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EVALUATION OF RANDOMIZED RESPONSE MODELS FOR THE MEAN AND USING DATA ON INCOME AND LIVING CONDITIONS

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Abstract:

The surveys on Income and Living Conditions carried out by the statistical agencies of many countries may contain sensitive questions, which can induce the respondent to give a false answer or no answer. Although the most common technique to treat this is the imputation, the randomized response techniques can also be used. In this paper we evaluate the performance of two randomized response models to estimate the population mean with real data obtained from the 2012 Spanish Survey on Income and Living Conditions. For this purpose, Monte Carlo simulation studies are carried out. Empirical results indicate that no estimator presents bias when individuals provide the true answers while the direct estimator presents a large bias when providing false answers. We also observe that one of the estimators based on randomized response models is more efficient than the other.

Keywords: sensitive questions, randomized response models, Monte Carlo simulation, survey on income and living conditions.

JEL Classification: A10, C15, C46, D10

1. Introduction

The statistical agencies of many countries carry out regular surveys in order to analyze the income and expenditure of households, and other variables related to living conditions. The information collected in these surveys has multiple applications, such as the calculation of the National Accounts, the Consumer Price Index (CPI), the poverty indicators such as the poverty line or the proportion of poor, etc. In this type of survey may be *sensitive questions*, i.e., questions that by their nature can induce the respondent to give a false answer or no answered. This fact is usually treated by imputation, assigning values that are within the possible values taken by the variable with no response. However, it is also possible to use randomized response techniques.

The purpose of this study is to evaluate the performance of two randomized response models, described in Section 3, for the problem of estimating the population mean with real data obtained from the 2012 Spanish Survey on Income and Living Conditions (ES-SILC) and verify if they produce similar results. For this, Monte Carlo simulation studies are carried out. Results derived from these simulation studies are shown in Section 4. Finally, this paper concludes with some discussions in Section 5.

Conclusion

In this paper we have analyzed the randomized response models for estimating the population mean from sensitive questions with real data collected from the 2012 Spanish Survey on Income and Living Conditions. For this purpose, Monte Carlo simulation studies have been carried out, using the

relative bias and the relative root mean square error as empirical measures. In addition to the estimators based on randomized response models, this work also includes the traditional sample mean, i.e., the mean of the responses obtained when asking the sensitive question directly. For this estimator, we have considered different percentages of individuals who provide false answers and different percentages of variation between the true answer and that one provided by the individual.

As we expected, the results obtained show that no estimator presents bias when individuals provide the true answers, while the direct estimator can present negative bias up to 25% for high values of individuals providing false answers. Furthermore, the fact of higher sample sizes does not make these biases decrease.

Moreover, the direct estimator is more efficient than the estimators based on randomized response models when individuals do not provide false answers, but this situation is reversed due to the large bias of the direct estimator. The Eichhorn and Hayre estimator is more efficient than the Bar-Lev *et al.* one, although we must not forget that the latter model is based on an additional random mechanism, which increases the possibility that the respondents provide a true answer. It is also reasonable that increasing the sample size results in more efficient estimators in all considered methods.

Finally, note that the randomized response models do not present very different results because of considering various distributions to generate the new random variable.

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DETERMINANTS OF STOCK MARKET DEVELOPMENT IN ROMANIA

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Abstract

This study aims to evaluate the impacts of some central explanatory variables namely Foreign Direct Investment (FDI), infrastructure facility, saving, inflation, income and energy use on Romanian's stock market development measured by market capitalization. For empirical examination, this study used annual time series data over the period of 1990 to 2013. The study employs various diagnostic tests including normality test, Pearson correlation test, Park test and DW- test, which shows that there is no problem of skewness and kurtosis, no problem of heteroscedasticity and no problem of autocorrelation in the model of market capitalization used for Romania. The Johanson co-integration results indicates that there exists three cointegrating relationship among the variables. Further, least squares estimate indicates incoming FDI, infrastructure, saving, energy usage and income are important determinants of Romanian's stock market in selected macroeconomic variables used in the study. The empirical findings suggests that management authorities of Romania needs to formulate prudent macroeconomic stabilization policy in order to encourage incoming FDI, facilitate physical infrastructure, encourage saving, maintain sustainable energy use. Thus, all these measures will further develop largely Romanian's stock market.

Keywords: Stock market development, FDI, GDP, Infrastructure, Romania.

JEL classification: F20, E44, H54, O43, O52

1. Introduction

Generally, it is believed that stable and well-functioning stock market plays important role in the process of economic growth and development everywhere. Therefore, researchers have exposed visible interest in various factors determining stock market for different countries. The supporters of stock market supposed that it perform a better role in the expansion of commerce and industry and consequently it contributes to the macroeconomic performance of country. The contemporary theoretical research reveals that long-standing stock market development can bolster economic growth, whereas, empirical studies be likely to offer some encouragement to this affirmation. In a study, Demirguc-Kunt and Levine (1996) have shown that utmost stock market indicators are vastly connected with the development of banking sector. So those countries which have well-developed and stable stock markets have a tendency to have well-developed banking sector. In a similar vein, study of Levine and Zervos (1998) indicates that stock market development plays a crucial role in expecting forthcoming economic growth of a country. According to Levine (1996:7) "Do stock markets affect overall economic development? Some analysts have viewed stock markets in developing countries as "Casinos" that have little positive impact on economic growth".

Caporale *et al.* (2004) notes that sound stock market facilitates the investors to bypass risk when capitalizing in promising projects. Moreover, energetic stock markets carry out a conclusive role in assigning investment to the corporate sector, which will have undeniably a verifiable impact on the overall economy. Sound stock market provides profitably to total productivity and established financial markets are usually well-thought-out a vital factor of long-run economic growth (Levine *et al.*, 2000; Barna and Mura, 2010; Cooray, 2010; Shin, 2013; Al-Qudah, 2014; Kaserer and Rapp 2014). It is therefore, foreseeable that every established stock market will certainly speed up the suitability of long-term capital for cost-effectively beneficial activities which is mandatory for the

encouragement of economic growth and development. In addition, suitable and smooth functioning of stock market be a sign of an extensive condition for financial sector evolution which is considered a pre-requisite to contributes to the economic development and provide sound environment to attract more foreign investors.

It is therefore, important to explore various determinants affects stock market. Though, there are enormous factors explaining stock market development, however, the main focus of the present study is more on the impacts of income, inflation, energy, foreign direct investment on stock market development in the context of Romania.

The study of Brasoveanu et al. (2008) finds a significantly positive relationship between capital market development and economic growth in Romania on quarterly data from 2000: 1 to 2006: 2. In a study, Barna and Mura (2010) mention that Romanian capital market grown sluggishly starting since 1995. It is evident, that many years after 1989 Romania had undesirable real rate of Gross Domestic Product (GDP) growth. While, it is recorded that since 2000, Romania exhibits positive and desirable economic growth rates associated with the progress of the financial system. Regarding the importance of capital market, Prime Minister Victor Ponta stated that the existence of solid capital market is an important part for Romania's development¹. The economy of Romania showed a marvelous performance in 2013, GDP growth rate is estimated to have touched or even surpassed 2.5% in 2013. The performance of Romanian's capital market remained outstanding and undoubtedly it is considered best year in the previous five years where some initial public offerings (IPOs) at highest values. The upward trend is expected to be continued during 2014 also. The capital market will certainly play a leading role in development of overall Romanian economy. Evidently, a significant growth of the capital market has been observed in 2013, with two IPOs of state-owned enterprises. Moreover, the growing involvement of retail investors could be another vital component in the expansion of Romania's market².

The broad aim of this study is to evaluate the influence of some macroeconomic variables namely FDI inflow, inflation, energy, and infrastructure on Romanian's stock market. For empirical analysis, time series data over the period of 1990 to 2013 are used. According to the knowledge of the authors, therefore is no similar studies exist on the Romania. Moreover, this study is different from the previous studies in terms of the period length taken into consideration. Several studies have surveyed the factors affecting stock market through different viewpoints and with different regressors for different countries. In spite of this, the assortment of regressors with holistic approach used in this study is emphatically different as compared to the past studies carried out in the context of Romanian's stock market determinants. Therefore, the present study will constructively contribute to the growth of literature on the determinants of stock market for Romania and can be extended to other countries also.

The rest of the study is structured as follows. Section 2 discusses literature review on the factors affecting stock market development. Section 3 deals with data sources, and the methodology used. Section 4 interprets the empirical results. Section 5 concludes the study.

Concluding remarks

The main objective of this study is to empirically verify the impacts of some central explanatory variables namely FDI, infrastructure, saving, inflation, income and energy use on stock market development of Romania measured by market capitalization. The study used annual time series data ranging from 1990 to 2013. The study applied various diagnostic tests including normality test, Pearson correlation test, Park test and DW- test, which shows that there is no problem of skewness and kurtosis, no problem of heteroscedasticity and no problem of autocorrelation in the model of market capitalization used for Romania. Data have been checked for stationarity using ADF test. The Johanson co-integration results indicates that there exists three co-integrating relationship among the variables. Further, least squares estimate reveals that the impacts of FDI, infrastructure, saving, energy usage and income on market capitalization are positive and statistically significant.

¹ Romanian National News Agency (2014)

² Franklin Templeton Investments (2014)

The results of this study are vigorous and reasonable, therefore, alluring for sound policy consideration. The findings of the study suggest that policy makers needs to create investment-friendly environment in order to enhance more FDI inflows into the country, infrastructure development, saving enhancement techniques, more energy usage but care should be taken to design energy supply policy appropriately to meet increase energy demand handsomely, all these factors expand market capitalization.

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OIL PRICE FLUCTUATIONS AND TRADE BALANCE OF TURKEY*

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Abstract:

The relationship between oil price fluctuations and the trade balance of Turkey is the main concern of this paper. Economic growth performance of Turkey depends on imported capital goods as well as imported oil. Oil price increases bring a heavy burden for Turkish economy. Therefore, it is important to analyze the effects of oil price increases on external balances of Turkey. We specifically aim to examine the effects of price fluctuations of imported oil on Turkey's trade balance using a structural vector autoregression (VAR) model. The variables used in this model are imported crude oil price, imports of crude oil, industrial production index, and trade balance to GDP ratio. Monthly data set for the period of September 2009 - June 2014 is used. The results show that the oil price shock creates a negative impact on trade balance and this effect continues while declining in magnitude for more than 10 months. Most of the variation in forecast error of trade balance ratio is explained by the shock on itself and only a limited variation, around 4%, is explained by oil price shock for a 10 months period.

Keywords: Oil price; trade balance; structural VAR; Turkish Economy.

JEL classification: F14, C32, F41

1. Introduction

The relationship between increasing oil prices and macroeconomic indicators such as economic growth rate, inflation rate, and external balances has been an important area of study in economics. The interest on the topic mainly started after the drastic oil price increases experienced during the oil shocks of 1970s. Initial studies after 1970s focused on the effects of increasing oil prices on macroeconomic performance of industrialized economies. As expected, it was mainly concluded that increasing oil prices lowered the GDP growth rate and contributed to the inflation problem.

