Journal of Economic and Social Development (JESD)
Vol. 5, No. 1, March 2018

Editor
Marijan Cingula, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia

Co-editors
Fran Galetic, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
Goran Kozina, University North, Koprivnica, Croatia
Marina Klacmer Calopa, University of Zagreb, Faculty of Organization and Informatics, Varazdin, Croatia

Members of the International Editorial Board
- Tariq Tawfeeq Yousif Alabdullah, University of Basrah, Iraq
- Ayuba A. Aminu, University of Maiduguri, Department of Management, Faculty of Management Sciences, Maiduguri, Nigeria
- Lidiya Bagaric, University of Rijeka, Faculty of Tourism and Hospitality Management, Opatija, Croatia
- Leonid K. Bobrov, Novosibirsk State University of Economics and Management, Novosibirsk, Russia
- Angelo Maia Cister, Federal University of Rio de Janeiro, Brasil
- Marina Dabic, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- Oguz Demir, Istanbul Commerce University, Turkey
- Ivica Filipovic, University of Split, University Center for Forensic Sciences, Split, Croatia
- Mirjana Gligoric, Belgrade University, Faculty of Economics, Belgrade, Serbia
- Marli Gonan Bozac, Juraj Dobrila University of Pula, Faculty of Economics and Tourism, Pula, Croatia
- Miryam de la Concepción González-Rabanal, National Distance Education University (UNED), Faculty of Economics and Business Administration, Madrid, Spain
- Anica Hunjet, University North, Croatia
- Irena Jankovic, Belgrade University, Faculty of Economics, Belgrade, Serbia
- Hacer Simay Karaalp, Pamukkale University, Faculty of Economics and Administrative Sciences, Denizli, Turkey
- Dafna Kariv, School of Business Administration, Department of Strategy and Entrepreneurship – of Entrepreneurship, Rishon Lezion, Israel
- Kaarel Kilvits, Tallinn University of Technology, School of Economics and Business, Tallinn, Estonia
- Marina Klacmer Calopa, University of Zagreb, Faculty of Organization and Informatics, Varazdin, Croatia
- Robert A. Lewis, Les Roches Gruyère University of Applied Sciences, Switzerland
- Francesca Mandanici, University of L’Aquila, Coppito, L’Aquila, Italia
- Vaidotas Matutis, Vilnius University, Lithuania
- Marjana Merkac Skok, Faculty of Commercial and Business Sciences, Celje, Slovenia
- Marin Mlikovic, University North, Croatia
- Claudia Ogrean, Lucian Blaga University of Sibiu, Sibiu, Romania
- Mislav Ante Ōmazić, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- Nikolai Ostapenko, University of the District of Columbia, Washington, D.C., USA
- Ivan Pavic, University of Split, Faculty of Economics, Split, Croatia
- Vojko Potocan, University of Maribor, Faculty of Economics and Business, Maribor, Slovenia
- Kerry J. Redican, Virginia Tech University, Department of Population Health Sciences, Blacksburg, Virginia, USA
Journal of Economic and Social Development (JESD) publishes scientific papers in the field of Economics and Social Development. The Journal is published two times a year. Online journal is open access and peer-reviewed. Authors are responsible for the linguistic and technical accuracy of their contributions.

Indexing/abstracting: Journal is regularly indexed and abstracted by ProQuest, DOAJ, ERIH PLUS, ECONBIZ, DRJI, SIS, Citefactor, J-Gate, Hrcak, ResearchBib, OCLC WorldCat, EZB, WCOSJ, ROAD, DAIJ, WZB and Kubon & Sagner databases. It is available in a PDF format from the Journal of Economic and Social Development website: http://www.jesd-online.com

Publisher: Varazdin Development and Entrepreneurship Agency, Mihanoviceva 4, Varazdin, Croatia
Co-publisher: University North, Koprivnica, Croatia

© 2018 Varazdin Development and Entrepreneurship Agency, Varazdin, Croatia. All rights reserved.

ISSN: 1849-3327 (online version)
1849-6628 (print version)
UDC 33:316
INDEX

Foreword

Looking Inwards: is Money Supply the Cause of Rising Inflation in Nigeria?
AMASSOMA D., KEJI S., EMMA-EBERE O. O

Public Infrastructure and Private Sector Productivity, Tasmania 1990-2015
MIKHAILITCHENKO Serguei

Empirical Methods in International Trade Using for Evaluation in Export of Services in CEE Countries Based on Balassa Index
BENO Michal

Oil Price Volatility and Consequences for Selected Oil-exporting Economies
OBADI Saleh Mothana, CHMELOVÁ Michelle

The Relationship between Organizational Commitment and Work Performance:
A Case of Industrial Enterprises
KAPLAN Metin, KAPLAN Asli

Barriers and Opportunities for the Development of Social Entrepreneurship:
Case Study of Czech Republic
WILDMANNOVA Mirka

A Geo-Economic Approach to Brain Drain in Morocco
NECHAD Abdelhamid

Seasonality of Employment in Poland and a Selected Countries of the European Union
RADLIŃSKA Kamila, KLONOWSKA-MATYNIA Maria

The Author’s Model of Assessing the Possibility of Achieving a Competitive Advantage Based on the Business Model and Position in the Supply Chain
KONIECZNA Izabela

Skewed Integration: the Negative Representation of Poles by Expatriate Managers
ALLEN Gregory
FOREWORD

We started our Journal of Economic and Social Development (JESD), four years ago trying to improve publishing opportunities for the delegates of international conferences on economic and social development.

For each number, editors selected several papers from the Book of proceedings, supporting ideas of quality and national diversity of authors. Different social and economic environments of our authors’ origin, contributed to the richness of academic networking and thematic varieties. However, publishing standards in academic society do not support any restrictions regarding the possibilities of free approach to the scientific journals.

In that sense, we are opening our journal to all authors, not only to participants of our conferences. JESD will remain on-line, open access and double-blind peer reviewed. We hope to meet higher standards for indexing in leading databases, and we are sure to rely on our international authors community.

Marijan Cingula
Editor
Looking Inwards: is Money Supply the Cause of Rising Inflation in Nigeria?

AMASSOMA D¹, KEJI S.¹, EMMA-EBERE O. O¹

¹ Department of Economics, Federal University Oye-Ekiti, (NIGERIA)
Email: ditimi.amassoma@fuoye.edu.ng

Work code CJ02F5001

Abstract

This study empirically investigates to know if money supply is the cause of high inflation in Nigeria using annual time series data spanning from 1970 to 2016. Co-integration and Autoregressive Dynamic Error Correction Model (ADLECM) approach was utilized. The results showed that money supply does not considerably influence inflation both in the long and short run possibly because the country is in recession. The ECM has the correct sign of negative and it is significant meaning that about 21% of the errors are corrected yearly. The Granger causality outcome demonstrates that, there is no causality between money supply and inflation in Nigeria within the study period and vice-versa. The implication of this is often that there are different economic conditions which are key determinant of inflation in Nigeria. The study recommends that the government should diversify the economy, minimize importation by encouraging local production of products and services. The CBN should guarantee an exchange rate policy that is essentially determined by the state of the economy and not by speculators being a net importation economy. Also, the CBN should look inwards into the current interest rate and see how it can be regulated in such a way that will encourage private and foreign investors to be able to invest in the country. This in turn, successively increases income, infrastructure development and economic growth at large.

Keywords: ECM, Granger causality, CBN, Nigeria, Infrastructure

JEL Classification: E51, E58, C22, C51

Introduction

In the last few years, the caption that covers the headline of newspapers, economic forums, one-to-one interviews, panel interviews, government agenda and so on has meandered around high inflation rate, high exchange rate i.e. the volatile nature of the Naira (Nigeria’s currency) to dollar exchange rate, high interest rate, inadequacies in the forex market, low or negative gross domestic product (GDP) growth rate, corruption, political turbulence, insecurity to mention a few in Nigeria and few other African countries which include: Tanzania, Kenya, Ethiopia etc. Surprisingly, politicians across the world especially in developing countries which Nigeria is inclusive, look at inflation as if they are horrific visitation in the form of food shortages, self-inflicted hardship, poverty, foreign invasion or a plague, over which they have no control.

In Nigeria, the syndrome of inflation has been so alarming in the last decade when its value moved from single digits to double digits in the third quarter of 2008 at a rate of 11.5 according to (IMF 2011 World Economic Outlook). However, it became more prominent in the last two years when its value increased from 9.0% in the fourth quarters of 2015 to 18.3% in the first quarters of 2017 accounting for about 100 percent rise in price levels of commodities and facilities (FSDH, 2016). Meanwhile, it has put economic agents vis-à-vis private sector, households, and government at a disadvantage in that income declines in real terms due to rising prices; get worsen especially if such inflation is sustained by high level of uncertainty and after making the cost of living to be on the high side according to (Greenridge et.al., 2009).
On the other hand, money supply can be seen as notes and coins circulating outside the central bank. Such that, an increase in money supply is described as direct monetary transmission mechanism which connotes that when money supply rises, it makes people in an economy to spend more of such money over money demand thereby making demand to exceed supply according to Ragan (2014). Therefore, to reiterate the commonly used economic slogan that economists are interested in ascertaining how a particular term is related to other ones.

Which in turn gives rise to a sixty-four million-dollar (meaning, the big and essential) question which goes thus: ‘is money supply the cause of high inflation?’

Nevertheless, efforts to study whether or not money supply is the cause of high inflation would be futile without first addressing a question posed by the Federal Reserve Bank of San Francisco (FRB, 2002) ‘what are the factors that contribute to a rise in inflation in a nation?’ Otherwise asked as ‘What are the determinant of inflation?’ According to Bryan (2003), this is a great question because inflation rates and speculation are often mentioned in the media, pointing to their significance in stimulating or marring the economy with implications on individual’s per capita income. In Nigeria, this is made possible by the national media which sensitizes the public on the values of this economic indicator as published by National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) respective on a monthly and quarterly basis. More so, an understanding of the sources of inflation will serve as a prerequisite to determine how effective economic policy that can be utilized to combat such inflationary pressure.

Meanwhile, before the above, it will not be out of place to first reckon with the most widely embraced theory of inflation known as the Quantity Theory of Money. This theory was first popularized by one of the foremost monetary economists called Milton Friedman, which stipulate that inflation is monetary therefore effort to trim it down should be ascribed to monetary policy. In particularly, when such inflation is at its first stage. Owing that, the growth of money is generally believed to have a profound influence on economic activities of any nation in the long run. The reason stems from the fact that a rise in money supply makes money more available in the hands of consumers and producers and thus generates consumption and investment as supported by the study of Bello and Saulawa (2013).

About the determinant of inflation, evidence from literatures accounted for the key determinant of inflation around the globe. For instance, Pinto (1990), argued that a rise in inflation can be attributed to the devaluation of currency possibly due to the unification of both the official and parallel exchange rate which in turn eliminate revenue from export earnings. To corroborate the above study, studies of Egwakhide (1994) and Imimole and Enoma (2011), emphasized that the devaluation of the currency could prompt up the general price level through an increase in the cost of production in the short run. Fakiyesi (1996) and Ajisafe (1996) analyzed the main determinant of inflation in Nigeria with a view to suggest the relevant policy that could be utilized to curb it.

Consistently, their results found that money aggregate stands to be a fundamental factor that spurs inflation growth in Nigeria.

In the same vein, the study of Fullerton and Ikhide (1993) examined inflation dynamics in Nigeria. Their results suggested that, the acclaimed devaluation of naira in the late 1980s and 1990s, despite the rising prices of products, was responsible for further activates inflation in the country. Hence, emphasized that monetary factor is the sole component that can induce inflation without requiring for any reparation. More recently, Bawa et al., (2016), examined the dynamics of the inflationary process in Nigeria. Surprisingly, the results indicated that inflation in Nigeria exhibited a strong degree of inertia. Hence, stressing that past and average rainfall appears to be the main determinant of the inflationary process in Nigeria over the study period. In a similar but surprising study, Odusanya and Atanda (2010) analyzed the dynamics and simultaneous interrelationship between inflation and its determinants. Results showed that only GDP growth and inflation inertia are significant in explaining inflationary process in Nigeria. In developing countries like Mali, Mame (2007) investigated how consumer price inflation can be identified. The results revealed that money and external sector equilibrium were found to be the principal determinant of inflation in Mali. Similarly, in Egypt, Metwally and Al-Sowaidi (2004) employed a simultaneous equation to explain the nature and causes of inflation from 1986
to 2002. The results indicated that both demand pull and cost push factors are the core determinant of inflation in Egypt.

Therefore, after a brief examination of the determinants of inflation, it was discovered that variation in money aggregates, fiscal deficit, external sector equilibrium, oil prices, and currency devaluation among others is responsible for the inflationary process in Nigeria and other developing countries alike. Accordingly, monetary factors were found to be more prominent among the factors that trigger inflation thereby validating the submission of the monetarists’ theorem. Worrisomely, in Nigeria despite, all attempts to increase government expenditure in order to stimulate aggregate demand have been unable to yield the required results. Instead, inflation keeps rising especially within the last decade. May be because key monetary variables like interest rate and overnight lending rates to mention a few have been on the high side in the name of ‘cooling off’ the economy by the central bank of Nigeria through their policy drive. It is in this context that this current study is interested in re-examining the above raised question. ‘Is money supply a cause of high inflation in Nigeria?’ The essence of this is to determine the actual and immediate cause of the inflationary process in Nigeria. Furthermore, to confirm if inflation is connected with money supply or not and proffer the needed solution to enable the country to tread on a pathway of growth.

Meanwhile, the current economic restructuring that emanates from the economic condition Nigeria is facing calls for a study like this nature. Also, Nigeria just like other upward looking developing countries is going through a substantial process of liberalization with its major macroeconomic fundamentals in a muddled manner. Couple with the problem of political instability via terrorism, high inflation rates, high interest, and high exchange rate to mention few which in turn is currently causing financial meltdown and decline in the growth of real GDP at large. Recently, Nigerian economy has recorded an enviable stepping up in growth as real GDP grew by 6.27, 7.57, and 7.38 percent, in 2009, 2010 and 2011, respectively. In the same vein, growth in real per capita income was 2.78 percent, 3.76 and 4.78 percent in 2008, 2009 and 2010 which averaged 3.77 for 2008, 2009 and 2010 respectively. Just at the end of the first, second, third quarters of 2016 and first quarter of 2017, the GDP of Nigeria shrank by 0.36, 1.5, 0.8 and 0.5 percent in a year on year basis. Where the latter followed an upwardly revised 1.7 percent decrease in the earlier period. Therefore, it is the smallest fall in five quarters of contraction, as oil sector continued to decline although at a slower pace to mention a few as opined by NBS (2017) even though, economic growth highlighted above is not the core of this current study. Yet, it has an adverse effect on inflation rate in the country.

Furthermore, the reason for this current research is borne-out of the intent to contribute to the existing body of knowledge by re-examining empirically whether or not money supply is the cause of high inflation in Nigeria. Also, it plans to improve our knowledge about diverse explanation in the literature that has outlined money supply and inflation both in pragmatic and hypothetically as it relates to Nigeria. From the practical perspective, it is obvious that the contribution and findings of this study would be supportive to the government and policy makers in terms of helping them to understand the effect of money supply on inflation as well as building policies that will guarantee that stability and sustainable development is achieved in the country. The rest of the inquiry is structured in four sections; the next section discusses the literature reviews. Section three showcases the research methodology; section four presents the empirical analysis and discussion of results. While section five, provides conclusion and recommends policy implication.

**Literature Review**

There is a growing disparity between developed and developing countries regarding the role money supply plays in an inflationary process around the globe especially in developing economies which Nigeria is inclusive, despite the pivotal task it performs in stabilizing the economy and guarantee a good standard of living among others. Consequently, this has resulted into numerous studies in the empirical literature on the impact of money supply on inflation both in developed and developing economies with mixed feelings.
Basically, as regarding quantity theory of money, which equation states that \( MV = PT \) only holds when full-employment has been achieved by a country be it developed or developing as the case may be. From the identity, \( M \) stands for currency and others forms of money in circulation (i.e. \( M1, M2, M3 \)), \( V \) refers to velocity of money, which is the number of times money changes hands, \( P \) is the prevailing price level and \( T \) represent the total volume of goods and services produced in an economy. As matter of fact, the left-hand side of the stated equation symbolizes money supply while the right-hand side stands for demand for money, because money demand arises from transactions. In the short run, it is believed that both ‘\( V \)’ and ‘\( T \)’ are unchanged. Therefore, \( P \) is said to vary positively with \( M \). In such a way that higher money supply leads to greater price level and vice versa. Consequently, a variation in money supply can result into a change in prices. Meaning that if a country is facing high rates of inflation, reducing the level of money supply would reduce inflation in a modest way and vice versa in case of disinflation and deflation. Although, critics have opposed the validity of this theory in the short run, while, some are of the opinion that it holds in the long run. For instance, in developing countries like India, Turkey and Nigeria in the African region does not believe that the upheld assumption of the theory regarding the constant state of \( V \) and \( T \) holds.

