being done is being done in stealth – i.e. most international tourists are unaware of it and to make them aware of it would be very expensive and, possibly, so expensive that improving the situation would counteract the positive effects that the low carbon concept has so far achieved. As a result, it is recommended that low cost approaches to promoting the concept among important stakeholders be sought. This will focus mostly on the supply side of tourism services. Since it is the supply side that is involved, it would not be necessary for high quality products to be involved.

Finally, there is a great deal of knowledge and understanding in the foreign community on the island which is not currently being incorporated into thinking at the local authority level. A way might be found to tap into this knowledge and understanding without, necessarily, empowering the overseas community. Foreign investors have many energetic and interesting ideas but those are ideas which are not fully commensurate with the best interests of all members of the island community. A foreign business association with some input into island-level governance might be a useful aspiration.

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A study of Integers Using Software Tools – I

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Abstract. The paper reviews the Sophie German primes and then it introduces two new types related to them. Using software there will be determined the first sequences of such numbers.

Keywords: prime; Sophie Germain

1 Introduction

The prime number theory dates back to ancient times (see the Rhind papyrus or Euclid's Elements).

A number $p\in\mathbf{N}$, $p\geq 2$ is called prime if its only positive divisors are 1 and p. The remarkable property of primes is that any nonzero natural number other than 1 can be written as a unique product (up to a permutation of factors) of prime numbers to various powers.

All over in this paper, the software presented was written in Wolfram Mathematica 9.0.

2 Sophie Germain Primes

A prime number p is called a Sophie Germain prime if 2p+1 is also prime. The number 2p+1 is called safe prime.

A prime number $p\geq 5$ is of the form 6k-1 or 6k+1, $k\geq 1$. If p=6k-1 then 2p+1=12k-1 and if p=6k+1 then 2p+1=12k+3=3(4k+1) which is not prime. Therefore, Sophie Germain primes numbers $p\geq 5$ are necessarily of the form p=6k-1.

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Let note that $p=2$ and $p=3$ are Sophie Germain primes.

The software for determining the Sophie Germain primes and the related safe primes is:

```
Clear["Global`*"];
(*Sophie Germain primes*)
limit=100;
For[k=1,k<limit,k++,If[PrimeQ[6*k-1]&& PrimeQ[12*k-1],Print[6*k-1,"
",12*k-1]]]
```

and we find (with the limit 599 for Sophie Germain primes):

5,11	53,107	173,347	251,503	431,863
11,23	83,167	179,359	281,563	443,887
23,47	89,179	191,383	293,587	491,983
29,59	113,227	233,467	359,719	509,1019
41,83	131,263	239,479	419,839	593,1187

3 A New Type of Numbers: α,β-primes

Based on the idea of Sophie Germain prime numbers we define a number p to be α,β-prime if:
p, $\alpha p+1$, $\alpha^2 p+1$, ..., $\alpha^\beta p+1$ are all primes.

Obvious if $p\neq 2$, α must be an even number, otherwise $\alpha^s p+1=\text{even}$ $\forall s=\overline{1,\beta}$.

If $p\geq 5$, $p=6k-1$ that is $p\equiv 5 \pmod 6$ then $\alpha p+1\equiv 5\alpha+1 \pmod 6$, $\alpha^2 p+1\equiv 5\alpha^2+1 \pmod 6$,..., $\alpha^\beta p+1\equiv 5\alpha^\beta+1 \pmod 6$.

If $\alpha=2\gamma$ we have therefore: $\alpha p+1\equiv 4\gamma+1 \pmod 6$, $\alpha^2 p+1\equiv 2\gamma^2+1 \pmod 6$,..., $\alpha^\beta p+1\equiv 5\cdot 2^\beta\cdot\gamma^\beta+1 \pmod 6$.

