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Leveraged Exchange Trated Funds's Emerging Markets: A Practical Application of Statistical Arbitrage Based on Cointegration

Francisco ORTIZ-ARANGO
ECEE, Universidad Panamericana, Ciudad de México, México
fortizar@up.edu.mx

Daniel Ulises URRUTIA-MARTÍNEZ
Instituto Politécnico Nacional, Actinver Bank México, Ciudad de México, México
danielulises.urrutia@gmail.com

Alejandro FLORES-MÉNDEZ
Abacus-CINVESTAV, IPN, México
flores.mendez.alejandro@gmail.com

Abstract

Pair Trading is a Neutral Market Strategy descendant of Statistical Arbitrage. Its objective is to identify pairs of assets whose historical prices or variations have high correlation between them. To attain this, pairs trading takes advantage of overvalued assets sales and purchases undervalued assets. To identify the goal pair, we performed back-testing using historical log returns (from December 31, 2008 through April 16, 2013). With the goal pair identified we run the daily strategy using historical adjusted at closed price data and historical log returns (from December 31, 2010 through September 11, 2015). Herein, we consider two inverse Exchange Trade Funds versus benchmark EEM (iShares MSCI Emerging Markets ETF) index. The objective of this work is to demonstrate that automated trading strategy built under the co-integration approach in moving windows of 60 and 180 days is able to beat a buy and hold strategy on the EEM benchmark.

Key words: pair trading; statistical arbitrage; exchange traded funds (ETF); cointegration; mean reverse

JEL classification: C61; C63; G11; G12

Introduction

The Exchange Traded Funds (ETFs) are one of the most innovative investment instruments that have expanded the range of options available in the market and meet the needs of increasingly sophisticated investors. One of the main objectives of the use of traditional passive ETFs management is to minimize the tracking error, which results in transactional and operational efficiencies. This is a clear competitive advantage over investment funds, since through them it is possible replicate the behavior and performance of a reference index or benchmark; offering investors access to the markets of different countries, regions or sectors, as well as fixed income and commodities, in addition to leveraged and inverse ETFs that take advantage of certain market opportunities, at low cost and with relative ease. There is consensuse among researchers and practitioners that passive management instruments do not allow to take advantage of changes in the market trend, showing a path dependence of underlying price index, and generally falling in transactional inefficiencies that make their cumulative returns Long-term deviate considerably as a result of the rebalancing associated with their daily activities. This is increased in an environment of high volatility and decreased in stable markets, making them less competitive than passive portfolio construction strategies.

Active management of these instruments gives competitiveness, such as market strategies rely on timing, short selling, long / short, neutral market or track time or volume weighted price, in order to identify patterns, market trends and benefits, and to take advantage of them. However, if the institution let to a manager in charge of drawing

up a strategy of active trading, this action always involves decisions based on common sense, experience and technical preparation of the trader, which may entail an implicit operational risk.

The operation of the active portfolio of an ETF tends to considerably raise the transaction costs of the instrument, leading to a transactional inefficiency, which one of the main advantages of ETFs is broken regarding investment funds. On this basis, the application of mathematical models and financial analysis tooling technology have enabled the development of algorithms that automate decision making, replacing subjectivity in judgment of the trader and minimizing the probability of error. Such algorithms are intended not only to maximize portfolio performance and minimizing the variance of the same, also minimizing operational risk, reducing impact on the market, the best execution of orders in time and in different markets, significant reduction in transaction costs and minimizing market inefficiencies.

Among the automated trading strategies, both academics and practitioners have shown great interest in the use of pair trading and its variants as an investment strategy in financial assets, because its construction is neutral market, which increases the probability of profit, on the other hand they are relatively simple to program, besides that supports its design using different estimation techniques, such as minimum distance, time series, stochastic control, copulas approach and cointegration (Krauss 2015).

This paper therefore seeks to demonstrate that automated pair trading strategy built under the cointegration approach over moving windows of 60 and 180 days allows active management of ETFs on EEV (BRIC MSCI Emerging Markets Ultrashort ETF) and FXP indices (FTSE China 50 Ultrashort ETF) has better results over benchmark EEM (iShares MSCI Emerging Markets ETF). These results can be the basis for the creation of new investment vehicles in the Mexican stock market, which will provide an investment option for portfolio diversification and exposure to emerging markets.

Conclusions

- The proposed strategy is profitable in the short term, and allows it to be implemented as an active management strategy uncorrelated with the market.
- It is observed that is more efficient estimate logarithmic yields and allowing intraday send signals, estimating prices is much slower.
- The yields obtained with logarithmic estimate yields were higher than those obtained with the price-based strategy.
- It is noteworthy that despite the asymmetry in inverse ETF yields and poor individual performance, the strategy proposed allowed to form a synthetic asset that offered positive returns with exposure to emerging markets.
- This is a very aggressive strategy for Equity; we need to incorporate VaR calculation and Active Strategic Stats to follow up accurately.

For future work we could be including Bollinger Bands, besides the volatility estimate by mobile windows arises.

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Ensembles of Classifiers for Parallel Categorization of Large Number of Text Documents Expressing Opinions

Frantisek DARENA
Department of Informatics
Mendel University Brno, Czech Republic
frantisek.darena@mendelu.cz

Jan ŽIŽKA
Department of Informatics
Mendel University Brno, Czech Republic
jan.zizka@mendelu.cz

Abstract:

Opinions provided by people that used some services or purchased some goods are a rich source of knowledge. The opinion classification, applying mostly supervised classifiers, is one of the essential tasks. Computer's technological capabilities are still a major obstacle, especially when processing huge volumes of data.

This study proposes and evaluates experimentally a parallelism application to the classification of a very large number of contrary opinions expressed as freely written text reviews. Instead of training a single classifier on the entire data set, an ensemble of classifiers is trained on disjunctive subsets of data and a group decision is used for the classification of unlabelled items. The main assessment criteria are computational efficiency and error rates, combined into a single measure to be able to compare ensembles of different sizes. Support vector machines, artificial neural networks, and decision trees, belonging to frequently used classification methods, were examined. The paper demonstrates the suggested method viability when the number of text reviews leads to computational complexity, which is beyond the contemporary common PC's capabilities. Classification accuracy and the values of other classification performance measures (Precision, Recall, F-measure) did not decrease, which is a positive finding.

Keywords: text documents; natural language; classification; parallel processing; ensembles of classifiers; machine learning

JEL Classification: C38; C63.

Introduction

The discipline concerned with mining useful knowledge from large amounts of textual data, known as text mining, has gained great attention along with the growth of volumes of available textual data. Such a growth goes hand in hand with the expansion of many activities on the Internet that enables creating large repositories of textual data (Aggarwal and Zhai 2012). Communicating and expressing opinions of people and organizations have become very popular in the recent years. The places where such opinions can be expressed include electronic markets, recommender systems, social networks, personal blogs, discussion boards, electronic mail, and others (Dařena and Žižka 2013).

Current needs of individuals and organizations include not only retrieving the data but also analysing it in order to facilitate decision making. Typical text mining problems therefore include document classification, prediction, clustering, information extraction, text summarization, word sense disambiguation, or text filtering (Aggarwal and Zhai 2013, Britsom, Bronselaer and Tre 2012, Sebastiani 2002, Weiss *et al.* 2010).

Text data classification, a problem of assigning a document to one or more predefined categories, is a major application category of the tasks belonging to supervised methods (Aggarwal and Zhai 2012). The goal is to find a function (classifier) that can be – according to labelled training data, represented by input data paired with desired outputs – used for predicting the labels of future unlabelled data. Text data classification includes, for example, document categorization, spam detection, authorship attribution, language identification, or sentiment analysis

(Manning, Raghavan and Schutze 2008). The importance of classification is given by the fact that many text mining tasks require that the data items to be processed have assigned labels categorizing the data.

A rich source of valuable knowledge for both commercial and non-commercial areas are opinions provided by people that used some services or purchased some goods. Typically, the more opinions are available the more valuable information and knowledge can be revealed after the analysis of the data. Thus, sentiment analysis and opinion mining have become very challenging and practical research topics where sentiment and subjectivity classification is the most widely studied subject (Liu 2012).

Having large amount of data available, manual processing, even by human experts, is unfeasible. Thus, the methods of automatic classification become very popular. For the classification of text data, several specifics, like large input space (many potential examples, huge amount of words and their combinations), noise (spelling errors, typos, wrong grammar etc., typical for natural languages), and computational efficiency (it is necessary to develop procedures able to handle large number of features) need to be taken into consideration (Joachims 2002). Today, methods from artificial intelligence and machine learning are used successfully for solving various tasks in many fields. As for text data classification, machine learning is a dominant approach in the research community (Sebastianiu 2002).

Besides the availability of data, automatic processing is enabled by the advancements of current technologies, particularly by increasing computing performance and memory capacities of the computers. However, the advancements are not always sufficient and the technological capabilities are still a major obstacle for certain tasks, especially when processing huge volumes of data. One of the major future challenges is therefore finding how to parallelize the methods for all kinds of text mining algorithms (Aggawral and Zhai 2012).

Parallel processing has a great impact in many areas of computer applications. Many applications, involving processing huge amounts of data or performing a large number of iterations require computing speeds and capacities that cannot be achieved by the current conventional computers (Roosta 2000). There can be found several applications of parallel approach in the text mining domain as well.

This study aims at an experimental evaluation of applying parallelism in order to technically manage classification of a very large number of contrary opinions expressed as freely written text reviews of a certain service. The main assessment criterion in this work is computational efficiency while maintaining satisfactory error rates. Maximizing the classification accuracy by tuning algorithm parameters, applying language (in)dependent pre-processing, and others is not the principal aim of the work. The main focus is also not on processing commonly used data sets like the Reuters corpus, 20 Newsgroups, and similar, but on the data generated by ordinary people in electronic environments. The analysis of this sort of data is very topical and empirical evidences of the applicability of advanced text mining methods are needed.

Conclusion

In this paper, a method making the classification of large amounts of text data feasible was presented. The experimental testing of selected classification algorithms that worked in parallel as classification ensembles members demonstrated clearly viability of the suggested method when the number of text reviews leads to too high computational complexity, which is beyond the contemporary common PC's capabilities. Expectedly, the computational time was notably reduced to a certain degree with the increasing number of the classification ensemble members, namely for decision trees and artificial neural networks. With the increasing number of ensemble members, the time needed for training the classifiers was reduced dramatically, which made the entire process feasible when using an ordinary PC. Classification accuracy and the values of other classification performance measures did not decrease (sometimes the results were even better), which is a positive finding.

The theoretical background of the presented method viability is supported by the analysis of the properties of the investigated data sets and their subsets. It was found that the processed text data had the characteristics needed for successful application of the proposed method based on the findings from ensemble categorization domain.

The algorithms and their results were, of course, driven by the specific experimental text data. However, such a data type (not too long users' or customers' opinions provided via web) appears very often. The results can be thus generalized for similar tasks. In the future work in the field of text mining, the parallel processing will certainly play even a more important role. The upcoming research will focus on processing data written also in different natural languages, analysing the impact of application of various pre-processing techniques (*e.g.*, stop words removal, stemming, spell checking), finding an optimal size of decision ensembles, and the investigation of the process of data division among the individual ensemble members.

Acknowledgements

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Assessment of Competitiveness of the Leading Russian Metallurgical Enterprises

Dmitrii Sergeevich VORONON
UMMC Technical University, Sverdlovsk Region, Verkhnaya Pyshma, Russia
d.voronov@tu-ugmk.com

Sergei Evgenievich ERYPALOV
Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia
ese62@rambler.ru.

Stanislav Viktorovich PRIDVIZHKIN
Capital Construction and Investment of UMMC-Holding
Ekaterinburg, Sverdlovsk region, Russia
28argo11@mail.ru

Irina Sergeevna PELYMSKAYA
UMMC Technical University, Sverdlovsk region, Verkhnaya Pyshma, Russia
eumtp@mail.ru

Elvira Antsasovna RUSETSKAYA
North Caucasus Federal University (NCFU), Stavropol, Russia
elwirasgu@mail.ru

Abstract

This study assesses the competitive status of the leading Russian metallurgical enterprises. The authors have demonstrated that the imperfection of the applied ranking methodology does not allow to use the existing ratings in order to assess the competitiveness of businesses. Due to this, it is concluded that the assessment of the impact of recessionary effects on the performance of the largest domestic metallurgical companies could only be accomplished through the application of analytical methods for assessing competitiveness. The basic methods of assessing the competitiveness of enterprises were reviewed. The authors substantiated that the most appropriate method to assess the competitive status of several businesses was to use dynamic method of assessment of the competitiveness of enterprises. The mathematical apparatus of the dynamic method of assessment of the competitiveness of enterprises was provided; its methodological principles were revealed. The calculations of the level of competitiveness of the leading Russian metallurgical enterprises were provided. Their competitiveness both in the domestic market and in the international arena was estimated. Competitive advantages and disadvantages of the companies were identified, and the basic ways to increase their competitiveness were defined. In conclusion, the authors determined the areas of further research on the subject.

Key words: competition; competitiveness; competitiveness of the enterprise; assessment of competitiveness of enterprises; dynamic method of assessment of competitiveness of enterprises

JEL Classification: C13; D41

Introduction

In terms of macroeconomic instability and focus on import substitution, the issue of assessing competitiveness of the leading Russian metallurgical enterprises in relation to foreign competitors is very relevant. Conclusions about the success of the implemented measures to improve the competitiveness of domestic producers can only be made only on the basis of such an assessment.

At the same time, we should note that in order to assess the effectiveness of these measures, it is necessary to evaluate not just the level of competitiveness, but also the gradient of the change of the competitive status of the

business under the influence of the applied measures. Thus, it is necessary to estimate the dynamics of the level of competitiveness of the company in time to achieve this goal.

On the one hand, the dynamics of quotations of the company's securities on the stock markets can be used to assess competitiveness. At the same time, fluctuations in the stock value may fail to reflect changes in real competitiveness of the enterprise, as price volatility is often determined by market factors (geopolitical, technological, speculative, etc.).

This thesis can be proved by the example of a sharp increase in the stock quotations of Russian state-owned companies (Gazprom, FSK UES, ALROSA, Rosneft, etc.), which occurred in spring 2016 after the decision of the Russian Government to increase the dividends of state-owned companies to the level of at least 50% of profits (previously this value was at least 25%). Obviously, this decision leads to a significant reduction in the investment program of state-owned companies, which leads to a decrease in their competitiveness. At the same time, the increase in dividends led to an increase in stock profitability of these companies, so that the growth of their securities prices has ranged from 10 to 17% over a short period.

Thus, fluctuations in the exchange quotations of securities largely reflect changes in the expectations of the stock market participants regarding their investment attractiveness, rather than actual changes in the company's competitive potential. For this reason, the use of stock market indicators for the assessment of the competitive status of the business is incorrect.

Various ratings of the largest companies in the world, published by the world's leading news agencies – Forbes Global 2000 (Forbes 2016), Fortune Global 500 (Fortune 2016), Financial Times Global 500 (Financial Times 2016) – can also be considered a tool for assessing the competitiveness of enterprises at the international level. Nevertheless, we believe that an analysis of the level of competitiveness with the help of such ratings is impossible. The main reason for this is that most of the ratings are based on elementary ranking of companies by revenue volumes (or market valuation). Neither operational efficiency (profitability) nor financial stability is taken into account. As a result, positions of the companies in these ratings and their actual competitiveness may differ significantly. Thus, Mechel, SU-155, Transaero were among the best Russian companies in the rankings following the 2014 results. The headline-making bankruptcy of these businesses in 2015 eloquently demonstrates that the absolute revenue volumes do not always reflect the competitive status of the company.

In addition, ratings are very lean tools for an analyst in terms of development of measures to improve competitiveness. This is due to the fact that the rating does not provide an integral quantitative measure of the level of competitiveness, but only allows to use the enterprise position in the ranking list. Thus, these ratings do not allow to quantify the differences in the level of competitiveness between the two companies, which results in an inability to identify and analyze the factors of the formation and dynamics of competitiveness of the analyzed company.

Therefore, imperfection of the applied ranking technique does not allow to use the published ratings to assess and analyze the competitive status of the leading Russian metallurgical enterprises. This leads to the necessity to carry out analytical assessment of competitiveness rather than ranking, and this study will be devoted to this.

Conclusion

The implemented assessment of the competitiveness of the leading Russian metallurgical enterprises leads to the conclusion of the high competitiveness of domestic metallurgy. At the same time, the recession of the world markets of raw materials did not have a negative impact on the high competitive status of domestic metallurgists.

In the applied aspect. The implemented analysis has shown that the level of competitiveness of Norilsk Nickel and NLMK in comparison with the world's leading competitors can be assessed as high and with a tendency to growth. At the same time, the main competitive advantage of Russian companies is high financial stability. *In the methodological aspect*. The implemented study has confirmed the universality of the dynamic method of assessment of the competitiveness of businesses. The dynamic approach does not only provide a quantitative assessment of competitiveness, but also allows to highlight the factors and sources of competitiveness of enterprises. *In the promising aspect*. The results of this research can be used to develop measures to improve the competitiveness of the company and industries, government regulation of the economy, investment analysis, etc.

We should note the relevance of assessing the competitiveness of other Russian industries among the areas for further research. In addition, the dynamic approach can be used to predict the competitiveness of the businesses under study.