Particularly in Nigeria, there is this believe that there is other dynamic prevalence in the country and political factors that triggers prices rather than just money supply. Moreover, it is believed that the theory works in one direction and not on the other. In the sense that, large volume of money supply may elevate prices but on the other hand, a reduction in money supply may not necessarily reduce prices as currently prevalence in Nigeria and India respective as buttressed by Shubhada-Sabade (2014). Hence, re-emphasizing the opinions of critics of the theory, ranging from Karl Marx, Keynes and monetarists counter position; all of which has agreed with the theory but with distinct and divergence opinion with respect to the driver of prices. For example, Marx points that, the driver of prices is production, Keynes emphasized on income and demand and Friedman dwells on the quantity of money.

On the other hand, according to the fiscal theory of price level, empirical evidence shows that government fiscal policy alters the price level, such that for prices to be stable, the government on its part ensure sustainable finances in the right direction; they must run a balanced budget, the business fluctuations must be without any record of deficit as opined by Leeper (1991) and Woodford (1994) among others. The question is that, in Nigeria has the country been able to meet up with all these requirements? The answer is ‘No’. It is at this instance that the current study seeks to re-examination the question ‘is money supply actually a cause of higher inflation’ with particular reference to Nigeria. In Nigeria, there are several country-specific literatures regarding the relationship between money supply and inflation. For simplicity, these studies would be categorized into the following: those that believe that money supply causes inflation; money supply does not cause inflation and others.

With regards to those that are of the opinion that money supply cause inflation; for instance, Osakwe (1983) on the relationship between money supply and money wages. The study found that increase in money supply and money wages (with lag-in-effect) was the principal factors influencing price movements. Furthermore, they uphold that inflation is a part of the most important economic variables that can distort economic activities of any country. In consonance to the above, the study of Uduakobong (2014) empirically investigated the long-run causal relationship between money supply and inflation in Nigeria within the period 1970 to 2011.

The study reveals that there exists a long-run linear relationship between money supply and inflation in Nigeria.

Bakare (2011) undertook an investigation of the determinants of money supply growth and its implication on inflation in Nigeria. The results demonstrated that there is an unequivocal connection between money supply growth and inflation in Nigeria. Thus, presuming that deviation in money supply is accompanying to inflation in Nigeria. Also, Olorunfemi and Adeleke (2013) explored on money supply and inflation in Nigeria. The results unfold that money supply and exchange rate are key in stimulating inflation in the country.

On the studies that do not believe that money supply causes inflation in Nigeria. Ogunmuyiwa (2004), while conducting an enquiry into the factors that cause of inflation in Nigeria using time series data, noted that money
supply is inconsequential in explaining inflation movements in Nigeria, although, marked that the Central Bank’s monetary tools are more reactive to inflation and could be used to control it. Contrary to Ogunmuyiwa (2004), Chuku (2009), argued that monetary policy innovations carried out on the quantity-based nominal anchor money supply showed modest effects on output and prices with a very fast speed of adjustment. While, innovations on the price-based ostensible anchor (MRR and REER) have neutral and fleeting effects on output and infers that the administration of the quantity of money advocated money supply in the economy is the most powerful instrument for financial policy usage. In contrast, these studies like Onitiri and Awoyinka (1982), suggested that neither monetary nor structural phenomenon alone explained Nigeria’s inflation. One striking conclusion from this study was that a combination of both factors precipitates the inflation process.

Another line of argument is the position that money supply has positive impact on inflation rate in Nigeria. Waingade (2011) examined the connection between money supply and inflation over a long-run period. The result of their outcomes demonstrates that there exists a positive connection between growth in the money supply and price level. The relationship between the two has however not been corresponding.

The growth in money supply has more often than not surpassed the growth in inflation rate. The gap between the two is attributable to the growth in real national income. Sequel to the above, Oyejide (1972) examined the causes of inflation in Nigeria, with specific emphasis on the structuralist point of view. The author particularly, addresses the effect of deficit financing to stimulate inflation process in Nigeria and found that there is an exceptionally solid positive connection amongst inflation and the different measures of deficit financing that was utilized in the vicinity of 1957 and 1970. Moreover, their outcomes exhibited that there is a long-run linear connection between the rate of inflation and its determinants. In addition, Gary (1994) used an error correction model to determine the factors that affect inflation in Nigeria. The result pinpoints that, money expansion, spurred up by fiscal policies explains to a large degree the inflationary process in Nigeria.

Little wonder, did the study of study of Busari (2007) on the determinant of inflation in Nigeria confirm that inflation is positively related to money supply and marginally to the fiscal deficit.

Odusola and Akinlo (2001) employed unrestricted VAR technique and impulse response to examine a study on output, inflation and exchange rate in Nigeria. Evidence from VAR results indicated a negative influence of inflation on the output. However, output and parallel exchange rate were found to be the major determinants of inflation dynamics in Nigeria. This was also supported by the study of Iyabode (1999) who utilized a two stage least square model to estimate inflationary trend in Nigeria during the period 1971-1995. The results confirmed the importance of parallel market exchange rate dynamics in determining inflation. In the same vein, Maku et al., (2013), inspected the dynamic of inflation in Nigeria utilizing an autoregressive technique. The results demonstrate that there is a critical adjustment process of the dynamic of inflation rate while actual output growth rate and fiscal shortage are noteworthy determinants of the inflation rate in Nigeria. They concurred that the objective of the monetary authorities had prompted a relentless increment in prices which constituted a major macroeconomic challenge.

From other developing economies, studies like that of Cevik and Teksoz (2013) employed co-integration and error correction models to investigate inflation dynamics in Libya. The study found inflation inertia to be key determinant of consumer price inflation in Libya. The result also indicated that government spending, money supply growth, global inflation, exchange rate pass-through and imposition and subsequent removal of international sanctions played central roles in the Libyan inflationary process. Also, Kabund (2012) investigated with the use of the quantity theory of money to identify the main factors underlying inflation in Uganda. The study showed that both external and domestic factors affects inflation in Uganda, amongst which are money growth, world food prices, domestic supply and demand effects in the agricultural sector, energy prices and inflation inertia. Furthermore, Bozkurt (2014) analyzes money-inflation and growth relationship in Turkey by utilizing co-integration test. The study used quarterly data of money supply (M2), GDP, velocity of money and deflator spanning between 1999Q1 to 2012Q4. The results showed that money supply and velocity of money are the principal determinants of inflation in the long-run in Turkey. Similarly, in Turkey, Koyuncu (2014) used the time-series approach for investigate the impact of the budget deficit and money supply on
inflation for the period of 1987-2013. His study discovers that there is no causality from inflation to money supply; while on the other hand, causality runs from money supply to inflation in Turkey.

In the same vein, Al-Fawwaz and Al-Sawai’e (2012) analyzed the short run relationship between money supply, price level, and the gross domestic product (GDP) for the Jordanian economy. The results show that price level negatively correlates with the output level. Much earlier, study like that of Tyrkalo and Adamyk (1990) investigated the relations between both the money supply and inflation and between money supply and GDP. Their outcomes recognize a long-run connection between money growth and inflation. Likewise, Tang and Lean (2007) analyzed the relation between money supply (MI) and inflation in Malaysia. Their regression outcome depicts that the impact of money supply (MI) on inflation in Malaysia is negative and statistically significant. The implication from their study did not support the monetarist’s view which pinpoints that inflation is purely a monetary phenomenon.

The studies of Lahiri (1991) investigated the causal relationship between money and inflation in Yugoslavia and Argentina respectively despite the different in time lag. Their empirical results showed bi-directional relationship between money stock and inflation in Argentina and Yugoslavia. In contrast to the above, the study of Makinen (1989) revealed from their empirical studies on hyper-inflation in Taiwan that, there exists uni-directional causality between money supply and inflation with the causality running from inflation to money growth in the nation’s economy. More so, Mbonge et al., (2014) and Sabade (2014), posed a question ‘is money supply the cause of inflation?’ using an alternative postulate to understand inflation to test the validity of quantity theory of money in India. Their results pinpoints that the inflation dynamics playing out in developing economies are different and requires necessary re-visit. It is on this note that this current study seeks to re-investigate if money supply is the cause of high inflation in Nigeria or not? In addition, the study intends to capture both the short and long run dynamic relationship in the model and equally find out if causality exist between them and if does, then, know the direction of causality.

Research Methodology

Sources of Data and Model Specification

For the purpose of re-investigating if money supply is the cause of inflation in Nigeria or not. We employed data from Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Development indicators. The data used for this study spans from 1970-2016. Based on previous studies like in the literature, about various arguments on the determinants of inflation, we specify that Inflation proxy by consumer price index (CPI) is a function of money supply (MS), output (GDP), real exchange rate (RER), domestic oil price (DOP), and monetary policy rate (MPR), government expenditure (GE) according to authors like; Mbonge et al., (2014) and Sabade (2014) etc. Our model is as specified in equation 1.

\[ CPI_t = f(\text{MS}, \text{MPR}, \text{EXR}, \text{RGDP}, \text{DOP})_t \]  

Equation (1) is written in an econometric form as seen in equation (2) below:

\[ CPI_t = \beta_0 + \beta_1(\text{MS})_t + \beta_2(\text{MPR})_t + \beta_3(\text{RGDP})_t + \beta_4(\text{RER})_t + \beta_5(DOP)_t + \epsilon_t \]  

Furthermore, in order to produce the most appropriate coefficient for the CPI with respect to the independent variables, we transform the model in equation (2) on a log-log econometric form as seen in equation (3) below.

\[ \ln CPI_t = \beta_0 + \ln \beta_1(\text{MS})_t + \ln \beta_2(\text{MPR})_t + \ln \beta_3(\text{RGDP})_t + \ln \beta_4(\text{RER})_t + \ln \beta_5(DOP)_t + \epsilon_t \]  

Where; ‘\( \ln \)’ represents natural log. More so, the reason for log-log transformation among others is that, it will be helpful in following ways; to reduce the problem of multicollinearity, heteroskedasticity, achieve a better fit which in turn ensures actualizing elasticity’s rather than slope hence making the variables to appear more symmetric according to Gujarati and Porter (2009). Since, we are interested in examining the impact of money
supply and inflation and their long run interaction as well. We rely on an Autoregressive Dynamic Lag Error Correction Model (ADLECM). This approach has been used by Mbonge et al., (2014) to test the relationship between money supply and inflation in Tanzania. After testing for the existence of long run linear relationship between the variable, with the null hypothesis of no Cointegration among the variables in equation (3) specified thus: $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ against the alternative hypothesis $H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$. Accordingly, if the results show the existence of co-integration, then we can proceed to estimate the error correction model according to Sorensen (2005). Therefore, the need for disequilibrium in the short run necessitate the use of a Dynamic Error Correction mechanism (ADLECM) in this study, so that one can treat the error term from eqn (3) as the equilibrium error which can then be used to tie the short run behaviour of the dependent variable to its long run value. Thus, the ADLECM model of this study is presented as follows:

$$\mu_t = \text{Incpi}_t - \beta_0 - \beta_1 \text{Inms}_t - \beta_2 \text{Inmpr}_t - \beta_3 \text{Inrgdp}_t - \beta_4 \text{Inrer}_t - \beta_5 \text{Indop}_t + \beta_6 t$$

$$\Delta \text{Incpi}_t = \alpha_0 + \alpha_1 \text{Inms}_t + \alpha_2 \text{Inrer}_t + \alpha_3 \text{Inrgdp}_t + \alpha_4 \text{Indop}_t + \alpha_5 \text{Inmpr}_t + \alpha_6 \Delta \mu_{t-1} + \varepsilon_t$$

(4)  

(5)  

Where; $\varepsilon_t$ is the white noise disturbance and $\mu_{t-1}$ is the lagged value of the error term in the previous model when the error term is non-zero, meaning that the model is in disequilibrium. More so, the value of $\alpha_6$ shows how fast the equilibrium converges. Furthermore, this study intends to use the Granger causality test to ascertain the direction of causality between money supply and inflation in Nigeria. The reason for this is owing to the postulation of the Quantity theory of money which critics presumes a causal relation between money supply and inflation to be one-sided. Consequently, the need establishes the exact direction of causality between these variables. This in turn, would prompt policy makers to point out the avenues of influence and outcomes after implementation of the policy. The granger causality for this study is expressed as follows:

$$\text{Incpi}_t = \sum_{i=1}^{p} \alpha_{1i} \text{Inms}_{t-i} + \sum_{i=1}^{p} \beta_{1i} \text{Incpi}_{t-i} + \sum_{i=1}^{p} \phi_{1i} \text{Indop}_{t-i} + \sum_{i=1}^{p} \Omega_{i1} \text{Inrgdp}_{t-i} + \sum_{i=1}^{p} \sigma_{i1} \text{Inrer}_{t-i} + \sum_{i=1}^{p} \psi_{1i} \text{Inmpr}_{t-i} + \mu_{1t}$$

$$\sum_{i=1}^{p} \psi_{1i} \text{Inmpr}_{t-i} + \mu_{1t}$$

$$\sum_{i=1}^{p} \phi_{1i} \text{Indop}_{t-i} + \sum_{i=1}^{p} \psi_{1i} \text{Inmpr}_{t-i} + \mu_{1t}$$

(6)  

(7)  

Where; ‘In’ denotes natural logarithm, $p$ is the maximum lag length, $\mu_{1t}$, stochastic error terms (normally distributed with zero mean and constant variance).

**Variable Measurements**

Data used in this paper are annual figures which spans from 1975 to 2016 and include: consumer price index (headline consumer price index), money supply (narrow money), real exchange rate, domestic oil price, output proxy by real GDP, and monetary policy rate respectively are sourced from National Bureau of Statistics and Central Bank of Nigeria statistics bulletin (2016). All of which were measured in naira except the rates. CPI was used to proxy inflation due to the fact that quantity theory of money though, accepted but criticized on the ground that there are different drivers of prices in an economy. Gross domestic product was used to proxy for output, while, the volatile nature of the Naira (Nigeria’s currency) to dollar exchange rate serves as the real exchange rate, monetary policy rate was used to proxy money market rate. Lastly, the money supply data is proxy by narrow money and is in billions of naira.
Results and Discussion

In an attempt to examine whether money supply is the cause of high inflation in Nigeria, this section begins by conducting some preliminary analysis (descriptive statistics, Unit root test and cointegration test) on the variables employed in the study. The result is presented in Table’s 1, 2 and 3 below.

Preliminary Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>AT LEVEL</th>
<th>AT FIRST DIFFERENCED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADF-t stat</td>
<td>PP-t stat</td>
</tr>
<tr>
<td>LMS</td>
<td>0.470090</td>
<td>0.605112</td>
</tr>
<tr>
<td>LDOP</td>
<td>0.166940</td>
<td>0.166940</td>
</tr>
<tr>
<td>LMPR</td>
<td>-2.296816</td>
<td>-2.296816</td>
</tr>
<tr>
<td>LRER</td>
<td>-1.723612</td>
<td>-1.840679</td>
</tr>
<tr>
<td>LCPI</td>
<td>-0.830764</td>
<td>-0.596874</td>
</tr>
<tr>
<td>LRGDP</td>
<td>-1.287820</td>
<td>-2.990516</td>
</tr>
</tbody>
</table>

Source: Authors computation from E-views 7
To perform the unit root test, the researchers employed both Augmented Dickey Fuller and Philip Perron test. To achieve this, a null hypothesis that the variables have a unit root was set. Expectedly, after performing the test, it was discovered based on the p-Value and t-statistics that the null hypothesis of a unit root was not rejected. Meaning that, all the variables of interest are not stationary at level. But, after taking the first difference of these variables, they now became stationary using both (ADF and PP) test as presented in Table 2 above.

Since, the variables are stationary at first differencing; we proceed to test the existence of long run relationship among the variables. The result of the Johansen co-integration test is presented in Table 3 below.