Studies showed that the degree of the impact of increasing oil prices on macroeconomic variables varied over time. Hamilton (1983) showed that while the negative impact of oil prices on explaining US recession during the period of 1949 - 1972 was significant, its size weakened in 1973 - 1980 period. Later studies argued that not all oil shocks were the same in terms of their nature and also in terms of their effects on the related economies. Some of these studies agreed that oil shocks of 1970s and early 1980s were supply side shocks while the ones after 1980s including the ones after 2000 were demand side shocks (Archanskia *et al.*, 2012; Hamilton 1983) in which oil prices are determined endogenously. However, not everyone agreed with this classification. For example, Kilian (2009) claimed that oil price shock of 1979/1980 should be considered as a result of both supply and demand shocks which were worked out together. For the oil shocks (Archanskaia *et al.*, 2012; Hamilton, 2009; Kilian 2009). Determining the nature of oil price increase and therefore the nature of the shocks is important to understand the underlying reasoning behind the shock so that policymakers could take appropriate precautionary actions for their economies in a timely manner.

The issue of increasing oil prices and oil price fluctuations captured the attention of economists one more time after the year 2000 as oil prices started to fluctuate considerably one more time. Small number of studies conducted was on emerging economies during this period. The response of economic growth rate and inflation rate of oil importing countries to the surge in world oil prices was one of the research topics of this period (Ghosh, 2009; Barsky and Kilian 2004; Hamilton, 2005). Studies on the external balances of oil importing countries were very limited in numbers (Bodenstein *et al.*, 2011; Kilian, L., Rebucci, A., and Spatafora, N., 2009; Narayan *et al.*, 2014).

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As Turkey moved to export oriented growth strategy after 1980, trade and current account balances gained importance in evaluation of Turkey's economic performance. According to the new growth strategy, export has become the new engine of growth in Turkey. As an oil importing developing country, it is widely believed that oil price fluctuations have created significant negative effects for Turkey. Moreover, Turkish growth experience showed that there is a significant correlation between economic growth and imports.

This paper is organized as follows. Section 2 reviews the previous literature on oil shocks and their effects on macroeconomic indicators such as growth rate and external balances. Section 3 gives brief information about the empirical methodology used in the paper and the main findings. Section 4 includes the concluding remarks.

Conclusion

In this paper, we investigated the relationship between imported oil price and trade balance of Turkey for the period of January 2009 – June 2014. We use the trade balance (TB), crude oil import (COI), industrial production index (IPI), and crude oil price (COP) as the variables of the model in the interested question of effects of oil price shocks of trade balance dynamics.

The empirical application is started with the unit root tests. Based on the unit root tests, we use difference of COI and COP and the level of IPI and TB. After the structural VAR model was constructed, the impulse response function and variance decomposition results are evaluated.

These results showed that imported oil price shock has a negative effect on TB. The trade balance values of Turkey were all negative during the investigated period. Meaning all monthly trade deficit values showed a trade deficit. Therefore, the negative effect meant that the trade deficit was worsened. Most of the variation in the trade balance however is explained by itself. IPI was the other variable with the second highest explanatory power. The variation explained in the trade balance by the oil price was very low.

Based on our findings, we can conclude that oil price fluctuations have a negative but weak effect on Turkish trade balance in the short run. Industrial production index, a proxy for the domestic production activity, show a stronger effect explaining the variation in the trade balance and this effect also exist in the short run. This could be an indication of the fact that Turkish growth performance is strongly correlated with total Turkish imports and therefore also correlated with oil imports.

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CATEGORISATION OF THE EUROPEAN UNION COUNTRIES IN RELATION TO EFFICIENCY ADJUSTMENT OF VALUE ADDED TAX COLLECTION USING CLUSTER ANALYSIS AND MULTIDIMENSIONAL SCALLING

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Abstract:

The issue of the value added tax efficiency is intensively debated these days both at the level of individual governments, and the level of the European institutions and bodies, as well. The whole Europe is trying to mobilize and implement effective measures which would be able to improve the collection of taxes without increasing tax rates. VAT is currently the most harmonized tax, but states still retain some sovereignty regarding the level of rates, reduced rates and exemptions. Different Tax legislation in the countries, in combination with the application of its own VAT policy preferences and lack of control of tax administration causes growing the gap between actual and theoretical base for income taxes. The paper is devoted to the quantification of VAT system setup from the view of revenue collection efficiency of this tax using cluster analysis including 27 EU countries. It is also devoted to the identification of countries groups with similar situation of VAT collection and their common features. In a statistical meta-analysis there are compared several methodological approaches: variant of agglomerative hierarchical cluster analysis, the outputs of k-means, k-medoid and also fuzzy c-means method. The results are in qualitative agreement with multidimensional scaling.

Keywords: Value-addeded tax, tax harmonization, tax rate, Cluster analysis, Multidimensional scaling

JEL Classification: C52, H20, H26

1. Introduction

According to (Novysedlák and Palkovičová, 2012) discuss that the primary objective of any tax system is to provide an efficient collection of taxes through the legislative and institutional conditions. These two components must operate and complement each other. Successful in tax legislation and tax administration is the foundation of a good functioning, steady source of income. Although states on the one hand may have tax legislative treated well, it still does not designate them to generate a sufficient amount of tax revenue. In the countries there are some obstacles in the form of bureaucracy, bad practices in the collection of the tax, weak controls, taxes unnecessary complexity in the form of a large number of legislative exemptions, exceptions and multiple rates application. This fact is confirmed by several studies, such as (CASE, 2013) and (Reckon LLP, 2009), which findings concerning the EU countries point to the fact that the growth of VAT revenues not reflect macroeconomic base applied within this tax. According to estimates of the VAT gap for EU-27 between 2000 and 2011, the average value of the VAT gap ranged at 17% in the Member States, while the median is 13%. Regardless of the objective reasons causing the gaps, loss of income has a major influence on economic policy. That is why tax revenue should produce stable income for the development of public finance and enable the efficient consolidation of public finances without taking any consolidation measures on the expenditure side.

Discussion and conclusions

Through the provided cluster analysis for the EU-27 on the basis of three indicators (VRR, VPR and G) were identified countries with similar state efficiency of the VAT system. The first two indicators (VRR and VPR) take into account the efficiency of VAT collection to the tax base and ability to generate revenue from the one percent rate in relation to GDP. The third indicator (G) is the gap between the base rate and the implicit rate.

Initial hypotheses H1 and H2 were determined at the beginning of the analysis and assumed EU countries distribution only by economic advancement and indebtedness, as well.

Hypothesis H1 that advanced economies have effectively set the VAT system can be considered partially confirmed. For the confirmation of the hypotheses can be considered the third most important cluster obtained by applying the Ward method. The third cluster of countries unite advanced economies of the EU, which has been placed on the second best place under monitoring of the indicators VRR, VPR and G. Cluster was characterized by the following features:

- Associates particularly the Nordic countries, which characterize their high-set VAT rates;
- With economies such as Germany and Austria have a stable social and economic environment and strong state legal system. Just these factors may affect the integration of these countries into a single cluster.
- The cluster is demonstrated a significant geographic dependence, as this is the vast majority of neighboring countries. As the only country of the V4 it was Czech which achieved comparable results with those countries. It is also a neighboring country with Germany and Austria;
- Hypothesis H1 can be considered partially confirmed as in clusters with developed economies there were also placed a less efficient economy. First cluster in the method Ward suggested that it is a advanced and less advanced economies, such as. France, Hungary, Ireland, Portugal. Their common feature is that they employ more than one reduced rate and reach the second worst record after bankrupt economies in southern Europe.

France and Ireland are among countries which apply up to 3 reduced rates. According to many studies, such as. (CASE, 2013) and (Reckon LLP, 2009), this dependence in the use of reduced rates was confirmed. Working on an analysis of reduced VAT rates and their impact on revenues from (Borselli, Chiri and Romagnano, 2012), confirms that the reduced rates have a negative impact on the overall levying of VAT. Specifically, only 60% of total household consumption is taxed at the full rate. According to a study by Copenhagen Economics: "... From a purely economic point of view is clearly the best approach one applicable rate of VAT. Less complicated rate structure would clearly create significant savings by reducing the costs associated with VAT obligations for businesses, both on the tax administration."

Hypothesis H2 predicted that countries with excessive indebtedness or failing countries are separated from the cluster of developed economies. That assumption was confirmed as a second cluster in the Ward method. It was the countries that are characterized by high debt and mismanagement of the government deficit. The countries have also a tendency less working tax administration in the form of high corruption. Countries during crises and unrest become non-standard economies with optimal settings for an inefficient tax administration. The analysis was conducted on specific countries Italy, Spain and Greece.

This group falls well as Slovakia and Poland. Although it is not the economy that is extremely indebted, it is neighboring countries within the V4, which are similar economic and legislative setting. In terms of foreign trade, Poland is an important trading partner for Slovakia. Even just this fact can have a big impact, that between our economies and Poland in the supply of goods and services may circumvention of legislation in the form of fraud, and so there is a choice of reducing VAT.

An interesting finding is that the best placed geographically small countries with a high share of consumption in GDP, which the cluster analysis included the fourth cluster. Achieve the best results examined indicators, which is mainly due to high consumption, but also that small countries are largely dependent on the import of what they can greatly increase the revenue from these taxes. E.g. Estonia, Bulgaria, Lithuania, Cyprus ended for 2012 with a negative balance of trade. This result confirms that it is the economy that is dependent on the import of goods and services. Denmark is the country, which in turn ended with an active trade balance. It is a specific country, as the only from EU-27 does not use any reduced rates. This fact in this country plays an important role in the classification of the economy with the most efficient VAT collection.

Regarding the resetting VAT systems, many organizations set different recommendations and proposals for action. To (OECD, 2002) increasing rates of individual countries within the consolidation has its limits, particularly in countries whose base rate is already quite high. With an increase in rates, the amount of revenue losses expected increases as a result of the application of reduced rates and tax exemptions.

Therefore, the recommends of the reforms to improve the performance and efficiency of the various VAT systems, among others, the expansion of the tax base, and the way that goods and services is to reduced rate or zero, will be progressively taxed at the full rate. The effective VAT system could thus be lower basic rate.