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Today Situation in Online Buying of Food Products in the Czech Republic

Přemysl PRŮŠA

Department of Retailing and Commercial Communication, Faculty of International Relations
University of Economics in Prague[1], Czech Republic
premysl.prusa@vse.cz

Tomáš SADÍLEK

Department of Retailing and Commercial Communication, Faculty of International Relations
University of Economics in Prague, Czech Republic
tomas.sadilek@vse.cz

Abstract:

Actual news from abroad confirm that online buying is very frequent also in FMCG business. In the Czech Republic, iTesco.cz Rohlik.cz Koloniál.cz and Košík.cz are pioneers in this area. The newest trends are mapped by professional media, especially the digital ones. Although online buying in the FMCG segment has not reached so significant market shares as in United Kingdom or in France, this year the situation is expected to be changed dramatically. The iTesco concept prepares expansion in new regions and Rohlík.cz, already operating three quarters of year in Prague and surroundings, acquires new customers every week, Košík.cz has already started too and Koloniál.cz starts the sales at the beginning of the third quarter of 2015. The aim of the article is to present current situation in the area of online food products retailing in the Czech Republic and to outline the future development trends. This is a comprehensive study dealing with description of Czech online food products market and could be a first step for further research.

Keywords: food products; online buying; Czech Republic

JEL Classification: L66; M31

Introduction

A goal of the study is to describe nowadays situation in the Czech market of online food products. The main research question is to find out, how many subjects operate on the Czech food products market and what products and services they do offer.

A prerequisite of food products online buying on the Internet is an information skill to use the Internet, which is expressed in Internet penetration in the population. The attached chart shows how the rate of Internet use has changed in chosen European countries. In the Czech Republic internet coverage increased from 10% in 2000 to 79.7% in 2015. In the group of 20 - 30years old people internet coverage is even higher than 90%. (Data are from the years 2000 and 2015.)

Figure 1. Internet penetration in the population in 2000 a 2015, in %

Source: http://www.internetworldstats.com/stats4.htm#europe

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[1] W. Churchill sq. 4, Prague, Czech Republic

GfK company and its consumer panel analyzed how Czechs buy food on the Internet. It is a research finding, which is representative for the Czech population, and it was found out that the average Czech consumer buys food 5 times a year, 58% of respondents bought repeatedly and the average purchase accounted for 747 CZK (GfK Consumer Panel 2014).

How does the food products online shopping look like? This topic was analyzed by the company IGD (in Koubek, 2014), and their research shows that 40% of grocery e-shops users make basic regular purchases, 39% make large monthly purchases (usually after the pay packet), 10% more common basic purchases, 6% supplementary purchases and 4% occasional purchases.

But not only internet penetration is an important factor why customers use online buying more or less frequent. Soopramanien and Robertson offers conceptual framework for adoption and usage behavior of online shopping, which includes new variables, such perceived benefits, perceived values, adoption and/or usage decision, whether to adopt internet as a shopping channel and how to use online shopping and if browse or buy (2007).

Figure 2. Framework of adoption online shopping

Source: Soopramanien and Robertson (2007)

In the future there is obviously plenty of space in the Czech market for expansion of food products shopping on the Internet. According to the research Future Buy (2014), Czechs, when buying food online, evaluate this way of shopping as cool, simple, effortless, organized and safe, which corresponds with their high trust in e-shops in general. Among the advantages of online grocery shopping Czechs mention mostly good value, time-saving, wide choice of options and convenient delivery. Conversely, Czech consumers perceive as disadvantages the cost of delivery, they are also worried about the quality and freshness of the goods as well as they mention an obstacle when they are forced to wait for delivery of goods and merchandise they cannot see and try in advance in person. Also, the fear of a possible claim plays a big role (GfK FMCG e-Shopping, 2014).

Conclusion

The paper is focused on the analysis of online buying of food products in the Czech Republic and on the description of nowadays trends in the Czech online market. Research shows that the average Czech consumer buys food 5 times a year, 58% of respondents purchased repeatedly with the average purchase in the value of 747 CZK. 40% of users of e-shops with food usually make basic regular purchases, 39% make large monthly purchases (after payment), 10% more frequent basic purchases, 6% supplementary purchases and 4% occasional purchases. In comparison with other analyzed countries, the share of online purchases in the Czech Republic is rather mediocre. Pioneers in internet food sales in the Czech market are concept online stores such as iTesco.cz, Koloniál.cz, Rohlík.cz and Košík.cz. The conventional retailers, however, are rather reluctant to enter the Internet market. If we are to compare the already existing food e-shops, iTesco.cz offers the widest range of available products (over 20,000 items) in comparison with Rohlík.cz - its assortment contains approximately 5,000 items. But Rohlík.cz and Košík.cz are the leaders in delivery time (no longer than 60 minutes in the case of Košík.cz and 90 minutes in the case of Rohlík.cz). These two online shops do not even charge transport costs (in case the purchase is over 1,000 CZK). Even though some of the e-shops still only operate in Prague (Rohlík.cz) the other ones expand to the other big cities in the Czech Republic, mainly in Bohemia and partly in Moravia, but some parts of the country, such as South Bohemia and South Moravia still remain uncovered (which is the case of Koloniál.cz and Košík.cz).

And what shall bring the future? It is quite hard to predict the further development of online food retailing. One of the visible trends is the further expansion of online food shopping from Prague to other big and even small cities in the regions, even though this process seems to be a little slower than it was expected. We still believe that the online food market will be extended by the entry of new competitors and the whole market will become more and more saturated. On the other hand, many competitors will certainly not survive in the long term and the market will tend to be rather concentrated, which is actually the same scenario as in the case of the traditional food retailers in most European countries. A questions remains, if and when the conventional retailers introduce online selling of food. The decisive factor, in our opinion, will be the speed and extend in the change of shopping behaviour of the Czech consumer.

Acknowledgement

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The Relationship between Research & Development Investment Expenditure, Foreign Direct Investment and Economic Growth: Panel Causality and Cointegration Analysis for G-7 Countries

Muhlis CAN
Faculty of Economics and Administrative Sciences
Department of Economics and Finance, Hakkâri University, Turkey
muhliscan@yandex.com

Buhari DOĞAN
Faculty of Economics and Administrative Sciences
Economics Department, Süleyman Demirel University, Turkey
doganbuhari@gmail.com

Osman DEĞER
Faculty of Economics and Administrative Sciences
Economics Department, Süleyman Demirel University, Turkey
osmandeger9@gmail.com

Abstract:

In this study, it is aimed to investigate the relationship between research and development (R&D) expenditures, foreign direct investment and economic growth over the period 1996-2011 in the sample of G-7 countries. In the empirical part of the study, Pedroni and Kao Cointegration Tests, Panel Granger Causality have been employed. It has been observed that the series are cointegrated in the long-run. As a result of the causality analysis, it is concluded that there is a unidirectional causality runs from foreign direct investments to R&D expenditures and to economic growth, there is a unidirectional causality runs from economic growth to R&D expenditures.

Keywords: R&D expenditures; G-7 countries; foreign direct investments; economic growth; panel causality; panel cointegration

JEL Classification: F21; O32; O47

Introduction

Today, income and economic growth differences between countries are based upon the current level of technology, skilled labor, natural resources, and economic stability phenomenon (Smith 1994). Even though countries are in different levels of development, they have similar macro objectives in the economic context (Erçakar and Karagöl 2011). Therefore, countries strive to develop new methods bothto have a say in the international arena and to ensure sustainable economic growth (Akıncı and Sevinç 2013). To achieve its growth targets and to ensure sustainable economic growth, world countries promote research and development activities (R&D) and foreign direct investment (FDI) (Göçer 2013). FDI is one of the most important factors that led to the globalization of the international economy (Erdal and Tatoğlu 2002). It is regardedfor many countries that FDI is a significant factor for development and growth strategy and these investments have a lot of numbers of impacts (Crespo and Fontoura 2007). FDI has numerous advantages for countries that are home to investment. These advantages include introduction of new technology, competition and increased efficiency in production, low cost and high quality manufacturing growth, and a positive contribution to production and employment (Göçer *et al.* 2012). FDI contributes to the accumulation of capital in the country (Ağayev 2010, De Mello 1999), and brings along abstract inputs such as know-how, and brand and management knowledge. Moreover, FDIs generate a spillover effect

through technology transfer (Zhang 2006). FDIs result in decreasing the limitations on foreign capital flows and facilitating capital inflows (Agenor 2001).

Another factor which is effective in increasing the dynamics of the economy and the globalization is R&D investment. The importance of this investment was emphasized by many scholars. For example, Romer (1989), Grossman and Helpman (1991), and Aghion and Howitt (1992) stated that increase in resources allocated to the creation of new technologies (R&D expenditures) has a significant contribution to the stabilization of economic growth. The most important factors behind the economic growth of developed countries are R&D and innovation activities (Stokey 1995). Currently, it is known thatcountries which allocate the highest share to R&D expenditures are the ones that have a voice in the world economy (Karagöl and Karahan 2014).

It is quite clear that countries which reserve and increase their share in R&D expenditurescould achieve significant accomplishments. For instance, it is observed that Asian Tigers[2] (East Asian countries) which give importance to R&D activities in recent times can acquire sustainable growth. R&D investments affect growth in many different ways. These ways involve innovation, capital accumulation, and qualitative increase in human capital (Bor *et al.* 2010). It is also inevitable for countries to adapt to the increasing competition in the world. Hence, ensuring the sustainable growth of the countries is greatly correlated with R&D investments (Erdil 2015).

Updating the production structure of the countries is bound to following technology. In this case, countries have two alternatives, they either import the current newest technology or they increase the present level of technology to the next level. Thus, R&D investment is of great importance. R&D activities are essentially investments that require substantial capital. It is known that many R&D investments held all over the world are realized by multinational corporations (Blomström *et al.* 2000). In this context, FDI can be regarded as one of the most important factors that affect the spread of cross-border technology (Kathuria 2008). However, FDI activities in R&D activities of many countries require a number of necessities especially including human capital, infrastructure, the presence of institutional quality, intellectual property rights etc. In this respect, developed countries are in a far better point than the other countries. Additionally, this can ensure FDI in developed countries to be active in R&D activities.

Furthermore, it is an undeniable fact that FDI all over the world mainly prefer developed countries. For example, UNCTAD data in 2014 reveals the fact that 40% of FDI was attracted by developed countries (UNCTAD 2014). The most important factors underlying this are higher levels of infrastructure of this country group, the existence of political and economic stability, and the existence of dynamic internal market etc. (Erçakar and Karagöl 2011).

In this sense, the purpose of this study is to analyze the relationship between R&D investment expenditure, foreign direct investment, and economic growth in the sample of G-7 countries, which are the best representatives of developed country group. Based on the previous studies, it was found that the literature on this topic focuses basically on R&D-growth or FDI-growth relationship. Therefore, this study is differentiated from the others in that it firstly examines the existing literature and then policy recommendations in light of the findings are given in the application part.

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[2]South Korea, Hong Kong, Singapore, Indonesia, Malaysia, Taiwan and Thailand, see. Papageorgiou and Spatafora (2012).

Conclusion

In the globalizing world economy, it is widely accepted by many scholars that R&D spending and foreign direct investment are two significant actors for the countries to maintain their growth. This paper studied the effects of both of these variables on growth in the sample of G-7 countries which can greatly represent developed countries. As a result of the empirical findings, it was found out that R&D spending and foreign direct investment are correlated with growth. Moreover, theshort term relationships of each three series were examined. Findings showed that there is one-way relationship from growth to R&D spending, from foreign direct investment to both growth and R&D spending. In this respect, one can claim that there are many lessons to learn from this context for the developing countries. No one can deny that R&D spending is basically quite costly. Especially for developing countries, it is not always easy to increase R&D spending. Hence, it is significant to promote foreign direct investment in their countries. However, foreign direct investment of R&D in a developing country brings a number of requirements. In particular, measures of the elimination of lack of infrastructure, increasing the superstructure facilities, guaranteeing the intellectual property rights, and increasing the quality of human capital need to be taken. Steps taken for this direction can both promote foreign capitals in the developing countries to invest in more qualified fields and help the country grow by means of these investments. All in all, R&D investment of foreign capital can end up in the manufacturing of products which could not be produced previously. Also, many economic benefits can be obtained through the spillover effects in the economy of a country.

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Assessment of the Economic Potential of Sovereign Wealth Funds

Olga Alekseevna BYKANOVA
Plekhanov Russian University of Economics
bykanova@inbox.ru

Ravil Gabdullaevich AKHMADEEV
Plekhanov Russian University of Economics
ahm_rav@mail.ru

Mikhail Evgenievich KOSOV
Plekhanov Russian University of Economics
kosovme@mail.ru

Vadim Vitalievich PONKRATOV
Financial University under the Government of the Russian Federation
vponkratov@fa.ru

Vladimir Sergeevich OSIPOV
Institute of Economics of RAS
The Federal Research Institute of System Analysis of the Accounts Chamber of the Russian Federation
vs.ossipov@gmail.com

Yulia Vyacheslavovna RAGULINA
The Federal Research Institute of System Analysis of the Accounts Chamber of the Russian Federation
julra@list.ru

Abstract:

Being the total of the state funds, sovereign wealth funds are generally accumulated in budget revenues as the surplus from sale of fossil fuels or non-oil and gas resources and aim to achieve specific macroeconomic goals set. Applying the method of correlation analysis, we evaluated the nature and degree of the relationship between the selected parameters. The Pearson simple linear correlation coefficient was used to measure the link between the rows. The relationship of x and y is considered linear if a straight line drawn through the center of the cluster of points presents the most appropriate approximation of the observed correlation. Using the method of correlation analysis to study sovereign wealth funds, we could formulate and prove the following hypotheses. Sovereign wealth funds generated from non-commodity exports do not depend on the size of the country's GDP; the value of the correlation coefficient equaled 0.5998, which implies the weak dependence of the studied parameters. A similar pattern was observed when studying the sovereign wealth funds formed by hydrocarbon exports. Besides, no significant linear relationship was found when studying the dependence of the sovereign wealth funds and the impact of the potential of the country's explored reserves.

Keywords: macroeconomics; fiscal policy; sovereign wealth funds; export potential; GDP per capita; global energy prices

JEL Classification: C13; E17; E20; E65; F37

Introduction

Recent research on the development of the society considers various approaches to definition of the state's role in the formation and regulation of the market economy in both developed and developing countries. The degree of state regulation, its specific forms and methods can vary considerably from country to country. For instance, the followers of John Keynes's theory argue that the system of free market lacks an internal mechanism capable of maintaining a balance at the macroeconomic level. At the same time, John Keynes, being in favor of relatively mild

influence on the economy, noted that the optimum degree of state intervention in the economy can be achieved by lowering bank interest rates in times of crisis and increasing them during the periods of rapid economic growth. The state, according to the Keynesian theory, serves as an addition to the market, helping to improve the market conditions, and in some cases, it should contribute to the solution of major problems. The concept of monetarism proposes a different approach. According to this theory, market conditions are competitive and capable of self-regulation, which manifests itself in the macroeconomic equilibrium. At the same time, monetary policy is more stringent regarding government intervention, the latter taking the form of withdrawal of excessive money supply from the economy, the reduction of the state budget and other expenditures.

Conclusion

The conducted research on the functions and methods of the formation of sovereign wealth funds in the world economy made it possible to identify a number of features that define them in the structure of the state budgetary resources. Sovereign wealth funds are characterized by their sovereignty and operation in the framework of legislative and legal acts of the state. As total of the state funds, sovereign wealth funds are generally accumulated in the budget revenues in the form of surplus from the sale price of hydrocarbons or resources and should achieve specific macroeconomic goals set. The size of the sovereign wealth fund formed both by the export of hydrocarbons and non-commodity sources is weakly dependent on GDP of a particular country.

As for the management type, sovereign wealth funds may be run by a specific government institution with public or private management, forming a vertically centralized structure or be run by the regional authorities only.

It should be noted that the size of the sovereign wealth fund generated by the export of hydrocarbons is dependent on GDP per capita. In turn, sovereign wealth funds formed by revenues from non-commodity exports depend on the country's export potential.

The most important trends in the development of the sovereign wealth funds management are the following:
- the growing number of sovereign wealth funds formed in countries that are not dependent on resources export;
- more funds are formed from non-commodity sources;
- most funds are formed in Asia, the region with significant gold and foreign exchange reserves.

Having studied the practices of the sovereign wealth funds of Norway, Australia, Chile, Alaska, Venezuela, we identified certain fundamental differences regarding the formation and use of assets, investment strategies and approaches to the management of funds, which allowed us to highlight the key features in the operation of the sovereign wealth funds. For instance, the analysis we had carried out showed that:
- throughout the whole period of the sovereign wealth funds operation there may be significant qualitative changes in the principles of formation and use of funds, as well as their organizational and management structure;
- the management the sovereign wealth funds imply the application of various practices regarding rules and methods of the formation and use of their assets, depending on the specifics of a particular fund and the conditions it operates in;
- in some countries sovereign wealth funds finance not only the non-oil deficit in both federal and regional budgets, but also deficits in the budgets of public companies (Venezuela);
- the revenues of a particular state company can become the source for formation of certain sovereign wealth funds (Chile);
- a characteristic feature of the most successful in terms of management funds is their information transparency and perfect compliance with the fiscal rules (Australia, Alaska, Norway, Chile);
- failures in fund management are associated with constant changes in the rules of formation and funds use, digressing from the goals the funds were to achieve and the lack of transparency of their operation (Venezuela);
- investments in infrastructure funds are typically self-liquidating and economically beneficial for the whole population (Australia).

In general, the rules of formation and use of funds in a particular country depend on various factors. These include climatic factors, the overall socio-economic status of the country, the demographic situation, the effectiveness of implemented monetary and fiscal policies, as well as the specifics and goals of the sovereign wealth funds themselves.