### Johansen Co-integration Test

Cointegration is a crucial test for the existence of long relationship among variables. As a matter of fact, this procedure relies heavily on the relationship between the rank of a matrix and its characteristic roots as buttressed by Johansen (1991). The result of the co-integration test is presented in Table 3 below.

<table>
<thead>
<tr>
<th>Null</th>
<th>Alternative</th>
<th>Trace Test</th>
<th>Maximum Eigen Value Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistics</td>
<td>95% Critical Values</td>
</tr>
<tr>
<td>r = 0</td>
<td>r ≥ 1</td>
<td>205.744</td>
<td>95.7537</td>
</tr>
<tr>
<td>r ≤ 1</td>
<td>r ≥ 2</td>
<td>127.697</td>
<td>69.8189</td>
</tr>
<tr>
<td>r ≤ 2</td>
<td>r ≥ 3</td>
<td>68.7846</td>
<td>47.8561</td>
</tr>
<tr>
<td>r ≤ 3</td>
<td>r ≥ 4</td>
<td>34.9976</td>
<td>29.7971</td>
</tr>
<tr>
<td>r ≤ 4</td>
<td>r ≥ 5</td>
<td>16.7958</td>
<td>15.4947</td>
</tr>
<tr>
<td>r ≤ 5</td>
<td>r ≥ 6</td>
<td>4.27878</td>
<td>3.84147</td>
</tr>
</tbody>
</table>

Source: Authors computation from E-views 7

From the above table, it was observed that, the null hypothesis of no co-integration for r=0, r ≤ 1, r ≤ 2, r ≤ 3, r ≤ 4 and r ≤ 5 were rejected by the trace statistics method. Although, the null hypothesis r ≤ 3 and r ≤ 4 were accepted by the maximum Eigen values statistics due to the fact that, that their statistical value was less than their critical values. The implication is that, there is a long run relationship among the variables with 3 cointegrating equations at 5% level of significance in the model.

### Empirical Analysis

#### Ordinary Least Square Results

The result of the long run estimate (see Table 4 in the appendix) clearly proves that money supply has a negative but insignificant relationship with price inflation in Nigeria although; this result was consistent with the study of Tang and Lean (2007).

#### Error Correction Model

Co-integration and non-spurious regression are the fundamental requirements of ECM. Consequently, the results of cointegration test (Table 3) and that of both ADF and PP test (Table 5) provide enough evidence on the long run relationship among the variables under consideration as there are three cointegrating vectors and Stationarity of residual at level therefore, the basis to estimate ECM. The result is presented in Table 6 below.
Table 6. Results of the ADL ECM

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.041139</td>
<td>0.024522</td>
<td>1.677675</td>
<td>0.1021</td>
</tr>
<tr>
<td>ECT (-1)</td>
<td>-0.206566</td>
<td>0.074042</td>
<td>-2.789842</td>
<td>0.0084</td>
</tr>
<tr>
<td>DLRGDP</td>
<td>0.179743</td>
<td>0.051017</td>
<td>3.523205</td>
<td>0.0012</td>
</tr>
<tr>
<td>DLDOP</td>
<td>0.114849</td>
<td>0.032010</td>
<td>3.587967</td>
<td>0.0010</td>
</tr>
<tr>
<td>DLCPI (-1)</td>
<td>0.427565</td>
<td>0.104490</td>
<td>4.091918</td>
<td>0.0002</td>
</tr>
<tr>
<td>DLRER (-2)</td>
<td>0.103789</td>
<td>0.047783</td>
<td>2.172087</td>
<td>0.0365</td>
</tr>
<tr>
<td>DLMPR (-1)</td>
<td>-0.134612</td>
<td>0.062627</td>
<td>-2.149434</td>
<td>0.0384</td>
</tr>
<tr>
<td>DLMS (-1)</td>
<td>-0.017618</td>
<td>0.033000</td>
<td>-0.533861</td>
<td>0.5967</td>
</tr>
</tbody>
</table>

R² = 0.64, Adj. R² = 0.58  
F-Stat = 9.286, Prob. < F (0.0001), DW = 1.68

The ECM results show that there is mixed impact of the exogenous variables on inflation between the captured period. Meaning that, some of the exogenous variables indicated a positive influence on inflation, while others had a negative influence on it in the short run. Evidence from the F-statistics indicates that the explanatory variables are jointly significant. R² value of 0.64 indicates that 64% of the variations in the response variables are accounted for by the changes in the explanatory variables. The value of DW statistics which is approximately (2.0) shows the absence of serial autocorrelation. For example, the coefficient of the past values of MPR (-0.135) and MS (-0.018) has a negative influence on the current value of inflation in Nigeria. Although, the former was found to be statistically significant while the latter statistically insignificant in the current value of inflation. This in turn, contradicted the popular monetary postulation which buttress that, the general price levels of goods and services is directly proportional to the amount of money supply leads an increase in the price level vis-à-vis inflation (Moses et al., 2015). Similarly, the current value of real GDP and the domestic oil price (DOP) were found to impact the current inflation figure in the economy. In addition, it was discovered that the first lagged value of inflation and second lagged value of the real exchange rate was found to exert influence on the current value of inflation in Nigeria positively.

Over and above, the adjustment coefficient error term was found to be non-zero and negative as expected and statistically significant at the 5% level shows the dynamic stability of inflation. Consequently, it can be inferred that in the short run, the model diverges from the equilibrium. In such a way that, any variation in the inflation via CPI can be regulated by adjusting the money supply, the real exchange rate, monetary policy rate, output and price of fuel respectively towards convergence in the equilibrium. More particularly, the coefficient of the ecm(-0.2065) in Table 6 pinpoints the adjustment mechanism of the equilibrium with the break of the model at 0.27 units. The implication from the aforementioned is that there is 21% of errors are corrected yearly from the previous periods in to the short run dynamic process. Despite, the appropriateness of the model, it was further verified by carrying out various diagnostic tests on the residual of the ECM model. They include: Normality test, Serial correlation LM test and Heteroskedasticity test respectively. Evidence from their results showed that the residuals of model passed the three tests based on their probability values (see appendix).

The Granger Causality Test

<table>
<thead>
<tr>
<th>Direction of causality</th>
<th>F- value</th>
<th>Observation</th>
<th>Probability</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI → MS</td>
<td>0.1594</td>
<td>43</td>
<td>0.9574</td>
<td>Do not reject the null</td>
</tr>
<tr>
<td>MS → CPI</td>
<td>0.9170</td>
<td>43</td>
<td>0.4653</td>
<td>Do not reject the null</td>
</tr>
<tr>
<td>RER → CPI</td>
<td>2.6932</td>
<td>43</td>
<td>0.0473</td>
<td>Reject the null</td>
</tr>
<tr>
<td>CPI → RER</td>
<td>2.9820</td>
<td>43</td>
<td>0.0326</td>
<td>Reject the null</td>
</tr>
<tr>
<td>RGDP → DOP</td>
<td>6.3466</td>
<td>43</td>
<td>0.0006</td>
<td>Reject the null</td>
</tr>
<tr>
<td>DOP → RGDP</td>
<td>3.4751</td>
<td>43</td>
<td>0.0175</td>
<td>Reject the null</td>
</tr>
</tbody>
</table>

Source: Authors computation from E-views 7
The result of the causality test as shown in Table 7 reveal that the null hypothesis of no causality was not rejected at 5% level of significance. Meaning that, there is no causality between money supply and inflation, which outcome is consistent with the study of Koyuncu (2014). Hence, money supply does not granger cause inflation and vice-versa in Nigeria.

Conclusion and policy implication recommendation

This study investigates if money supply is the cause of high inflation in Nigeria. After exploring on all the needful theoretically and empirically literatures, the study concludes that money supply does not impact on inflation both in the short and long run in Nigeria. This is evidence from the results obtained from both the long and short run analysis. However, the outcome of this study tends to support the work of Akinbobola (2012) who posited that inflation seems to find no explanation on money supply in Nigeria. As a result, the government of Nigeria should put in place other measure that triggers up inflation in Nigeria which includes: high exchange rate, interest rate and high domestic fuel price respectively in order to achieve low inflation rate. The study also revealed that monetary policy rate has an impact on money expansion that is accompanied with a reduced interest rate. This in turn will make it possible for banks to provide credit to private sectors at a low lending rate; thereby fostering the economy and vice-versa. In this wise, the government can use inflation as a watchdog on the efficacy of monetary policy since, it is generally known as a monetary phenomenon. The above result was also supported by the result of our Granger causality test, that there is no causality between money supply and inflation during the periods under study. Meaning that, money supply is not a major cause of inflation; rather it is caused by some structural factors in the country. Therefore, the study recommends that the federal government through the monetary authorities should regulate the monetary policy rate downwardly to encourage foreign and private investment in the country which in turn boosts economic growth at large.

In addition, the government should reduce her outrageous expenditures and control the incessant budget deficit that has been recorded in Nigeria while the central bank should desist from creating cheap currency so as to curb excess supply of money in the economy. In addition, the government should diversify the economy; enact easy export policy, subsidize fuel price because they turn out to be among the factors that triggers high inflation in Nigeria possibly because of the ripple effect they exhibit on economic activities at large vis-a-vis transportation, prices of food, necessity items to mention few.

REFERENCES

17. Friedman, M. (1968); The Quantity theory of money, London: Harvard Publisher limited.
23. Koyuncu F. T. (2014); “Causality Network between Budget Deficit, Money Supply and Inflation: An Application to Turkey”; International Journal of Business and Social Science Vol. 5, No. 10(1); Center for Promoting Ideas, USA.
40. Tang CF (2008); Is Inflation always a Monetary Phenomenon in Malaysia; Online at http://mpra.ub.uni-muenchen.de/19778/ MPRA Paper No. 19778, posted 11 January 2010 02:17 UTC.
41. Tyrkalo R. and Adamyk, B. (1999); Monetary Policy Transmission and Its Meaning to the Effectiveness of NBU activity; Herald of NBU, 7, 6, 11.


46. Yahaya, K. (2000); Structural disequilibrium and inflation in Nigeria; A theoretical and empirical analysis; *Centre for Economic Research on Africa*; School of Business, Montclair State University, New Jersey.

### Table 5. Residual Stationarity test results

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF Test</th>
<th>PP Test</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual</td>
<td>-3.90888</td>
<td>-3.07362</td>
<td>I(0)</td>
</tr>
</tbody>
</table>
Public Infrastructure and Private Sector Productivity, Tasmania 1990-2015

MIKHAILITCHENKO Serguei

1 Holmes Institute, Brisbane (AUSTRALIA)
Email: smikhailitchenko@holmes.edu.au

Work code CJ02F5002

Abstract

The study utilises the recent advances in development of capital stock data at subnational level for Australian states and applies the series for analysis of the effect of the public infrastructure on the private sector productivity in Tasmania. The study employs a version of an aggregate production function to estimate the elasticity of private capital productivity with respect to the public infrastructure. The results of analysis indicate that, in the long run, contrary to the expectations, the public infrastructure contributes negatively to the private sector productivity in Tasmania. There is also some evidence that Tasmanian government is engaged in countercyclical public investment activities.

Keywords: Public capital stock, Multifactor productivity, Australia

JEL Classification: R11, C1, O56, H74

Introduction

The literature on the role of the public infrastructure on private sector productivity in Australia is very limited. Studies by Otto and Voss (1994, 1996, and 1998) and Satya (2003) are the only four studies known to the author that looked at the impact of the public capital on the Australian private capital productivity. The aggregated models used in the above-mentioned studies concluded that there is a significant positive effect of the public infrastructure on the private capital productivity, which is consistent with the estimates for the United States (Aschauer, 1989; Munnell, 1990). However, the analysis at the industry level produced mixed results showing that public infrastructure was less important for the private capital productivity and even had a negative impact for some industries (Otto and Voss, 1996). There are no studies known to the author that looked at the role of public infrastructure on the private capital productivity at the regional level for Australia.

As one might also expect, a significant amount of information might be lost not only in cross-industry aggregates but also in special aggregation of data in the Australian national accounts. As the result, there might be significant differences in the extent to which the public infrastructure affects the economies of different regions. Therefore, it is worth to look at the impact of the public capital on economic development of individual states. Although some literature in the area of regional productivity for Australia does exist (see, for example, Nguyen and Smith, 2007 and Lucas, 2003), these studies did not look at the role of the public capital and used either private capital stock only or aggregate capital stock as inputs into the models.

This study makes a step in filling the gap and, in addition, uses an updated Net Capital Stock (NCS) series available from Mikhailitchenko (2015). A matter of interest would be also to compare the estimates with the results of analysis conducted at the regional level for other countries, such as Duffy-Deno and Eberts (1989), Munnell (1990), Gu and Macdonald (2009) and Ezcurra et al., (2005). These studies found that the effect of the public infrastructure in regional growth was of a smaller scale than that for the nation as a whole.

The choice of Tasmania for analysis was motivated by the geographical uniqueness of this state as well as its unique rates of population growth, the amount of capital stock per capita, capital stock dynamics and capital stock composition. In addition, the author has legitimate concerns that this small state might be overlooked in
future panel data analysis if it turns out to be that the differences in inter-regional interaction between economic variables are too large between the small and the large states.

Tasmania is an island economy connected to the mainland only via sea and air. Therefore, the spill-over effects from the Tasmanian public sector investment into economic performance of the neighbouring states are expected to be insignificant. The effects of the public infrastructure in Victoria and New South Wales might also have a negligible effect on economic growth and productivity in Tasmania. If this is the case, then private capital productivity of Tasmania might not be included into a panel data analysis of the productivity of Australian states.

The rest of the paper is organised as follows. Section 2 presents the model. Section 3 identifies the sources of data used in the analysis and discusses certain aspects of Tasmanian economic development. Section 4 provides a discussion of results, while Section 5 gives the concluding comments.

The Model

The study examines the effects of the public capital stock on the private capital productivity and applies the growth model as shown in equation (1) below.

\[ Y_t = A_t K^{1-\beta_L} L^{\beta_L} G^{\beta_G} \]  

(1)

Where \( Y_t \) is the private sector contribution to the Gross State Product (GSP) of Tasmania, \( K_t \) is the private net capital stock (NCS), \( L_t \) is the number of hours worked by all employees in Tasmania and \( G_t \) is public net capital stock.

To estimate the private capital productivity, equation (1) is further transformed into equation (2) as shown below. This approach is similar to model (3) in Otto and Voss (1996) where the public infrastructure was looked at a not purely public good in the aggregate production function.

\[ \frac{Y_t}{K_t} = A_t \left[ \frac{L_t}{K_t} \right]^{\beta_L} \times G^{\beta_G} \]  

(2)

As all variables are in natural logs, further transformation is possible as shown in equation (3) below.

\[ Y_t - K_t = A_t + \beta_L \times (L_t - K_t) + \beta_G \times G_t \]  

(3)

In equation (3), the term \( Y_t/K_t \) is private capital productivity; the term \( L_t/K_t \) is an inverse capital deepening measure and the term \( G_t \) is the public net capital stock. Logged values imply that the regression coefficients \( \beta_L \) and \( \beta_G \) represent the elasticity of private sector capital productivity to capital deepening and elasticity of private capital productivity to the value of the public infrastructure available. The expected sign of \( \beta_L \) therefore is expected to be negative, while the other two coefficients, \( A_t \) and \( \beta_G \) are expected to be positive due to the expected positive effect of the public infrastructure on the capital productivity in the private sector and a reasonably expected positive annual multifactor productivity growth.

Equation (3) presupposes constant returns to scale in private inputs to production and allows increasing returns to scale in public infrastructure and, therefore, increasing returns to scale across all inputs. Aschauer (1989) found that, in the United States, one percent increase in the public capital stock increases the private sector productivity by 0.4 percent. Otto and Voss (1994) used aggregated Australian data and found that the corresponding figure was around 0.45 for Australia as a whole. The average figure for the Australian industries was 0.17 percent in Otto and Voss (1996).

Variables and Data Sources
In addition to its special geographic position, Tasmania, has a small population size of just over half a million residents and, in these terms, is the third smallest state in Australia, being larger in this respect than only the Northern Territory and the Australian Capital Territory. At the same time, Tasmanian population grows at the slowest pace of 0.5 percent per annum, on average.

As can be seen from the Figure 1, Tasmania experienced three consecutive years of negative population growth in 1997, 1998 and 1999, -0.1, -0.3 and -0.1 percent respectively. The only other example of negative annual regional population growth over the same period in Australia is the Northern Territory, where its population shrank by 0.3 percent in 2003. However, the average 1990-2015 annual population growth rate in the Northern Territory is 1.6 percent per annum, which is more than triple of the figure for Tasmania.