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FOREIGN DIRECT INVESTMENT AND MALAYSIA'S STOCK MARKET: USING ARDL BOUNDS TESTING APPROACH

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Abstract

The broad aim of the present study is to examine the influence of Foreign Direct Investment (FDI) inflow and in addition, some other macroeconomic variables namely domestic investment, inflation rate, domestic saving and GDP on Malaysia's stock market. This study is based on annual time series data covering the period ranging from 1988 to 2012. After checking the data for stationarity purpose, an Autoregressive Distributed Lag (ARDL) bounds testing approach has been employed for parameters estimation. The empirical results of ARDL bounds testing approach suggest that FDI inflow has a positive influence on the stock market. It is also found that domestic investment, domestic saving rate, GDP growth rate and inflation variables influence stock market. The estimated coefficient of FDI is found to be positive, which implies that the policy makers need to devise a friendly and conducive investment policy in order to enhance FDI inflow and encourage domestic investment. In addition, inflation rate needs to be controlled and the domestic savings should be encouraged in order to promote stock market. This study offers prodigious insights on the important implication of the FDI in stock market. The positive influence of FDI on stock market demonstrates the complementary role of inflows of FDI in the stock market. This study will certainly contribute to the growth of literature on the impact of FDI inflows on stock market capitalization.

Keywords: FDI, stock market, ARDL model, Malaysia

JEL codes: C50, F20; G20

Introduction

The importance of financial market, especially stable stock market has been growing largely at the global level. It is believed that stable stock market is an indicator of sound macroeconomic performance. The stock market plays a decisive role in the development of the commerce and industry in any country and consequently it affects the economy of the country to a large extent. Several prior studies argue that well-functioning stock market contributes positively to aggregate output (Singh, 1997; Levine *et al.*, 2000; Caporale *et al.*, 2004; Husain, 2006; Yartey, 2008; Adjasi and Biekpe, 2009; Cooray, 2010). In South Asia, the foreign investors have focused on the emerging financial markets, where the stock market have the potential and provide lucrative environment for the international investors (Wongbangpo and Sharma, 2002). Hussain (2006) stated that Japan is the most advanced market followed by East Asia such as China, Korea, Malaysia, Thailand, Singapore, Hong Kong, Philippines and Indonesia. Among the East Asia, Malaysia has a large equity and bond market in relation to its Gross Domestic Product (GDP). However, according to Levine (1996) "*Do stock markets affect overall economic development? Some analysts have viewed stock markets in developing countries as "Casinos" that have little positive impact on economic growth". In a study, Sarkar (2007) has shown that there is no relationship between stock market and economic growth.*

Foreign capital inflow provides many benefits include contribution to the recipient countries capital formation and production capacity, modern technology, knowledge and enhance tax revenue. Therefore, foreign capital inflows have sound effects on the recipient country's production, employment, income, balance of payments and economic development and growth (Gumus and Gungor, 2013). Though, both components of the foreign capital inflows i.e., FDI and portfolio investment are the paramount variables affecting the stock market. However, the focus of the present study is mainly to explore the role of FDI along with a few noteworthy factors influencing the Malaysia's stock market. In a study, Wang and Shen (1999) have noted that the proponents of foreign investment claim that due to its stabilization and demonstration effects, it has a vital positive effect on

domestic stock market in the recipient country. The inflows of foreign capital have long term influence on stock market development and further enhance investment (Errunza, 1983; Sing, 1997; Claessens *et al.*, 2002; Yartey, 2008; Malik and Amjad, 2013). Karthik and Kannan (2011) found positive relationship between FDI and the stock market development of India during 1971-2006. Doytch (2013) has concluded that from macroeconomic perspective, it is however expected to have a positive impact of foreign capital on domestic stock market capitalization, while at the microeconomic level; it is a complex decision that requires further analysis and more thorough understanding. Acheampong and Wiafe (2013) have shown that the incoming FDI flows have positive impact on stock market development of Ghana. On the other hand, some earlier studies, for example, Wang and Shen (1999) concluded that foreign investment had a mild effect on the volatility of the stock returns in Taiwan during January, 1991 to November, 1995.

According to the US Department of States (2013), Malaysia's stock market (Bursa Malaysia) is open to foreign investment and foreign corporation issuing shares. In market capitalization, Malaysia has the 3rd largest corporate bond market, behind only Japan and Korea where both domestic and foreign investors often intend to trade in securities and derivatives. It became evident in 2011, when inflows of foreign capital shifted back into Malaysian bonds after a US \$ 35 billion outflow during the 2008-9 global financial crises. Malaysia's percentage of overall investment in the ASEAN member states is now lower than its share of the group's GDP. The inflow of FDI from Japan to Malaysia has been estimated to the largest inflows of RM 26.3 billion from 2009 to August 2013 (Bernama, 2013). Due to constant efforts, Malaysia has regained its position to enhance foreign investment, where around US\$10 billion worth of FDI flows was received in 2012. The Malaysian Investment Development Authority attempts to establish the country as a global outsourcing hub for high-tech manufacturing value chains (UNCTAD, 2013).

The World Investment Reports (2013) have reported that out of the FDI flows to East and South-East Asia, China is at the top, followed by Hong Kong, Singapore, Indonesia and Malaysia. The data statistics indicates that FDI flows to Malaysia are relatively at the lowest level if compared with other countries in the region. Figures 1 and 2 show the trend analysis of market capitalization and FDI inflows as percentage of GDP into Malaysia respectively. It can be read from Figure 1 that after a sharp decline in 1997, the market capitalization upsurged gradually. However, Figure 2 reveals that FDI inflows after 1992 have not yet recovered its previous level. Though, UNCTAD's World Investment Report (2011) proposes that global inflows of FDI will continue to regain from pre-crisis position. In 2013, FDI flows are expected to hit US \$ 1.9 trillion. The government of Malaysia believes that key factors play crucial role in enhancing more FDI such as conducive and stable business environment, market orientation, sound infrastructure comprising excellent transport connectivity and advanced communications infrastructure, cost effective, appropriate government policies and tax incentives. However, more committed and practical efforts are required to enhance foreign investment.



Sources: Data gleaned from World Development Indicator (2013) and World Investment Reports (2013)

Figure- 1: Trend in market capitalization ratio to GDP of Malaysia



Sources: Data gleaned from World Development Indicator (2013) and World Investment Reports (2013

Figure-2: Trend in foreign direct investment inflows as percentage of GDP to Malaysia

The main purpose of this paper is to test the impact of FDI inflow on Malaysia's stock market. Prior theoretical and empirical studies on the impact of FDI on Malaysia's stock market have either unobserved or shed cursory light on the impact of FDI on stock market. This paper is distinguished from the prior ones in terms of the longevity of the period it takes into account. Many studies have surveyed the factors affecting stock market through different viewpoints and with different explanatory variables. However, the portfolio of regressors with holistic approach used in this paper is certainly different as compared to prior studies conducted on Malaysia's stock market determinants. Thus, the current study will positively contribute to the growth of literature on the subject matter particularly with reference to Malaysia.

The present paper is designed as follows. Section 1 above explains introduction along with some stylized facts and figures of Malaysia. Section 2 reviews the relevant literature on the factors influencing stock market. Section 3 discusses data sources, explains variable and elaborates the methodology used. Section 4 present estimations and interprets the empirical results. Section 5 concludes the paper.

Summary and Conclusion

The present study has attempted to examine empirically the impact of FDI with some other macroeconomic variables namely domestic investment, inflation rate, domestic saving and GDP on Malaysia's stock market capitalization using an annual time series data for the period from 1988 to 2012. The distinctive feature of this study is that it offers enriched insight from a new dimension. The empirical results obtained bear the correct signs, which support the study hypotheses. Nevertheless, some variables are statistically insignificant. It is evident from the data statistics on FDI inflows, that Malaysia has not yet regained the previous incoming FDI level as in during 1992. However, the estimated coefficient of FDI found is positive as expected. It implies that if the FDI inflows are enhanced, it will certainly have further progressive effect on the stock market.

The main conclusion that can be drawn based on the empirical results discovered is that FDI is the important factor affecting stock market. This study also has some policy implications, that in order to stimulate Malaysia's stock market development, it is imperative for the policy makers to control inflation, boost domestic savings through satisfactory incentives, control exchange rate from further depreciation, and most essentially is to create conducive environment for foreign investment. A suggestion for future research is to include portfolio investment in the model in order to determine their significance as a factor of stock market in the context of Malaysia.

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MARKETING PRICING STRATEGY AS PART OF COMPETITIVE ADVANTAGE RETAILERS

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Abstract:

The article is focused on pricing policy and marketing pricing strategies applied in the branches of retail chains in the selected region of Slovakia. An important part of this article is a demonstration of the most commonly used marketing pricing strategies from the perspective of marketing managers of affiliates of retail chains operating in the examined region of Slovakia. The aim of this article is to detect and highlight the most utilized marketing pricing strategy within the surveyed branches of retail chains operating in the North East of Slovakia. The analysis of variance (ANOVA) and Student two-sample test were used to detect differences of comparison.

Keywords: pricing policy, marketing pricing strategies, retail trade, competition.

JEL Classification: M30, M31

1. Introduction

For most of history prices were wagered by negotiation between a buyer and a seller. Negotiation is still a popular discipline in some areas. The idea of setting one price for all buyers was developed with the beginning of mass retailing in the late 19th century. F. W. Woolwoorth, Tiffany & Co., John Wanamaker and others advertised "one price policy" because they offered a large number of items and employed many employees. Traditionally, price acts as a major factor influencing the choice of the buyer (Kotler and Keller, 2013; Pudło and Gavurová, 2012). Several authors Kotler *et al.* (2009), Solomon *et al.* (2006), Kotler and Keller (2007), Štefko (2003), Gburová (2011) point out that price decisions and pricing strategies are considered as a highly accented issue that must be to a large extent handled by marketing. Pricing issue in market conditions is also the specific issue of each company. Price is an item of the mix marketing; its task together is to with other instruments bring the company to its marketing objectives (Kita *et al.*, 2010).

Economic fall in recent years caused the "price pressure" for a lot of companies. Price cutting is not always the best answer, because unnecessary cutting can lead to a profit loss or dangerous price wars (Užík and Šoltés, 2009; Szabo et al. 2013). This may indicate to customers that a price is more important than a brand. In pricing companies must carefully consider a number of internal and external factors while choosing a price, which provides them the biggest competitive advantage on the selected markets. Pricing decisions are limited by laws and ethical factors (Kotler et al., 2007; Foust, 2003; Gavurová, 2011, 2012). Currently, companies have to face constant price change of their competitors. The strategy often depends on whether the company produces homogeneous or nonhomogeneous products (Kotler et al., 2009). Pricing must become an integral part of the marketing strategy of the company and must also comply with corporate and marketing objectives, as well as other elements of the marketing mix. In addition to these inputs a prices trader has to consider the demand, price and competition while making decisions about prices (Gavurová et al. 2014; Laucaster and Massingham, 2010). Making the qualitative pricing strategy requires an understanding of various situations, considerable background material and results of proven experience in a variety of situations, which arised during the competition compete. Their use and good theoretical knowledge are prerequisites for the success of processed procedures in price area of every businessman (Olah et al., 2009; Šoltés and Gavurová, 2013). Companies usually do not provide the only price, but rather a pricing structure that reflects the diversity of demand and costs between different regions, the requirements of individual market segments, timing of purchase, warranty, service contracts, and other factors. As a result of rebates, deductions and sales promotion company rarely achieves the same profit from each unit sold product (Kotler and Keller, 2013). Price is often the most important, in some cases, the only factor that can influence the consumer to purchase.