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Migration Processes in the Context of Political Collisions: Factors and Social and Economic Consequences

Mikhail Nikolayevich DUDIN
Russian Presidential Academy of National Economy and Public Administration (RANEPA)
Moscow, Russian Federation
dudinmn@mail.ru

Evgenia Evgenevna FROLOVA
Peoples Friendship University of Russia (RUDN University), Moscow, Russian Federation
frolevgevg@mail.ru

Sergey Ivanovich KOVALEV
Peoples Friendship University of Russia (RUDN University), Moscow, Russian Federation
kovalev@st-tr.ru

Elena Petrovna ERMAKOVA
Peoples Friendship University of Russia (RUDN University), Moscow, Russian Federation
ermakovaep@mail.ru

Alexey Nikolaevich KIRSANOV
Peoples Friendship University of Russia (RUDN University), Moscow, Russian Federation
aleksey-kirsanov@mail.ru

Abstract

Europe is undergoing the strongest migration crisis that in terms of its importance can be compared with the migration crisis caused by the Second World War. This article researches the coherence of "catastrophic" hypothesis related to the current migration crisis in Europe, and considers the risks and consequences of this crisis for the social and economic development of the European region. The materials stated in the article enable the authors to make the following conclusions: Migration as an objective phenomenon that comes with globalization phenomena will always maintain its historical focus from the lagging regions of the world in terms of economic and social development to more developed and democratically free regions, The current migration crisis in Europe has been caused by an abrupt increase in the migrants' inflow to the region (2-5 times during 2015 as compared to 2014), as well as by the lack of coordination in the actions of representatives of the executive power of European countries, including the lack of distinct and efficient measures aiming at regulating the abruptly increased migration inflow, The "catastrophic" scenarios of the current migration crisis based on historical parallels (for example, the fall of the Western Roman Imperia and the Holy Roman Empire of the German nation) offered in some scientific and publicist articles have insufficiently objective grounds, Countries of Europe (and including the European Union) must take into account and forecast probable risks that will come with the current migration crisis (social and political instability that will cause destructive phenomena in economy), and The European region may extract potential profits from the migration crisis, successively pursuing the policy of securitization, integration and assimilation of migrants and herewith finding the balance between the efficient tolerance to newcomers and the required level of safety for the indigenous population.

Key words: migration; crisis; Europe; Eu; risks; threats; assimilation of migrants; multi-culturism; safety; tolerance

JEL Classification: F22; H56

Introduction

Europe undergoes the migration process that according to its scales, as well as consequences is unprecedented in modern times (OECD 2015). The mass stream of refugees from the North Africa, Middle East and South Asia is stipulated by geo-political transformations and social destabilization in these regions, including in the context of

military collisions and reactional tough actions of the local governments. The European leaders who initially were open for the dialogue with the forced migrants and provided them with the minimum required amenities for staying on the territory of the European Union states have changed their rhetoric over the recent year. Thus, for example, Francois Hollande (President of France) stated about the impossibility to further accept refugees and forced migrants because of the lack of free accomodation required for placing them. In spite of the calls of Angela Merkel (German Chancellor) and Juha Sipila (Premier-Minister of Finland), Theresa May (Premier-Minister of Great Britain) confirms that the problem of the forced migration must not be solved through prejudicing interests and needs of the indigenous population of European countries (Reuters 2016, The Guardian 2016, Independent 2016, BBC 2015).

The scientific community (economists, sociologists, political analysts) did not stay on the sidelines of the discussion about the reasons, consequences, and historical analogous of the current migration crisis in Europe either (Zaiceva and Zimmermann 2016, Bertoli *et al*. 2016, Falkner 2016). According to some scientists and researchers, it is undoubtedly necessary to consider reasons of the current migration crisis as military and political, and in the historical context, to compare it with the historical crisis that was observed in Europe during and after the Second World War. Other scientists and researchers do not deny the military and political basis of the migration crisis in Europe (2015-2016) and specify that it is also necessary to take into account social and psychological, and evolutionary and anthropogenic aspects (Holmes, Castaneda 2016). Here in a greater degree it is appropriate to make a historical analogue with the Migration Period in the first millennium (d'Oultremont, Martin 2015, Vereschagin 2015).

Without derogating scientific grounds of both positions, we believe that the current migration crisis in Europe must be considered in a wide global and evolutionary context, taking into account the formation of the multi-polar world and the change of the vector development from the European and American to the Eurasian. We mentioned it many times in our earlier works (Dudin and Frolova 2015, Dudin 2015). Thus, the problematics of the modern migration crisis in Europe where other regions of the world can be involved, and importance of the historical context of the research make this article urgent.

Conclusions

Summarizing this article, we would like to specify that the migration processes must be considered as a regular consequence of the globalization of the modern world. Along with this, the migration can cause crisis tendencies. It is currently observed in European countries. However, the crisis is stipulated not so much by the phenomenon "migration" as the mass nature of the migration flow and inability of the recipient country's powers to efficiently and rationally manage it. We do not think that the modern migration crisis in Europe must be considered in terms of a catastrophe and make unconditional historical analogues with the fall of the Roman Empire (including the Holy Western Empire of the German nation), although there are certain correlation points here. It is necessary to understand that migration is stipulated by an aggregate of determining factors that have maintained and probably will maintain their urgency for the medium- and long-term observable perspective. In other words, migration (its power and directionality) is stipulated by disproportions between social and political, and economic and technological development of the donor and recipient parties.

The current migration crisis may have both negative and positive consequences both for Europe as a whole and the European Union, in particular. It is necessary to mention such negative consequences as a threat of social and economic stability, risks of strengthening the power and frequency of terroristic attacks, and formation of the large-scale "grey" segment not only in economy but also in politics. On the other side, Europe can extract profits from the migration crises because its aging population is not ready and is not capable to self-reproduction. For Europe to be able to use long-term advantages from the migration crisis, it is necessary to pursue coherent policy aiming at securitization, integration, and assimilation of migrants. It will allow to maintain not only a high level of the social and economic development, but also to provide the translation of democratic values to that part of the world community that lives in regions with the totalitarian regimes of governing. Efficient management of migration flows by using the above tools will allow to maintain the reasonable balance between the openness and tolerance, as well as threats and safety.

This article has not considered methodological issues related to estimating social and economic consequences of migration. The authors offer to consider these issues in future articles on this theme.

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Input-Output Analysis of Interregional Effects

Mina ABOOTALEBI
Faculty of Administrative Sciences and Economics
University of Isfahan, Iran
abootalebi.mi@gmail.com

Neamatollah AKBARI[3]
Faculty of Administrative Sciences and Economics
University of Isfahan, Iran
nemata1344@yahoo.com

Rahman KHOSHAKHLAGH
Faculty of Administrative Sciences and Economics
University of Isfahan, Iran

Abstract

Multiregional input-output model is a tool for tracing the effects of economic changes in a region on the total production in another region. This approach is noticeable due to interregional spillover and feedback effects, especially in regions of the country that economic interactions between them are numerous.

In this study a non-statistical method used to estimate two-regional input-output table of Isfahan Province and other regions of Iran. The table includes 71 sectors for each region. Then, decomposing the two-regional Leontief inverse matrix, we specified types of interregional effects, including: internal and external feedback effects and spillover effects. We calculated these effects for each sector in both regions when an exogenous shock occurs. Then, sectors with the largest impact were identified in each region and using them, the intensity of interregional effects were analyzed. It can be calculated that sectors in smaller region have stronger spillover effects, therefore, smaller region is more dependence to the larger region. However, about sectors with large comparative advantages and strong intraregional linkages in the smaller region, result can be inverted. Also, the feedback effects are small in both regions, but, in the larger region are smaller, except the sectors with less spillover effects in the smaller region.

Keywords: two regional input-output model; feedback effects; spillover effects; internal effects; external effects; exogenous demand shock

JEL Classification: P25; R12; R15; R58

1. Introduction

The impact of economic shocks on regional planning will be understood properly when interactions between regions are considered in the model. Paying attention to interregional models is crucial, especially in regions of the country that economic transactions between them are numerous and economy of each region is open to other regions (Hewings *et al.* 1999). Thus, changing in exogenous demands in each one would not only lead in initial change in that region, but also through interregional effects will lead to further changes in output of all regions.

Two-regional input-input approach can be used to specify intensities and types interregional effects in an economy. Using this approach, in addition to asses' exogenous shock effects on the output of each sector in each region, is applied to specify, import and export dependence specific sector in one region on sectors in another region or relative self-sufficient level of each region - in aggregate. These measures will help regional planners to identify regional economy and make appropriate policy decisions for better planning.

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[3] Corresponding Author

In this study, according to literature of two-regional input-output model, is developed two-regional input-output table for Isfahan province as the first region and the rest of Iran as the second region. Then, decomposing the two-regional Leontief inverse matrix, is specified how much would be variety of effects arising from interregional connections if a particular sector in one region is stimulated. It helps to be understood that by considering the relative region size, how would be the economic dependence of each region to another.

Conclusion

In this study, in terms of theoretical and empirical ways, interregional effects are investigated. Most studies in this context have focused on internal feedback effects. Besides that, we have paid special attention to the external effects of exogenous shock and decomposed them into spillovers and external feedback effects. In this way, the impact of a variety of effects on each other effects could be explored.

For this purpose, the two-regional interregional input-output tables of Isfahan and the rest of Iran was estimated. Each region includes 71 economic sectors. Then, using Leontief inverse matrix decomposition, interregional effects were calculated when an exogenous shock occurs for each sector in each region. According to the results, it was observed that:

- intraregional linkages in larger region is stronger relative to smaller region, hence, the spillover effects of larger region are smaller and hence, the dependence of the larger region to the economy of the smaller region is less;
- for both larger and smaller regions, the internal feedback effects are small but, for the larger region is less because, spillover effects of most sectors in the larger region are less and also, intraregional connections for the most sectors in small region are weaker;
- external feedback effects due to an initial changing in final demand of smaller region are greater than larger region, because the spillover effects resulting from small region and the internal feedback effects in it are greater than larger region;
- sectors with comparative advantages and strong intraregional linkages in the smaller region leave less spillover effects and thus, have less internal and external feedback effects. Therefore, spillover effects can play a decisive role in determining the feedback effects.

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Quantification of Possible Level of Cost Reduction in Enterprise as a Result of Intensification of Production Processes

Josef KAŠÍK

VŠB-Technical University of Ostrava[4], Czech Republic

josef.kasik@vsb.cz

Petr ŠNAPKA

VŠB-Technical University of Ostrava, Czech Republic

petr.snapka@vsb.cz

Abstract:

The article presents a comparative model system for quantification of the level of change in total production process costs in enterprises. These are changes in the level of costs attained in connection with the application of intensification measures in a given production process or processes which are linked logistically with the production process and measures expressed in them in the production process. Intensification measures allow the attainment of higher process performance, which is expressed in a growth in the level of production. This fact has a possible echo in the possibility of reducing total process costs. The presented model allows an informationally correct quantification of the level of reduction in total process costs in the context of comparison of process variants. The article also presents an information analytical model determination of possible distortion in the level of change of total process costs in the case of a cost comparison of process variants. This information distortion of the level of savings on process costs then initiates a further distortion in potential decisions of managers, who apply these distorted information inputs to subsequent solutions of decisive situations in the enterprise. Our article has been written in order to avoid the occurrence of the input information conditions leading to the formation of such incorrectly taken decisions.

Keywords: algorithmization; information distortion; intensification measures; comparative model; process costs; production process; decision-making

JEL Classification: D24; L23; M11

Introduction

One of the most significant ways to attain an increase in the effectiveness of enterprises' operation is to reduce their costs (Wheeler 2010). This means that through their effective management we wish to ensure that the enterprises are low cost. However, ineffective, uncontrolled reduction in costs can even have fatal consequences, for example in the area of quality of products (goods, services) that are the output of the enterprise's production activity (Šnapka and Mikušová 2014). Therefore, it is necessary to perform an ongoing evaluation of the level of attained changes, including the cost aspect of the applied measures, focusing on reduction of costs in the enterprise. One can also say that it involves an evaluation of attained savings on corporate costs leading to an increase in the effectiveness of the given enterprise without a deterioration in the level of fulfilment of other target parameters of its operation. This involves, for example, a reduction in the level of labour productivity, the aforementioned quality of its production, introduction of necessary innovations etc.

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[4] 17. listopadu 15/2172, 708 33 Ostrava-Poruba, Czech Republic

Conclusion

In the conclusion to the contribution on the quantification of the possible level of change (savings) of total process costs arising from the intensification of the production processes we introduce the basic system steps that have to be applied for the level of this change to be designated correctly, and also for it to be possible to use the gained information further to resolve corporate decision-making situations.

We can state the basic system steps for the solution to the relevant matter as follows:

- To ascertain by analysis, for example on the basis of calculation of costs, the structure and level of unit process costs in the sense of their level and structural proportion of the fixed and variable component of these costs. In our case of analytical considerations in the context of the variable component of total costs it entailed a proportionately variable component of the production process costs, this being the initial production variant (V_I). Then during the application of the cost calculation it entailed the determination of unit process costs which are considered for the determination of total process costs for the given input level of production from the production process before its intensification. These costs are also considered in the context of the cost comparison of process variants (V_I) and (V_{II}) for production which is comparatively considered at the level of production attainable after process intensification /*i.e.*, production (Q_{II})/.
- To determine the possible intensification measures and derive the possible (attainable or desired) level of process production, *i.e.*, production (Q_{II}) following application of intensification measures with final focus on intensification of evaluated production process.
- To determine according to the derived equations, the level of total costs for the cost comparison of process variants (V_I) and (V_{II}), *i.e.*, costs $/TC_{I,1}(Q)/$ and $/TC_{II}(Q_{II})/$.
- Determination of value-correct level of changes to total process costs with information designation (SA_{RA}) according to equation (4.7).

If necessary, the possibility of quantification of the level of deviation (ε) in the evaluation of changes to the level of total process costs in a comparison of variant (V_{II}) with variant (V_I) using the equation (4.12).

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Innovation Capacity of the Regions of Siberian Federal District: Status and Dynamics

Olga VLADIMIROVA
Siberian Federal University, Krasnoyarsk Russia
olga.ovladimirova24@yandex.ru

Marina MALAKHOVSKAYA
Siberian Federal University, Krasnoyarsk Russia
marinatomsk1@gmail.com

Aida PETROVA
Siberian Federal University, Krasnoyarsk Russia
petrovaaida@rambler.ru

Manon KHUSAINOV
Institute of Management and Strategic Development
of the Moscow Technological University MIREA, Moscow, Russia
mkkhusainov@mail.ru

Irina ROUIGA
Siberian Federal University, Krasnoyarsk Russia
irina_rouiga@bk.ru

Abstract:

Considerable changes in the income flows and in the structure of the expenses for mobilization of resources in the system of the economy generate the demand for innovations. The differences between the approaches to the regional innovation status estimation predetermine the differences in the tools for the implementation of the state innovation policy. The possibility to establish the interrelations between the specific features of regional economies and the quality of their innovation capacity serves as an indicator of the opportunity for regulatory intervention into innovation practices. Institutional analysis and the application of the ranking approach to the array of the public domain data on the contents, resources and the results of regional innovation systems in Siberian Federal District made it possible to suggest the methodology of indicative estimation of innovation capacity of the territorial subjects of the Russian Federation and to establish the interrelations between the rating change and the nature of innovations. The rating of the regions of Siberian Federal District is a result of the monitoring of innovation capacity of the regions and of the determination of the values of the indicators. Classification of the regions based on the initial level and on the innovation capacity rating change is represented by the matrix of the diverse tools for the regulation of the innovation systems that possess different quality of innovation capacity. The results of the undertaken investigation provide the foundations for the state regulatory authorities to formulate the effective approach to the implementation of the innovation policy taking into account the maturity of the innovation system in the region.

Keywords: innovation capacity of the region; innovation capacity rating of the region; subjects of siberian federal district

JEL Classification: O32; R11; R12

Introduction

The current urge to ensure competitive sustainability of national and territorial economies under the conditions of the constrained resource coverage exacerbated by the conditions of an open economy predetermines the fact that now there are no alternatives to the innovative development of national economy. Thereat, the innovation dynamics of the regions of the Russian Federation is insufficient for ensuring the economic security: statistical indicators of innovation activities reflect the low level of technological transfer at both national and regional levels (National report

2015). In modern economic and political environment, the identification of the opportunities to stimulate and support economic transformation based on the innovative practices comes to the front line of corporate and governmental managerial and regulatory efforts. The issue of the formation of the analytical basis and tools to duly identify the trends and problems of the implementation of the innovation processes across the country and at the level of the subjects is of paramount importance (Vladimirova and Malakhovskaya 2016).

Innovation capacity plays an important role in ensuring the appropriate rate of economic transformation of the sectors of the economy. *Innovation Capacity of the Region* is the availability and the capability of the economic agents and of the executive authorities of the region to create, to develop and to implement the innovation processes as component elements of the innovation policy taking into account the existing conditions and available resources within the framework of the clearly determined and transparently exercised regional and national development strategies of the innovation policy (Vladimirova 2011).

Conclusion

The formation of the regulation tools cannot help being founded on similar features of the objects of management. The effort to aggregate the innovation attributes applying the indicators of the rates and levels of innovation capacity reveals their contradictory nature at the levels of "high" and "middle" at the rates of "Of high capacity" and "Of low capacity"; the qualitative features of regional innovation systems found in these quadrants can be characterized by the high degree of uncertainty: it is most likely that the barriers for leadership can be represented either by industrial limitations of innovation process (even under the conditions when the cut-through innovation process has been implemented), or by the limitations of the relevant stage (only product-related, only technological or only organizational innovations, etc.), or by the excessive territorial focus of the implemented transformations (the lack of scalability which is required to initiate the cluster mechanisms of innovative development).