![Fig. 1. Population Growth Rates, Tasmania 1990-2015](source: ABS 3101.0, 2015)

Figure 2 below shows the value of Gross State Product (GSP) per capita for Australian states and Gross Domestic Product (GDP) per capita for Australia as a whole during 1990-2015. As can be seen, Tasmania had the lowest GSP per capita among Australian states during the entire period of the last twenty-five years.

![Fig. 2. Gross State Product per capita, Australia and states 1990-2015](source: ABS 5220.0, 2015)

Figure 3 below presents unemployment rates for Australian states and territories for the period from 1992 to 2015. In most years during this period the unemployment rate in Tasmania was the higher than in all other Australian regions with exception for the period 2007-2009 when Tasmanian unemployment rate fell below the national average and in 2015 when the unemployment rate in South Australia rose sharply possibly to the redundancies in the auto manufacturing industry.
Figure 4 below presents participation rates for Australia and states during the period 1992-2015. As can be seen from the figure, Tasmanian participation rate was the lowest among Australian states during the entire twenty-five-year period.

Figure 5 shows the average annual growth rates in the number of hours worked for the states and territories of Australia for the period 1990-2015. As can be seen, Tasmanian average growth in this category of the labour input was the lowest among Australian states.
Figure 6 presents private net capital stock (NCS) per capita for Australian states and territories for the years 1990 and 2015\(^1\). As can be seen, Tasmania had the lowest value of per capita NCS among Australian states in both 1990 and 2015. The growth rate of NCS per capita was the lowest in Tasmania with only 31.9 percent change during this period compared to 79.4 percent for Australia as a whole.

![Figure 6. Private net capital stock per capita, Australian states and territories, 1990 and 2015](image)

*Source: Mikhailitchenko, 2015*

However, Tasmania has the forth-highest value of public NCS per capita among Australian states and territories being behind ACT, NT and QLD as shown in Figure 7. At the same time, the growth rate of the public NCS per capita between 1990 and 2015 was only 9.1 percent, which was above the corresponding value only for VIC and far below 23.5 percent for Australia as a whole.

![Figure 7. Public net capital stock per capita, Australian states and territories, 1990 and 2015](image)

*Source: Mikhailitchenko, 2015*

Figure 8 below shows the reasons for the slow growth of the public NCS per capita in Tasmania. As can be seen, in most years since 1990 public capital depreciation measured as Consumption of Fixed Capital (COFC) in Tasmania exceeded the public investment measured as Gross Fixed Capital Formation (GFCF), resulting in disinvestment in the public capital stock of this state in most periods 1990 to 2009 and some growth in public capital stock in 2010-2014. This is unique for Tasmania and was not observed in any other Australian state or territory.

---

\(^1\) See appendix for details of the PIM methodology to derive NCS
There are also significant differences in the composition of the capital stocks between the states. As can be seen from Figure 9 below, the proportion of private non-dwelling construction comprising of non-residential buildings and private infrastructure was the lowest for Tasmania in both 1990 and 2015.

However, as can be seen from Figure 10 below, the proportion of public assets in the total NCS in Tasmania was the second highest among Australian states and below only for ACT. This proportion declined between 1990 and 2015 for all states except ACT, which probably reflects the expansion of the Federal government public service capabilities. The large proportion of public capital stock in Tasmania indicates that public infrastructure might play a significant role in the state economic development and that this role might be more important than the role of public investment in other Australian states.
According to the discussion above, Tasmanian economy is unique indeed. A rigorous economic analysis of this state might provide some important insights into regional economic development and the role of provision of public infrastructure, in particular.

Estimation Results and Discussion

The author starts from a traditional growth decomposition approach and proceeds with a time series analysis of the data in order to test the coefficients for statistical significance. Table 1 below reports the units root tests of the variables (p-values given in parenthesis). As can be seen from Table 1, $Y_t/K_t$ and $L_t/K_t$ exhibit unit roots at level but are stationary in the first difference, which implies that these series are $I(1)$ processes. Further Kwiatkowski-Phillips-Schmidt-Shin unit root test revealed that the hypothesis that $G_t$ has a unit root at the first difference couldn’t be rejected at 10 percent significance level. Therefore, $G_t$, despite the risk of having a unit root in the first difference, this variable is also considered an $I(1)$ process.

Table 1. Unit root tests

<table>
<thead>
<tr>
<th></th>
<th>Level</th>
<th>ADF</th>
<th>PP</th>
<th>1st difference</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$Y_t/K_t$</td>
<td>-1.8497</td>
<td>0.6499</td>
<td>$d(Y_t/K_t)$</td>
<td>-4.9270</td>
<td>0.0031</td>
</tr>
<tr>
<td></td>
<td>$L_t/K_t$</td>
<td>-1.4442</td>
<td>0.8216</td>
<td>$d(L_t/K_t)$</td>
<td>-4.2854</td>
<td>0.0132</td>
</tr>
<tr>
<td></td>
<td>$G_t$</td>
<td>-1.2606</td>
<td>0.8782</td>
<td>$d(G_t)$</td>
<td>-2.6903</td>
<td>0.2486</td>
</tr>
</tbody>
</table>

*, ** and *** indicate that the t-statistic is significant at 10, 5 and 1 percent level of significance respectively

Table 2 below shows Johansen system co-integration test results with p-values given in parenthesis. As can be seen, there is at least one co-integrating equation, which makes it possible to proceed with modelling the relationship between the specified variables using an error-correction methodology.
Table 2. Co-integration test results

<table>
<thead>
<tr>
<th>Level</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace Statistic</td>
<td>22.2996**</td>
</tr>
<tr>
<td></td>
<td>(0.0501)</td>
</tr>
<tr>
<td>Maximum Eugen value</td>
<td>35.1928***</td>
</tr>
<tr>
<td></td>
<td>(0.0086)</td>
</tr>
</tbody>
</table>

*, ** and *** indicate that the t-statistic is significant at 10, 5 and 1 percent level of significance respectively

However, as Otto and Voss (1994, 1996) noted, it is not always clear if the public expenditure is purely exogenous variable or it is greatly influenced by political considerations, in which output growth and unemployment usually play a major role. Therefore, this study assumes that the private output variable and all input variables can be endogenous and applies a vector error-correction model (VEC) to estimate the aggregate production function as per equation (3). This approach allows to distinguish between the short-run and the long-run dynamics as well as to estimate the rate of adjustment towards the long-run equilibrium after a shock.

Specifying the long run relationship between the variables in a VEC and correctly identifying the dependent and independent variables is extremely important as misspecification might lead to a bias in the estimates and also severely affects the significance of the estimated coefficients. Therefore, it is advisable to conduct a Grange causality test before estimating a VEC. Table 3 presents the basic Granger causality test results. As can be seen, contrary to the expectations, it is the public capital and not the output is the dependent variable, implying that the government of Tasmania is actively engaged in using fiscal instruments for macroeconomic management.

Table 3. Granger causality test results

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gt doesn’t Granger cause Yt/Kt</td>
<td>2.0777</td>
<td>0.1527</td>
</tr>
<tr>
<td>Yt/Kt doesn’t Granger cause Gt</td>
<td>5.0354</td>
<td>0.0176**</td>
</tr>
<tr>
<td>Lt/Kt doesn’t Granger cause Yt/Kt</td>
<td>0.7885</td>
<td>0.4820</td>
</tr>
<tr>
<td>Yt/Kt doesn’t Granger cause Lt/Kt</td>
<td>1.8357</td>
<td>0.1867</td>
</tr>
<tr>
<td>Lt/Kt doesn’t Granger cause Gt</td>
<td>0.5158</td>
<td>0.6052</td>
</tr>
<tr>
<td>Gt doesn’t Granger cause Lt/Kt</td>
<td>4.4453</td>
<td>0.0261**</td>
</tr>
</tbody>
</table>

*, ** and *** indicate that the t-statistic is significant at 10, 5 and 1 percent level of significance respectively

Equation (4) presents the estimation results of the long-run relationship of equation (2) with p-values of the estimated coefficients given in parenthesis.

\[
\frac{Y_t}{K_t} = -0.41 \times \frac{L_t}{K_t} - 0.04 \times G_t \\
(0.0108)** \\
(0.0629)*
\]

\[
R_{adj}^2 = 0.626
\]

*, ** and *** indicate that the t-statistic is significant at 10, 5 and 1 percent level of significance respectively (2-tail tests)

The estimated results\(^2\) indicate that there is a long-run positive relationship between the private capital productivity and the public net capital stock. A one percent increase in the later results in around 0.04 percent decrease in the former. A one percent increase in the capital to labour ratio results is a 0.4 percent increase in private capital productivity. An immediate problem in the estimates is that the adjustment coefficient towards

\(^2\) The error term of the model has been tested for normality using a Jackie-Berra test. No abnormality of the error term has been detected
the long-run equilibrium indicates that the error term becomes larger over time as, although of a small absolute value (0.0023) it has a positive sign. Although this might indicate a problem with the model specification, the public investment cannot be considered as purely endogenous due to the political factors influencing the government expenditure. The short-run VEC coefficient for the differenced $Y_t/K_t$ term is negative 0.1640, which provide some further evidence that Tasmanian government is conducting a countercyclical fiscal policy.

**Conclusion and Future Work**

The estimated results suggest a weak negative effect of the public infrastructure on the private sector productivity in Tasmania. The long-run elasticity of the private capital productivity with respect to the public capital is -0.04. The long-run elasticity of the private capital productivity in Tasmania with respect to the public infrastructure is significantly lower than the estimates of Otto and Voss (1994) for Australia as a whole and Aschauer (1989) for the United States.

The negative elasticity of private capital for Tasmania is not in accord with the estimates at sub national level in other countries in studies such as Ezcurra (2005) for Spain and Hamalainen and Malinen (2011) for Finland, where the public capital was found playing a significant positive role in the private sector productivity growth.

There is an evidence of countercyclical fiscal policy conducted by the government in Tasmania. However, as can be seen, the government’s effort doesn’t result in a long-term growth and can only be considered as a short-term stimulus for the state’s economy.

The results must be treated with caution due to the sensitivity of VEC estimates to the model specification and the quality of inputs into the model. In future, the author will try several other model specifications including the multistage least squares in order to determine the true effect of the public capital on economic growth and private capital productivity. In addition, the author will attempt developing the capital services series and use these data as the capital input instead of the NCS.

Further, the author will conduct similar analysis for the rest of the states of Australia to determine if there are any substantial differences in productivity between the regions with respect to the public infrastructure.

Finally, the author plans building a panel data model that allows for special spill-over effects between Australian states and territories, which will make it possible to find out if and in which direction the development of public infrastructure in one state causes economic growth and productivity growth in neighbouring states.

Some consideration will be given to the possible effect of the small population size of some states, which might reduce the extent to which small state are able to exploit economies of scale in public infrastructure compared to more densely populated regions, or at least, in some parts of those.

**REFERENCES**


Appendix

Net capital stock (NCS) by type of asset has been derived as a sum of gross fixed capital formation (GFCF) discounted by the age-specific depreciation rates, $\delta_t$ in each year of service as per ABS (5216.0, 2012) and by the age-specific retirement rates as per Winfrey’s (1938) survival function.

$$K^i_t = \sum_{\tau=0}^{T} I^{ij}_{t-\tau}(1 - \delta^{ij}_\tau)(1 - \theta^{ij}_\tau)$$

where $K^i_t$ is NCS $I^{ij}_{t-\tau}$ is the real value of investment of type $i$ in a region $j$ with the remaining service life of $t-\tau$; $\delta^{ij}_\tau$ is the accumulated loss of efficiency of an asset when it reaches the age $\tau$; $\theta^{ij}_\tau$ is the accumulated value of loss of assets due to their retirement from the stock.

The investment data for dwellings, ownership transfer costs, non-dwelling construction, machinery and equipment, cultivated biological products, intellectual property products, and public assets are available for the period 1986-2015 are published by the ABS (Cat. No. 5206.0 and 5220.0). Where the GFCF series are not long enough, which is the case for most of the variables, the population size was used as a proxy for investment data.
Empirical Methods in International Trade Using for Evaluation in Export of Services in CEE Countries Based on Balassa Index

BENO Michal¹

¹ Mgr. Bc. Michal Beno, VSM/CITY University of Seattle, Panonska cesta 17, 851 04 Bratislava, (SLOVAKIA)
Email: michal.beno@vsm-student.sk

Work code CJ02F5003

Abstract

Balassa Index is widely used in the research literature to measure country-sector called Revealed Comparative Advantage (RCA) to determine a country’s weak and strong sectors. In this paper we determine a country’s strong sector by analyzing the actual export flows in services of CEE countries. Our study includes 10 countries based on raw data from the International Trade Center for the period from 2012 till 2016. We provide a systematic analysis of the empirical distribution of the Balassa index. Using analysis, we consider which country in which sector of the service is Rival for chosen 10 countries. It is evident that foreign trade is important for all of them, albeit it to varying degrees. It might seem a logical way to restore economic strength.

This paper presents a new approach to the export structure of services using the Balassa Index.

Keywords: Balassa index, services, export, comparative advantage, CEE countries

Introduction

The term trade of services is generally understood to mean apply to international transactions in a diverse array of fields, including financial services, transportation, communication, construction and distribution. When considering barriers to trade in services, domestic regulations governing their supply and consumption are more important than border measures such tariffs. This is a contrast to trade in goods, where border measures play a significant role.

OECD [1] refers that services differ from goods in a number of ways, most commonly in the immediacy of the relationship between supplier and consumer. Many services are non-transportable. The definition of services trade under the GATS is four-pronged, depending on the territorial presence of the supplier and the consumer at the time of the transaction. The GATS covers services supplied: a) from the territory of one Member into the territory of any other Member (Cross border trade); b) in the territory of one Member to the service consumer of any other Member (Consumption abroad); c) by a service supplier of one Member, through commercial presence, in the territory of any other Member (Commercial presence) and d) by a service supplier of one Member, through the presence of natural persons of a Member in the territory of any other Member (Presence of natural persons) [2]. The General Agreement on Trade in Services (GATS) was concluded within the Uruguay run. Its outcomes had to be, as instructed by WTO, entirely realized by 2005. As for the content, GATS determined privatization of all services (let’s mention several of the most important services—education, research, telecommunication, transport and tourism). WTO expects acquisition of new markets in the field of services due to privatization [3].

However, trade in services has been steadily increasing. According to WTO data exports commercial services by WTO members totalled US $ 4.68 trillion in 2015 [4]. According to the data from The World Bank [5], goods and services accounted 29.367% of GDP in 2015 worldwide, trade in services (% of GDP) reported 12.345% in 2016 [6] and exported services recorded 4.933 Trillion US $ [7].
Comparative advantage is a widely used concept in international trade. In this report we describe new approach to the competitiveness of ten CEE countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Ukraine) in the twelve sector services (Travel, Transportation, Other business services, Telecommunications, computer, and information services; Manufacturing services on physical inputs owned by others, Insurance and pension services, Financial services, Maintenance and repair services n.i.e., Personal, cultural, and recreational services, Charges for the use of intellectual property n.i.e., Construction and Government goods and services n.i.e.) using Balassa index to measure the specialisation of export. In this context we used the statistical data from International Trade Center in thousand €. We believe that we have presented important data referring the specialization of CEE country.

Methodology

Many investigations aimed at identifying international competitiveness and trade performance can be found in the scientific literature. In this study we have chosen Balassa index. Balassa [8] comparative-advantage indices measure revealed comparative advantage from international comparisons of exports data, and are blind to possible sources of advantage. The idea to determine a country’s “strong” sectors by analysing the actual export flows was pioneered by Liesner [9]. Since the procedure was refined and popularized by Bela Balassa [8, 10] it is popularly known as the Balassa Index.