- If $\alpha\equiv 0 \pmod 6$ we have: $\alpha p+1\equiv 1 \pmod 6$, $\alpha^2 p+1\equiv 1 \pmod 6$, $\alpha^\beta p+1\equiv 1 \pmod 6$.
- If $\alpha\equiv 2 \pmod 6$ we have: $\alpha p+1\equiv 5 \pmod 6$, $\alpha^2 p+1\equiv 3 \pmod 6$ therefore we cannot have $12\gamma+2,\beta$-primes if $\beta>2$ and $p=6k-1$, $k\geq 1$.
- If $\alpha\equiv 4 \pmod 6$ we have: $\alpha p+1\equiv 3 \pmod 6$ therefore we cannot have $12\gamma+4,\beta$-primes if $\beta>1$ and $p=6k-1$, $k\geq 1$.

If now $p \geq 7$, $p=6k+1$ that is $p \equiv 1 \pmod 6$ then $\alpha p+1 \equiv \alpha+1 \pmod 6$, $\alpha^2 p+1 \equiv \alpha^2+1 \pmod 6$,..., $\alpha^\beta p+1 \equiv \alpha^\beta+1 \pmod 6$.

If $\alpha=2\gamma$ we have therefore: $\alpha p+1 \equiv 2\gamma+1 \pmod 6$, $\alpha^2 p+1 \equiv 4\gamma^2+1 \pmod 6$,..., $\alpha^\beta p+1 \equiv 2^\beta \cdot \gamma^\beta+1 \pmod 6$.

- If $\alpha \equiv 0 \pmod 6$ we have: $\alpha p+1 \equiv 1 \pmod 6$, $\alpha^2 p+1 \equiv 1 \pmod 6$,...,$\alpha^\beta p+1 \equiv 1 \pmod 6$.
- If $\alpha \equiv 2 \pmod 6$ we have: $\alpha p+1 \equiv 3 \pmod 6$ therefore we cannot have $12\gamma+2,\beta$-primes if $\beta>1$and $p=6k+1$, $k \geq 1$.
- If $\alpha \equiv 4 \pmod 6$ we have: $\alpha p+1 \equiv 5 \pmod 6$), $\alpha^2 p+1 \equiv 5 \pmod 6$,..., $\alpha^\beta p+1 \equiv 4^\beta+1 \equiv 5 \pmod 6$.

Finally, we have that α,β-primes for $p \geq 5$, $\beta \geq 3$ can exist only in the cases:

- $p \geq 5$, $p=6k-1$, $\alpha=6r$, $r \geq 1$;
- $p \geq 7$, $p=6k+1$, $\alpha=6r$, $r \geq 1$;
- $p \geq 7$, $p=6k+1$, $\alpha=6r+4$, $r \geq 0$.

The software for determining the α,β-primes with β=maximum (and limited to primes less than 100000 and $\alpha \leq 1000$) is:

```
Clear["Global`*"];
(*α,β-primes*)
limit=100000;
basepower=1000;
number=2;
maximumnumber=0;
maximumtermsformaximumnumber=0;
maximumpower=0;
For[k=1,k≤limit,k++,maximumterms=0;
 For[α=2,α≤basepower,α++,
 valuetrue=PrimeQ[k];
 r=1;
 While[valuetrue,valuetrue=valuetrue&&PrimeQ[α^r*k+1];r++];
 If[maximumterms<r-2,maximumterms=r-2;number=k];
If[maximumtermsformaximumnumber<maximumterms,maximumtermsform
aximumnumber=maximumterms;maximumnumber=number;maximumpowe
r=α];
 ];
 ]
```

```
If[maximumtermsformaximumnumber≠0,Print["Number=",maximumnumber];Print["Base power=",maximumpower];Print["Maximum terms=",
maximumtermsformaximumnumber];
For[r=1,r≤ maximumtermsformaximumnumber,r++,
Print[maximumpower^r*maximumnumber+1]]]
```

and we find:

Number=9319

Base power=100

Maximum terms=6

931901

93190001

9319000001

931900000001

93190000000001

9319000000000001

Therefore, the numbers: 9319, $100\times9319+1$, $100^2\times9319+1$, $100^3\times9319+1$, $100^4\times9319+1$, $100^5\times9319+1$, $100^6\times9319+1$ are all primes.