The interpretative attitude chosen by the regulator in the course of selecting the strategy and tactics is not neutral, and it affects the composition of the tools and the nature of the consistent regulations of the incentives for innovations. Placing a priority on such attribute as "qualitative consistency of the indicators of 'rate/level of innovation capacity'" in the process of establishing the typological groups the authors of this study assume that there is some certain level of synchrony of the changes in the area of innovations that is required for the efficiency of the multilevel regulatory effects focused on the development of resource and product results of the economy (Table 6).

Table 6. Interrelations between the rating change and innovation capacity

Observed manifested motivation for innovations	Nature of innovation capacity		
	Efficient	Inefficient	Fictitious
Capacity rating group, dimension of rate/level	"Leaders", "Potential leaders"	"In progress"	"Unstable", "Falling behind"

These empirical data confirmthe possibility of the use of the author's technique of rating innovation susceptibility of the region to select the instruments of state management in the context of separate indicators and a common index. Thus, the monitoring of innovation capacity of the regions of SFD enables a statement that greater attention is now paid to some certain components of innovation activity (in particular, there are positive phenomena in the sphere of legislative regulations). At the same time, there are negative trends in other areas which predetermine rather low general level of innovation capacity.

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Applications of Input-Output Analysis in Economy of Central North-Eastern Thailand

Sumeth KAENMANEE
Faculty of Economics, Khon Kaen University[5],Thailand

Jeeranun KHERMKHAN
Faculty of Agricultural Technology
King Mongkut's Institute of Technology[6],Thailand

Sarinya LATTEERASUWAN
Faculty of Economics, Khon Kaen University, Thailand
Jeeranun33@gmail.com

Abstract

The aim of this study was to applications of input-output analysis in economy of central north-eastern in Thailand, particularly the agricultural fields in the central north-eastern. This study shows the impact of economic activity on the basis of output in each province in central north-eastern in order to know the forward and backward links as well as impact on economic of the regions, ability to add value and the income distribution in each field of production in the central north-eastern. The results of study found that the production and agricultural field are rarely ability to add value and income distribution. Moreover, the production in the central region is inadequate to meet the demand in the area. Therefore, production is needed to be imported from outside the north-eastern region. The potential event forward linkage in the central of Northeast is the production of appliances and electrical equipment, Iron and steel industry, other manufacturing, Printing and Manufacture of chemicals and chemical products.

Keywords: linkage; input-output analysis; economic structure; production sector

JEL Classification: E23; O18; P40; Q10

Introduction

There are many foods and agricultural products of Thailand were exported to abroad. The most products exported to both in Asia and Europe. In addition, products produced in Thailand are high quality for neighbouring countries such as Laos Vietnam Cambodia (Office of the National Economic and Social Development Board 2015). Areas of three countries were border of north-eastern Thailand. There are several million baht trade occurred in the north-eastern border with three countries. This is the reason that the trading, investment and industry development in north-eastern region need to be focused. In this region, it is an advantage location as the central of the GMS and the numbers of workers in the sector are many as this region has 23.7 millions for population which is counted as 34.6 percent of overall population for the whole country. Although the agricultural sector is an important sector of the country, the farmers still have problems with poverty, and economic inequality in the population, especially in the central north-eastern region, and it is accounted for 13.4 percent of the poor than any other region in the country (Office of the National Economic and Social Development Board 2015).

There are many labours evacuate from agriculture to industry, which showed that the income from agriculture is insufficient to sustain their lives. Therefore, this research study about production potential of the central area of north-eastern and the linkage on the production field in such areas is necessary in order to reflect the income distribution in each field of production in central of north-eastern region particularly in the field of agriculture by apply Input –Output table (IO).

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[5] Khon Kaen 40002, Thailand
[6] Ladkrabang, Bangkok 10520, Thailand

Conclusion and discussion

The results of study found that the production and agricultural field are rarely ability to add value and income distribution. Moreover, the production in the central region is inadequate to meet the demand in the area. Therefore, production is needed to be imported from outside the North-eastern region. The potential event forward linkage in the central of Northeast is the production of appliances and electrical equipment, Iron and steel industry, other manufacturing, Printing and Manufacture of chemicals and chemical products.

This result of study according with Pasinetti, (1962) that distribution of income depend on growth of economics. The potential event in the Northeast is the field of electrical appliances and electrical equipment as well as Iron and Steel Industry. Most of the production fields in the provincial group are the manufacturing that supports the upstream inputs such as the field of electrical appliances and electrical equipment, the field of metal products, industry, iron and steel, and the field of printing, etc.

The ability to linked of the field of agriculture are fields of rice farming and rubber farming as these fields can deploy products to other products such as rice into flour, candy, etc., and the rubber can be processed into plastic bags, tires, etc. In addition, the fields that more attention is needed are corn farming, soybean farming, and livestock as these groups are just to pull the inputs from upstream production without adding value to the balance. As a result, the distributions of income in these fields are lesser, and it affects to the economic growth in North-eastern area. In this case, these fields shall be developed and linked forward with other fields in order to create added value and income distribution as well as reducing the income problem of farmer. The result is that the farmers will be able to generate more revenue from their own agricultural products and do not evacuate to other residents.

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Empirical Reassessment of Bank - based Financial Development and Economic Growth in Hong Kong

Sin-Yu HO
Department of Economics
University of South Africa, South Africa
hosy@unisa.ac.za

Bernard Njindan IYKE
Department of Finance
Deakin University, Melbourne, Australia
benitoflex@gmail.com

Abstract:

This paper reassesses the nexus between bank-based financial development and economic growth in Hong Kong during the period 1990 – 2014. That is, it tests whether Hong Kong follows a supply-leading or a demand-following hypothesis. Empirically, economists have generally disagreed on the nexus between bank-based financial development and economic growth. Hong Kong is a typical economy which has experienced both bank-based financial expansion and economic expansion in the last three decades. It therefore serves as a quintessence for testing this overarching debate. Using the Toda-Yamamoto test for causality and two indicators of bank-based financial development – in order to report robust results – the paper finds Hong Kong to follow the supply-leading hypothesis. This implies that the banking sector is vital in driving economic growth in Hong Kong during the study period. Policymakers in this economy will only enhance economic growth further by targeting and ensuring efficient performance of bank-based financial institutions.

Keywords: bank-based financial development; economic growth; causality; Hong Kong

JEL Classification: C32; E44; G21

Introduction

Do banking systems drive economic growth? Or does economic growth drive banking systems? These questions have been prominent at least since the nineteenth century. Among the earliest economists to assess the relationship between financial systems and economies is Schumpeter (1912). In his paper, he emphasises the importance of the banking sector in aiding technological innovation and productive investment, which eventually drives growth. In contrast to Schumpeter (1912), Robinson (1952) asserts that financial development has no influence on growth. She argues, instead, that growth influences the development of financial markets. Robinson (1952) argues that as economies grow the need for financial services arises, thereby stimulating the growth of financial systems.

Since the above seminal works, various studies have analysed, extensively, the linkages between financial development and growth. In characteristic fashion, the empirical results remain divergent. In this paper, instead of focusing on the broad concept of financial development – which can be classified into bank-based and market-based financial development – we concentrate on bank-based financial development. In general, the findings in the literature can at best be classified into four broad categories. The first is the so-called finance-led growth hypothesis, whereby bank-based financial development acts as a precursor to growth. Several empirical studies are consistent with this view. See among others, Bittencourt (2012), Chaiechi (2012), Lee (2012), and Colombage (2009). The second is the so-called growth-led finance hypothesis, whereby growth acts as a precursor to bank-based financial development. This view has been supported by studies such as Hassan *et al.* (2011), Colombage (2009), Chakraborty (2008), and Zang and Kim (2007). The third category finds bidirectional causality between bank-based

financial development and growth. This has been corroborated by studies such as Bangake and Eggoh (2011), Hassan *et al.* (2011), Wolde-Rufael (2009), Abu-Bader and Abu-Qarn (2008), and Hondroyiannis *et al.* (2005). The fourth category finds no causality between bank-based financial development and growth. Studies such as Ibrahim (2007), Chang (2002), and Shan *et al.* (2001) find support for this view.

Most of these studies are either based on bivariate frameworks, cross-sectional approaches, or on frameworks that suffer from small sample properties. This paper attempts to re-assess the causal linkage between bank-based financial development and growth in Hong Kong, using a testing technique that overcomes the afore-mentioned shortcomings. We achieve this aim by extracting indicators of bank-based financial development and growth, and by building an augmented vector autoregression (VAR) model which caters for variable omission by introducing inflation. Then, by applying the Toda-Yamamoto test, we find Hong Kong to follow the supply-leading hypothesis, implying that the banking sector is an important source of growth in Hong Kong during the study period. Based on this conclusion, we argue that policymakers in this economy will only enhance growth further by targeting and ensuring efficient performance of bank-based financial institutions.

The rest of the paper is organised as follows. In the next section, we discuss the trends in banking development and growth in Hong Kong. Section 3 gives the theoretical and empirical underpinning of the finance-growth nexus. Section 4 outlines the empirical methodology and the data. Section 5 analyses the empirical results. Section 6 provides the conclusion.

Conclusion

This paper assessed the causal nexus between bank-based financial development and growth in Hong Kong. It answered the following question: Does Hong Kong follows a supply-leading or a demand-following hypothesis? Hong Kong is a typical economy which has experienced both bank-based financial expansion and economic expansion in the last three decades. It therefore serves as a quintessence for testing this overarching debate. Many deficiencies exist in the majority of the previous studies, including the use of limited data for methods that are inefficient in small samples, and problems of variable omission bias. This paper avoided those problems by using the Toda-Yamamoto test for causality, and by introducing inflation as a conduit between bank-based financial development and growth. The paper is also among a few to assess the above-mentioned question in the case of Hong Kong. Using a dataset that covered the period 1990 – 2014, and two indicators of bank-based financial development, the paper found Hong Kong to follow the supply-leading hypothesis. This implied that the banking sector has been an important driver of growth in Hong Kong during the study period. Policymakers in this economy will only enhance growth further by targeting and ensuring efficient performance of bank-based financial institutions.

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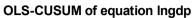
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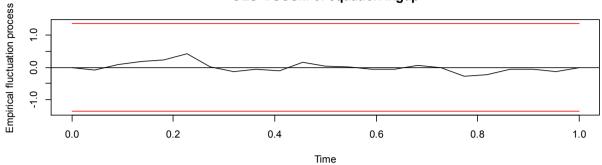
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APPENDIX
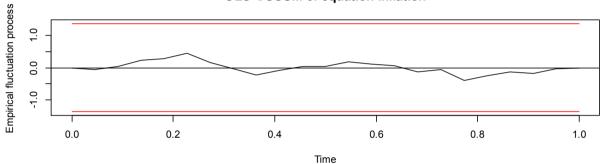
Figure A.1 - The cumulative sum of recursive residual plots of lnGDP, INF and lnPC/GDP

OLS-CUSUM of equation lngdp

OLS-CUSUM of equation inflation
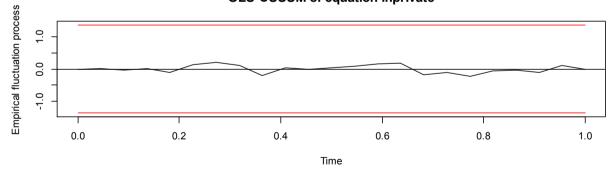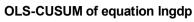

OLS-CUSUM of equation lnprivate

Figure A.2 - The cumulative sum of recursive residual plots of lnGDP, INF and lnBD/GDP

OLS-CUSUM of equation lngdp

OLS-CUSUM of equation inflation

OLS-CUSUM of equation lnbank

The Entrepreneur's Network as a Cooperation Form of Entrepreneurship: Case of Slovakia

Renáta MACHOVÁ
Faculty of Economics
J. Selye University in Komárno, Slovakia
machovar@ujs.sk

Ladislav MURA
Faculty of Economics and Business
Pan-European University in Bratislava, Slovakia
ladislav.mura@gmail.com

Katarína HAVIERNIKOVÁ
Faculty of Social and Economics Relations
Alexander Dubček University of Trenčín, Slovakia
katarina.haviernikova@tnuni.sk

Zsuzsanna TÓTH
Faculty of Economics
J. Selye University in Komárno, Slovakia
tothz@ujs.sk

Abstract:

The subject of the paper is the analysis of the current situation of entrepreneur's network and smaller foreign company's developmental opportunities in terms of innovations. Entrepreneurial networks can help entrepreneurs to achieve their goals and may provide special assistance to entrepreneurs in small and medium-sized enterprises (SMEs) in particular as they usually have limited resources relative to larger businesses. A survey is carried out in order to get to know the respective company's innovation activities more thoroughly. The goal of entrepreneurial networks is usually to combine a broad selection of talents, professionals and resources in order to complement each other's endeavours. We become acquainted with some innovative models, strategies and possibilities. In the chapter dedicated to the practical part we look into the scope of activities of the company. Through interviews we examine the kind of role the innovation plays in its life. As the result of the examination, we evaluate the obtained results.

Keywords: innovation; innovation activities; entrepreneur's network; entrepreneurship; small and medium enterprises

JEL Classification: L26; O10; M21

Introduction

The current situation and development of the global economy, oriented primarily to the continuous creation of market and non-market goods to meet the production and final consumption, reveal problems that threaten the fundamental workings of the economic system on its each level. Shortcomings in the functioning of national economies are growing and have an impact on the global economic system, which is based on the principle of market mechanism. The phenomenon of globalization is increasingly familiar to people, and it reveals the interdependence of political, social, cultural, safety, environmental and special economic areas. Economic theory has had a long development (Chikán 2010), during which researchers have formed a number of economic concepts that have predetermined the behaviour of those responsible for managing the economy. (Ivanička 2014, Doležal, Šnajdr, Belás and Vincúrová 2015) Innovative activities (Keresztes 2012) are currently the most effective answers to a modern company operating internationally, to create business opportunities in the global economy. It is

necessary to emphasize the understanding of innovation. It is not only the development of science and technology in that specific field, but it is also a complex business phenomenon (Pitra 2004).

In 1910, Schumpeter was the first who used the concept of innovation in his study of economic growth. Current players of the economy can be characterized by a paradigm shift in their expectations. Promising professional cultures have emerged. The rapid ´´prototyping´´, genetics, nanotechnology and other innovative discoveries are the tools of the change of the future determining technology. It is an inducement of development of innovative sectors. (Poór *et al.* 2012)

There are four types of innovation. The first type is product innovation. The aim is to survive, to increase the prestige, profits and market share, to create new jobs and to increase the number of loyal customers. The second type is process innovation – an innovation during the financial and controlling processes (Michalski 2014) of product development. Its aims are to reduce costs (Mihóková, Andrejovská, and Buleca 2016), increase productivity, material and energy savings, introduction of automation, protection against accidents and environmental protection. The third type is social innovation, which includes the innovations in the elements of human sphere and in the control system. The aim is to develop training schemes, to improve social conditions and the ability of an organization to retain its employees, to increase social benefits, to boost internal mobility and to use the new organizational form. The fourth type is structural innovation – innovations taking place in distribution systems, in the buying and selling markets.

Conclusion

Globalization involves the integration of different companies into joint partnerships, through which they can effectively face the pressure of competing businesses. Gavláková (2012) states that globalization highlights the role of clusters (clusters, common initiatives), thanks to which businesses participating in this cluster are much more competitive. Competitive advantages are based on the internal and external resources that are available in national and local business environment. According to the author, clusters are potential tools for improving regional values because they use the combination of knowledge, skills and abilities of different subjects. They enable the participants to create value for customers while reducing transaction costs and increasing economic benefits. Businesses in clusters through an innovative approach improve their competitive position and the situation of the region. The current business environment is facing very dynamic changes, forcing businesses to increase their competitiveness.

Small and medium-sized enterprises (micro-enterprises, small businesses, medium-sized enterprises) react to changes in the business environment in the most susceptible way, and therefore they require special attention. Linking the SMEs to the national economy is constantly growing. Adversaries of globalization note that globalization and integration of international economic space goes together with its fragmentation, and globalization is essentially a process in which developed countries consolidate to oppose the rest of the world (Kolmykova, Lukianykhina, Baistriuchenko, and Lykianykhin 2015). This business segment contributes significantly to the creation of new jobs, to the introduction of innovations into practice, to the new technological resources and to the formation of a competitive environment.

Acknowledgments

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The Impact of Selected Research & Development Indicators on Companies´ Growth in Individual Industries in V4 Countries

Markéta ŠELIGOVÁ
School of Business Administration in Karviná[7]
Silesian University in Opava, Czech Republic
seligova@opf.slu.cz

Abstract:

The aim of this paper is to evaluate the influence of research and development on companies´ growth in individual industries in V4 countries from 2003 to 2014. Using generalized method of moments (GMM) will be tested the influence variables such as for example the firm growth rate, capital R&D expenditure, R&D intensity, R&D tax incentive generosity, profitability, growth rate of R&D employees in individual industries in V4 countries. It is expected the positive influence for companies´ net sales growth of their investment in R&D and of tax policies that benefit the individual companies. It is expecting also a positive effect of R&D intensity in companies´ growth. On the basis of the article we can find information about importance of R&D investment and R&D tax credits and their consequent impact on companies´ growth.