Alternatively, as the actual export flows ‘reveal’ the country’s strong sectors it is also known as Revealed Comparative Advantage. The Balassa index measures the degree of specialization of CEE country export services. Many countries are, for example, producing and exporting cars. To establish whether a country, e.g. Japan, holds a particularly strong position in the car industry, Balassa argued that one should compare the share of car exports in Japan’s total exports with the share of car exports in a group of reference country’s total exports. The Balassa index is therefore essentially a normalized export share. More specifically, in this case the index is calculated as follows:

\[
BI = \frac{\text{export of service by country}}{\text{export of country}} \times \frac{\text{export of country}}{\text{export of CEE excluding the country}}
\]

If BI>1, country A is said to have a revealed comparative advantage in service. It means that the service involves specialisation. If this is less than 1 it means no specialisation involved in the service. Hinloopen and Marrewijk [11] have gone further to divide the theoretical range of the RCA Index into four additional classes as follows: 0-1 Value of BI means industries with comparative disadvantage, 1-2 Value of BI means Industries with weak comparative advantage, 2-4 Value of BI means Industries with medium comparative advantage, Greater than 4 means Industries with strong comparative advantage. This indicator is one of the most commonly used [12]. According to Laursen [13], this measure has been applied in numerous reports e.g. UNIDO, World Bank, OECD, and academic publications to measure international trade specialization.

Results

Bulgaria

According to the calculations it can be seen that Bulgaria had a medium comparative advantage in category travel for the whole analysed period. Second category with partly strong comparative advantage was insurance and pension services in period from 2014 to 2015, rest of the years Bulgaria registered medium comparative advantage. This country recorded medium (in 2012 and 2013) and weak (in 2014 and 2015) comparative advantage in sector Personal, cultural and recreational services. In the last product label Telecommunications, computer, and information services we observed weak comparative advantage in years 2012-2013 and 2015-2016 as illustrated on the Fig. 1
Fig. 1. Balassa Index Bulgaria

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>1,929</td>
<td>2,125</td>
<td>2,051</td>
<td>1,917</td>
<td>2,088</td>
</tr>
<tr>
<td>Transportation</td>
<td>0,658</td>
<td>0,701</td>
<td>0,784</td>
<td>0,728</td>
<td>0,741</td>
</tr>
<tr>
<td>Other business services</td>
<td>0,553</td>
<td>0,481</td>
<td>0,565</td>
<td>0,808</td>
<td>0,658</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>1,205</td>
<td>1,094</td>
<td>0,995</td>
<td>1,012</td>
<td>1,051</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>0,586</td>
<td>0,523</td>
<td>0,484</td>
<td>0,488</td>
<td>0,438</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>3,021</td>
<td>3,724</td>
<td>5,747</td>
<td>4,845</td>
<td>2,934</td>
</tr>
<tr>
<td>Financial services</td>
<td>0,405</td>
<td>0,524</td>
<td>0,818</td>
<td>0,617</td>
<td>0,751</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>0,529</td>
<td>0,492</td>
<td>0,497</td>
<td>0,495</td>
<td>0,464</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>2,086</td>
<td>2,201</td>
<td>1,645</td>
<td>1,551</td>
<td>0,812</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>0,141</td>
<td>0,174</td>
<td>0,183</td>
<td>0,352</td>
<td>0,319</td>
</tr>
<tr>
<td>Construction</td>
<td>0,900</td>
<td>0,169</td>
<td>0,170</td>
<td>0,137</td>
<td>0,118</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>0,099</td>
<td>0,111</td>
<td>0,143</td>
<td>0,120</td>
<td>0,119</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 15]

**Czech Republic**

Based on the Balassa Index results for Czech Republic we noticed comparative advantage in seven product labels. Fig. 2 summarizes the data. It is evident that Insurance and pension services had medium advantage in period 2012, 2013, 2014 and 2016 and weak one in 2015. The next labels with the weak comparative advantage for the whole period were Travel. Other business services and Telecommunications, computer, and information services as demonstrated in Fig. 2. Maintenance and repair services n.i.e. and Charges for the use of intellectual property n.i.e. we discovered the weak comparative advantage in period from 2014-2016. The last examined sector Construction had an advantage in year 2012, 2014 and 2015.

**Fig. 2. Balassa Index Czech Republic**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>1,255</td>
<td>1,251</td>
<td>1,256</td>
<td>1,264</td>
<td>1,258</td>
</tr>
<tr>
<td>Transportation</td>
<td>0,786</td>
<td>0,731</td>
<td>0,724</td>
<td>0,740</td>
<td>0,762</td>
</tr>
<tr>
<td>Other business services</td>
<td>1,096</td>
<td>1,162</td>
<td>1,063</td>
<td>1,042</td>
<td>1,044</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>1,305</td>
<td>1,275</td>
<td>1,181</td>
<td>1,055</td>
<td>1,093</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>0,599</td>
<td>0,804</td>
<td>0,845</td>
<td>0,849</td>
<td>1,002</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>2,176</td>
<td>2,074</td>
<td>2,362</td>
<td>1,729</td>
<td>2,084</td>
</tr>
<tr>
<td>Financial services</td>
<td>0,943</td>
<td>1,077</td>
<td>1,126</td>
<td>1,087</td>
<td>0,997</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>0,670</td>
<td>0,579</td>
<td>1,356</td>
<td>1,688</td>
<td>1,349</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>0,811</td>
<td>0,941</td>
<td>0,845</td>
<td>0,646</td>
<td>0,675</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>0,668</td>
<td>0,836</td>
<td>1,042</td>
<td>1,216</td>
<td>1,075</td>
</tr>
<tr>
<td>Construction</td>
<td>1,173</td>
<td>0,925</td>
<td>1,146</td>
<td>1,217</td>
<td>0,621</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>0,166</td>
<td>0,172</td>
<td>0,186</td>
<td>0,193</td>
<td>0,198</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 16]

**Estonia**

This country recorded the weak and medium advantage in two product labels Construction and Government goods and services n.i.e. for the whole studied period as shown in Fig. 3. Further analysis showed that six categories recorded weak advantage as follows: Travel and Maintenance and repair services n.i.e. from 2013 till 2016, Transportation from 2012 till 2015, Financial services in 2012, 2014 and 2016, Other business services only in year 2016 and Personal, cultural, and recreational services in year 2015.
Fig. 3. Balassa Index Estonia

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>0.832</td>
<td>1.036</td>
<td>1.149</td>
<td>1.136</td>
<td>1.156</td>
</tr>
<tr>
<td>Transportation</td>
<td>1.286</td>
<td>1.163</td>
<td>1.123</td>
<td>1.129</td>
<td>0.984</td>
</tr>
<tr>
<td>Other business services</td>
<td>0.915</td>
<td>0.895</td>
<td>0.889</td>
<td>0.903</td>
<td>1.019</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>0.991</td>
<td>0.918</td>
<td>0.848</td>
<td>0.785</td>
<td>0.766</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>0.703</td>
<td>0.503</td>
<td>0.391</td>
<td>0.463</td>
<td>0.431</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>0.218</td>
<td>0.098</td>
<td>0.097</td>
<td>0.078</td>
<td>0.102</td>
</tr>
<tr>
<td>Financial services</td>
<td>1.108</td>
<td>0.850</td>
<td>1.025</td>
<td>0.990</td>
<td>1.373</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>0.676</td>
<td>1.200</td>
<td>1.353</td>
<td>1.152</td>
<td>1.384</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>0.595</td>
<td>0.823</td>
<td>0.901</td>
<td>1.168</td>
<td>0.869</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>0.159</td>
<td>0.070</td>
<td>0.085</td>
<td>0.108</td>
<td>0.113</td>
</tr>
<tr>
<td>Construction</td>
<td>1.879</td>
<td>2.296</td>
<td>2.284</td>
<td>2.246</td>
<td>2.973</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>1.181</td>
<td>1.054</td>
<td>1.852</td>
<td>2.023</td>
<td>1.776</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 17]

Hungary

Fig. 4 product label Charges for the use of intellectual property n.i.e. shows a significant very strong comparative advantage for Hungary. A visual inspection of this table shows us that Personal, cultural, and recreational services had weak (2012) and medium (2013-2016) comparative advantage for the whole period.

Other business services recorded weak comparative advantage. Two product labels Travel and Government goods and services n.i.e. we noticed the dominance only in the period from 2014 to 2016. Maintenance and repair services n.i.e. dominated only in the year 2012 and 2013 and Manufacturing services on physical inputs owned by others 2012, 2014 and 2015.

Fig. 4. Balassa Index Hungary

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>0.957</td>
<td>0.975</td>
<td>1.066</td>
<td>1.122</td>
<td>1.150</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.743</td>
<td>0.790</td>
<td>0.800</td>
<td>0.813</td>
<td>0.845</td>
</tr>
<tr>
<td>Other business services</td>
<td>1.303</td>
<td>1.267</td>
<td>1.233</td>
<td>1.251</td>
<td>1.271</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>0.936</td>
<td>0.899</td>
<td>0.776</td>
<td>0.725</td>
<td>0.655</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>1.122</td>
<td>0.977</td>
<td>1.053</td>
<td>1.172</td>
<td>0.863</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>0.192</td>
<td>0.248</td>
<td>0.194</td>
<td>0.155</td>
<td>0.162</td>
</tr>
<tr>
<td>Financial services</td>
<td>0.490</td>
<td>0.691</td>
<td>0.592</td>
<td>0.587</td>
<td>0.635</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>1.315</td>
<td>1.282</td>
<td>0.968</td>
<td>0.867</td>
<td>0.876</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>1.609</td>
<td>2.352</td>
<td>3.269</td>
<td>2.626</td>
<td>2.752</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>11.709</td>
<td>12.201</td>
<td>10.214</td>
<td>7.615</td>
<td>8.924</td>
</tr>
<tr>
<td>Construction</td>
<td>0.529</td>
<td>0.626</td>
<td>0.455</td>
<td>0.464</td>
<td>0.414</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>0.809</td>
<td>0.754</td>
<td>1.327</td>
<td>1.464</td>
<td>1.271</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 18]

Latvia

We note from Fig. 5 by Latvia very strong comparative advantage in the whole period. The second analysed sectors which report domination is Government goods and services n.i.e. with weak (2012 and 2013) and medium (2014-2016) comparative advantage and Transportation for the total examined period. Construction registered the dominance in 2013, 2014 and 2016. Only in 2016 Latvia had advantage in Telecommunications, computer, and information services.
Lithuania

In this country can be seen that transportation had medium comparative advantage in observed period. Government goods and services n.i.e. allocated weak (2012-2014) and medium (2015, 2016) comparative advantage. In Construction Lithuania had dominated position only in 2012, 2015 and 2016, in Maintenance and repair services n.i.e. only on year 2016 as demonstrated on Fig. 6.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>0.531</td>
<td>0.570</td>
<td>0.633</td>
<td>0.684</td>
<td>0.640</td>
</tr>
<tr>
<td>Transportation</td>
<td>1.635</td>
<td>1.472</td>
<td>1.407</td>
<td>1.344</td>
<td>1.245</td>
</tr>
<tr>
<td>Other business services</td>
<td>0.696</td>
<td>0.779</td>
<td>0.776</td>
<td>0.786</td>
<td>0.791</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>0.750</td>
<td>0.791</td>
<td>0.739</td>
<td>0.813</td>
<td>1.072</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>0.336</td>
<td>0.321</td>
<td>0.100</td>
<td>0.075</td>
<td>0.098</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>0.562</td>
<td>0.901</td>
<td>0.090</td>
<td>0.070</td>
<td>0.303</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>0.800</td>
<td>0.643</td>
<td>0.360</td>
<td>0.338</td>
<td>0.274</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>0.328</td>
<td>0.621</td>
<td>0.361</td>
<td>0.408</td>
<td>0.329</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>0.100</td>
<td>0.119</td>
<td>0.053</td>
<td>0.069</td>
<td>0.054</td>
</tr>
<tr>
<td>Construction</td>
<td>0.860</td>
<td>1.157</td>
<td>1.346</td>
<td>0.823</td>
<td>1.663</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>1.051</td>
<td>1.040</td>
<td>2.294</td>
<td>2.223</td>
<td>2.213</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 19]

Poland

As highlighted in Fig. 7, the values of three product labels had weak comparative advantage for the whole period: Travel, Other business services and Construction. It is also apparent from this table that Maintenance and repair services n.i.e. dominated from 2013 till 2016, Personal, cultural, and recreational services for the whole period except 2014. Insurance and pension services, we noticed the comparative advantage in year 2013, 2015 and 2016 and Manufacturing services on physical inputs owned by others in year 2014 and 2016.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>0.836</td>
<td>0.783</td>
<td>0.785</td>
<td>0.784</td>
<td>0.720</td>
</tr>
<tr>
<td>Transportation</td>
<td>2.038</td>
<td>2.160</td>
<td>2.163</td>
<td>2.080</td>
<td>2.077</td>
</tr>
<tr>
<td>Other business services</td>
<td>0.338</td>
<td>0.421</td>
<td>0.378</td>
<td>0.423</td>
<td>0.467</td>
</tr>
<tr>
<td>Telecommunications, computer, and information services</td>
<td>0.357</td>
<td>0.313</td>
<td>0.351</td>
<td>0.356</td>
<td>0.360</td>
</tr>
<tr>
<td>Manufacturing services on physical inputs owned by others</td>
<td>0.766</td>
<td>0.393</td>
<td>0.364</td>
<td>0.415</td>
<td>0.574</td>
</tr>
<tr>
<td>Insurance and pension services</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Financial services</td>
<td>0.581</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Maintenance and repair services n.i.e.</td>
<td>0.000</td>
<td>0.000</td>
<td>0.673</td>
<td>0.777</td>
<td>1.381</td>
</tr>
<tr>
<td>Personal, cultural, and recreational services</td>
<td>0.507</td>
<td>0.576</td>
<td>0.457</td>
<td>0.480</td>
<td>0.427</td>
</tr>
<tr>
<td>Charges for the use of intellectual property n.i.e.</td>
<td>0.029</td>
<td>0.236</td>
<td>0.170</td>
<td>0.190</td>
<td>0.210</td>
</tr>
<tr>
<td>Construction</td>
<td>1.072</td>
<td>0.966</td>
<td>0.000</td>
<td>1.301</td>
<td>1.554</td>
</tr>
<tr>
<td>Government goods and services n.i.e.</td>
<td>1.250</td>
<td>1.148</td>
<td>1.907</td>
<td>2.620</td>
<td>2.254</td>
</tr>
</tbody>
</table>

Source: author’s own calculation based on [14, 20]
Romania
We have found that Romania dominated in three sectors over the whole period as following: medium advantage Manufacturing services on physical inputs owned by others with medium (2012) and weak advantage (2013-2016) and weak advantage by Other business services. Other product labels had weak advantages in different periods namely; Transportation in 2015 and 2016, Insurance and pension services and Financial services in 2012 and 2013, Maintenance and repair services n.i.e. only in year 2013, Charges for the use of intellectual property n.i.e. in year 2012, Construction over the period 2013 and 2014 and Government goods and services n.i.e. in 2014 and 2015 as illustrated in Fig. 8.

Slovakia
Figure below shows that Slovakia had in two product labels medium and weak comparative advantage in the whole analysed period: Maintenance and repair services n.i.e. and Travel. Other business services and Telecommunications, computer, and information services recorded weak comparative advantage from 2012 till 2014.
Financial services rose from 2014 till 2016. Insurance and pension services, we noticed the dominance only in 2012, 2014 and 2015. Transportation (2014), Personal, cultural, and recreational services (2012) and Construction (2012) seem to be not the strong product label of Slovakia.
Ukraine

Ukraine is the only country which does not belong to European Union of the CEE Group. We were surprised to find that Government goods and services n.i.e. had very strong comparative advantage as demonstrated on the Fig. 10. We discovered also that Transportation and Manufacturing services on physical inputs owned by others had the weak advantage for the whole examined period. Telecommunications, computer, and information services are on the rise from 2014 till 2016. Maintenance and repair services n.i.e. we notice the dominance only in the year 2012.

Discussion

Observation by Balassa Index shows that each CEE country has great advantage and disadvantage over those country exports. But is this Index a superficial measure of export trade? This method does not measure the circumstances of the market, or show economic and political implications. One Alternative is Constant Market Share Analysis which is an arithmetic breakdown of the growth of a country’s market share over a period of time into a structural component, reflecting the impact of specialisation by product and geographical area, and other factors reflecting changes in individual markets shares. The starting point is difference between a country’s export growth and world export growth [25].

Leromain and Oreficice introduced another method of analysis, a modern economic-based measure for Ricardian RCA. In their opinion, the modern, modified measure showed better statistical properties than the Balassa Index [26].
Further research at disaggregated (NUTS2) level may be suggested, as they are rare. We have found only one dataset compiled by the Netherlands Environmental Assessment Agency [27] so far. Furthermore, there should be a focus on the rest of European Union states. We think that this improves understanding of the regional aspect of competitiveness, including a future point of view of the economic development of the region.