Conclusion

Due to the recent economic recession and ever-changing economic situation, consumer attitudes to prices are also changing, because many of the consumers found that they are no longer able to maintain their current lifestyle. Consumers have begun to focus more of their purchases on the real needs and satisfied themselves with cheaper products. The results of our research show us this fact because marketing managers of retailer affiliates ranked promotional discounts as the most used strategy. According to surveyed regional managers action prices strategy is also one of the most used marketing pricing strategies within the branches of retail affiliates operating in the North-Eastern Slovakia.

We can say that Slovak trade is already European trade, because in recent years we dealt with Europe, not only in the assortment, quality environment, but also in offering services. The problems we have are also European: rise in food prices, but also specifically "Slovak", which are translated into laws. Regarding to the obtained results, there is a question whether there is a need for change of determining marketing pricing strategies in retail affiliates operating in the North-Eastern Slovakia. Based mainly on the findings of the convention, provided that the coherence of determining the price of marketing strategies within the branches of retail chains operating in the North-Eastern Slovakia is not enough and competitive enough.

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TECHNICAL, ECONOMIC AND MANAGERIAL STRUCTURES IN THE FIELD OF ENERGY IN THE VISION IN THE EUROPEAN UNION

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Abstract:

In the global context, emphasis is strongly placed on the attempt to render extractive mining and energy industry profitable with the help of improved or innovative technologies. Yet, in the field of miningenergy there occurs a noticeable gap between the operational levels of highly developed, underdeveloped or emerging countries. The last have more flexible laws related to environment. The development of new technologies and cooperation to improve the situation of those in operation are topics for technical and commercial approach, but the demarches were marked by economic, contextual circumstances. Worldwide including Romania, they require a central qualitative and strategic parameter, in what concerns the the mining and energy technologies, to be taken into account, namely international competitiveness.

Keywords: energy, efficiency, energy sector, economic development, renewable energy, European strategy, sustainable energy.

JEL Classification: M12, M54, J53

Introduction

In early 2006 the European Commission launched a broad public debate on the future of the EU's energy. For Romania as a member state it is particularly important to adapt to the general framework of Community energy policy. It is marked by three important objectives in the medium and long term, namely:

- increasing the security of energy supply;
- increasing competitiveness in the energy field;
- reducing environmental impact.

To successfully address these objectives, the European Union aims to establish and implement a common policy in the field of energy where, traditionally, national competences are very extensive and the Community instruments are limited.

From this perspective, it should be stressed that EU Member States remain sovereign in establishing the forms of energy that they want to use. On the other hand, each selection must be accompanied by the implementation of measures adopted at Community level for that form of energy.

- Among the priorities proposed at European level we mention:
- The initiation of analysis regarding the long-term energy demand and the way it is provided;
- Elaboration of an action plan for energy efficiency;
- The implementation of an action plan regarding biomass;
- Development of an interconnection plan and facilitation of the achievement of priority infrastructure projects which contribute to supply diversification and integration of regional markets into the EU internal market, recognizing the essential role of economic operators in these projects;
- The improvement of the dialogue on energy between Russia and the EU, including the ratification by Russia of the Energy Charter Treaty and the finalization of negotiations on the Transit Protocol;
- Development of a strategy to promote the concept of the internal market in EU neighboring countries;
- Ensuring appropriate priorities for the energy sector in FP7 research program;
- Improvement of energy markets transparency, particularly in respect of storage capacities and oil stocks data;
- The organization of a European debate about the future of nuclear energy, with accurate information of European citizens on the current state of energy, advantages and

disadvantages of this form of energy, the progress made in the field of nuclear safety and radioactive waste management.

Conclusions

The European Commission's energy policy is to be revised two years after its adoption, concurrently with the publication of a report on the implementation and results achieved. Through the energy policy of the European Commission proposed they create a coherent framework for action not only to ensure the EU's energy future, but also to reduce the impact on environment, particularly, on climate change. Specific targets are set unilaterally in the Union. This is an example for the rest of the world states and Europe take the leading role in the fight for a clean and safe planet.

The general objective proposed is also effective on the safety of energy supply in the long term. Through achieving this goal Europe will reduce exposure to price volatility of fossil energy resources, will stimulate the development of domestic markets for electricity and gas and encourage technological development.

Three related objectives emerge from the the overall objective, the European Commission proposing a target:

- Increasing the share of renewables in the total energy mix to 20% in 2020;
- Improving energy efficiency by 20% by 2020;
- Increasing the share of biofuels in transport to 10% by 2020.

Based on contextual research it is possible to design and implement technical, economic and managerial restructuring activities in energy complexes. Therefore, the use and future structural transformation from technical, economic and managerial perspective of the energy sector in the European Union is an approach characterized by risk estimation and prediction that aims at measuring and dimensional reduction, of their content, respectively.

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THE REAL EXCHANGE RATE VOLATILITY COMOVEMENTS AND SPILLOVERS IN THAILAND'S INTERNATIONAL TRADE: A MULTIVARIATE GARCH APPROACH

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Abstract:

This paper examined the real exchange rate volatility comovements and spillovers among major currencies in Thailand's international trade against the Thai baht including the USA dollar (USD), the British pound (GBP), the Japanese yen (JPY) and the Malaysian ringgit (MYR). The data used in this study was the monthly data from 1985 to 2013. The three Multivariate GARCH models, namely the diagonal VECH, the diagonal BEKK and the CCC, were employed.

The empirical results overall for monthly data showed that the ARCH and GARCH estimates of the conditional variance between the real exchange rate returns were statistically significant in case of RGBP and RJPY. The conditional correlation between volatility of the real exchange rate returns was statistically significant in case of RGBP with RJPY as well.

Finally, we would choose the best model by considering the value of log-likelihood, AIC, SIC and HQ. We found that the best model in volatility analysis was the CCC model.

Keywords: The real exchange rate volatility, comovements and spillovers, the diagonal VECH, the diagonal BEKK, the CCC model

JEL Classification: G17, G12, G32

1. Introduction

The exchange rate is important for trading between countries, considered a business cost. Even though, Thailand has mainly partners in the export and import of goods and services such as ASEAN, EU, Japan and China. But Thailand also relies on money in dollars USD for international trade. Revenues from the export or expenditures from the import, paid in USD averaged 80% and the other currencies are next. We can consider from Table 1.

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Currencies	USD	THB	JPY	EUR	GBP	SGD	MYR	OTHERS
The proportion in export	80%	8.20%	6.10%	2.80%	0.40%	0.30%	0.20%	2.00%
The proportion in import	80%	4.40%	10%	3.70%	0.30%	0.70%	0.60%	0.3%

Source of data: Bank of Thailand (BOT), 2013

In addition, the Thailand's exchange rate switches to a managed float exchange rate system since 1997. The Thai baht will move according to the market mechanism that is affected by the internal and external factors of the country. The change of exchange rate may affect international trade. Therefore, volatility management of exchange rate is necessary.

Now we look back on the exchange rate. It can be divided two types such as the nominal exchange rate and the real exchange rate. The nominal exchange rate is exchange rate seen in general. But for the real exchange rate, according to the definition, the real exchange rate can be defined in the long run as the nominal exchange rate (e) that is adjusted by the ratio of the foreign price level (P_f) to the domestic price level (P). It can be shown as:

The Real Exchange Rate
$$(RER) = e \frac{P_f}{P}$$
 (1)

This study covers the conditional volatility and the conditional correlation of Thailand's international trade by taking changes in the real exchange rate into consideration. The reason is that the real exchange rate affects the Thailand's international trade more than the nominal exchange rate. And we choose four important exchange rates in the volatility analysis; the USA dollar (USD), the British pound (GBP), the Japanese yen (JPY) and the Malaysian ringgit (MYR)

We can explain more in the next section, which is related to the literature reviews, research methodology and empirical results.

Conclusion

This paper estimated three popular multivariate GARCH models, namely the diagonal VECH, the diagonal BEKK and CCC model, for the real exchange rate returns of USA dollar (RUSD), British pound (RGBP), Japanese yen (RJPY) and Malaysian ringgit (RMYR) against the Thai baht. The empirical results overall for monthly data showed that the ARCH and GARCH estimates of the conditional variance between the real exchange rate returns are statistically significant in case of RGBP and RJPY. The conditional correlation between volatility of the real exchange rate returns is statistically significant in case of RGBP with RJPY as well.

Finally, we will choose the best model by considering the value of log-likelihood, AIC, SIC and HQ. We found that the best model in volatility analysis is the CCC model. Such results can be useful as the management the volatility of the real exchange rates for Thailand's international trade.

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MODELLING THE DEMAND FOR NEW INVESTMENT CREDITS TO THE NON-FINANCIAL COMPANIES IN THE SLOVAK REPUBLIC

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Abstract:

This article deals with modelling the demand for new investment credits to the non-financial companies in Slovakia. The main aim is to analyze what indicators determine the demand for new investment credits using Autoregressive distributed lag modelling approach to cointegration analysis. The time period under consideration lasts from January 2009 to September 2013. Applied econometric analysis has confirmed the existence of the long-run relationship between the examined variables. We have shown that the index of industrial production, cost of loans and inflation rate are important determinants of the investment credit to the non-financial companies in Slovakia. The employed ARDL approach to cointegration enabled us to examine the long-run and short-run relationships among the variables of interest. The signs of the coefficients indicate that the estimated function is a demand function for the investment credit to the non-financial corporations. Both the CUSUM and CUSUMQ tests confirm the stability of the estimated long-run coefficients of the demand function.

Keywords: new investment credits, non-financial institutions, demand for investment credits, bounds test, ARDL approach to cointegration

JEL Classification: G21; G31; C22

1. Introduction

Credit developments carry significant information about both economic and financial activity. First of all, changes in credit provide signals about the availability and demand for funds supporting (or deterring) the investment and spending decisions of the private non-financial sector. This is particularly the case where bank lending is one of the major sources of non-financial corporations financing. Credit developments may thus contain useful information for forecasting an economic activity and monetary developments. In addition, from a monetary policy perspective, the credit market potentially plays a propagating role in the process of transmitting changes in monetary policy to the real side of the economy. Loans are also the major component of banks' asset side of their balance sheet and hence they represent a significant counterpart to the monetary aggregates. As a result, corporate lending is an important measure to consider for the regular assessment of the monetary policy stance. Detailed knowledge about the various structural factors determining corporate loan developments is therefore crucial for understanding monetary developments and, ultimately, for the setting of monetary policy.

Most previous studies have either modelled credit to the private sector as a whole (Hofmann, 2001; Hulsewig, 2003; Calza *et al.*, 2003; Gambacorta and Rossi, 2007) or business lending for individual euro area countries (Bridgen and Mizen, 1999 and 2004; Kakes, 2000). In the case of Slovakia the analysis of the determinants for household credits is studied e.g. by Vokorkosová and Peller (2013). Furthermore, in our analysis, we exploit a dataset of credits to the non-financial companies in the Slovak Republic.