Keywords: companies´ growth; profitability; R&D intensity; R&D investment; tax incentives

JEL Classification: H20; H30; O32

Introduction

The aim of this paper is to evaluate the influence of research and development on companies´ growth in individual industries in V4 countries from 2003 to 2014. Another target of this paper is to identify which selected factors affecting companies´ growth. Using generalized method of moments (GMM) will be tested the influence variables such as the firm growth rate, capital R&D expenditure, R&D intensity, R&D tax incentive generosity, profitability, growth rate of R&D employees on companies´ growth in individual industries in V4 countries. The first chapter includes an introduction and literature review. The second part of this paper includes a methodology. using date and purpose of the generalized method of moments (GMM). This chapter includes an overview of variables and characteristics of the data used. The third part of the paper is focused on the results of estimating generalized method of moments (GMM) and their comments. This chapter is focused on the selected factors affecting the companies´ growth in individual industries in V4 countries from 2003 to 2014.

The EU Industrial R&D Scoreboard defines research as original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Expenditure on research is recognised as an expense when it is incurred. Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use. Development costs are capitalised when they meet certain criteria and when it can be demonstrated that the asset will generate probable future economic benefits. Where part or all of R&D costs have been capitalised, the additions to the appropriate intangible assets are included to calculate the cash investment and any amortisation eliminated.

Theoretical and empirical literatures show that research and development (R&D) and R&D investments are crucial for economic growth. Innovation is the engine of a knowledge economy. Research and development (R&D) is the key ingredient of the innovation process. Research and development ensures the generation of new knowledge and technologies. Institutions that perform research and development stay abreast of leading-edge

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[7] Univerzitní náměstí 1934/3. 733 40. Karviná. Czech Republic

technologies, make more informed decisions, and nurture a valuable knowledge base and absorptive capacity in their skilled personnel. New technologies resulting from R&D increase productivity.

We can say that growth in productivity leads to economic growth. Economic research has long linked R&D expenditure with economic growth, showing that about 30-50% of economic growth in society comes from the introduction of new technologies. A competitive and stable tax policy has the potential to be an effective tool for promoting R&D and innovation in the country or region. Government has a major supporting role in this area by providing a favourable business environment, including appropriate and competitive incentive programs for R&D (Warda 2005).

Companies improve their production technology through a variety of means, many of which are unobservable to the outside world. This is, in particular, true for a very significant proportion of innovations and other production efficiency gains that arise through learning, internal research and development (R&D), and accumulation of organizational capital. As many of these gains are not patentable, firms prefer to retain privacy of information about their actual cost and technology structure. More interestingly, it is difficult for existing rivals, potential competitors, and other stakeholders in the industry to readily acquire information about efforts and inputs expended in the R&D process of a firm. In competitive markets, the absence of observability of R&D investment or efforts undertaken by other firms is likely to influence the strategic incentive to invest, the extent of actual technological improvements, and the eventual market outcomes. This leads to an important question about the effect of privacy of such information on technological change and social welfare. If such secrecy is not socially desirable, then there would be a case for public policy to discourage secrecy and promote sharing and disclosure of information about R&D investments made by the firms (Sengupta 2016).

Conclusion

The economic and social growth is dependent on the level of research and development activity in different countries. The economic growth can mean also the increase in the competitiveness on stable competitiveness. Information, innovation and knowledge has attained significance in economy. The key role is played by research and development. Companies and economy can obtain advantages within the ability to find new information and to create new knowledge and to transform it into new technologies, services and products. All technological innovation activities comprise scientific, technological, organizational, financial and commercial steps, including investments in new knowledge. It is intended to lead to the implementation of technologically new or improved products and processes. R&D is only a part of these activities and may be carried out at different phases of the innovation process. R&D intensity is used as an indicator of an economy's and firm´s relative degree of investment in generating new knowledge.

The aim of this paper was to evaluate the influence of research and development on companies´ growth in individual industries in V4 countries from 2003 to 2014. Another target of this paper was to identify which selected factors affect companies´ growth. Using generalized method of moments (GMM) was tested the influence variables such as the firm growth rate, capital R&D expenditure, R&D intensity, R&D tax incentive generosity, profitability, growth rate of R&D employees on companies´ growth in individual industries in V4 countries.

In low-tech firms, the model results showed a positive effect of the R&D intensity, profitability, companies´ growth in previous period and growth rate of R&D employees on companies´ growth. The model results also showed the negative impact of capital R&D expenditure on companies´ growth.

In medium-tech firms, there was recorded a positive relation between companies´ growth and variables such as R&D intensity, profitability, companies´ growth in previous period. The results also suggested a negative relation between companies´ growth and capital R&D expenditure.

In high-tech firms, the model results indicated a positive relation between companies´ growth and variables such as R&D intensity, profitability and companies´ growth in previous period. Others variables were not statistically significant.

In general, R&D investments are crucial for economic growth. Innovation is the engine of a knowledge economy. Research and development (R&D) is the key ingredient of the innovation process. Research and development ensures the generation of new knowledge and technologies.

Acknowledgement

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Attitude of the Future Young Managers to Business Model Processing at the Faculty of Economics, Technical University

Dana PAĽOVÁ
Faculty of Economics, Technical University of Košice, Slovakia
dana.palova@tuke.sk

Peter NIRODA
Faculty of Economics, Technical University of Košice, Slovakia
peter.niroda@student.tuke.sk

Abstract:

In nowadays fast changing world, the education is key factor in shaping and preparation of future managers. This paper describes importance of education of process modelling for future, fresh-graduated managers, where uptake of new information and communication technologies (ICT) should determine and essentially affect the way the business acts. The aim of this paper is to present importance of strengthening basic e-skills and principles of business informatics for young generation. Therefore, is subject Informatics II continuously improved and adjusted for business needs. This process and ways of subject realization and evaluation and what impact the update process are shortly described within the paper.

Keywords: business process modelling; e-competences; e-skills; marketplace requirements; project based learning; managing education process; human resources development

JEL Classification: A230

Introduction

There is no doubt, that Information and Communication Technologies (ICT) affect development of human society significantly. The ICT contributes not only to development of IT sector, but essentially affects other sectors, enhances their economic productivity and growth. From begin of 1990s information technologies started transforming of "previous century" companies and their habitual processes, with aim to bring them to new century. With this, new type of industrial engineering was created. (Davenport and Short 1990) Today, globalization and using of ICT in enterprise environment is fact, that everyone has to face to. Modern business process management is based on dissemination of free knowledge. Staying competitive is not just about tracking news and innovation in the ICT field. The most important factor is human resources development, because people are engines of change, those who use the technology and are warranty for continuous evolution and bring added values to business.

The future managers should be persons opened toward changes, innovation, creativity and its implementations, skilled in risk treatment, etc. (Abbas and Madni 2013), (Howard 1996) And here is most important role of education, because it forms future human resources and can prepare young people for future challenges. At the faculty of Economics, Technical university of Košice, we educate future managers, which knowledge and skills in the field of informatics are demanded. Although our students are considered by their employers as non-professionals in the field of informatics, we can announce that in each job they will face to some kind of information system or software, because using of them is nowadays matter of course. Subjects concerns on ICT and covers basic introduction into ICT or generally needed ICT skills like networking, design and editing HTML pages, text processing, basics of programming (subject Informatics I), introduction to business informatics (Informatics II, Economic information systems, Data presentation and visualization) and e-services in financial institutions (Bank electronic services). This composition was designed with aim to propose to our students' competitive advantage on the labor market after graduating education at our faculty.

Conclusion

Computing and creativity are main forces of innovations. This is the way, how Informatics II is being taught, in order to help to enhance both of them. Creativity can be developed via semestrial project and computing knowledge and skills can be improved by various (practical oriented) tasks during the face-to-face classes. Students work with various tools. With them they can better understand how are data transformed to information and how can they be used by business. This helps our students to avoid common scenario, when graduates enter labor market place and they too often discover, that they do not have the skills and competences, which they need for their future careers. More than 4.5 million young people (aged 15-24 years) are today unemployed in the EU what presents 21% (European Commission 2012b). Although our graduates usually don't have problem with employability, we have to follow EC agendas about connected human resources development. It means, that we have to analyze pros and cons of education provided by us from both sides - from teachers and students. The way how we do it and most interesting outcomes were presented in the paper. As good results can be included fact, that about 75% of students is in average satisfied with the Informatics II subject content and special topic business process modelling and at about 66% of students consider the BPM as important field in their future life. An even worse grade average from last year didn't caused decreasing of level of importance. More strictly, rules and change of educational process applied in last year have woken up interest of this subject and have revealed its future potential. Real challenge for our future education is to find balance between high level of students' satisfaction, high grades achieved by students and real marketplace requirements. The success of Informatics II subject is in feedback achieved also by our graduates working at the different positions within companies like T-Systems, IBM, etc. who agreed on, that in hindsight they discovered what they have learned through this subject.

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Problems on Forming System of Indicators to Estimate Efficiency of Social and Economic Development of the Country

Svetlana Kapitonovna DEMCHENKO
Department of Economics and Planning
Siberian Federal University[8], Russian Federation
demchenko.svet@mail.ru

Julia Ju. SUSLOVA
Department of Trade Business and Marketing
Siberian Federal University, Russian Federation
JSuslova@sfu-kras.ru

Andrey Sergyeyevich YAMSCHIKOV
Department of Economics and Information Technologies of Management
Siberian Federal University, Russian Federation
AYamshchikov@sfu-kras.ru

Irina Rudolfovna RUYGA
Department of Economics and Management of the Business processes and Economy
Siberian Federal University, Russian Federation
IRuiga@sfu-kras.ru

Tatiana Alexandrovna MELNIKOVA
Department of Economics and Planning
Siberian Federal University, Russian Federation
mta6918@yandex.ru

Abstract:

At the present time the task on increasing the efficiency of the social and economic development of the country prevails in Russia. It contributes to increasing the social and economic potential of Russia.

In this context, there is a need to develop theoretical and methodological provisions of estimating the efficiency of the social and economic development of Russia. In spite of a great number of works on the economic development of the country, it is necessary to note insufficient consideration of methodologies and indicators related to increasing the efficiency of social and economic development as a system. The existing methodologies of estimation are meant to measure indicators for every specific period. It cannot objectively estimate social and economic development. Thus, this article offers the development of theoretical provisions on estimating the efficiency of social and economic development in dynamics.

Key words: public production; social and economic development; integrational processes; transformation; dynamics

JEL Classification: H53; O10

Introduction

Factors caused by the globalization have an impact on the social and economic development of any country (Bandurin 1999). One of the most important problems of the interrelated world community is not the cooperation of various social and economic systems any more but the interrelation of split-level economic structures that are characterized not only by the degree of development but also by the degree of the involvement in the global division of labor and the global economy (Biyakov 2004, Gusev 2015).

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[8] L. Prushinskaya St., Krasnoyarsk, 660075, Russian Federation

When considering the system of indicators that define social and economic development of the country, it is necessary to turn to the European experience of the social and economic development that is reflected in works of Wishlade, Galbraith (2002) and Fedorenko (1975).

Russian authors paid more attention to the analysis of the system approach to researching indicators. They include works of Fedorenko (1975), Lopatnikov (1976), Tyuhnin (1972), Tsygichko (1991), Syroezhkin (1976), and Illarionov (1996).

Conclusions

Thus, the authors have developed the adapted recommendations for estimating efficiency of the social and economic development of the country. They include various scenarios of the system formation: formation, development, recession and depression. It is similar to the life cycles of economic processes.

Stages of the social and economic development depend on the speed of the development of processes described in the methodology of estimating the efficiency of such development. After estimating efficiency of the social and economic development by using the offered methodology, it is necessary to aspire for forming and developing the ideal model of the system related to the social and economic development.

Table 6 shows the results of calculations according to the methodology offered by the authors. It is related to two periods and specifies types of the social and economic development in every year.

Table 6. Types of social and economic development during the 1st and 2nd periods in Russia

Years	1st period										2nd period									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Typological nomination of efficiency of the social and economic development	Lagging I	Favorable	-	-	-	-	-	Lagging I	-	Favorable (ideal)	Favorable (ideal)	Favorable (ideal)	Depressive II	Depressive II	Lagging I	-	-	-	Depressive II	Favorable

It is possible to make the conclusion from the obtained results from Table 6 that during any crisis and post-crisis periods the whole Russian system of the social and economic development was in the form of systemless process. Period 1, *i.e.* during the transitional economy, contains the largest number of such systemless years.

In the second period the system character and efficiency of the growth of the social and economic development are observed more intesively. However, the 2008-2009 crisis and the post-crisis period show that economy of the country is not ready for such global problems. It is only by 2013 when Russia managed to achieve the favorable level of development. That is why it is possible to make the conclusion that in the second period indicators of the social and economic development are more systemized and can be estimated.

In case of the favorable ideal development of social and economic indicators (it was in 2003-2005), the speed of growth of basic and auxiliary processes surpass the speed of indirect processes. In this case it is possible to speak about stable social and economic development: the level of the population's life improves, a low level of unemployment remains, industrial production and social infrastructure, as well as other features of high economic activity are intensively developing. In case of the favorable development of social and economic indicators (it was observed in 1995 and 2013), the basic peculiarity is the advanced growth of processes that prevail social and economic development in relation to indirect processes.

On the basis of the 2013 data, it is possible to imagine the development of social and economic indicators according to two scenarios. In one case the speed of indirect processes will grow, and the speed of processes that prevent development will decrease. It is peculiar of the mode related to diversifying the country economy. In other case, the situation may worsen up to the transformation of the social and economic development to the depressive type. In order not to allow the second scenario, it is necessary to strive for the ideal model of the social and economic development like the one in 2003-2005.

In 2014-2015 it is necessary to pay attention to the growth of the following areas of the social and economic development: to increase the living wage in the country, to improve the conditions that allow to increase expenses and savings of the population, to develop new methods to provide the Russian population with housing with the aid of state programs, to decrease rates for mortgages, and to simplify administrative barriers when constructing new residential houses.

Thus, on the basis of the obtained results the work considers and offers to implement the adapted scenarios of developing the system of the social and economic indicators of the country: formation, development, recession, and depression. They are analogous to the life cycles of economic processes. The stages of the development depend on the speed of development of processes related to the indicators of the social and economic development that are described in the methodology of estimating the efficiency stated in this article. After estimating the efficiency of the social and economic development according to the methodology, it is necessary to strive to form and develop the ideal model of the system related to managing the social and economic development of the country. The ideal model of the efficient social and economic development is a system where all indicators are agreed, synchronized, and efficient. Practical importance of the results is found in the fact that the offered adaptive methodology can be used on various levels of management. It is relatively simple for applying and can research various quantitative and qualitative indicators of the social and economic development of the country.

In order to approach the ideal model of efficient social and economic development of the country, it is necessary to take a number of measures, including the following: to start using the developed methodology in program products of the statistical informational system of Russia, and to automate procedures related to estimating efficiency of the social and economic development. It will allow to increase the veracity of the analysis of such development and to timely reveal disagreement of social and economic processes. It is also necessary, on the basis of constant monitoring of the social and economic potential of the country development, to form programs of the social and economic development of Russia, which, being within a system but not separately, will have an impact on indicators; to continue further research of the increase in the efficiency of the social and economic development by using the developed methodology with a more detailed and increased set of indicators by considering every subject, city, economic zone, and area.

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Effects of Minimum Wage Rate towards the Unemployment Rate

Rabiul ISLAM
School of International Studies
University Utara Malaysia
rabiul@uum.edu.my

Ahmad Bashawir Abdul GHANI
School of International Studies
University Utara Malaysia
bashawir@uum.edu.my

Irwan Shah Zainal ABIDIN
School of Economics, Finance and Banking
University Utara Malaysia
irwanshah@uum.edu.my

Abirama SUNDARI
School of Economics, Finance and Banking
University Utara Malaysia
mri7983@gmail.com

Abstract:

In Malaysia, the minimum wage policy was announced by the prime minister on 15 October 2010. It is also known as one of a government policies instruments vide New Economic Model (NEM) in order to transform economy in Malaysia from a middle-income to a high-income economy by the year 2020. The aim of this policy is to protect the right of the citizens who are earning especially low income per month and low skilled. The purpose of this paper is to investigate the effects of the minimum wage rate towards the national unemployment rate. It is done by conducting a very important process which is collecting data and information regarding the paper. It is then followed by preparing a full report on the related topic which is the effects of minimum wage rate towards the national unemployment rate. The data that been collected based on the problem statements and also based on the objective of the study related to the effects of minimum wage rate towards the national unemployment rate. This paper also conducted in order to examine the effect of the minimum wage rate on the rate of working adults as well as the preferences of the labours whether to work a part time or full time, which finally will reflect on the national unemployment rate.

Keywords: wage rate; unemployment rate; economic model; income

JEL Classification: J5; J6

Introduction

A minimum wage is basic wages that have been paid to the workers excluding any allowances or other payments per month. This minimum wage implementation can be said to reduce poverty by increasing the purchasing power of the poor through increased wages. Minimum wage is legally the lowest wage that an employer is allowed to pay an employee. In Malaysia the national minimum wage was announced by the prime minister on 15 October 2010. It is also one of a government policies instruments vide New Economic Model (NEM) that was introduced by Malaysian Prime Minister Najib Razak on 30th March 2010 in order to transform economy in Malaysia from a middle-income to a high-income economy by the year 2020. Human capital plays an important role in achieving economic growth and development (Islam *et al.* 2016a). In the effort to attract the automotive manufacturers and major international component to invest in Malaysia, government has developed good government policies which

emphasizes on political and economic stability, well economic fundamentals, as well as practical (Islam *et al.* 2016b).