The recently proposed additive measures of revealed comparative advantage (RCA) have been argued as better alternatives to the Balassa Index therefore this measure may be examined deeper and applied in calculation of RCA.

Conclusion

We described the empirical distribution of the Balassa Index by analysing the export performance of CEE countries, we investigated individual countries and the CEE as a whole. The distribution of the Balassa index differs considerably across countries, making the comparisons of the index between countries problematic. In this study officially-available data was used to calculate the Balassa Index with reliable results.

The results show that this Index can be used to show the value of exports of services between chosen states.

The upward trend in competitiveness in recent years is an important signal for the whole economy. Exports create growth and jobs opportunities. Internationalization is therefore an important component of our business strategy to protect jobs and prosperity in each region. The results of this study indicate that there are many interesting product labels in the countries.

This paper sheds light on the export structures of the services of CEE countries. These countries were all influenced by the economic downturn in the course of the crisis and have been struggling with national debt crises and recession. The economic situation, however, is different for each country.

Based on the calculations of the Balassa Index and the subsequent analysis performed on the Balassa scores for the time periods 2012-2016 the paper found that each country has comparative advantage and disadvantage in different product labels depends on their export variety and preference. On this basis the paper concludes that there has been a shift in the pattern of specialization from the examined period. According to the transition probability matrix there is a high probability of persistence in industries with an initial very strong comparative advantage (RCA>4) e.g. Bulgaria in Insurance and pension services, Hungary in Charges for the use of intellectual property n.i.e., Latvia in Financial services and Ukraine in Government goods and services n.i.e., medium (2-4) and weak (1-2) comparative advantage and those with no comparative advantage (RCA<1).

The evidence from this analysis suggests that industries with weak comparative advantage have a high probability of moving towards being a position of a comparative disadvantage. This shows that there is mobility in pattern of trade.

To sum up, the economic structure of service product label of Ukraine is the most problematic. Regarding the structure and the competitiveness of most sectors, the country’s international standing and openness is far from solid.

This study focuses on a limited time period and a particular region country. In further work, it would be useful to examine longer time periods and expand the analysis to other Objective Areas in the European Union.

The research objectives were achieved, but the results show only provide of a measure of the importance of CEE exports diversity. An additional study investigating the role of goods exports would be valuable to give an overview of CEE’s export economy.

REFERENCES


Oil Price Volatility and Consequences for Selected Oil-exporting Economies

OBADI Saleh Mothana¹, CHMELOVÁ Michelle²

¹ Institute of Economics and Management, University of Economics in Bratislava, (SLOVAKIA)
² Institute of Economic Research, Slovak Academy of Sciences (SLOVAKIA)
Emails: ekonbadi@savba.sk, michchmelova@gmail.com

Abstract

This paper examines the impact of oil price volatility on economic growth of selected oil exporting countries (OECs). According to the theoretical sources, one of the possible channels through which there may be an adverse relationship between the abundance of natural resources and the economic growth is price volatility.

Oil price volatility is higher than for other natural resources. In countries where oil revenues are high, oil price volatility can seriously affect macroeconomic stability. There is the possibility that countries will suffer for a double deficit. In this case, is likely that this will exert pressure on country currency (the symptom of Dutch Disease). Commodity price volatility has an impact on the economy through fiscal policy. For the purpose of this paper, we tried to perform a random effect model in panel data analysis for eight OECs during the period 2000-2017. We found that the oil price volatility has a negative effect for major of the selected countries.

Keywords: Economic growth, GDP, Oil price, Volatility, Oil exporting countries

Introduction

Price volatility is the one of the channel according to abundance of natural resources could weak economic performance. From actual data, we can see that some resource rich countries could reach lower economic development contrary to resource poor countries. Recent decline in price of oil cause serious problems with macroeconomic stability of oil-exporting countries (OECs). From theoretic background, price volatility is transmitted through fiscal policy to the economy. Oil dependence could shape economy of OECs, there is a potential risk of losing fiscal position of OECs. The sharp fall in oil prices brings question what are consequences of lower prices for OECs and how they could rich sustainable development. Recent decline in price of oil suggest that countries tend to high their fiscal deficit and diverge their GDP growth from the rest of the world. This article deals with theoretical base of price volatility and in following chapter summarize how OECs can avert possible consequences on their economic development.

The main objective of paper is according to theoretical background and empirical analysis to identify the consequences of oil price volatility on economic performance of OECs. Moreover, we provide a possible solution how countries could avert risk of losing fiscal sustainability.

Since the 1850s, we have seen that the richness of natural resources such as oil and gas is not always related to economic development (Ross, 2012). Countries with abundance of natural resources can suffer from so-called resource curse. Since the 1950s, some economists have argued that, despite the potential benefits, primary exports cannot lead to economic development. The most common arguments were that primary products markets are growing too slowly, commodity prices are falling, revenues are unstable, there is corruption and civil disputes (Perkins et al., 2013). During the last quarter of the 20th century, countries which are rich in natural resources grew less rapidly than those with no such a wealth of natural resources. Therefore, natural resources are not always associated with a positive impact on economic growth and development. Dependence on natural resources is associated with low economic growth and development. Moreover, it is associated with low economic diversity and is usually associated with low economic performance. Many countries dependent on oil
exports cannot turn their wealth in economic development. This phenomenon is known as resource curse. Most countries dependent on the export of primary products, mainly on exports of oil and natural gas. The growth performance of economies rich in natural resources has often been unsatisfactory. In some cases, it has led to the opposite assumption of a comparative advantage. One of the possible ways of explaining the inverse relationship between abundance of natural resources and economic performance is through the phenomenon resource curse. For decades, the abundance of natural resources such as oil, natural gas and other valuable minerals has not necessarily been the source of economic development for all countries. For example, countries such as Angola and Nigeria that are rich in natural resources show low per capita income as well as poor quality of life. While countries that not rich in raw materials such as Korea, Singapore, Taiwan have grown faster.

In literature, Richard Auty is associated with term of natural resource curse, which he used and explained for the first time and has since been adopted by economists around the world. Auty (1993) explained the natural resource scarcity terms as countries rich in mineral resources, unable to use their wealth in their development. The curse (also known as the paradox of abundance) refers to situations where the country has an export-driven natural resource sector that generates a large amount of government revenue but paradoxically can lead to economic stagnation or even economic decline and political instability.

Oil and natural gas differ from other sources of wealth in two major facts. The first is that natural resources do not need to be produced – they need to be harvested. The second facts are that oil and natural gas are non-renewable. From the economic point of view, oil and gas are more property than source of income. The separation of the oil and gas sector from economic processes together with their non-renewable nature can lead to considerable adverse effect on the economy.

**Price volatility and consequences for oil exporting countries**

One of the possible channels through which there is an adverse relationship between resource wealth and economic growth is the price volatility of resources (Gylfason 2001); (Gylfason a Zoega 2006); (Frankel 2012); (Guo et al., 2016); (Badeeb et al., 2017). The oil price shock has different implications for the global economy.

For purpose of this article, we concentrate our attention on consequences for oil-exporting countries (OECs). For OECs, shocks in commodity price can lead to slow down their development of trade and export.

Fluctuations in oil prices have a significant impact on the economic activity of countries. Sectors of oil and gas in such countries account for a substantial portion of export performance as well as a substantial portion of government revenue. The oil price volatility can be transmitted to the economy through the large fluctuations in government revenues. The consequences of price volatility are that it tends to reduces economic growth.

Oil price volatility is a phenomenon that negatively affects net oil exporters. Moreover, oil price swings have been larger than those of other mineral resources (Regnier 2007). The transmission mechanism, through which price volatility affects the real economy, is demand and also supply side (Jiménez-Rodríguez, Sánchez 2005).

Commodity price volatility causes pro-cyclical fluctuations in government revenues and export earnings with both falling during price downturns (Davis and Tilton 2005). In countries, where rents from oil are high, price volatility can cause serious problems with macroeconomic stability. On Figure 1 we can see how high are oil rents in some countries of major oil exporters in contrast of average oil rents in major OECs.
Generally, oil price volatility has been the main problem of oil dependence. In long term it influences fiscal stability (Sturm et al., 2009). It is transmitted to the economies of OECs through fiscal policies because oil revenues accrue to governments (Alley 2016 a). Fiscal policy in oil-exporting countries is facing two significant challenges. In the short term it contains terms of macroeconomic stabilization and fiscal planning. In the long term it contains intergenerational fairness and fiscal sustainability.

The impact of oil price volatility is transmitted to budget deficit Rafiq et al., (2009). Commodity price volatility is also associated with uncertainties. Oil price volatility makes expected government revenues unpredictable which means that real revenues diverges from expected revenues. This differences between real and expected revenues often lead to fiscal deficit.

Fiscal volatility has been higher for resource-dependent economies that those whose fiscal policies are less dependent on export revenues (Alesina and Tabellini, 2005). Increase in oil export tend to higher government revenues and it leads to a rise in the fiscal balance. The effects are strong and statistically significant. On the other hand, non-oil export does not significantly increase fiscal balance. It means that the non-oil sectors in most of OECs are not well developed to contribute to growth of the fiscal balance (Alley 2016 b). Fiscal balance would continue to decline while governments rely on current oil price to project future revenues. Thus, governments need to factor into their revenues projection prospective global factors driving oil prices. The oil exports have negative effects on fiscal balance in the long term. Many resource-rich countries run negative fiscal balance despite rising oil exports. The sharp fall in oil prices brings question what are consequences of lower prices for OECs and how they could rich sustainable development.

The price of oil (Brent) oscillated between 100-110 USD/bbl in 2010-2014. This relatively stable price of oil should be so-called “new norm”. Shortage of stability occurred in June 2014, when oil prices began to fall due to the growing imbalance between supply and demand. In addition, other factors have contributed to inequality in the oil market, including the increase in oil production in some OPEC countries and outside OPEC, and the high oil supply in OECD countries, and the slowdown in the economic growth of the major importers of this energy commodity. This situation was followed by effort to stabilize the oil price on level 50-60 USD/bbl. (Obadi et al., 2016). As we know, Oil price decline in 2014 could be explained by the significant increase in the supply of oil. But the drivers of the recent oil price decline have changed to demand side. In early 2016, oil prices reached a ten-year minimum. Brent crude oil prices dropped by 82 USD/bbl. (70%) from their peak in June 2014 to the low in January 2016. Since then, they have recovered moderately by around 17 USD/bbl. and they are expectedly to rise only gradually in the medium term (ECB Economic Bulletin, Issue 4/2016). Such significant decrease in oil prices along recent periods has especially influenced oil exporter countries. There is a possible way that oil price slump could possibly lead to twin deficits, which is likely to put pressure on the country’s currency (symptom of the Dutch disease). The extent of this pressure depends on a variety of factors:
budget balance, the amount of external debt, whether country implemented oil stabilization funds or sovereign wealth funds etc. (Barisitz, Breitenfellner 2017). Oil exporter countries were adversely affected from this situation because of various impacts such as stress on income, budget and foreign trade balance. Decreasing oil prices also caused income transfer between importer countries and exporter countries. Advantageous position between oil importer and oil exporter countries shifted - importer countries decreasing production costs and inflation rates.

**Fig. 2.** Average GDP growth in major oil exporters and average oil prices

![Graph showing average GDP growth in major oil exporters and average oil prices](image)

*Notes: Oil price for 2017 is an average of 11 months. The groups of OEC: SVaSSA are Oman, Saudi Arabia, Gabon, Qatar, Angola, Bahrain, Nigeria and Kuwait. SvaLAaSNS are Kazakhstan, Ecuador, Iran, Russia and Venezuela. SVSAaLAaEU are Algeria, Brazil, Malaysia, Norway and United Arab Emirates.*

*Source: Own calculation based on World Bank and IMF databases, 2017*

Some oil exporters have managed to cushion, to some extent, the initial adverse impact on their output from the recent oil price decline by running substantial and rising fiscal deficits. Started from 2014, there are well documented sharply downturn in deficit that has grown over the coming years. Nonetheless, GDP growth in these countries has still declined significantly compared with the rest of the world.

The study by (Gocer, Akin 2016) presents effect of changes in oil prices on countries’ national incomes, exports and political stabilities by utilizing from seven net oil exporter countries’ (Saudi Arabia, Russia, Canada, Nigeria, Kuwait, Kazakhstan, Venezuela) in 1998-2015 data under horizontal cross-section dependency by means of panel unit root and panel cointegration methods with structural break. The results suggest that 1% increase in oil prices would increase national incomes of Suadi Arabia by 0,63%, Russia by 0,98%, Canada by 0,47%, Nigeria by 0,93%, Kuwait by 0,86%, Kazakhstan by 0,92% and Venezuela by 0,66%. Also 1% increase in oil prices would increase export incomes of Saudi Arabia by 1,10%, Russia by 0,99%, Canada by 0,36%, Nigeria by 1,04%, Kuwait by 1,20%, Kazakhstan by 1,34% and Venezuela by 0,79%. Despite the fact that these countries gain considerable amount of income from oil export, there is a potential of harm subject to the decrease in oil prices in the meantime. The economists recommend diversifying their export products. Also, they examined effect on political stability which is in different directions for 7 OECs. Increasing oil prices were distorting political stability in Saudi Arabia, Russia and Venezuela and positive effect on political stability in Canada, Nigeria and Kazakhstan.

Based on these findings, it is recommended for OECs, which try to increasing their national income and rich political stability, they should diversify their export item. There is an argument that performance of diversified economy is better in long term (Hesse, 2008). Akinwale (2012) finds solutions in economic diversification,
healthy fiscal policies and in the creation of various specialized funds that would flow incomes from natural resources. There are several arguments for decreasing dependence on mining sector. First arguments are that dependence on crude oil decline terms of trade for commodity export. Second, volatility of commodity prices impacts domestic economy. Third, in countries with high dependence on crude oil is supported to reach lower rate of technological change in resource extraction activities relative to other sectors. Last, rent-seeking behaviors weak governance and civil wars.

Another research highlighted the importance of price volatility and suggested that arrangements should be in line with global and development economic environment. (Kojo 2014).

Empirical studies suggest that in oil downturns, this is severely hindering economic growth. While oil booms play a limiting role in stimulating economic growth. Countries rich in natural resources that suffer from a weak and undiversified economic base without a stabilization mechanism to mitigate shocks could be vulnerable to boom-bust cycles. In the case of policymakers, it would be beneficial to introduce institutional mechanisms to manage oil booms and declines through the expenditure cuts and begin with diversification of economy.

In order to isolate the economy from the volatility of oil revenues, it is necessary to separate fiscal expenditure from current income.

Moreover, they should reserve a stability fund to stabilize incomes from oil sector to use this fund when oil price fall to obtain stable domestic economy. In other way, they could be prone to instability of economic system\(^3\) (Alley 2016 c) also recommends supporting and export diversification policy when oil exports have not significantly contributed to the fiscal position. If policies focus on suggested areas, OECs should maintain fiscal positions in both short and long term.

In addition, OECs should take advantage from reform of energy prices and taxation in sense to create space for accompanying growth enhancing fiscal measures. In a number of low and middle-income countries, energy sector reforms to broaden access to reliable energy would have important development benefits (Husain et al., 2015).

**Empirical analysis**

In this paper, we tried to test the impact of oil price volatility on GDP growth of selected oil exporting countries by performing a simple econometric model with two main variables and dummy variables for every selected country. After performing Hausman test for choosing the appropriate model, we found that the random effect model is an appropriate model for our selected equation.

The model is then look as fellow:

\[
Y_{it} = \beta_i X_{it} + \alpha_i + u_{it} + \varepsilon_{it} \tag{1}
\]

Where:

- \(\alpha_i\) (i=1…n) is the unknown intercept for each entity ( n entity-specific intercepts).
- \(Y_{it}\) is the dependent variable (DV) where i = entity and t = time.
- \(X_{it}\) represents one independent variable (IV),
- \(\beta_i\) is the coefficient for that IV,
- \(u_{it}\) is the error term between entity
- \(\varepsilon_{it}\) is the error term within entity

In this paper, we used data from World Bank (oil prices and other indicators) and IMF (GDP growth in constant prices) for the period 2000-2017. For oil prices in 2017 is the average price of eleven months of world

\(^3\) Findings from this research are in line with findings from researches Lederman and Maloney (2007); (Hesse 2008) for instance.
oil prices (Average of three benchmarks – Brent, WTI and Dubai). The examined OECs are Angola, Bahrain, Gabon, Kuwait, Oman, Nigeria, Qatar and Saudi Arabia.