Conclusions

This study employed the bounds test (ARDL) approach to cointegration to examine the longrun and short-run relationships between the real investment credit to non-financial companies, the interest rate, the index of industrial production and the inflation rate. The main aim of the study is to estimate the demand for the real investment credit to non-financial companies and find out the indicators that have an impact on the demand for the credit to non-financial companies in Slovakia. By applying the cointegration technique we were able to find out that the variables of interest put in the demand function (6) are bound together in the long-run. The estimated error correction term was also highly significant and negative confirming the existence of the long-run relationship among the variables of interest. Both CUSUM and CUSUMQ tests confirm the stability of the long-run coefficients of the investment credit demand function. The results also indicate that the economic activity, cost of loans and inflation rate are important determinants of credit demand to non-financial companies in Slovakia. This implies that the growing economic activity will enhance the investment credit demand in Slovakia.

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ETHICS PERCEPTION IN BUSINESS AND SOCIAL PRACTICE IN THE CZECH REPUBLIC

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Abstract:

Business ethics, as a part of so called applied ethics, has been dynamically gaining on importance. Pushing the idea of applying ethics in the Czech business environment has started in the mid-90s of 20th century. Since that time the business ethics has made a huge progress and its Czech representatives and promoters have done a significant amount of work in this area. On the other hand, it is necessary to objectively admit, that there are still many managers, businessmen, students and people who have doubts about the legitimacy of business ethics and they consider it as unreal and illusory in the market environment. Therefore, main objective of this paper is to contribute to the knowledge, understanding, current status, level of perception's awareness of ethics and morality in business and social spheres based on both theoretical analysis and resource bases, and own empirical research.

Keywords: business ethics, applied ethics, corporate social responsibility, Czech society, pilot survey, qualitative analysis.

JEL Classification: M140

1. Introduction

Much of the growing importance of business ethics was caused by the membership of Czech Republic in the European Union, which very intensively supports ethical behavior and corporate governance of European enterprises with the aim to increase their competitiveness in a global measure. The initiator of promoting ethical behavior can be also the representatives of business sphere. Entrepreneurs' growing interest about ethical and social audits, implementation of ethical codex and other methods and tools of business ethics has various causes: pressure of foreign partners, requirement for foreign investment, changes in customer's attitudes, company's culture of foreign parent company, requirement of quality and stable employees, requirement for long-term business relations, pressure of supranational institutions and state and total pressure of society and public opinion (Bowie, 2013; Andriof, McIntosh, 2001; Kline, 2010; Schminke, 2010; Kunz, 2012; Trevino, Nelson, 2011).

If the main aim of entrepreneurship is to maximize profits then it is impossible not to encounter in practice the irresponsibility, performance orientation and motivation, increase need of money and consumption etc. We meet with ethics resp. with its disobeying practically every day. Large-scale media and mass media are informing us daily about law violations, but also about the facts and situations which are not clearly stated in law but they are generally known and violating these rules/laws is considered unethical and immoral.

Many managers and business owners are asking themselves whether there is any sense in dealing with ethical and moral aspects of business. It is generally said that you either behave consistently ethically and morally, but in this case you do not have much chance of success at the market, or you are successful, efficient, and competitive, simply you are earning money, but ethics is a luxury for you, it is a luxury good. Ethics, morality and success in business do not mix. This is then related to overall increase in corruption, economic crime and other social and socio-pathological phenomena. However, now in a time of falling economic results of enterprises and overall companies' deterioration, enterprises and companies are more interested in ethical aspects, tracking the causes and consequences of its absence not only in interpersonal relationships, but especially in the business and commercial sphere. The importance of applying ethics in business and management is discussed very

often, different views are presented as to why and how important is ethics in business, why ethics is a necessary prerequisite for the future development in all areas of social existence. The importance of business and management ethics is becoming more urgent and necessary as the globalization's process is coming to its peak. Here, we are dealing with overcoming up to now respected opinions and searching for ways to form new interpersonal relationships and creating more dignified business environment. Tendencies, trends and topicality of this problematic are suggested by the fact that many various ethical conferences, seminars, trainings, symposia etc. are being organized. At the same time they discover and promote approaches which state that especially linking business ethics and enterprises' social responsibility belongs among one of the competitive advantage on the market and represents the image of corporate culture (Bailey, Burch, 2005; Caroll, 2008; Blowfield, Murray, 2008; Duarte, Diniz, 2013).

Currently we can, with certainty, characterize several basic foundations (Kuldová, 2012, Collins, 2012):

- Many institutions and organizations that support the implementation of business ethics in the Czech Republic were established, they promote the idea of ethical behavior. They compile rankings of ethical companies, present particular examples on how to do business ethically, they execute research and gather concrete contributions of ethical behavior.
- Consulting companies which help the enterprises to apply concrete tools and methods of business ethics organize seminars and provide training in the area of business ethics.
- Cooperation of private and non-profit sector has intensified. The amount of concrete social and environmental project is continuously growing.
- Conferences, meetings of representatives from state, private companies, non-profit sectors and academics are being held; the aim is to support and promote development of business ethics in Czech Republic.
- Many researches, in the area of business ethics and company's corporate governance, which evaluate current state and point out trends and development direction, were executed in the Czech Republic.
- Teaching business ethics takes place at most of Czech universities.
- There are more and more companies that actively apply ethical principles of business and permanently sustainable development.
- More Czech customers are interested in ethical and responsible behavior of companies whose products they are buying.

This pilot survey follows and in fact complements current, already executed investigations in the field of business ethics and social practice. We work on the assumption that it is not possible to comprehensively and methodologically cover the problem only based on a single study or partial empirical research. Therefore, it is necessary to perceive the results (findings) as complementary. The structure and content of the research is based on the work of Čaník, Řezbová, Zavrel (2006), Putnová, Seknička (2007), Dytrt *et al.* (2011), Remišová (2011), Kuldová (2012), Kunz (2012), etc.

Conclusion

From the executed empirical investigation we have found partial, specific findings:

• Almost absolute majority of respondents say that it is *very important and significant* to deal with ethics in business and management activities. Similarly, the respondents contended that ethics in business *has its justifiable benefits*. They also believe that ethical behavior will *pay off* to the companies and organization in the long term horizon. It is more than positive that respondents evaluate the role and the importance of ethics in social practice; however, it still remains more or less as the "sympathy" for ethics. Another, not entirely academic, but an apt expression is that everybody talks and discusses about ethics and its importance but nobody really does anything about it, more precisely nobody does anything that would at least partially improve this situation.

• Respondents consider the behavior of enterprises in the Czech Republic *rather unethical*. It is also very worrying that respondents perceive this situation in the future as *deteriorating*. It is difficult to say what has caused this situation. Certainly, the level of current political corruption and instability, ongoing economic recession, overall deterioration of interpersonal relationships etc. contributed to this problem. This impression is also confirmed especially in the comparison with foreign countries; it is not only the business environment that the respondents evaluated at much higher level. Here comes

into consideration the fact, how would the respondents react or what they would most probably mention in case of "heretical" question, such as: "By what specific activities, attitudes or behavior did they contribute to increase ethical behavior at their workplace or elsewhere?, or "What did you (yourself) do to make whole picture of ethics in society different, better?".

• Respondents claim that the situation in the context of ethics in business continues to deteriorate, and the Czech Republic's businesses are behaving *rather unethically*. The evaluation and assessment of the level of ethics in organization, in which the respondents work, are less critical. They claim that their own company is behaving ethically. A certain inconsistency of these observations can be attributed to a certain level of anonymous answers. Respondents have the tendency to answer general, social questions more sincerely. Within the context of assessing their surrounding and specific environment the respondents are more tolerant.

In the context of ethics in companies and organizations, it was found that the ethical and moral level is *higher in international or multinational corporations*. As already mentioned, the degree of ethical climate in foreign companies is generally perceived at higher level. This is among other things due to a certain long-term social, political, economic and cultural development.

Over sixty percent of respondents work in an organization with purely Czech capital, this with the respect to the fact that higher level of ethics is perceived in foreign companies. From this information we can derive that if the respondents worked in an organization with mostly foreign capital (investor) we could assume higher level of ethics, resp. perception of level and ethic's evaluation.

From the series of questions it was found out that there is a higher occurrence of unethical behavior in *profitable and state organizations*. By state company we understand organization in which the state is at least co-owner. The private and state sectors are colliding here. In this environment the respondents perceive the highest level of unethical behavior.

Potential benefits of ethical behavior of companies and organizations fully correspond with other, previously carried out research and studies. Among the major reasons for the introduction of ethics in business, according to respondents is: *company reputation, strengthening corporate culture, keeping skilled employees, competitiveness.* Other less significant reasons are: increasing product quality, sales growth and profit growth. How much are these reasons justified and important for effective company's operation remains a question.

Among the major ethical problems not only in the business environment, but in society as a whole, respondents perceive: *corruption and bribery*. This belongs (with respect to various social environments) to the most common socio- pathological phenomenon. Further problems were also registered: unfair treatment of employees, unfair sales and marketing practices, financial fraud, failure to comply with terms and conditions or poor quality of products and services.

The highest level of corruption is obviously seen in the *political sphere* 78%. Others troubled sectors include: construction 65%, health services 50%, transportation 43% and industry 42%, etc. this basically corresponds to the current Corruption Perception Index (CPI) with a rating of 4.4. The rate of this index ranks the Czech Republic in the EU and other developed countries at the bottom of the trend.

More than half of the respondents claim that a fundamental change to increase the overall ethical and moral climate in the Czech Republic is in the *way of thinking, politics, and people* 57%. This is largely associated with the political culture in general. So, the way the leaders present their image of ethical and moral patters of political life, the same way we, the citizens follow this pattern. Next, a lower percentage in changes is: *rigorous enforcement of law, respect for existing norms and laws and consistent control.* Interestingly, the improvement in ethics in Czech society is not, based on the results, a question of time (continual development of social changes) but necessary, fundamental, radical change is required.

As the greatest factor (condition) of successful business in the Czech respondents consider the *quality of the product*. Interesting is that in the previous question No. 9 poor quality products and services are with only 21%. Furthermore, it is about *prestige and reputation of the company, innovation, clear corporate strategy, network of contacts and friends or corporate culture*. The survey results only confirm the need, importance and sense of increasing company cultures in companies and organizations. This corresponds with necessary need to implement various ethical tools into business

sphere. Actual *business ethics* as a factor of increasing success in business sees only 18% of respondents.

Ethic rules, values or better the presence of ethical codex are *rather an exception* in the analyzed companies. Potential sanctions and penalties for breaching something which basically does not exist is very difficult. Research indirectly confirmed dependence between company's size and code of ethics. In large companies (approx. more than 300 employees) the presence of internal ethics document can be assumed more often. At the same time, the relation between code of ethics and company's origin is proven. The more the foreign capital is present the higher is the probability of ethical codex existence.