4 p,α-Sophie Germain Sequences

Another type of prime numbers, based also on the idea of Sophie Germain is the following: a sequence will be called a p,α-Sophie Germain sequence if $p_1=p$, $p_2=\alpha p_1+1=\alpha p+1$, $p_3=\alpha p_2+1=\alpha^2 p+\frac{\alpha^2-1}{\alpha-1}$,..., $p_n=\alpha p_{n-1}+1=\alpha^n p+\frac{\alpha^n-1}{\alpha-1}$ are all primes.

Obvious if $p\neq2$, α must be an even number, otherwise $p_2=\alpha p_1+1=$even.

If $p\geq5$, $p=6k-1$ that is $p_1=p\equiv5 \pmod 6$ then $p_2\equiv5\alpha+1\equiv1-\alpha \pmod 6$, $p_3\equiv5\alpha^2+\alpha+1\equiv1+\alpha-\alpha^2 \pmod 6$ etc.

If $\alpha=2\gamma$ then:

- If $\alpha\equiv0 \pmod 6$ we have: $p_k\equiv1 \pmod 6$ $\forall k=\overline{2,n}$.
- If $\alpha\equiv2 \pmod 6$ we have: $p_k\equiv5 \pmod 6$ $\forall k=\overline{2,n}$.

- If $\alpha\equiv4 \pmod 6$ we have: $p_2\equiv3 \pmod 6$ that is it cannot be prime.

If $p\geq7$, $p=6k+1$ that is $p_1=p\equiv1 \pmod 6$ then $p_2\equiv\alpha+1 \pmod 6$, $p_3\equiv\alpha^2+\alpha+1 \pmod 6$ etc.

If $\alpha=2\gamma$ then:

- If $\alpha\equiv0 \pmod 6$ we have: $p_k\equiv1 \pmod 6$ $\forall k=\overline{2,n}$.
- If $\alpha\equiv2 \pmod 6$ we have: $p_2\equiv3 \pmod 6$ that is it cannot be prime.
- If $\alpha\equiv4 \pmod 6$ we have: $p_2\equiv5 \pmod 6$, $p_3\equiv3 \pmod 6$ that is it cannot be prime.

Finally, we have that p,α-primes for $p\geq5$ can exist only in the cases:

- $p\geq5$, $p=6k-1$, $\alpha=6r$, $r\geq1$;
- $p\geq5$, $p=6k-1$, $\alpha=6r+2$, $r\geq1$;
- $p\geq7$, $p=6k+1$, $\alpha=6r$, $r\geq1$.

The software for determining the p,α-Sophie Germain sequence with maximum length (n=maximum) and limited to $p\leq10000$, $\alpha\leq100$ is:

```
Clear["Global`*"];
(*p,α-Sophie Germain sequences*)
limit=10000;
basepower=100;
number=2;
maximumnumber=0;
maximumtermsformaximumnumber=0;
maximumpower=0;
For[k=1,k≤limit,k++,maximumterms=0;
 For[i=2,i≤basepower,i++,
 valuetrue=PrimeQ[k];
 p=1;
 While[valuetrue,valuetrue=If[p>1,valuetrue&&PrimeQ[i^p*k+(i^p-1)/(i-1)],
valuetrue&&PrimeQ[i*k+1]];p++];
 If[maximumterms<p-2,maximumterms=p-2;number=k];
If[maximumtermsformaximumnumber<maximumterms,maximumtermsform
aximumnumber=maximumterms;maximumnumber=number;maximumpowe
r=i];
 ]
]
If[maximumtermsformaximumnumber≠0,Print["Number=",maximumnumbe
r];Print["Base power=",maximumpower];Print["Maximum
```

```
terms=",maximumtermsformaximumnumber];For[p=1,p≤maximumtermsfor
maximumnumber,
p++,Print[If[p>1,maximumpower^p*maximumnumber+(maximumpower^p-
1)/(maximumpower-1),maximumpower*maximumnumber+1]]]]
```

We find:

Number=37

Base power=48

Maximum terms=5

1777

85297

4094257

196524337

9433168177

that is: $p_1=37$, $p_2=48\times p_1+1=1777$, $p_3=48\times p_2+1=85297$, $p_4=48\times p_3+1=4094257$,

$p_5=48\times p_4+1=196524337$, $p_6=48\times p_5+1=9433168177$ are all primes.

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