We aware that this simple model is not quite enough to explore the impact for oil price volatility on economic growth but only to confirm the common known theories about the relationship between the mentioned variables in OECs.

**Results**

Our finding in this paper are in line with many studies. The coefficient of cross-section random effects is 0.08 and the p-value is less than 1%. That is mean when the oil prices go up by one unit the GDP goes up by 0.8%. As it seen in the below table, the independent variable (oil price) has been transformed to the first difference because the times series was nonstationary.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(OILPRICE)</td>
<td>0.078138</td>
<td>0.022439</td>
<td>3.482309</td>
<td>0.0007</td>
</tr>
<tr>
<td>C</td>
<td>5.246665</td>
<td>0.919782</td>
<td>5.704250</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Source: Own calculations*

In this case, we can conclude that the association between the oil price and the GDP growth in the selected OECs is high. Therefore, the volatility of oil prices making the economic development in these countries more fluctuated because the unclear Outlook of the oil market and the then the macroeconomic planning in the OECs became more difficult.

<table>
<thead>
<tr>
<th></th>
<th>GDPG</th>
<th>OILPRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>5.332944</td>
<td>62.61786</td>
</tr>
<tr>
<td>Median</td>
<td>4.443500</td>
<td>57.62846</td>
</tr>
<tr>
<td>Maximum</td>
<td>26.17000</td>
<td>105.0096</td>
</tr>
<tr>
<td>Minimum</td>
<td>-7.076000</td>
<td>24.35183</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>5.305836</td>
<td>28.39403</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.216843</td>
<td>0.213454</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>5.289491</td>
<td>1.672297</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>66.98757</td>
<td>11.67028</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000000</td>
<td>0.002923</td>
</tr>
<tr>
<td>Sum</td>
<td>767.9440</td>
<td>9016.972</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>4025.720</td>
<td>115289.6</td>
</tr>
<tr>
<td>Observations</td>
<td>144</td>
<td>144</td>
</tr>
</tbody>
</table>

*Source: Own calculations*

While we aware that the impact of volatility on economic growth is vary between OECs according to the share of oil export in GDP of the country, the selected random effect model (by Hausman test) shows that 5 of
8 selected countries have a negative sign effect. That is mean that the major OECs have an adverse effect of oil price volatility.

The highest negative effect of volatility according our results of individual effects is on Qatar economic growth and highest positive effect is on Gabon economic growth (see figure 3).

![Fig. 3. Cross-section random effects](image)

**Source: Own calculations**

**Conclusions**

Oil price volatility is higher than for other natural resources. Therefore, in the countries where oil revenues are high, oil price volatility can seriously affect macroeconomic stability. There is the possibility that countries will suffer for a double deficit. In this case, it is likely that this will exert pressure on country currency (the symptom of Dutch Disease). The extent of this pressure depends on a number of factors budget balance, the amount of external debt, whether country implemented oil stabilization funds or sovereign wealth funds. At the same time, it acts on countries through fiscal policy – in the short term with consequences on macroeconomic stability and fiscal planning, and in the long term, it influences fiscal sustainability. Fiscal volatility is higher in countries where is more dependent on oil revenues. The rise in oil exports tends to lead to higher government revenues. Sectors other than oil are not well developed in most of OECs. Fiscal balance will therefore so far fall until the government adjusts future revenue planning to the current state of oil prices. Government revenue is becoming unpredictable through this channel, which exacerbates the fiscal deficits of individual oil exporting countries. Since 2014, we have seen a decline in oil prices because of oil market imbalances (increase in oil production in some OPEC and non-OPEC countries and high oil supply in OECD countries, slowing the growth of the major importers in November 2014). However, the major drivers of declining oil price in 2016 was global demand. Some of the major OECs have been able to reverse sufficiently the impact on economic growth through the deepening of fiscal deficits. Nevertheless, despite the fact that GDP growth in these countries has still declined significantly compared with the rest of the world.

From our findings, it is clear that the volatility of oil prices has a high impact on GDP growth of the selected countries. That is mean when the oil prices go up by one percent the GDP goes up by 0.8 per cent.

The main recommendations therefore include a reduction in dependence on the mining sector, the diversification of exports and the whole economy, the creation of so-called oil funds, which will ensure income source for future generations and are successfully realized in many OECs. At the same time; they isolate oil revenues from the economy, which are so against the appreciation of the domestic currency. Finally, yet
importantly, the adoption of energy and tax price reforms, which would benefit mainly the medium and low-income countries of OECs in terms of economic development.

**Acknowledgement**

This contribution is the result of the project VEGA (2/0005/16) Economic and geopolitical context of the changing global energy scene of their implications for the EU’s position in the global economy.

**REFERENCES**

The Relationship between Organizational Commitment and Work Performance: a Case of Industrial Enterprises

KAPLAN Metin¹, KAPLAN Asli²

¹ Nevsehir Hacı BektasVeli University, Faculty of Economics and Administrative Sciences, (TURKEY)
² Nevsehir Hacı BektasVeli University, The School of Foreign Languages, (TURKEY)
Emails: mkaplan@nevsehir.edu.tr, akaplan@nevsehir.edu.tr

Abstract

The aim of the study is to determine the impact of organizational commitment (affective commitment, normative commitment and continuance commitment) on employees’ work performance. The sample consists of 329 employees working in businesses operating in Konya Chamber of Commerce and Industry in Turkey.

According to the results of the regression analysis, affective commitment had a significant and positive impact on work performance, normative commitment and continuance commitment had no significant effect on work performance.

Keywords: affective commitment, normative commitment, continuance commitment, work performance

Introduction

In today’s business world, as well as physical elements, human factors are also significant for enterprises to gain sustainable competitive advantage. In this regard, organizational commitment defined as “the relative strength of an individual’s identification with and involvement in a particular organization, as well as the willingness to exert effort and remain in the organization” [10] has become important in the organization.

Industrial enterprises rely on human performance, this situation gains importance. Organizational commitment yields positive outcomes for both individual and organizational consequences.

The study focuses on work performance from the positive outcomes. The aim of this study is to determine the relationship between organizational commitment and work performance in the case of industrial enterprises.

Organizational Commitment

Organizational commitment is an important concept because it influences the commitment on employees, organizations, and society as a whole. Employees can benefit from commitment using the intrinsic and extrinsic rewards relevant to the organization [6]. Organizational commitment is viewed as “a tendency to ‘engage in consistent lines of activity’ based on the individual’s recognition of the ‘costs’ (or lost side-bets) associated with discontinuing the activity” [1]. Organizational commitment involves three factors [14]:

a) a strong belief in and acceptance of the organization’s goals and values,
b) a willingness to exert considerable effort on behalf of the organization,
c) a define desire to maintain organizational membership.

Although organizational commitment has different classifications, this study mentioned the affective, normative and continuance commitment of Meyer and Allen (1997) [15].
Affective Commitment

Affective commitment means individuals’ contentment with the organization and being satisfied with being a membership of the organization [4]. In other words, affective commitment refers to dedication of employees to the organization.

Normative Commitment

Normative commitment refers to employees’ importance for the organization. Employees who have high level of normative commitment feel that they should remain in the organization [9]. In normative commitment, culture and work ethic lead to their staying in the organization, as a result, employees feel loyalty to the organization and duty may influence employees’ normative commitment [7].

Continuance Commitment

Continuance commitment specifies the necessity to stay in the organization because employees can face costs related to the organization if they leave the organization. As they do not have any other job alternatives and do not want to change their jobs, employees prefer to stay in the organization [7]. In conclusion, employees with strong affective commitment stay in the organization because they want to, those with strong continuance commitment because they need to, and those with strong normative commitment because they feel they ought to do so [1].

Work Performance

Performance refers to the fulfillment of the objectives, the functions or duties of the organization [3]. Performance is viewed as the degree of the realization of the aims and it indicates that any individuals, any groups or work units can reach the target through the that work [8]. Bingöl (2003: 273) [5], on the other hand, defines performance as the execution of work according to the given conditions or as identifying employees’ behavior. Work performance defined as the fulfillment or completion of the work is the success level of making efforts that employees can perform their works [22].

Organizational Commitment and Work Performance

Commitments in the workplace can take various forms and, arguably, have the potential to influence organizational effectiveness [16] and employees’ work performance. From an organizational perspective, effective employee performance constitutes basic result and aim of commitment. Compared to uncommitted people, committed people are prone to be insistent on task sets and fulfill set goals. With the regard to the outcome of employee performance, commitment may be expressed in; (1) persistence in completing tasks and achieving goals, (2) service quality, (3) acceptance of change and (4) assumption of extra job tasks [14].

Organizational commitment has been linked both theoretically and empirically to individual performance. Meyer and Allen (1997) [15] have argued that both normative and affective commitment will be linked performance, whereas continuance commitment will be unrelated or even negatively related. Considering employees committed to the organization that show more effort at work, although intuitively and theoretically commitment can be easily related to performance, this relationship was empirically less supported [21].

The research carried out by Uygur (2007) [20] on bank employees demonstrated that there was a positive relationship between organizational commitment and employee performance. The research of Özutku (2008) [18] done on factory workers revealed that there was a positive and significant relationship between affective commitment and continuance commitment and work performance, but there wasn’t a significant relationship between normative commitment and work performance. The study of Iraz and Akgün (2011) [12] performed on bank employees displayed that there was a positive relationship between normative commitment and performance. Baugh and Roberts (1994) [2] presented that organizational commitment had a significant and direct effect on work performance.
In the light of the studies in the literature, the following hypothesis were tested:

- **H1**: Affective commitment has positive effect on work performance.
- **H2**: Normative commitment has positive effect on work performance.
- **H3**: Continuance commitment has positive effect on work performance.

### Research Methodology

#### Sample

The study was conducted in 329 employees working in businesses operating in Konya Chamber of Commerce and Industry in Turkey.

#### Measures

Work performance was designated as the dependent variable in this study, while organizational commitment was considered as the independent variable. To measure organizational commitment, we used the 20 items Questionnaire developed by Meyer and Allen (1997) [15]. The items of organizational commitment were classified in terms of three dimensions of affective commitment (6 items), normative commitment (6 items) and continuance commitment (8 items). Participants responded on a 5-point Likert-type scale dictating to the extent which they agreed with each statement (1 = strongly disagree, 5 = strongly agree). Cronbach’s Alpha Coefficient; affective commitment: 0.93, normative commitment: 0.81 and continuance commitment: 0.85.

There is no removed item as we couldn’t find an item whose reliability is highly low.

On the other hand, work performance was measured with four items 5-point Likert scale (1 = strongly decrease, 5 = strongly agree) developed by Kirkman and Rosen (1999) [13]. Then, the scale developed by Sigler have Pearson (2000) [19] was used. The Cronbach’s alpha coefficient was 0.92.

### Research Findings

The regression analysis was carried out to determine the efficacy level of subdimensions of organizational commitment (affective commitment, normative commitment and continuance commitment) on work performance.

**Table 1.** The results of regression analysis for work performance

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Unstandardized β</th>
<th>Std. Error</th>
<th>Standardized β</th>
<th>Sig.</th>
<th>R</th>
<th>Adjusted R²</th>
<th>D-W</th>
<th>Tolerance</th>
<th>F</th>
<th>VI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F_{(3-325)} = 38,650$</td>
<td></td>
<td></td>
<td></td>
<td>000 **</td>
<td>.263</td>
<td>.256</td>
<td>1.905</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.536</td>
<td>.174</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Affective Commitment</td>
<td>.328</td>
<td>.051</td>
<td>.392</td>
<td>.000**</td>
<td></td>
<td></td>
<td>.618</td>
<td>1.618</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Normative Commitment</td>
<td>.095</td>
<td>.056</td>
<td>.127</td>
<td>.089</td>
<td></td>
<td></td>
<td>.349</td>
<td>2.862</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Continuance Commitment</td>
<td>.045</td>
<td>.064</td>
<td>.056</td>
<td>.485</td>
<td></td>
<td></td>
<td>.409</td>
<td>2.444</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.05; ** p<0.01

Dependent variable: Work Performance
The results of regression analysis in Table 1 suggest that the overall model was significant (Adjusted $R^2 = 0.256$; $F = 38.650$; $p<0.01$). We can assume that multi-collinearity is not a problem in data since all significant variables in Table 1 have much higher tolerance values than 0.10 [17] and have lower variance inflation factors (VIFs) than 10.0 [11]. The independent variables (affective commitment, normative commitment and continuance commitment) was taken into account, and the Adjusted $R^2 (0.256)$ was significant at the 0.01 level.

This means that 25.6% of the variance in work performance was significantly explained by the independent variables (affective commitment, normative commitment and continuance commitment). Among independent variables, affective commitment was found to be the most important in explaining the variance in work performance as the highest beta value was 0.328 ($p=0.000$). In this frame, the findings of research reveal that affective commitment has positive and significant impact ($\beta=0.328; p<0.01$) on work performance. In this respect, $H1$ was supported. On the other hand, normative commitment ($p=0.089>0.05$) and continuance commitment ($p=0.485>0.05$) had no significant effect on work performance. Thus, $H2$ and $H3$ were not supported.

Conclusions

This study examined the effect of organizational commitment on work performance. Questionnaire were administered. According to the findings, affective commitment had a positive and significant effect on work performance. This finding shows consistency with the studies of Özutku (2008) [18] and Uygur (2007) [20].

On the other hand, normative commitment had no significant effect on work performance. This finding is consistent with the studies of Özutku (2008) [18] and Baugh and Roberts (1994) [2] while it differs from the study of Iraz and Akgün (2011) [12]. Moreover, the study also indicated that continuance commitment had no significant effect on work performance. While this finding is similar to the study of Baugh and Roberts (1994) [2], it differs from the study of Özutku (2008) [18]. These differences can be resulted from different cultures or sectors that the research has been performed.

The findings of this study need to be interpreted with the following limitations in mind. First limitation is that the results cannot be strictly construed to be representative of all businesses, because this study has been conducted in a specific region of Turkey, Konya. Therefore, the study needs to be replicated in different industries and countries to be able to generalize the findings. Secondly, the work performance of the employees’ in this survey was tested on the basis of employees’ self-report. This research aimed to investigate the relationship between organizational commitment and work performance. For the upcoming research, it is possible to investigate the issue of organizational commitment and work performance in different industry settings.

REFERENCES

Barriers and Opportunities for the Development of Social Entrepreneurship: Case Study of Czech Republic

WILDMANNOVA Mirka

1 Faculty of Economics and Administration, Masaryk University, Brno, (CZECH REPUBLIC)
Email: mirkaw@econ.muni.cz

Work code CJ02F5006

Abstract

Social enterprises are becoming a powerful and effective tool for the employment of disadvantaged people in the labour market and are an effective tool of state and local governments in the fight against social exclusion, rising unemployment and segregation of excluded localities. To identify the main barriers to the activities of social enterprises a questionnaire survey was used. The form was distributed to 100 social enterprises, the selection was random and use was made of the Directory of social enterprises on the České sociální podnikání.cz website. The paper aims at identifying the main barriers and opportunities to the activities of social enterprises. The conclusions are drawn on the basis of a questionnaire survey conducted in social enterprises. The main barriers to the development of social enterprises are the non-existence of the social entrepreneurship act – the organisations are primarily business corporations, insufficient determination of whether the business is an integration social enterprise and what criteria should be fulfilled. Social enterprises are not supported by public processes – such as socially responsible public procurement. What is also missing is a system of financial support for social enterprises. The originality of this work lies in studying some aspects of barriers in social business. The Czech Republic is among the countries that discover the benefits of social entrepreneurship, especially at the regional level.

Keywords: social economy, social enterprise, public administration, Czech Republic

Introduction

The urgency of structural unemployment, social policy issues and the need for more active integration policies result in the question and need to establish suitable structures, that might, in certain areas, take over these socio-economic issues from the public administration. One of the possible alternatives is to address the issues related to social economy through social enterprises that provide alternative and complementary options to addressing these issues. The concept of social entrepreneurship has been adopted by some EU countries; nevertheless, this concept has not been socially recognised everywhere. It does not only concern recognition of the enterprise but also recognition in the form of support, regulation and legislation by public authorities.