Business entities in the Czech Republic deal with violations of ethical rules and standards with difficulties. Respondents, themselves admit in most cases that they are not aware that their employer, supervisor, or management had ever dealt with ethical code violation. This may be due to the fact that de facto none ethical wrongdoing occurred or the issue is not specifically addressed. Only in exceptional cases unethical behavior was punished by a penalty, or even dismissal. This confirms the fact that some businesses, but also other organizations in the Czech Republic do not know how to proceed when ethical rules are disobeyed. This problematic is especially complicated if specific ethical directives are not implemented.

Next, also very important findings are that more than half of the respondents do not know, what CSR concept (Corporate social responsibility) means or what it represents. But in fact this concept is a typical example of ethics' application into business and managerial work. Based on the survey and its results it is evident that a radical change in terms of improving the ethical climate and moral awareness or corporate management is necessary. The situation is urgent. Managers should lead their companies in current market conditions to prosperity. This obviously will not happen without problems which they have to solve responsibly, they have to decide about them and they have to be held responsible for their decisions. Objective, responsible and ethical managerial decisions are complicated. Defined rules (phases) for ethical decision making within the organization can help the managers in their decision making (Čaník, Řezbová, 2006; Putnová, 2007).

Applying ethics into business is not a fashionable trend although it can seem like this. It is some kind of "revitalization" of correct, transparent and responsible business which should become necessary condition for success – to become competitive. Managerial ethics increases business' transparency and it helps to overcome uncertainty in decision making about strategic goals in the context of economic and social phenomenon. Mentioned problematic of consumption does not have to be a fundamental social problem if it is "managed" in the context of economic responsibility.

In the context of other surveys we have to, unfortunately, admit that interest of management in implementing ethics into business is rather formal and it has never been high. It is necessary to realize that ethics and morality, more precisely its level is not an issue only for that particular company or institution but it reflects total level of ethical climate of society. It is abundantly clear and understandable that the goal of every company/enterprise is to satisfy the market requirements, fulfill economic objectives in the context of further development or sometimes even survive in the market, efficiently use existing capacity and anticipated sources of new investment and de facto continuous process of innovation support as a means of competitiveness. It is assumed that all this is happening in the context of ethics, morality and good governance procedures. But the reality is somewhat different. Many cases can be found and documented where strictly adhered ethics in business and managerial work "got" the company into bankruptcy, the competitive failure. It is not possible to be so short-sighted that we did not realize that the academic environment provides a place; space and time to deal with ethics, morality, conscience and other noble themes. There is a space to explore and investigate. The market environment is competitive fight where businesses battle for survival is definitely not the ideal environment for ethical "experiments".

Nevertheless, we cannot accept the American slogan "Whatever is good business is good ethics." And yet we still believe that it is possible to "do" business fairly, honestly, solidly and still effectively. Due to the very theme and content of the work it is in principle more than undignified, degrading and desperate, that we have to deal and solve the question of ethics and morality. It should be a natural thing!

There is a clear connection between the problematic of knowledge of management, companies, organizations and total level of morale in the society. Otherwise said, company's

management but also their employees are a part of complete reflection of morale profile of a given company. From this point of view the analysis of ethics in business is fundamental.

Company's management responsibility creates some added value in the life of whole society. It increases not only the total level of a domestic company's good name, but in current, globalized, geo-economic place and also the position in international context. It cannot be ignored or underestimated if the companies realize their social role, significance and in what rate do they participate on total increase of national wealth. Logical connection among wealth, company's prosperity and wealth and prosperity of society is evident. Nevertheless, it should not be done for any price. In ethics and morality the liberal statement: laissez-faire cannot be applied. As a success in business we should not consider only production prices increase and company's cost decrease. If we talk about responsible and wanted results from business, then we think about all organization's activities which do not reduce their duties in case of satisfying the stakeholder's interests.

Ethics and its meaning in business and managerial work have been discussed for quite a long time; in our country as well as in many other developed economies. The meaning of ethics, resp. the interest in it is growing. This is especially due to the development of science, technology and information technology, which in the context of globalization presumes development of international cooperation. This development and building mutual relations is not possible without systematic ethical base.

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ECONOMIC ASPECTS OF WORKING TIME FLEXIBILITY IN SLOVAKIA

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Abstract:

The paper presents the results of the research held on flexibilization of labour and promoting reconciliation of work and family life in Slovakia. Data collection was done by questionnaire survey on a sample of over 400 respondents (parents of minor children) in the Central Slovakia (Banska Bystrica region). Data were analysed by data mining methods (frequency and cross tables, decision trees) in SPSS. We tested the dependence of responses to questions about flexibility of working time and contractual arrangement from economic indicator of work (occupational), sector of economic activity, ownership (public and private owned companies) and their impact on working conditions. The aim of the paper is to identify critical factors of influence on working time organization from the first named group of factors of influence (work, production process organization, sector of economic activity and occupation specifications) with intention to support implementation of positive working time flexibility in Slovakia and another post-socialist countries of Central and Eastern Europe facing problems in this area.

Keywords: working time flexibility, factors of influence at sectorial, occupational and company level, decision trees.

JEL Classification: J22, C38

1. Introduction

Economic factors (at sectorial, occupational, company level) cannot be considered in isolation. At the same time with economic characteristics of production process it must be taken into account the influence of socio-demographic structure of workers on working condition, especially working time organization. Both above-mentioned groups of factors (on the employers-site and on the workers-site) that determine working time organization at company level are influenced by national and sector characteristics (legislation, culture, norms formal and informal, collective bargaining etc.), too.

On the basis of own research results and on the basis on data analysis from Eurostat, European Foundation of Working and Living Conditions (Eurofound) in Dublin and from Institute for the Study of Labour (IZA) in Bonn we make conclusions about key factors of influence on working time flexibility from economic area (at company, sector of economic activity and occupation level) to improve practical implementation of positive working time flexibility in Slovakia and other countries of the Central and Eastern Europe.

In the second part we describe the assumption of the research of problematic working time flexibility at company level.

Conclusion

The aim of our paper was to identify critical factors of influence on working time organization from the first named group of factors of influence (work, production process organization, sector of economic activity and occupation specifications). Not only business objectives (production process character, fluctuations of demand, workload irregularity), but also company's culture, the negotiation climate within the company (trade unions density, collective bargaining, works councils) are an important explanatory factors in the analysis of a company's organisation of working time, as well as professional or sectorial profiles affect significantly applications of flexibility schedules at company level. The group of economic factors cannot be considered in isolation. With economic characteristics of production process it must be taken into account influence of socio-demographic structure of workers on working condition, especially working time organization. The differences between countries may reflect how institutional and cultural differences affect application of working time flexibility in practice. Slovakia and countries of the Central and Eastern Europe are countries with lower levels of working time flexibility, particularly of positive (workers-oriented) flexibility of working time schedules. Reasons are not only objective (determined by nature of production process, sectorial or occupational specifications), but also subjective behaviour at level of individual employer (business culture, by willingness to negotiation about working conditions improvement) and workers structure (by skills, age, occupations and by their individual preferences and needs). Evidently, all these factors have influence on resulting flexibility of working time schedules. We specify key factors of influence at company level with the intention to support implementation of positive working time flexibility in practice of Slovak companies and in companies in other post-socialist countries of the Central and Eastern Europe facing problems in this area.

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THE EFFICIENCY OF SLOVAK UNIVERSITIES: A DATA ENVELOPMENT ANALYSIS³

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Abstract:

We run Data Envelopment Analysis to study technical efficiency of faculties in the Slovak Republic. Our dataset come from Academic Ranking and Rating Agency. Inputs for our analysis are Education, Attractiveness of study and Doctoral studies. Output variables in our study are Research and Grants. Our finding shows that there exist serious differences in effectiveness of faculties. The most serious imbalances are within Economic Sciences group, Technical Sciences group, Theological Sciences and Group of Arts. On the other hand, the most balanced situation is within the Natural Sciences group, Medical Sciences Group and Agricultural Sciences Group.

Keywords: Data Envelopment Analysis, Slovak universities, efficiency of faculties.

JEL Classification: C14, I21

1. Introduction

Efficiency of schools is a crucial factor that can lead an educational system towards economic efficiency. In this paper, we look closer on the technical efficiency of universities in Slovak Republic using Data Envelopment Analysis. The issue of efficiency of universities is quite complex, because of the fact, that higher education is, apart of certain exceptions, public good, thus one cannot orient in pursuance of market price. In Slovakia, private and public universities coexist. Both of them have different goals. Whereas public universities aim to carry on own research and development, private universities are aiming on profit maximization. Despite of the fact, that Slovak Republic is a relatively small country, we can find here 20 public universities, 3 state colleges, 13 private colleges and 4 foreign universities. In this paper we present data envelopment analysis, which works with 24 universities, 109 faculties, among which 103 are public ones and 6 are private faculties. Our dataset comes from independent Slovak civil association Academic Ranking and Rating Agency report for 2013. Our study use as input variables: Education, Attractiveness of study and Doctoral studies. Output variables in our study are Research and Grants.

The aim of the study is to examine the efficiency of faculties based on their scientific specialization. Paper is organized as follows: in next part literature review is proposed. Afterwards materials and methods are described precisely. Subsequently, results of the analysis are presented. Final part of the paper is devoted to discussion and conclusion.

Conclusion

In this paper, we run Data Envelopment Analysis to measure technical efficiency of faculties in Slovakia. Our analysis revealed that in Technical Sciences group, 15 out of 23 faculties operate on

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the efficient frontier. In the Natural Sciences group, six out of seven faculties work in an efficient way, thus, this group seems to be quite equilibrated. We observe the same pattern in the Medical Sciences group, where eight out of ten faculties operate in an efficient manner. Among faculties from the Agricultural Sciences group, four out of six operate well. The Economics Sciences group is the motliest one. Here, only five out of fourteen operate in an efficient way. Moreover, differences in input-oriented and output-oriented analysis are quite relevant. In a Social Sciences group, more than one half, six out of ten, of faculties lie on the efficient frontier. The Philosophical Sciences group is the most equilibrated one, here five out of ten faculties works in an efficient manner. In Law Sciences group, three of the five faculties operate in a good way. Within Pedagogical Sciences group four out of nine faculties operate well. Moreover, all the teaching faculties are pretty close to the effective border in input-oriented model. In Theological Sciences group, three out of seven faculties work well. Here we observe the critical state of the Reformed Theological Faculty of J. Selye University. In the group of the Arts three faculties are performing well and remaining five have serious distance from successful ones. Noteworthy is maybe the fact, that in the field of Arts, intangibility and particular character of outputs can affect obtained results.