The main idea of the study is to find out on how the national minimum wage can affect the national unemployment rate. In conducting this study found out whether this minimum wage policy that was implemented in Malaysia would affect the labors directly or not. Moreover, do not have any robust data available on some types of workers who are more likely to be on the minimum wage, such as new migrants, temporary workers and disabled workers. Besides, there ate estimates assume that all 16 and 17 year olds are eligible to earn at least the adult minimum wage because the Department is unable to estimate how many of them may be eligible for the new entrants' minimum wage.

Conclusion

Conducting this research paper more information regarding this minimum wage policy that been implemented in Malaysia as well as in other countries have been gained deeply. There countries those are facing problems because of this minimum wage. Yet, in Malaysia it is an effective policy in overcome the national unemployment rate. Furthermore, this minimum wage rate also being very beneficial to the labors overall. It is also known as one of a government policies instruments vide New Economic Model (NEM) in order to transform economy in Malaysia from a middle- income to a high-income economy by the year 2020. Plus, the aim of the implementation of this minimum wage policy in Malaysia is this policy is to protect the right of the citizens who are earning especially low income per month and low skilled.

Through this research, it is get to know that the minimum wage rate is effecting positively in decreasing the national unemployment rate. Because of this minimum wage rate, those who are working as part time workers before, choose to work full time. This finally, increases the employment rate of the full time workers. In addition, this minimum wage rate also seems to increase the participation of the working adults in the working field. The positive changes that happen in the rate of working adults reflect positively towards the national unemployment rate, where the overall national unemployment rate have decrease.

Moreover, in the methodology part, the final result on the respondents' data shows that there is relationship between the variables of this research. The Pearson Correlation and Descriptive Statistics show the result clearly. Through these tests, it has been confirmed that the minimum wage rate is reacting positively on the national unemployment rate where the unemployment rate has decrease. These tests also shows what does the respondents who represented the Malaysians overall, and they are really agree with this minimum wage rate.

At last, this research will be very help full to those who are conducting research on any topics that are related to this research. Plus, this research also will be good information provider to those who wants to know about the minimum wage rate and its contribution in reducing the national unemployment rate. Furthermore, this research paper also will be as a value able informatics for those individuals who do not have any idea or knowledge on this minimum wage and its effects on the national unemployment rate.

In conducting this research, it is recommended that, the research on this minimum wage rate have to be improved from time to time to make sure that this minimum wage policy is giving benefits to all of the users. Through that research, there must be changes on the minimum wage rate which the research have to be a guide line in improving efficiently not only by focusing on the low wage workers but also in context of all the related labors in Malaysia. The future researches also hope to be focus on the teenage group or on the other parties related to the unemployment rate.

Furthermore, it is also recommended to conduct a research on the minimum wage rate on contributing the economic growth. It can be investigated whether this minimum wage rate implementation is contributing in improving and increasing the economic growth in Malaysia. By conducting the related researches it can be find out whether, is this minimum wage policy is really effective in increasing the economic growth in Malaysia and is it use full in achieving the objective in the year 2020.

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Would It Be Helpful to Have Credit Ratings to Prevent the Initial Public Offering Underpricing?

Seung-Ki SEO
School of Business Administration
University of Seoul, Seoul, Republic of Korea
skseo@nicerating.com

Hyung-Suk CHOI[9]
Ewha School of Business
Ewha Womans University, Seoul, Republic of Korea
hyungsuk.choi@ewha.ac.kr

Wonseok WOO
Scranton College, Division of International Studies
Ewha Womans University, Seoul, Republic of Korea
wwoo@ewha.ac.kr

Abstract:

In this study, the effect of the credit rating on the IPO pricing has been analysed. The analysis of the companies which were listed in Korea Exchange and made IPO from 2002 to 2014, found out that the companies which had the credit rating had less underpricing IPOs than those which did not have. The results showed that the underpricing IPO has nothing to do with the level of credit rating and the difference in the credit rating entities and that the existence of the credit rating itself plays a big role in removing the uncertainties and information asymmetry on the corporate values. Same as the final underpricing *IPO*, the companies which have the credit rating were also found to have less adjustments of the public offering price during the period of demand forecasting. These results show that the credit rating plays a big role in removing the information asymmetry in the IPO market.

Keywords: credit rating; initial public offering (IPO); underpricing; Heckman model; information asymmetry

JEL Classification: G10; G14; G24; G29; G39

Introduction

The IPO funding for inducing the outside investment is an effective tool for increasing the capital required for the corporate growth. But it can be found from the past records that the newly issued shares were traded at a far higher price than the IPO price here in Korea and in advanced overseas markets as well. So, if we assume that the price formed at the market reflects the true value of the companies, we can infer that the IPO price is formed at relatively low price. As the IPO underpricing may be considered as the cost from the viewpoint of the IPO companies, it has been studied both in financial businesses and colleges. There is a hypothesis on the cause of the underpriced IPO among others, which argues that the underpricing is caused by the uncertainty as it is hard for the potential investors to get precise information about IPO Company prior to the listing of the companies. In this study, the empirical analysis was focused to find out whether the IPO companies having the credit rating prior to IPO have less information asymmetry so that the underpricing IPOs for those companies are less likely to happen. This study has

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[9] Address correspondence to Hyung-Suk Choi, Finance Department, Associate Professor of Finance, Ewha School of Business, Ewha Womans University, Seodaemun-gu Ewhayeodae-gil 52, Seoul, 120-750, Korea. Email: hyungsuk.choi@ewha.ac.kr.

studied 706 IPO cases during 2002 to 2014, which were listed in Korea Exchange and found out that the IPO companies evaluated the credit rating have less underpriced IPOs.

IPO is conducted through a lot of processes such as selection of underwriter, preliminary audit of the company prior to the listing, filing of the securities, demand forecast, public offering and final listing. Though the IPO processes are designed to remove the uncertainties on the corporate values which may exist among the stakeholders such as the issuing company, underwriter and investors, there is still the uncertainty due to the difference in the volume of information owned by each stakeholder and due to this uncertainty, the underpriced IPO continues to happen from the time of the studies made by Ibbotson (1975) and Ritter (1984). Beatty and Ritter (1986) showed that the underpriced IPO is positively related to the uncertainly on the value of issuing company based on the hypothesis of information asymmetry. Rock (1986) argued that the issuing company selects the method of underpriced IPO to avoid the chance of the winner's curse which may happen due to the information asymmetry among the stakeholders and give more inducement to the IPO for the investors.

To resolve IPO underpricing, the method of minimizing the information asymmetry between investors would be the most effective one as shown in the study by Michaely and Shaw (1004) on the homogeneity in the acquisition of information among investors. However, this method may be limited to IPOs in the specific fields. Therefore, it would be better alternative to the issuing company to appoint a more reputable underwriter to get rid of the uncertainty on the IPO price for the investors although it may cost more. However, the prior studies show that there is less correlation between the reputation of underwriter and the IPO underpricing. It may be caused by the fact that the reputation of underwriter not only reduces the information asymmetry but also affects the IPO underwriting in other way.

On the other hand, An and Chan (2008) suggested the credit rating as a means of reducing the information asymmetry among the transaction participants. Even though the credit rating just represents the possibility of redemption of the debt security by the debtors or the redemption capability of a company, it can be broadly interpreted as the value of the company evaluated by the credit rating agency from the view point of an independent third party using not only the disclosed data but also the internal data. So, if an issuing company has a credit rating prior to starting IPO, it would help the stakeholders to reduce the uncertainty on the value of that company and thus affect the IPO pricing. As shown in the study made by An and Chan (2008), this study focuses on the empirical analysis to find out whether the credit rating has the information effect even in Korea and whether it could reduce the IPO underpricing.

The study has the following implications: First of all, based on the hypothesis of information asymmetry, the empirical analysis found out that there are the difference in the IPO underpricing depending on the existence of credit rating, thus indicating that the information asymmetry among the transaction stakeholders has effect on the IPO pricing and that the existence of credit rating can alleviate the level of information asymmetry among the transaction participants and the difference in the level of IPO underpricing. It was also found that the companies evaluated the credit ratings have less adjustment in offering price during the demand forecasting period, thus showing that if a company has the credit rating prior to IPO, the uncertainty on the value of the issuing company can be reduced. In addition, the study analyzed whether the credit information grade prepared by the credit research company, which is similar to the credit rating provided by the credit rating agency, alleviates the information asymmetry. In this case, the credit information grade was found to have the same effect as the crediting rating has. This may be caused by the fact that even though there is a big difference between credit rating and credit information grade, the credit information grade has some information effects as the people are confused about the difference between them due to its similarity in the form and that the credit information grade is often used in the bidding made by the public entities such as Public Procurement Service.

The paper is composed of the followings: Chapter 2 describes the prior studies on IPO underpricing and the credit rating. Chapter 3 sets up the hypotheses on the effect of credit rating on IPO underpricing through the provision of information on the company while Chapter 4 explains the empirical analysis model and basic statistics for the verification of the analysis data and hypotheses. Chapter 5 reports the findings from the empirical analysis while Chapter 6 makes the conclusion of the study.

Conclusion

The credit rating is an indicator showing the capability of a company to repay its debt securities. It is one of the sources which can provide the investors with the critical information on the companies in the capital market. This study found out that the credit rating has the role of informing the investor of the company's repayment capability and the information effect on the company's value as well, which result in additional effect of the credit rating would affect IPO underpricing.

The analysis was conducted on the newly listed companies in Korean Exchange from 2002 to 2014 (except the financial companies and SPACs) to find out whether the existence of the credit rating would affect the company's IPO pricing. The findings showed that the company which has the credit rating is less likely to get IPO underpricing. In addition, it was found out that the company holding the credit rating is less likely to get the adjustment in the IPO price during the demand forecast period same as the final IPO underpricing. The same results also applied to the credit information grade, which implies that the consistent IPO underpricing in Korean IPO market is caused by the information asymmetry to a certain extent and that the third party organizations such as credit rating agencies may have alleviated the level of the information asymmetry to reduce IPO underpricing.

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Strategic Management of High Technology Company Development based on Cloud Space Architecture

Sofia Pavlovna KHRUSTALEVA
Voronezh State Technical University, Russia[10]
spkurbatova@mail.ru

Oskar Grigoryevich TUROVETS
Voronezh State Technical University, Russia
oskar-turovets@yandex.ru

Valentina Nikolaevna RODIONOVA
Voronezh State Technical University, Russia
rodionovavn2011@yandex.ru

Yuliya Anatolyevna SAVICH
Voronezh State Technical University, Russia
vilsavia@mail.ru

Abstract:

High technology company development is focused on deep penetration of applied research, experimental and production activities in shared business processes, and ensuring sustainable growth of their scientific and technical level. Effectiveness of implementing the system of strategic management of company development is based on the organization of adaptation processes and subsequent adjustment of the strategic development program at all life stages of the product of high technology company in accordance with requirements of varied environment changes. Organization of the implementation process of the system is realized by developing an integrated model of interaction between structural elements in temporary space. In order to ensure the adaptation process of the strategic management system cloud space architecture is formed, in which information sources, information space field and disseminating information conditions could be defined.

Keywords: high technology company; strategic management; innovative development; research activities

JEL Classification: L10; M11, M15

Introduction

In the conditions of development of innovative economy, the primary is given to the process of achieving conditions for sustainable growth of scientific-technical and technological potential, which leads to a high demand in the establishment and operation of companies, focused on the development and production of high technology products. Specific features of these companies are the conditions for the creation of technology intensive, unique product by integrating research and production activities.

The effect of the uniqueness of science-intensive product in high-tech markets has a very short time frame that directs management activities on creating conditions of effective interaction of industrial, technological, innovative and organizational structures, in accordance with the dynamic development of research activities, providing a high level of economic efficiency and competitiveness of high technology company in the long term.

In this context, a priority role is given to the processes of strategic management, able to ensure sustainable growth in conditions of realization of prospective lines of development and achievement of strategic goals (Aniskin, Zhmaeva, and Ivanus 2012).

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[10] Russia, 394026, c. Voronezh, Moscow avenue, 14

The operation of high technology company is focused on deep penetration of applied research, experimental and production activities in shared business processes, and ensuring sustainable growth of their scientific and technical level with continuous adaptation to varied environment changes.

An important factor in the development of high technology company is the organization of effective system of strategic management aimed at achieving competitive advantages through targeted orientation of research and their transformation into a unique final product.

Conclusion

High-tech business is effective in terms of creating and implementing a radical innovation, providing a core competence dynamic development of high technology company and adequate response to the rapidly changing demands of the external environment, transformation of the results of research activities in fundamentally new product.

Proposed approach to the implementation of adaptive system of strategic management will allow high technology company following: to create corporate culture of innovation, to ensure focus on the achievement of strategic development goals in a resource-constrained environment, to form a seamless information environment that able to satisfy the needs of the participants of the process of adaptation in the information obtained in the process of building the knowledge base and the results of audit evaluation of the effectiveness of the system of strategic management, to develop the mechanism of impact of factors of external and internal influence on the effectiveness of the implementation of the system of strategic management, to develop the organizational mechanism of management of processes of adaptation, providing effective interaction of the system of strategic management and the participants in the process of adaptation.

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Organizations Perception to Telework in Dubai: An Emperical Investigation

Naseer KHAN
naseerkhan@agu.ac.ae
Al Ghurair University, Dubai, United Arab Emirates

Sophia JOHNSON
sjohnson@agu.ac.ae
Al Ghurair University, Dubai, United Arab Emirates

PREMILA
jaya.premila@agu.ac.ae
Al Ghurair University, Dubai, United Arab Emirates

Nasiha OSMANOVIC
n.osmanovic@agu.ac.ae
Al Ghurair University, Dubai, United Arab Emirates

Abstract

The aim of this study is to investigate the status of teleworking among private and public sectors in United Arab Emirates (UAE) and the factors that influence organizations in implementing telework. Fifteen small to medium sized Information and Communication Technology (ICT) organizations were targeted for the study. A survey was conducted among Information Technology professionals, in the UAE by distributing 600 questionnaires, out of which, 500 were returned, with a response rate of 83.33%. Quantitative and qualitative analysis was done with percentage, mean, standard deviation, Chi square and ANOVA. The survey result indicated that there are major differences in adoption pattern of public and private sectors in UAE although most of the private and public sector prefer teleworking.

Keywords: teleworking; telecommuting; homeworking; virtual working; teleworkers; telecommuters

JEL Classification: J81

Introduction

With the rapid proliferation of Information, Communication and Technologies (ICT), the concept of working anywhere, anytime, and with anyone has become a reality owing to easy connectivity, collaborations, and communications, thus forcing many organizations to adopt teleworking. The term teleworking (also known as telecommuting, homeworking, or virtual working) is not a new concept; the roots were found in early 1970s and have grown to achieve an extraordinary level today. Many individuals and organizations have adopted teleworking because of its many benefits such as improvement of office space, operational cost, absenteeism, turnover, work-related stress, commuting time (Kowalski and Sawson 2005); and also improving on job autonomy, work-family conflict, office technology, and environmental pollution (Ng 2010).Though technology has brought massive changes to our personal lives, in some workplaces it often seems like we are living a decade or more behind the time. While devices like smartphones and laptops have made communication much easier and accessible than before, many employees in the United Arab Emirates (UAE) still spend their days in big crowded office buildings, stuffed in tiny cubicles. Some business firms are on the fence about this new concept of teleworking as a strategic tool to compete in the global market. The overall aim of this research is to examine the status of telework implementation among private and public sectors in the United Arab Emirates, and to investigate the perception of employees and the employers about adopting teleworking culture.

Conclusion

The survey revealed significant association between public and private teleworking choice with education and organization level but there is no significant association between genders, age, and experience. The adoption pattern of public sectors differs from that of private sectors with respect to motivation of work. Teleworking, an alternate work option, has yet to gain widespread recognition in the business environment in UAE. Despite the relatively low number of teleworkers in Emirates, the change of attitude remains increasingly optimistic about the future of flexible work arrangements which would play a very crucial role for greater penetration of teleworking in UAE.

Further research can be conducted on the types of jobs or businesses adopted by teleworkers, to find out how long each organization has been practicing telework, whether there is development after adoption, and so on. To fully understand telework, research need to expand to include all parties who might be affected when an individual teleworks.

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Monetary Factors that Affect Price Formation in Real Estate: A Nonlinear Approach

Angélica ALONSO-RIVERA
Instituto Politécnico Nacional, Mexic
angelicalonsorivera@hotmail.com

Salvador CRUZ-AKÉ
Instituto Politécnico Nacional, Mexic
salvador.ake22@gmail.com

Francisco VENEGAS-MARTÍNEZ[*]
Instituto Politécnico Nacional, Mexic
fvenegas1111@yahoo.com.mx

Abstract

This paper is aimed at examining the relationship between monetary policy and price formation in the mortgage industry. We use the coefficient of mutual information as a measure of "association" to capture such a relationship as a whole, and not necessarily as the addition of contributions of statistical moments and, more important, it is not confined to linear structures or to the linear transformation as turns out to be in econometrics analysis. It is verified the effectiveness of the proposed measure of association according to Renyi's (1959) properties regarding a functional measure of dependency. The obtained results provide empirical evidence of the existence of an "association" between monetary instruments and the formation of prices in the sector under study.