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ASSESSMENT METHODOLOGY FOR RESOURCE-EFFICIENT DEVELOPMENT OF ORGANIZATIONS IN THE CONTEXT OF THE GREEN ECONOMY

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Abstract:

The paper deals with the problem of forming comprehensive methodology for determining the level of economic, social and environmental performance of all organizations. The system of indicators that allow an individual to make a forecast of the development of economy under the conditions of its transition from "brown" to a "green" one is proposed by authors. These indicators can be grouped into three categories: indicators of economic transformation, indicators of progress and well-being, and indicators of resource efficiency. An assessment methodology for resource-efficient development at the macro level was created in accordance with the international standard of the Global Reporting Initiative and methodology for sustainable development of the industrial organizations. This methodology is based on specific categories of indicators of organization's sustainable development, such as the indicators of economic sustainability, social sustainability and environmental sustainability. The main stages in the formation and implementation of the methodology in the performance of an organization are presented in the given paper.

Keywords: green economy, brown economy, sustainable development, ecology, green economy indicators.

JEL Classification: Q01, Q57

1. Introduction

A shift towards a green economy defined the beginning of a new stage of the development of our society, when the existing paradigm is replaced by a new paradigm for the low carbon energy, necessary for sustainable economic development. In recent decades the most prominent scientists, experts and politicians regard the priority task to ensure a comprehensive and balanced development of civilization, as defined by the main task in twenty-first century. The overcoming of the modern society ecological crisis, as well as improving of the ecological state of the environment and resource management requires immediate transition to sustainable ecological and socio-economic development, like in most technologically advanced countries all over the world. Nowadays particular attention is paid to the search for possible solutions to the urgent problems of eco-economic theory and to the formation of a modern paradigm of economic and environmental management, grounding on the "green" economy. The development of methodology and conceptual principles of sustainable development is no less important than economic education in the context of myriad of global transformational and environmental challenges faced by certain countries, regions and continents. It should be mentioned that "green" economy as a system of economic activities ensures agreeable combination of three components of sustainable economic, environmental and social development.

Conclusion

As a result of the research, we developed a methodology for assessing the level of greening of organizations, which is distinguished by the presence of the complex analysis of sustainable development and the possibility of obtaining composite index based on a set of indicators. Forming mechanism of the transition from a brown to a green economy by this technique, the organization will be able to direct the economic activities in such a way as to meet the international requirements of sustainable development, to address social, environmental and risky task, ensuring that in the end, their competitiveness and viability. The implementation of the proposals presented in this paper will contribute to solving the problems of rational use of natural resources, improve the environmental, physical and spiritual quality of life of citizens, improving environmental safety. A promising direction for research on this issue is the differentiation of indicators of greening the various areas of

economic activity, through which it is possible to determine the readiness of organizations to function under conditions of ecological and socio-economic space and test the proposed methodology.

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MANAGING THE STRUCTURE OF QUALITY COSTS IN CONTEXT OF ACHIEVE "DUAL EMPHASIS"

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Abstract

Article deals with economical aspects of costs of quality (CoQ). Literature review showed that, improve of quality can increase level of sales, achieving benefits of "revenue emphasis", decrease costs achieving benefits of "costs emphasis", simultaneous achieving both effects called "dual emphasis". It also showed that, "dual emphasis" is hard to achieve. That is why the aim of the paper is to show how modeling the structure of CoQ can influence on "dual emphasis".

Key words: costs of quality, dual emphasis, revenue emphasis, costs emphasis, DOL, DFL, continual improvement.

JEL Classification: L 15, M 21

1. Introduction

One of the most important dilemmas, which should be take into consideration by management of present companies is to find effective ways of understand management in turbulent environment. One of this ways can be rational approach to problematic of quality. Demand for quality is the single most critical factor for companies to survive in the global marketplace. Quality is a wide definition refers to all processes in company. That is why improvements/deteriorations of quality have influence on effectiveness of all company. Quality should be managed comprehensively throughout the company. The concept of Total Quality Management (TQM) has been developed as a result of intense global competition. TQM has significant relationship with business performance (Ahmad et al., 2012). Appropriate improvement of pro-quality actions is possible by measuring impact of quality on company efficiency. One of the tools which measure effects pro-quality actions are costs of quality (CoQ). There are many definitions and divisions of quality costs. In group of total costs of quality are costs of good quality and poor quality. The main principle of quality management is to minimize total costs of quality, thanks to removing costs of poor quality (Juran, 1988). Removing costs of poor quality often causes increase of costs of good quality. Changes in structure of total costs of quality have influence on value of total costs. Minimizing total cost is basic assumption of "costs emphasis". In conditions of sharp competition, customers want to buy products of high quality at a low price. "Revenue emphasis" puts pressure on increase customer satisfaction and what follows increase of sales. In order to maximize profit, companies should combine these two models to achieve "dual emphasis".

Conclusion

Activities in area of quality generate costs of quality (CoQ). Literature review shows that there are many definitions and classifications of CoQ. The aim of this article was to show how managing the structure of CoQ can influence "dual emphasis". Traditional classification of CoQ divides them on prevention cost, appraisal costs and failure costs are not enough to fulfill the aim. Classification of CoQ on FCoQ and VCoQ showed how changes in improve quality product/services on EBIT and level of cost per unit. Modeling the structure of CoQ allows from one hand lowering cost per unit "cost emphasis" from another hand fulfill customer expectations, which leads to increase sales "revenue emphasis". In consequences company achieves "dual emphasis". Achieved effect of "dual emphasis" depends on directions of changes: continuous improvement, investing into quality and changes in individual groups of CoQ, quality and price products of competition, fluctuation of economy.

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SOLVENCY CAPITAL FOR NON LIFE INSURANCE: MODELLING DEPENDENCE USING COPULAS

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Abstract:

The aim of this article is to improve the internal model of the solvency 2 framework, by assessing a solvency capital for non life insurance portfolio, taking into account potential dependencies between insured risks. We used two stochastic models and a simulation technique to determine the distribution of reserve. Then we modelled the dependence using several copulas and the best one was selected using a goodness of fit test. Finally we evaluated the solvency capital in the dependent and independent case. By comparing the results, we highlighted the effect of dependence on solvency capital of the insurance company.

Keywords: solvency capital requirement, reserves, claims dependence, copulas functions, goodness of fit test, simulation methods.

JEL Classification: C13, G17, G22

1. Introduction

Plenty actuarial research in recent years has focused on the solvency of the insurance companies. Indeed, insurance company must have a level of liability (equities and technical reserve), which allows it to be solvent in future years. Historically, the insurance companies were sufficiently capitalized compared to their engagements: the markets were controlled and less volatile. Furthermore the correlation between the risks of insurance was not considered. Recently, we remark that the claims increased and the legal environment became more uncertain: the Lothar storm in 1999 and the disaster of the World Trade Center in 2001 were responsible of a number of insolvency among various lines of business: damage, catastrophes, industrial accidents, trading losses, civil responsibility. Also, some situations are observed almost every day, as for example, in auto insurance, accidents may involve several insured at once in a collision. These events proved that the risks of insurance could be dependent, and this dependence can bind liabilities or assets of insurance. Thus, control of risk has become essential. One way is to consider dependence between insured risks. For example, linear correlation is frequently used in practice as a measure of dependence notably by the solvency 2 framework see (Commission 2010). However, it cannot capture the non-linear dependence relationships that exist between different risks, especially when extreme events are highly dependent between lines of business.

Recently, several actuarial studies have applied copulas functions to fully capture a wide range of dependence structure amongst different insured risks. (Frees and Valdez 1998) have proposed copula function to measure dependence between risks of insurance, and to evaluate the loss of life mortality, the loss of adjustment expenses and reinsurance contract pricing. Moreover (Frees and Wang 2006) have used copulas for estimating the credibility of aggregate loss. In addition, (Kaishev and Dimitrova 2006) have shown the importance of copulas in reinsurance. (Antonin and Benjamin 2001) also used copulas to assess the amount of the reserve, they provided a model which combined at the same time the theory of copula and the theory of credibility in order to detect better the dependence between the lines of business. Furthermore, (Belguise and Levi 2002), (Faivre 2002) and (Cadoux and Loizeau 2004) have shown that the model with copulas allows for an aggregation of risks and evaluates a capital higher than when assuming independence. Similarly, (Krauth 2007) has modeled the dependence using three models (bootstrap, common shock and copulas) to assess the

amount of insurance reserves. In addition, (Bargés *et al.* 2009) evaluated the capital allocation for the overall portfolio using the TVaR as a measure of risk and a FGM copula. More recently (Zhao and Zhou 2010) have applied semi parametric copula models to individual level insurance claims data to forecast loss reserves, and (Shi and Frees 2011) have investigated the aggregate insurance loss reserving data with bivariate copulas and linear models. Besides, (Diers *et al.* 2012) have shown the flexibility of a Berntein copula to model a several lines of business. Moreover (Zhang and Dukic 2013) have introduced a Bayesian multivariate model based on the use of parametric copula to model dependencies between various lines of insurance claims.

All studies mentioned above have considered copulas functions as a powerful tool to resolve the problem of dependence between insurance risks. However, the new solvency 2 frameworks launched in 2001 which is the basis framework for the European insurance market, consider the correlation coefficient to measure dependence and to aggregate risks. Or this measure is insufficient to capture the non linear dependence of insurance risks.

For that, the purpose of this work consists, to model the structure of dependence between underwriting risks of non life portfolio of a Tunisian insurance company, and to assess the solvency capital requirement (SCR) by the new solvency 2 approaches. Indeed this paper is primarily motivated to show the importance of the internal model of the Solvency 2 framework compared to the standard model, and to extend the internal model by including copula approach in assessing reserves and capital.

On the basis of this framework, we consider in this paper, two models, the standard model and the internal model of Solvency 2, the last one is investigated in two cases; the independence and the dependence case in which a copula approach is used to model the structure of dependence. A goodness of fit test for copula was implemented to select the best one for the data and a simulation method of conditional distribution of the copula is applied to include dependence in the internal model.

The paper is organized as follows. Section 2 presents the Solvency 2 framework. In Section 3 we present reserving models. In section 4 we provide the copulas functions. Section 5 reports the empirical results. Some comparisons with other papers are discussed in section 6, followed by concluding remarks and some open questions in Section 7.

Conclusion

Control of risk has become a major issue in insurance where the risks are more dangerous and more concentrated. Previous research studied reserves and capital based on the independence assumption between lines of business. However, claims prove that they are dependent. It is within the framework of assessing a solvency capital requirement including dependence structure that is the objective of our study.

We carried out an analysis of a non life portfolio consists of two lines of business Auto Damage and Auto Liability. We assessed the SCR by the two models proposed by Solvency 2 and we noticed that the aggregate SCR of the internal model is lower than the SCR in total, and this is due to diversification effect and compensation between risks. This result illustrates a potential benefits for in insurance company since, it reduces the cost of capital. An important implication of this observation is that the insurer might consider expanding the Auto Damage or shrinking the Auto Liability to take best advantage of the diversification effect. Thus, we retained the internal model that provides a capital an adequacy of the proper risks of the company. The main contribution in this paper is to improve the internal model chosen. As innovative; we propose to introduce the copula approach in the internal model. The analysis between the two lines of business revealed a structure of dependence at the lower tail distribution described by the Clayton copula. The evaluation of the SCR showed that taking into account the dependence increases the solvency capital as well as the precision on reserves (minimum standard error). So our study provides a model to assess the accurate reserve and SCR for the insurance companies that are adapted to the characteristic of lines of business and suggest that evaluating SCR with the copula approach is more appropriate.