Keywords: Real estate; monetary policy; mathematical methods; dependence measures; nonlinear models; entropy

JEL Classification: R31; E52; C02; C14

Introduction

The economic crisis in the US in 2008 was caused, essentially, from the bursting of a speculative bubble gestated in real estate. Due to the strong economic consequences of this event, recent research has focused on analyzing the importance of price formation in that sector. Studies from Assenmacher-Wesche *et al*. (2010) and Hirata *et al*. (2013) agree that the expenses related to real estate represent a significant percentage of the GDP in the United States. Also the evolution of prices in this sector plays an important role in the real and financial sectors, affecting macroeconomic fundamentals as wealth of families, their expenses and borrowing, as well as consumption and investment decisions. Another factor that, undoubtedly, has increased the significance of the real estate sector is the globalization of financial markets, which has encouraged the innovation of investment instruments related to real estate. For this reason, since the 1990s, real estate markets have played a major role as part of international long-term investments (Patterson 2008). Several investigations as those conducted by Aoki (2001, 2004), Ahearne (2005), Taylor (2007), Mishkin (2007), Dokko (2009), Xiaoqing (2012), and Hirata (2013), among others, agree in indicating an important link between monetary policy and changes in real estate prices. In this regard, Asenmacher-Wesche *et al*. (2010) report that over the past thirty years housing prices in most industrialized economies have been characterized by periods of sharp increases, followed by severe crashes. These increases have, generally, occurred in a context of low real interest rates in the long term, high liquidity and stable economic growth. Other studies, as those from Ahearne *et al*. (2005), Aoki *et al*. (2004), Calza *et al*. (2009), and Dokko *et al*. (2009), among many others, based mainly on econometric models, have examined the impact of monetary policy on the evolution in real estate prices.

However, most of the empirical results lead to contrasting conclusions. It is for this reason that the present research proposes the use of an alternative methodology, which is effective to capture the relationship between

monetary policy and housing prices as a complete stochastic system without the classical assumption made when dealing with linear systems. In this regard, works from Darbellaya and Wuertzc (2000) and Dionisio *et al.* (2004) propose the use of the concepts of entropy, joint entropy, conditional entropy, and mutual information coefficient. The latter is seen as a more general measure of dependence, which has the ability to capture a stochastic relationship as a whole, and not necessarily as the addition of the contribution of each statistical moment. The calculation of this indicator requires no assumptions about linearity, normality, stationarity, or homoscedasticity. In this paper, the coefficient of mutual information is used to study the relationship between the formation of housing prices and monetary policy variables such as: money supply, short-term interest rates, and total loans by commercial banks. We also describe the economic and financial importance of the real estate sector, and discuss about monetary and non-monetary factors that influence price formation in real estate.

This paper is organized as follows. Section 2 emphasizes the advantages of the concepts of entropy and mutual information as measures of association between two stochastic processes, and verifies that these indicators satisfy desirable characteristics stated by Renyi (1959) for having a functional measure of dependence. Section 3 shows the empirical results of the mutual information in studying the relationship between monetary policy variables (real M1, interest rates, total industrial and commercial loans granted by commercial banks) and the Shiller index which represents the evolution of prices in the US real state. The study period starts in 1987, when the calculation of Shiller Index starts, and finishes in July 2014. Finally, section 4 provides the conclusions, and acknowledges the limitations of this research.

Conclusions

The obtained empirical results showed that the coefficient of mutual information provides an appropriate approach to examine the relationship of money supply, short-term interest rates, and banks' loans with the price formation in the real estate sector. It is worthwhile pointing out that, unfortunately, this coefficient does not allow us to determine the causal direction between these variables, that is, it is not possible to elucidate whether monetary policy affects price formation in real estate or *vice versa*.

We have seen that the association among the studied variables becomes stronger during periods of relaxation of monetary policy. In this sense, we may say that monetary variables provide more information on real estate market when monetary policy is accommodative. On the other hand, the decrease in the coefficient of information can be explained by the increase in speculative activity. In the specific case of interest rates, it is important to notice that this monetary instrument has ceased to provide information to the performance of the housing sector since the Federal Reserve has handle extraordinarily low interest rates.

Finally, it was clear that the formation of prices in the housing market plays an important role in the monetary transmission mechanism and this sector has the potential to affect real growth and to create instability in the financial system. Needless to say real estate prices should be an important variable that monetary policy designers should consider when designing economic policy.

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Vertical Fiscal Imbalance as an Integral Part of the Local Public Sector Financing: Its Determinants in the Case of New and Old European Union Member

Lenka MALIČKÁ

Technical University of Košice, Faculty of Economics[11], Letná 9, Košice, Slovak Republic

Lenka.Malicka@tuke.sk

Abstract:

Fiscal decentralization brings certain economic benefits, but also meets certain inconveniences. If the process of decentralization is realized in the mode, that the decentralization of expenditure and decentralization of revenue are divided, the success of its implementation is endangered. Excessive expenditure decentralization without adequate decentralization of revenues creates a gap, which is under the soft-budget constraints conditions completed by intergovernmental transfers. Intergovernmental transfers present a move of public financial resources from central level of government to local levels of government creating vertical fiscal imbalance. The theory is not clear about the eligibility of soft-budget constraints and vertical fiscal imbalance. The economic reality supports their existence and considers them as an integral part of local resources. In this paper vertical fiscal imbalances in the EU countries are analyzed. Using the panel regression with time effects for a sample of new and old EU member states, determinants of vertical fiscal imbalance are identified. Significant negative effect of public deficit and revenue decentralization is observed in all two samples. The impact of time effects differs according to the sample. This paper is published within the project VEGA no.1/0559/16.

Keywords: fiscal federalism; fiscal decentralization; vertical fiscal imbalance local budget; budget constraint; panel model

JEL Classification: H77

Introduction

Vertical fiscal imbalance is a term to express a part of sub - central (sub-national) expenditure, which is financed through transfers from the central level of government or a part of sub – central expenditure, which is not financed through sub – central own revenues. It is directly connected with the Theory of Fiscal Federalism introduced by Oates (1972) as a part of the Public Finance Theory elaborated by Musgrave (1959) and revisited by Musgrave and Musgrave (1984). Here the fiscal decentralization plays a key role. According to Bodman et al. (2009) the fiscal decentralization is an amount of independent decision-making power involved tin sub-national provision of public services, expenditure and revenue decisions in an economy. In general, it represents a shift of responsibilities and powers from central government to lower levels of government. Shift of responsibilities is understood as expenditure decentralization and shift of power presents revenue decentralization (Horváthová 2009). Ebel and Yilmaz (2002) or Rodríguez-Pose and Gill (2003) emphasize the simultaneous implementation of the expenditure and revenue decentralization. However, the asymmetry in expenditure and revenue decentralization creates a space for distortions and requires additional financial resources to finance this gap. Under the conditions of hard budget constraints, the problem may be solved also through sub-national borrowing. Under the soft-budget constraint is this gap solved through intergovernmental grants creating vertical fiscal imbalance. Boadway, Roberts and Shah (2000) mention, that the situation corresponding to vertical fiscal balance could be expressed as situation, when decentralized local governments have on their disposal sufficient sources of revenue to finance their expenditure. The basic condition of vertical fiscal balance is compliance of expenditure responsibilities and fiscal resources on decentralized level of government (or lower level of government). Usually, the scope of revenue decentralization does not rise accurately to the scope of expenditure decentralization. The reason is concerning on the lack of own revenue resources of lower levels of governments. Intergovernmental transfer system of financing local needs becomes a rule as a rule becomes an insufficient own revenue source. There are several origins of vertical fiscal

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[11] Letná 9, Košice, Slovak Republic

imbalance. First, incentives of expenditure decentralization are stronger than incentives of revenue decentralization (decentralization of tax powers). Lower levels of government react more flexible on preferences and needs of corresponding (local) citizens. This is the main reason of the expenditure decentralization. Decentralization of tax powers may lead to inefficiency and inequality among lower levels of government. Additionally, centrally administrated taxation is less expensive in comparison of decentralized units of tax administration and provides unified tax system and tax policy. Second, the shift of sources from central government to lower government levels may play the role of a central government instrument to achieve social welfare goals. Winer and Hettich (2010, 6) define vertical balance as situation that involves an efficient allocation of resources among government levels and between the public and private sector. To complete the idea of vertical fiscal balance, Bird and Tarasov (2004, 78) mention that vertical fiscal balance requires that each level of government separate and independent revenue resources sufficient to finance all expenditure assigned to that level of government.

Correctly set intergovernmental transfer system works as mean of equalization among jurisdictions. They naturally differ because of the unevenly distributed taxable base. According to Boadway, Roberts and Shah (2000) the optimal degree of vertical fiscal imbalance is not set. Similarly, to findings of Sorens (2016), they warn against the negative aspects of vertical fiscal imbalance. Relax of the budget constraint may lead to reduction of spending accountability of local authorities and the loss of motivation to acquire own resources. The importance of vertical fiscal imbalance resists in increasing the efficiency of the entire economy. It allows the tax system harmonization, internalization of the externalities, influencing the lower government levels´ behaviour (through transfers) and to set the redistribution by the central government as mentions Jílek (2008).

The problem of soft-budget constrain was originally elaborated by Kornai (1979, 1980). He deliberated about state - owned enterprises of socialist economies. Their chronic financial losses were compensated by financial aids from central (state) budget. According to Kornai, Maskin and Roland (2003) this problem was later generalized to all economic subjects, which have expected a financial aid from a "sponsor" organisation to solve their deficits. Oates (2005) mentions, that nowadays certain regions and localities behave in this way, whereby the sponsor is in this case is still the central government - state.

Important is an aspect of expectation of lower levels of government. Soft – budget constraints allow financial aids in period of "financial crisis" even in the case when the crisis is individual – bearing on an individual jurisdiction. If the expectation broke out into a convention, it demotivates lower levels of government to behave responsibly and to economize, to create a surplus and to exploit the public resources effectively.

Problem of soft- budget constrains was theoretically elaborated also in the Game Theory. Under the information asymmetry conditions, the central government launches threats to local governments, that in case of local financial problems it will not provide an aid (Innman 2003, Rodden 2003). Local governments have to decide whether they will behave as under the hard – budget constraints or they will still expect an aid from the central government. Consequently, the central government have to make a decision about the provision of financial aid.

The related literature body in not compact about the economic eligibility of vertical fiscal imbalance. Sorens (2016) distinguishes among two main approaches to vertical fiscal imbalance (gap). First, the public finance theory approach, second, the political economy approach. Public finance theory sees the equalization as the main reason of creating vertical fiscal imbalances. The absence of equalization encourages the negative impact of tax competition on tax rates (in sense of the race-to-the-bottom hypothesis). Equalization also serves to solve the distortions caused by the existence of interjurisdictional externalities. Political economy approach is sceptic about the importance of intergovernmental transfers programs that create vertical fiscal gaps. Excessive revenues from transfers and shared taxes reduce incentives of sub-central governments to behave competitively, undermine the fiscal discipline and lead to waste of financial resources. Despite of this, fiscal decentralization is still promoted for its economic benefits (Jha 2015); even some authors mention its potential menaces (Tanzi 2000).

The aim of the paper is to examine the presence of the vertical fiscal imbalance in the system of sub – national financing in the EU and to identify its determinants in the cease of two samples - new and old EU member states. The paper is organized in a following way. Introduction is followed by the literature review. Next chapter expresses the methods and date used in the research. After it, the results and discussion are provided. Conclusion and References are situated at the end of the paper.

Conclusion

The aim of the paper is to explain the presence of vertical fiscal imbalance in the sub – national finance and to analyze vertical fiscal imbalance determinants using the regression models for panel data. EU countries divided into two sub – samples were analyzed estimating the FEM with time effects to capture the period (2000 – 2015) heterogeneity. The results of estimation for new and old EU member states do not differ essentially, although certain derogations are observed. In both estimations the negative significant relationship between revenue decentralization and vertical fiscal imbalance is observed. Strengthening the financial autonomy of sub – national government the transfer dependency is reduced. Both models reveal significant negative influence of public deficit on vertical fiscal imbalance. Increase of public deficit (created mostly on the central level of government) initiates reduction of transfer payments in aim to realize the centrally provided macroeconomic stabilization. Results about the impact of population characteristics on vertical fiscal imbalances differ regarding the sample. In the case of new EU member states, the relationship between population density and vertical fiscal imbalance is significant and positive. It signalizes increasing demand for public goods financed through transfer payments. In the case of old EU member states, the situation differs. The relationship between population density and vertical fiscal imbalance is significant and negative. Lower fertility in developed countries causes a decrease of the population density. It causes the diminution of a taxable base, and missing resources have to be completed by transfer payments. In both estimations certain time effects are significant. The period of financial crisis affected positively vertical fiscal imbalance of new EU member states in 2009. Dropouts in sub - national revenues fortified the transfer dependency of sub- national governments on central level. Significant positive effect of time dummy for year 2015 may be explained by the restoration of transfer flows from central level of government induced by the economic recovery. In case of old EU member states, the time dummy of 2007 is significant. Its negative effect on vertical fiscal imbalance may indicate the reduction of transfer payments in these countries following the purpose of creating sources to realize the centrally provided stabilization and redistribution functions of the public finance.

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Analysis of Factors of Investment Activity in Russia through the Construction of Econometric Model

Konstantin Konstantinovich POZDNYAKOV
Department of Corporate Finance and Corporate Governance
Financial University under the Government of the Russian Federation
kk.pozdnyakov@gmail.com

Abstract:

Investment policy - is one of organic components of the economic policy. Implementation of effective investment policy in many respects depends on a strategy correctness and tactics of general economic reforms at the macro- as well as at the micro-level.

Key words: investment policy; investment climate; Russian Federation; regional policy; econometric model; econometric modeling; identifying the main factors of investment activity

JEL Classification: C5, E22.

Introduction

Forming effective investment policy aimed at changing the investment climate requires assessment of available improvement opportunities, and finding the most effective directions for applying the efforts of regional authorities.

To this end, the main, most important components of the investment climate can be divided into two large groups: stable and changeable. Stable factors are characterized by low susceptibility to deliberate action in the short term. Their change requires long time and results in a significant shift in the region's economy. Thus, ownership type change at production facilities, such as replacement of government ownership with private, leads to a completely different form of interaction between the authorities and the productive sector. The change of stable characteristics in the management is either difficult (such as spatial and climatic factors), or associated with the radical change in the nature of management.

Changeable components include factors that are susceptible to the effects of management at the regional level. Investment attraction policy is basically carried out through the change of these factors. Thus, the creation of an appropriate model is one of the basic tasks of government.

The following factors, roughly classified as stable, can be distinguished at the regional level. First of all, it is, as already mentioned, the territorial factor, climatic conditions, security in the region by various types of natural resources. As a stable factor we can also name the demographic factor, due to the complexity of the changes in the short term, its characteristics such as overcrowding or under-population (labor surplus) in the region, the proportion of the economically active population, the proportion of people of retirement age, the ratio of urban and rural population, etc.

Components of investment climate can be characterized by very close mutual influence and large interdependence. In addition to stable components of investment climate it is possible to allocate some factors that are largely a consequence of its other factors.

One of these factors is the degree of interregional relations. Tightness of interregional relations in a given region is largely determined by its production structure and the financial condition of its manufacturing sector. Export opportunities in the region are determined by the level of competitiveness of goods produced at enterprises located on the regions territory, as well as by the degree of product differentiation. The structure of imports in the region also depends on how highly specialized the area is, the extent of the regions ability to provide itself with productive

resources and consumer goods. It is clear that the ratio of imports and exports is a direct consequence of these factors.

Another such factor is the degree of public trust to the regional government, the degree of polarization of political sympathies, relationship between regional authorities and federal center. It is largely determined by the kind of policy carried out by regional power bodies, the degree of effectiveness of this policy. This factor is also strongly influenced by the level of socio-economic development of the region, both in itself and in comparison with neighboring regions.

Another factor essentially determined by the other components of the regional investment climate, is the level of social tension and crime in the region. We know that crime and social tensions tend to increase in proportion to the deterioration of the material conditions of the population, *i.e.*, reduction in real income of most of the population, increase in unemployment, a decrease in the availability of premises, etc.

The degree of financial security in the region can also be attributed to the group of factors conditioned by other components of investment climate in the region. Securing regional government expenses with income depends on:

- size and structure of these expenses, *i.e.* the regional policy (for example, presence and magnitude of regional marketing costs, qualitative assessment of repayment of loans provided to enterprises by the regional administration), social situation in the region (volume of social benefits and other expenses to reduce social tension in the region), demographic structure of the population;
- income value and structure in the constituent entity of the Federation, ie development of manufacturing and other sectors of economy (tax revenue), regional policy (tax incentives), specialization and structure of economy in the region (depth of recession during reformation years, degree of favorable economic conjuncture for certain sectors).

Thus, we can conclude that the main components of investment climate may be subject to deliberate action by a regional investment policy. Further, by means of building an econometric model we will try to identify the main factors that need additional incentives in order to create a favorable regional investment climate. After consideration of the major factors affecting the attraction of foreign investments, we construct a model using econometric methods, including all the factors described above into the model.

Since one of the main sources of investment financing is the profit of the enterprise, the ability of the region's economy to increasing the volume of investment is determined by the profitability of existing enterprises on its territory. Thus, the factor of development of infrastructure, which is crucial for a strategic investor in organizing a new production on any territory or in creating a joint venture, to some extent, takes a back seat. A favorable investment climate largely determines the ability of the existing conditions in the region to ensure the restoration and development of existing businesses, increase their profitability and, consequently, increase foreign investment.