This study is a first step of modeling dependence between two lines of business. Future work should therefore include several lines of business. Also, an important question is to determine the dependence between claims of the one run off triangle. Finally, and after assessing the SCR, it is interesting to conduct an adequate allocation of the latter to evaluate the performance of each line of business.

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MODELLING VOLATILITY: EVIDENCE FROM THE BUCHAREST STOCK EXCHANGE*

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Abstract:

Financial series tend to be characterized by volatility and this characteristic affects both financial series of developed markets and emerging markets. Because of the emerging markets have provided major investment opportunities in last decades their volatility has been widely investigated in the literature. The most popular volatility models are the Autoregressive Conditional Heteroscedastic (ARCH) or Generalized Autoregressive Conditional Heteroscedastic (GARCH) models. This paper aims to investigate the volatility of Bucharest Stock Exchange, BET index as an emerging capital market and compare forecasting power for volatility of this index during 2000-2014. To do this, this paper use GARCH, TARCH, EGARCH and PARCH models against Generalized Error distribution. We estimate these models then we compare the forecasting power of these GARCH type models in sample period. The results show that the EGARCH is the best model by means of forecasting performance.

Keywords: stock returns; volatility; GARCH models; emerging markets.

JEL classification: C13, C32 C51, C52, G17

1. Introduction

The conditional variance of financial time series is important for measuring risk and volatility of these series. Conditional distributions of high-frequency returns of financial data have excess of kurtosis, negative skewness, and volatility pooling and leverage effects. Volatility of stock exchange indices and forecasting of their volatility have enormously increasing literature for both investors and academicians. The prices of financial securities have constant inconsistency and their returns over the various periods of time are notably volatile and complicated to forecast. The modelling volatility started with the Autoregressive Conditional Heteroskedasticity (ARCH) model, introduced by (Engle, 1982) and generalized by (Bollerslev, 1986) in GARCH model. Although ARCH and GARCH models capture volatility clustering and leptokurtosis, they fail to model the leverage effect. After these two papers, various types of GARCH models were proposed to solve this problem such as the Exponential GARCH (EGARCH) model , the Threshold GARCH (TARCH) model and the Power ARCH (PARCH) model.

Aim of this paper is to investigate the volatility and of Bucharest Stock Exchange, namely Bucharest Exchange Trading Index (BET) as an emerging capital market for the last decade. Also we aim to compare forecasting power of GARCH-type models to find the relevant GARCH-type model for BET. We investigate the forecasting performance of GARCH, EGARCH, TARCH and PARCH models together with the Generalized Error Distribution (GED).

Bucharest Exchange Trading Index (BET) is a capitalization weighted index which was developed with a base value of 1000 as of September 22, 1997. BET is the first index developed by the BSE and comprised of the most liquid 10 stocks listed on the Bucharest Stock Exchange BSE tier 1. Currently, the Bucharest Stock Exchange calculates and publishes a few indices: BET, BET-C, BET-FI, ROTX, BEX-XT, BET-NG, RASDAQ-C, RAQ-I, RAQ-II. BET. (Pele *et al.*, 2013; Bloomberg, 2013)

Investigating volatility of returns of stock markets and comparing forecasting accuracy of returns of stock markets have achieved attractiveness all over the world. Because of aim of the paper we focused on paper about European and emerging stock markets.

^{*} This paper is adopted the paper which is entitled as "Modelling Volatility: Evidence from the Bucharest Stock Exchange" that was presented in The International Conference on Economic Sciences and Business Administration (ICESBA 2014), 24 October 2014, Bucharest, Romania

(Emerson *et al.*, 1997), (Shields, 1997), and (Scheicher, 1999) investigates Polish stock returns. (Scheicher, 2001) (Syriopoulos, 2007) and (Haroutounian and Price, 2010) analyze the emerging markets in Central and Eastern Europe. (Vošvrda and Žıkeš, 2004) is another research about the Czech, Hungarian and Polish stock markets. (Rockinger and Urga, 2012) make a model for transition economies and established economies. (Ugurlu *et al.*, 2012) and (Thalassinos *et al.* 2013) investigate the forecasting performance of GARCH-type model to European Emerging Economies and Turkey and Czech Republic stock exchange respectively.

This paper is organized as follows. Section 2 describes the volatility models which are used in this paper. Section 3 shows empirical application results. Section 4 contains summary of the paper and some concluding remarks.

Conclusion

The first aim of the paper is to estimate the volatility model of Bucharest Exchange Trading Index (BET) by using GARCH, EGARCH, TARCH and PARCH models. The second aim is to compare forecasting performance of the used GARCH-type models to find best model for return of the BET.

The empirical application was started with interpretation of descriptive statistics. The results show excess of kurtosis, negative skewness and normality of distribution of the return series. Before the GARCH-type models were selected the ARMA models estimated to modelling the mean of the series using several criteria.

It is found that ARMA(2,2) model is the best model for investigated variable. Based on the ARMA model GARCH-type models were estimated. We compared the forecasting performance of several GARCH-type models using GED distribution for the return of BET. We found that the EGARCH(1,2) model is the most promising for characterizing the behaviour of the return of BET. In other words EGARCH model is more useful than the other models which are used in this paper for Bucharest Exchange Trading Index returns. Also the EGARCH(1,2) model shows that Bucharest Exchange Trading Index has leverage effect.

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THE PERFORMANCE MEASUREMENT SYSTEM – POTENTIALS AND BARRIERS FOR ITS IMPLEMENTATION IN HEALTHCARE FACILITIES

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Abstract:

Balanced Scorecard (BSC) belongs to the most detailed prepared and the best known approaches to the performance measurement and management. The original idea behind the BSC was to define such parameters of the company performance which reflect the final performance better than hitherto preferred complex rentability values. Compared to the traditional system, which measures performances focused primarily on financial area, essence of BSC particularly is underpinning difficult quantifying of qualitative indicators (customer loyalty, employee loyalty, rate and reasons for turnover, employee satisfaction, etc.) and their connection to traditional financial indicators. Hereby is the basic condition of BSC method fulfilled, and it is its balance. The core of the system is the way and the content of the conception of the measures in a mutual balance and the causal bonds connected with the strategy formulation. The paper declares the partial results of the research realized in the Slovak Republic and focuses on the critical areas of the BSC implementation.

Keywords: Balanced Scorecard, BSC, performance indicators, strategic performance measurement system, strategic map, KPI.

JEL Classification:

1. Introduction

Balanced Scorecard (BSC) constitutes a strategic management measurement and communication tool, which allowing in an easy way to point out, how company is well on its way to achieving its strategic objectives. It represents a multidimensional system allowing the definition and implementation of the strategy at all organizational levels of the enterprise in order to maximize value creation (Marinič, 2008). BSC is based on the basic business management tasks and by the specified business strategy allows to achieve its vision, while it lays stress on key factors (Key Business Drivers) affecting the formation of the final value of the company through four basic perspectives: financial, customer, employee and internal business processes. The balance in the system is ensured by the balance of the implementation and evaluation strategies. With the correct design of indicators in response to the corporate strategy are earmarking the strategic priorities and through causalconsequence connections also the way to the strategy realization. The manuscript is based on the results of the first research focused on the BSC use in Slovakia from 2008 to 2010, whose aim was to systematize, to review and to evaluate the selected attributes of the BSC application in the context of the implementation process in the surveyed organizations, to identify problem areas of BSC implementation and propose possible solutions to address them (Gavurová, 2011, 2012; Šoltés -Gavurová, 2013, 2014a).

2. The research sample

Given the nature of the businesses engaged in guidance and counselling services and also businesses in information systems and information technology (IS/IT), was obtaining information on enterprises implementing BSC in Slovakia through corporate websites. Scanned were the most visited websites by number of unique visitors and by entering keywords related to the issue to specified companies implementing BSC in Slovakia. On this basis it was found 40 companies indicated with BSC implementation, of which only 20 actually implemented BSC. These companies were subsequently contacted. 16 respondents were interested in participating in research. In the research realization was used the combined method of contacting in the form of written, electronic and personal interviewing. Part of the research was obtaining information - references about BSC users from

businesses implementing BSC. We acquired a second research sample of companies with implemented BSC. The first research sample consisted of advisory and consulting companies as companies implementing the BSC system. In the sample are represented companies with a history from 3 to 19 years, and most are represented businesses that have 12 years since its establishment (37.5%). Thus the sample consists of companies established in the industry quite a long time. In greatest measure are represented micro enterprises with 62.5%, at a significantly lesser extent are small businesses with 25% and medium-sized enterprises with 12.5%. The second sample (BSC users) are represented businesses from 8 to 14 years from its establishment, with the highest proportion are represented companies established in the industry for 10 years (37.5%). Number of employees in the company says solely about medium and large enterprises. Five-year experiences with established BSC system has 38% of respondents, the same proportion of companies are represented with a period of use of the BSC system from 6 to 14 years (25%). 13% of respondents have BSC in the introduction stage, respectively in initial operation as a pilot run. The BSC system was the most commonly implemented in the field of trade and industry (71%) and in a lesser extent in the healthcare system (29%) (Gavurová, 2011) (Šoltés, Gavurová, 2013, 2014b)

In the context of research outcomes is purpose of the manuscript - critical areas analysis of the BSC system implementation.

Conclusion

BSC allows communicating the vision and strategic objectives for all levels of the enterprise in the form of operational objectives. Employees are committed to the achievement of strategic objectives within their daily job descriptions, which often acts as a powerful motivational tool. On the other hand, by the operationalization of the strategy, as well as the precise definition of the indicators and their values BSC allows you to discover the hidden deficits in corporate activities and define important primary tasks. Expert implementation of the BSC spells out the powers and responsibility for the taken actions. This simple and transparent BSC structure leads to a reduction of duplication in management as well as in administration. BSC principle is very simple and extremely useful if it is implemented and used correctly. Exclusive of the positive feedback of added value of the implemented BSC for effective measurement and performance management in organizations were also reported negative experiences declaring lack of BSC benefits, dissatisfaction with the system and fail of expectations stemming from the opinion that the BSC is dysfunctional and unhelpful. Realized research declares critical areas of BSC system, by which can the BSC system does not bring desired effects. During implementing the BSC most organizations underestimate the need for communication and education; therefore it is necessary to bear in mind these two critical success factors. By applying of suitably methods, tools and indicators, respecting weaknesses and finding ways of eliminating them will BSC system constantly improve and enable to managers to obtain the benefits of this powerful management tool.

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