The choice of a criteria and prognostic evaluation of its effectiveness, as a rule, are largely subjective. An approach used in this work is based on the following:

- objective analysis of the investment sphere functioning in the regions, which itself implies taking into account peculiarities of the transition period and the characteristics of investment processes in Russia
- use of economic and mathematical modeling for the analysis and forecasting of investment processes
- taking into account the specifics of investment sphere in a particular region, as opposed to the use of standardized development criteria

One method of regional forecasting is building econometric models (Magnus, Katishev, Peresetsky 2014). Econometrics – the science that, using mathematical and statistical methods, allows to reveal quantitative relationship between the studied parameters and influencing factors. The main tool of econometrics is the econometric model, *i.e.,* economic and mathematical model of factor analysis, the parameters of which are estimated by means of mathematical statistics. This model serves as a tool for analysis and forecasting of specific economic processes based on actual statistics. According to traditional econometrics, econometric modeling of economic processes is carried out in several stages:

- building of the economic model (choice of the basic economic criteria, selection of explanatory factors, building a system of connections between the criterion (the result obtained) and selected factors);
- data collection (statistics materials);
- choice of estimation method (least squares method, Gauss method, the weighted least squares method, and others);
- evaluation of the model using the selected method;
- control of the quality of the econometric model.

For the purposes of this study it would be particularly interesting to build a model that would allow to influence the inflow of investments in the region through the previously defined (available for the impact of the regional administration) factors of the investment climate and to forecast the effect of the use of certain measures, such as introduction of new facilities, benefits and guarantees.

The coefficients estimated in the course of solving the system of equations are essentially weights reflecting the importance of the relevant factors for the investment climate in the region, *i.e.*, the degree and nature of its influence on investment processes.

Thus, the regression equation is not the sum of factors that dissimilar in their nature, the nature of the impact on the investment climate and units. It is a weighting function, by detecting the correlation between the factors and the resulting process (investment activity in the region), reflecting the approximate dynamics of investment activity in case of the explanatory factors change in its terms of quantity per unit. Units of the explanatory variables are taken, in accordance with accepted in official statistics used in the ranking, etc.

The test of the hypotheses presented in this work will be carried out using regression analysis techniques and, in particular, by building and evaluating the multiple linear regression models. It should be noted that regression models were used earlier by a number of Russian and foreign authors for investigating investment attractiveness. Thus, regression model was also used in the study of E. Kolomak (2000) to analyze the economic impact of attracting investments to the regions. Also, the issue was raised in the work of the Institute of Economy in Transition.

The work is dedicated to econometric analysis of the factors determining the investment processes in the Russian regions. In particular, there has been conducted a study of interdependencies of variable sets that characterize some aspects of investment processes in the Russian regions, and many economic variables that reflect the economic situation in the region and having a potential impact on the volume and structure of investment in the region. The analysis is based on regional data published by the Federal State Statistics Service. It has considered 16 indicators characterizing the investment activities in the region. These indicators can be divided into 7 groups: 1) the overall level of investment activity; 2) the distribution of investments by form of ownership; 3) the distribution of investments by investment objects; 4) public investment; 5) investment from its own funds; 6) investments of borrowed funds; 7) foreign investment.

This work studies the impact of the individual indicators on a number of characteristics of the investment on the regional level which reflects various aspects of the economic situation in the region. Multiple regression model enables to include quite a number of factors in this study. On later stages it would be possible to identify the most important and on this basis to draw conclusions on the following aspects:

- *firstly*, define the impact of various factors on attraction of foreign investment;
- *secondly*, suggest methods for attracting foreign investment based on the comparison of the obtained results.

The least squares method was used to estimate the parameters of the regression equations *(i.e.* the coefficients of the variables). The coefficient of determination R^2 and the adjusted coefficient of determination R^2 reflect the correlation between studied phenomena. The values of these coefficients stay in the range [0, 1]. The closer the estimated value of coefficients to 1, the stronger the correlation between variables.

In general quality equations testing was performed using the F-statistic, and the test of the regression coefficients - using t-statistics at a certain level of significance.

Critical value of t - statistics were determined from the table of the Student distribution for testing the hypothesis of a coefficient being equal to zero in the regression. The specified level of significance was determined by the number of degrees of freedom which equals N (m-1). The random variable tj is subject to this distribution, if the true value of the corresponding coefficient is zero.

The critical values of t - statistics were given for the level of significance α = 0,05. Required critical t - statistics was derived from the table given the value of the degrees of freedom v. If the value of tj exceeds the value of tcr from the table for v = N * (m-1), then it can't be said that the coefficient bj = 0 because the probability of such event is not more than 0.05. In this case the coefficient bj is significant. If tj <tcr, then the coefficient bj is insignificant.

After the test of the significance of the estimated coefficients of the linear model, the program calculates the estimates of two-factor interactions of coefficients and their corresponding values of t - statistics.

Calculation of estimates of two-factor interactions of coefficients is carried out according to the formula:

$$bjk = \Sigma yi*xij * xik/N$$

where: bjk - estimates of regression coefficients during product of factors xj and xk, j ≠ k.

The level of significance is the probability of rejecting a correct hypothesis. The lower the value, the more likely the equation and its coefficients are statistically significant. Correlation between the variables considered statistically significant if the significance level is less than 0.1. This means that the confidence level at which the coefficients in the regression equation we determined should be not less than 90%.

Durbin-Watson test is also performed to evaluate the quality of the model. The model is considered to be reliable, and can be used for the forecast if the value of this criteria exceeds 1.4 (Eliseeva 2013).

Conclusion:

The results we received in our investigation also depict high importance of this factor for investment and, in particular, for regional investment in Russia. One of the economic policy priorities in Russia is to attract Russian and foreign investments in the real sector of economy. The role of foreign investment in the region is primarily in the fact that their involvement should contribute not to exhausting resource potential, but to recovery of all sectors of the economy in the new scientific and technological base, technological breakthroughs, creating new and modern industrial products, development of production infrastructure.

Econometric modeling of economic processes takes the following steps: building the economic model (choice of the basic economic criteria, selection of explanatory factors, building a system of connections between the criterion (the result obtained) and selected factors); data collection (statistics materials); choice of estimation method (least square method, Gauss method, the weighted least square method, and others), evaluation of the model using the selected method, control of the quality of the econometric model. The constructed econometric model revealed the following most important factors of investment attraction: industry development, investment marketing, support of investors: tax benefits, garantees, development budget, specialisation of the region, number of students (education level in the region).

In general, the volume of foreign investment in most regions does not correspond with their investment potential, and well-constructed investment policy, especially of the regional and federal authorities, will encourage inflow of foreign capital, next larger than the current inflow of foreign funds (Pozdnyakov 2015).

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On the Science and Research Efficiency of Czech Universities: A Data Envelopment Analysis

Matus KUBAK
Technical University of Košice, Faculty of Economics
Department of Management and Regional Sciences, Czech Republic
matus.kubak@tuke.sk

Radovan BACIK
University of Prešov in Prešov, Faculty of Management
Department of Marketing and International Trade, Czech Republic
radovan.bacik@unipo.sk

Beata GAVUROVA
Technical University of Košice, Faculty of Economics
Department of Banking and Investment, Czech Republic
beata.gavurova@tuke.sk

Abstract:

The quality of higher education depends on the quality of scientific research of their employees. University scientific research and education are inseparable. Rating of their level is currently the subject of many scientific and expert discussions. At the present time, there is a prevailing pressure to create a categorization of universities on the basis of their scientific performance, which should translate also in the process of distribution of state subsidies for universities. In order to stop the process of stagnation in the quality of higher education it is necessary to identify the barriers to its growth as soon as possible and propose solutions for their elimination. For this reason, questions of objective and independent evaluation of the quality through multidimensional economic analysis are nowadays being brought more and more into focus. It was the ambition of our research.

We aimed to evaluate the effectiveness of science and research at universities in the Czech Republic to find out the real state as well as the suitability of the applied method chosen for the evaluation process. We run Data Envelopment Analysis on data on faculty level. Our findings suggest, that efficiency level of faculties in global view is fair enough, but place for improvement still exists. Our analysis shows that 53% of the faculties in the Czech Republic operate on efficient way in term of Science and Research. Most equilibrated groups in term of efficiency is group of Engineering, followed by group of Architecture, group of Psychology and group of Informatics. Least equilibrated groups are group of Economics, group of Sociology and group of Law.

Key words: data envelopment analysis; Czech Republic; universities; faculties; efficiency

JEL Classification: C67; I21

Introduction

Higher education is often seen as a public good that is accessible to everyone. On the majority of markets with education, private and public colleges and universities coexist. Private colleges finance their activities by their own sources, while public universities are dependent on public funds. In both cases, the majority of financial resources is coming out from enrolled students. This fact is the topic of debate of nowadays, because universities can directly influence their budgets by a number of admitted students. This matter of fact implies question about the quality of education.

Various non-scientific approaches exist to measure out the quality of universities. On the international level, we can find about twenty more or less established and accepted ranking. Among them, one of the most accepted is Times Higher Education World Reputation Rankings which define top 100 most powerful global university brands

by using 13 performance indicators, which are grouped into 5 areas: Teaching: the learning environment what is 30% of the overall ranking score; Research: volume, income and reputation which are worth 30%; Citations: research influence that's worth 30%; Industry income: innovation, which make an impact by 2.5%; and International outlook: staff, students and research that worth 7.5% of the overall ranking score. Another well-established ranking is done by QS World University Rankings® which provides individual ranking positions for top 400 universities in a global dimension. QS World University Rankings work with 6 parameters. These are: Academic reputation (40%), Employer reputation (10%), Faculty/Student ratio (20%), Citations per faculty (20%), International student ratio (5%), and International staff ratio (5%). The following is The Academic Ranking of World Universities which yearly ranks top 500 universities all over the world. This ranking works with four criteria divided into six indicators. Criteria have following weights: Quality of Education: (10%); Quality of Faculty (40%); Research Output (40%); Per Capita Performance (10%).

Naturally, alongside with global universities ranking exist also national university rankings. These are often based on global universities rankings parameters. For instance, in the Slovak Republic, the Academic Ranking and Rating Agency, which is an independent Slovak civil association exists, and yearly ranks universities in accordance with parameters used by the above mentioned agencies. These parameters are following: Education, Attractiveness of study, Doctoral studies, Research, Grants. This ranking is done separately for individual fields of study, which are: Technical Sciences, Natural Sciences, Medical Sciences, Agricultural Sciences, Economic Sciences, Other Social Sciences, Philosophical Sciences, Law Sciences, Pedagogical Sciences, Theological Sciences and Arts.

In the Czech Republic, ranking is done by the influential journal Economic Newspaper, which is the member of the European Business Press Federation. Parameters are: International school involvement, Teaching staff, Interest in the study, Survey of graduates, Science and research. Czech ranking distinguishes seven main fields of study: Architecture, Economics, Informatics, Law, Psychology, Sociology and Engineering.

The aim of this study is to measure the efficiency of Czech faculties with respect to field of study. Dividing faculties into a particular field of study is done with the purpose to have a homogenous group of units. In total, 59 faculties in 7 fields of study entered our analysis. To perform our analysis, we are using Data Envelopment Analysis (hereafter DEA).

The paper is organized as follows: in next part the Literature review is proposed. Then, Materials and Methods are precisely described. Afterwards the Description of Variables is done. Analysis and Results are in chapter four. Final part of the paper is devoted to the discussion and Conclusion.

Conclusions

University research should form the core of the research potential of each country. In many countries, there are clear pressures to rise substantial funding for higher education with the ambition to achieve at least an average level of OECD countries or EU.

In the process of allocating funds for higher education an issue of rational consideration of the criteria of science, research and employment of graduates in practice is getting into focus. For this reason, there are more discussions about the possibilities for evaluating the effectiveness of science and research at universities necessary for the efficient allocation of resources, as well as creating a platform for national and international benchmarking. In this process multidimensional analysis are increasingly important, which would allow to evaluate the quality of higher education in various aspects and detect endogenous and exogenous causes of its lack of progress, resp. stagnation. These facts have been our main motivation in implementing the evaluation of effectiveness of selected Czech universities. We run Data Envelopment Analysis with variable returns to scale on the dataset consisting of 59 faculties in the Czech Republic. We use an output oriented model to measure efficiency in Science and Research. We use data on faculty level. Data have a nature of composite indicators with the intention to reduce the size of the sample and include more information, by keeping the number of variables low. Faculties are divided into seven distinctive groups, with purpose to capture differences in budgeting, tuition and different conditions for research. We distinguish groups of Architecture, Economics, Informatics, Law, Psychology, Sociology and Engineering.

Our findings suggest, that efficiency level of faculties in global view is fair enough, but place for improvement still exists. Our analysis shows that 53% of the faculties in the Czech Republic operate on efficient way in term of Science and Research. Most equilibrated groups in term of efficiency is group of Engineering, followed by group of Architecture, group of Psychology and group of Informatics. Least equilibrated groups are group of Economics, group of Sociology and group of Law. The findings mentioned above are important for the creators of several policies, strategic plans in the process of development of science and research at universities, as well as greater activation of the research potential in the country. Finally, it can encourage the adoption of new measures to revitalize the growth of quality in higher education from extensive to intensive, from quantity to quality. It is also necessary to adopt a number of crucial decisions in the educational policy of the country.

Aknowledgement

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Current Instability in the Monetary and Credit System of Russia

Magomed R. TASHTAMIROV[12]
Banking Department, Economics and Finance Institute
Chechen State University [13], Grozny, Chechen Republic, Russia
mail@chesu.ru, basxo@yandex.ru

Zulay K. TAVBULATOVA
Economics and Credit Department
Chechen State University, Grozny, Chechen Republic, Russia
mail@chesu.ru, eva_didi@inbox.ru

Svetlana S. GALAZOVA
Political Economy Department
Chechen State University, Grozny, Chechen Republic, Russia
mail@chesu.ru, eva_didi@inbox.ru

Rashid M. ABAEV
Economics and Credit Department
Chechen State University, Grozny, Chechen Republic, Russia
mail@chesu.ru, abaev_rm@mail.ru

Abstract:

The current geopolitical and international economic situations are changing at a high speed and leading to multi-faceted changes of individual economies. Russia is now experiencing isolation in political and economic spheres, which has led to the assertion of its political position on the international arena. The dead-end relationship between Russia and the West has led to the sanction wars that negatively influence the state and development of the monetary system and the banking sector of the Russian Federation. This work is devoted to the analysis and evaluation of the impact of the sanctions approved by the Western countries against Russia on its monetary and banking systems.

Keywords: sanctions; banks; restrictions; inflation; currency markets; decline

JEL Classification: E22; E31; E44; E5; F51; F62; G00

Introduction

Economy is the continuation of politics. Modern globalization and extension of inter-national links lead to diffusion of certain boundaries among countries: cultural, political, judicial, social and economic. Any change on the world political arena or in mega-economy can seriously influence different states' development. A spectacular example was a significant cooldown of relations between Russia and western countries as part of the recent events in Ukraine. The consequences of such cooldown were different external-economic and political limitations which left a negative imprint on the economic structure of the country under sanctions. The referendum of March 16, 2014 on inclusion of the Crimea into the RF became a critical point in the political and economic relations between Russia and western countries. On the next day, the USA and European Union, Australia, New Zealand and Canada put in force the first package of sanctions including freezing of bank accounts and visa limitations with reference to 21

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[12] Corresponding author
[13] 32 Sheripov str., Grozny, Chechen Republic, Russia 364907.

Russian and Ukrainian officials, as well as suspension of cooperation in a few spheres (The White House. Office of the Press Secretary 2014)

Conclusions

The problems of the Russian banking and monetary sectors have been caused not so much by the sanctions imposed in 2014 or the key interest rate increase, as by the years-long policy pursued by the monetary regulator. The main vector of the monetary-credit regulation carried out by the Bank of Russia was maintaining the ruble purchasing power, its unjustifiable exchange rate against the American currency and control of inflation, which, as a result led to direct dependence of the national currency and state budget on the dollar inflows from the sales of crude hydrocarbons. The overstated refinance rate of 8% made it impossible for the Russian banks to obtain a sufficient amount of liquid and cheap resources; on the other hand, it led to high bank loan interest rates which in no way stimulated the development of the economy and production. Commercial banks and big companies re-orientated towards the European and American financial markets with affordable credit resources at low interest rates. The outcome was the dependence of the Russian banking sector on external loans.

The target of the policy pursued by the Bank of Russia was not developing the banking sector, financial markets, and the stability of the national currency, as required by the law, but keeping the inflation level at the lowest possible rate with the regulation of the currency band unjustifiably overstating the exchange rate of ruble against dollar. Correspondingly, the economic stagnation and the resulting crisis in the monetary system and banking sector became the consequences of the years-long "short-sighted" policy of the RF Central Bank, which dramatically manifested themselves after the imposed sanctions and even more inadequate decisions of the regulator to increase the key interest rate and "to let the ruble float freely".

With due account for the presented data, one should note that the negative impact related to the deterioration of Russian foreign economic relations with its western partners is significant. The introduction of sanctions, the prohibition to enter the external funding markets, the response food embargo, the break-up of cooperation in the biggest investment projects, the slump in oil quotations have led to a deep fall in the banking sector of the country and deterioration of the monetary and credit system condition. It is premature to unambiguously speak of the sanctions as the primary reason for the deterioration of the economic situation in the country, as it is necessary to conduct a detailed research of the structure of the economy and economic development over the last decades. The main problem that has led to the existing difficulties in the economy and financial system is the model of raw material export dependence of the national economy. This, to a great extent, reflects the depth of the structural problems of the national economy. The sanctions as an external factor and a threat to economic safety of the country have become a catalyst accelerating both the onset of the crisis and its intensity.

One way or another, the introduced sanctions have significantly affected the financial sector and the state monetary system. In order to ease the damage caused by the external factors and to overcome the crisis in the mid-term, an expert and weighted policy of the Bank of Russia is required concerning the monetary system and the banking sector. The vexed problem that requires immediate solution is ruble liquidity shortage on the internal monetary market.

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