Importance of the third sector and its differentiation from the private and public sectors has been highly topical recently. Its economic importance is associated primarily with productivity and employment and growth can also be observed in the services sector. The importance of the third sector in the countries of Central and Eastern Europe is underrated. In contrast, in developed countries, such as France, Belgium and Ireland, the social economy contributes to 10% of employment. (Defourny, Pestoff, 2008)

The paper aims at identifying the main barriers to the activities of social enterprises. To identify the main barriers to the activities of social enterprises a questionnaire survey was used. The form was distributed to 100 social enterprises, the selection was random and use was made of the Directory of social enterprises on the České sociální podnikání.cz website.
Theoretical Definition of the Subject Matter

In terms of the third sector, the social economy is considered as an alternative to the public sector and the market. The traditional European concept implies connections with associations and cooperatives, unions and foundations that employ people from disadvantaged social groups. The society highlights the economic, social and local importance. (Defourny, Develdere, Fonteneau, 1999).

Social economy and social entrepreneurship do not bring innovation associated with ownership of companies. Social economy emphasises responsibility of the social enterprise owners related to changes in the society by introducing innovation in the field of new products and their quality, new methods of organisation and production, new production factors and relationships in the market and new forms of enterprises and entrepreneurship. (Defourny, Hulgard, Pestoff, 2014).

The values and starting points for social economy and social entrepreneurship are inspired by the ideas of solidarity and humanism advocated by Owen and King, Leon Walras and John Stuart Mill. (Defourny, Develdere, Fonteneau, 1999) Contemporary economists include, for example, Jacques Defourny, Jean-Louis Laville and others who combine the ideas of social, solidarity, ethical or humane economy and thus emphasise the importance of local social enterprises and social entrepreneurship. (Dohnalová, Deverová, Šloufová, 2012).

The definitions of social enterprise and social entrepreneurship are not uniform. According to Hunčová (2007), the concept of social enterprise is built upon on partnerships between the public and private sectors in providing public services and promoting public employment policy. (Wildmannová, 2017).

Danish Technological Institute (DTI), which is actively involved in social innovation, defines social business as “a business with primarily social objectives where economic profit is primarily reinvested in the business for the same purpose or in the development of the local community and therefore is not intended to maximise profits for owners and shareholders”. (Danish Technology Institute, 2002).

The social enterprise is a business that wants to do things in a different way, with other motivation values. Social enterprise is not automatically every employer identified as such. Neither is it every socially responsible company as it is often established for profit, nor socio-therapeutic workplaces which primarily focus on services for their clients. (Hunčová, 2007).

Legal environment

In the individual EU countries there is no uniform model of European social economy law. Social economy is legally recognised in selected EU countries. (Dohnalová, Deverová, Šloufová, 2012)

<table>
<thead>
<tr>
<th>Country</th>
<th>Legislation adopted in</th>
<th>Name of law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>2003</td>
<td>Act on social entrepreneurship</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2004</td>
<td>Act on social entrepreneurship</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2004</td>
<td>Definition of social enterprises under Act No. 5/2004 Sb, on services in employment</td>
</tr>
<tr>
<td>Italy</td>
<td>2005</td>
<td>Act on social entrepreneurship</td>
</tr>
<tr>
<td>Poland</td>
<td>2006</td>
<td>Act on social cooperatives</td>
</tr>
<tr>
<td>Belgium</td>
<td>2008</td>
<td>Regional decree on social economy</td>
</tr>
<tr>
<td>Spain</td>
<td>2011</td>
<td>Act on social economy</td>
</tr>
<tr>
<td>Greece</td>
<td>2011</td>
<td>Act on social economy and social enterprises</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2011</td>
<td>Act on social entrepreneurship</td>
</tr>
</tbody>
</table>
Social enterprises are subject to regulations introduced by a number of laws; however, none of them defines the term social entrepreneurship. Social enterprises are mainly focused on creating jobs for disadvantaged people. (Vyskočil, 2014) Once the Czech Republic was established, the law took over regulation concerning non-profit sector entities (civic associations, foundations, churches) and the conditions for doing business and manage assets underwent only partial changes. It can be stated that the law of the Czech Republic does not prevent from social enterprises but does not promote them either. There are no rules set for social entrepreneurship such as the rules of profit (Monzón, Chaves, 2008).

According to Vyskočil, social enterprises are governed mainly by the following acts:

- Act no. 89/2012 Sb., Civil Code
- Act no. 90/2012 Sb., On Business Corporations
- Act no. 563/1991 Sb., On Accounting
- Act no. 455/1991 Sb., On Trades (+ Act on doing business in tourism etc.)
- Act no. 137/2006 Sb., On public procurement

**Current structure of social enterprises in the market in the Czech Republic**

Figure no. 1 indicates that most social enterprises are located in the South Moravian Region (23 social enterprises), followed closely by the Moravian-Silesian Region (22) and the Region of Olomouc (20). The graph is based on the database of Czech social business administered by the organization TESSEA and the company P3 – People, Planet, Profit. This website gives information about the indicators of selected social enterprises such as field of activities, destination, employed groups etc. Due to the fact that it is voluntary for social enterprises to get registered in the database, the data is not statistically relevant. Still, we can say that the number of social enterprises is growing, which is caused by the transformation of current businesses into social enterprises, the transformation of NGIs into social enterprises and the establishment of new social enterprises.

![Fig. 1. Number of social entrepreneurship in the Czech Republic (author)](image)

The most commonly employed target group is people with disabilities. The most employed group of disabled people are physically disabled people (over 50%), followed by people with intellectual and mental disabilities.
The main activities of social enterprises are gardening services, vegetation management, maintenance and cleaning services. Furthermore, social enterprises are involved in accommodation and catering services and food processing.

Material and methods

The paper aims at identifying the main barriers and opportunities to the activities of social enterprises.

To identify the main barriers to the activities of social enterprises a questionnaire survey was used. The form was distributed to 100 social enterprises, the selection was random and use was made of the Directory of social enterprises on the České sociální podnikání.cz website registering 230 social enterprises (as of 31st August 2017). Registration in the Directory of social enterprises is voluntary and therefore the exact number of social enterprises in the Czech Republic currently operating cannot be determined. The questionnaire survey was carried out in spring 2016, response rate was 30%. The online questionnaire contained 10 questions, of which some questions were open. The questions concerned mainly the legal form of the enterprise, reasons for selecting the legal form, strengths of social entrepreneurship, problems with entrepreneurship, funds used for business operations (various loans, operating subsidies, grants, donations etc.), opinions on the legislation, employment of disadvantaged groups and support by public administration and the state.

Results and discussion

The questionnaire was anonymous, the responses were subsequently evaluated with the results presented below.

As regards the interviewed entities, the prevailing legal form was commercial company (48%). The respondents indicated that they wish to be a “normal” business which means that they prefer the legal form of commercial companies.

As regards employment, they clearly indicated that they employ disadvantaged groups (this was the response provided by over 70% of respondents), mainly people with disabilities and the long-term unemployed. The respondents identified the social dimension of their business as a strength.

As regards financing, the answers were identical: most of the social enterprises receive contributions for their employees (45%), which explains the answer to the question about the strong aspect of social entrepreneurship – employment of disadvantaged people. Other major funds are in the form of their own resources. The respondents often mentioned the discrepancy between operating and investment subsidies. As the main source of funding they reported EU funds (54%) and grants from other entities (24% – in the same proportion they answered that they did not receive any subsidies). The social entrepreneurship is mostly supported by regions, followed by municipalities, whereas the last place belongs to the State (only 3% of respondents were subsidized by the State). The subsidies to organizations and contributions to employees may accumulate.

As regards the profit over the past year of doing business a total of 70% of all respondents answered positively. This indicates that social entrepreneurship develops in a positive direction and it proves viability of this kind of business.

Another question concerned the non-existent law on social entrepreneurship. 58% of respondents said that it is necessary to adopt a law on social entrepreneurship, the others could not comment.

The respondents most often apply the Employment Act, tax law, hygiene regulations, Trade Licensing Act, Civil Code, Business Corporations Act and standards concerning the physically handicapped.

The question of what change or support from the government the respondents would appreciate was answered as follows:

- clear definition of social entrepreneurship;
- better financial support, tax incentives;
- changes in public procurement;
According to the questionnaire survey the social enterprises would like to have adopted a clear and precise definition of social entrepreneurship and a better financial support from the State. The reason for the better financial support was provided by one of the respondents: “also the volunteering costs something”. Two respondents would welcome a discrete advisory assistance for aspiring social entrepreneurs in the form of a helpdesk, where they could send their questions regarding the legislative, taxation or financial support.

As part of the theoretical definition of social entrepreneurship the following definition was adopted by Hunčová (2007) “the concept of social enterprise is built upon the partnership between the public and private sectors in providing public services and promoting public employment policies” [10]. This indicates that the process of social entrepreneurship must be implemented in partnerships between social business and public administration. This was confirmed in the questionnaire survey where the most employed group was disabled people. This is also confirmed by another survey conducted at the Faculty of Economics and Administration in spring 2014 where the respondents were beneficiaries – social enterprises within Call 30 “Social Economy”.

The respondents here most frequently employed people with disabilities. The businesses receive contributions for these people from the labour offices. There is a clear line of cooperation with labour offices and search for suitable job seekers. The most commonly employed group of people with disabilities is people with physical disabilities.

Another role of social entrepreneurship is the social dimension. It's not only about employing the excluded people in the labour market, but mainly about redistribution of profits back into the organisation. Here the social enterprises may redistribute their profits into investment processes or into staff training.

A concrete example of cooperation between social enterprises and public administration is the development strategy of the South Moravian Region. The short implementation plan titled “Human Resources Development Strategy of the South Moravian Region 2016-2017” (South Moravian Region, 2016) states that incubators for social enterprises will be established with this activity managed by the Chamber of Social Enterprises (association of legal entities) and the co-operating entities being the South Moravian Region and municipalities.

Further cooperation is envisaged with the South Moravian Innovation Centre, which is a Europe-wide recognised authority in the field of innovation and incubation processes in the Czech Republic and the Brno university.

McNeill (2013) points out other important stakeholders who can contribute to the development of social entrepreneurship include educational system, especially secondary schools and universities. The future graduates must be prepared for this possibility of this type of innovative business. Currently, social entrepreneurship is taught at a large number of universities and interest in this topic in the academic environment is on the rise. Given that social entrepreneurship is more specific than traditional business, it is necessary to adapt the curricula accordingly. The weakness of the Czech educational system is interdisciplinary collaboration, inadequate legislation, complexity and the slow accreditation of new subjects.

Another outstanding issue related to social entrepreneurship is the very absence of a social entrepreneurship act. Most of the respondents in our survey confirmed the need for statutory regulation of social entrepreneurship associated with better systematic financial support, tax reliefs, etc. The same results were obtained from the questionnaire survey conducted by P3 in 2015 (Questionnaire survey evaluation, 2016): 80% of respondents expressed a positive attitude to the adoption of the social entrepreneurship act.

Currently, the act is being drafted in the Czech Republic. Along with the preparation of the social entrepreneurship act, the development strategy of social entrepreneurship in the Czech Republic is being drawn up by the Ministry of Industry and Trade. The future social entrepreneurship act applies especially to SMEs.

This was also confirmed by the survey where the respondents were mainly small businesses. The social entrepreneurship act has also impacts both on public budgets and business environment. The social entrepreneurship act should not create a new legal form, it only sets the characterisation to be met by the natural or legal business entities that wish to enjoy the status of a social enterprise, or the integration social enterprise, and benefits arising from such a status.
Ministry for human rights and equal opportunities legislation (2016) states that the development of the legal environment for social entrepreneurship will contribute to the development of social economy. The legal regulation of social enterprises and the subsequent definition of specific benefits for these businesses will encourage the initiative of individuals and communities related to the establishment of social enterprises in order to actively address problems in their municipalities and regions. The development of social enterprises will also contribute to the employment of disadvantaged people in the labour market and will address problems associated with poverty and social exclusion. Last but not least, the clear legislative basis for the characterisation of social enterprises can also facilitate decision-making of financial institutions whether these enterprises should receive financial support, e.g. loans and credits under certain favourable conditions. Financial institutions tend to be immature in this respect and start-up social businesses without any track record and guarantees are risky clients for the banks.

Conclusions

This paper has identified the main barriers and opportunities to the activities of social enterprises. Answers to the survey questions are based primarily on the conducted survey. The survey results indicate that the main barriers to the development of social enterprises is the non-existence of social entrepreneurship law, inadequate definition of the social enterprise (what criteria are to be met by a social enterprise). Social enterprises do not receive support in public processes (socially responsible public procurement proceedings). What is also missing is a systematic setup of financial support for social enterprises (soft loans, credits).

The objective of this paper is to contribute to the debate about social entrepreneurship. Currently, application deficit may be observed in the social entrepreneurship market. What is now being drafted is the social entrepreneurship act; however, the local governments are not ready to cooperate with social enterprises or give advice to the social enterprises. Another problem is a lack of social innovation capacity (insufficient innovation offer) and, to some extent, weak innovation demand (i.e. demand for effective solutions to social issues) (MPSV, 2016).

Apparently, the only prospective way forward is to diversify the factual focus of support programmes and their capacity, to actively seek innovative capacities and opportunities, and to actively promote the innovation demand (public and private) for social impact.

It is therefore necessary to implement collaboration with local social enterprises into local strategies, bring this initiative to the level of cooperation with the public sector (e.g. by creating social incubators and platforms) and encourage this type of local business – e.g. by awarding socially responsible contracts.

Acknowledgement

This article was supported by the research project MUNI/A/1018/2017: “New Public Governance, Co-production and hybridity Phenomenon”.

REFERENCES


A Geo-Economic Approach to Brain Drain in Morocco

NECHAD Abdelhamid¹

¹ Professor at ESCA-EM (MOROCCO)

Work code CJ02F5007

Abstract

The brain drain is a symptom of a more serious disease that plagues the Moroccan policy of training and scientific research. The “brain drain” phenomenon is not novel and dates back to 1950. At that time, the term meant the massive departures of British scientists and engineers to the United States. Then, it referred to the South-North scientists’ migration and since recently scientists’ emigration from the East. Now this term is used in a broader sense to refer to the flight of human capital (that is to say, highly educated individuals with a university degree or equivalent) from the developing countries to the industrialized countries. Over the past two decades, the magnitude of the brain drain has reached staggering proportions.

It is however clear that the extent of the brain drain has increased dramatically since the seventies. This is due in part to the introduction of selective immigration policies favoring skilled workers in most countries. Yet, the skilled labor migration contributes essentially to the increasing globalization of the economy, a globalization that reinforces the natural tendency of human capital to agglomerate where it is already abundant.

In this article, we aim to explore some positive aspects of the “Brain Drain”. In fact, we will show that, in principle, a brain drain gain can at least rhyme with positive feedback for the country of origin. We will show through empirical analysis that the migration of skilled labor from a country can play a potential role in the pace of development of the latter and can be a source of positive externalities, and that through two channels. The first is related to the acquisition of additional skills and the increase in the ex-ante level of education. The second is related to the “brain gain” thanks to a compensation in terms of migrants’ return and the technology transfer that ensues.

This article will aim to answer three major questions:

➢ What are the determinants of skilled labor departure in Morocco?
➢ Is there a link between the perspective of emigrating to a more developed country and the accumulation of human capital in Morocco?
➢ Why these skilled migrants return and what is their role in the development of the country of origin?

This article will present the determinants of departure and causes of return of the skilled migration in Morocco, analyze the issues raised by this migration and define the channels that mitigate its negative impact.

Keywords: International migrations, Brain drain, Human capital, Development, Brain gain

Introduction

The brain drain is a characteristic feature of globalization. It is meant to grow and expand in the future. The phenomenon has been of considerable importance since the end of the last century. The term “brain drain” was popularized in the fifties referring to the migration of senior scientists from countries such as the UK, Canada or the former Soviet Union to the US; this term is now used in a broader sense to refer to the migration of human capital (that is to say, highly educated individuals with a university degree or equivalent) in developing countries to industrialized countries. Over the past two decades, the magnitude of the brain drain has reached staggering proportions. Yet, it is essentially part of the increasing globalization of economy, a globalization which reinforces the natural tendency of human capital to agglomerate where it is already abundant.
Currently, there is an affluence of expressions to describe this form of migration: elitist migration, brain drain, skills drain, knowledge leakage, exodus of intellectuals, reverses transfer of technology ... Although it’s increasingly being thrust into the limelight, the question remains little explored and poorly controlled. The issue is quite complex and multidisciplinary, it challenges the sociologist, the economist, the political scientist, the demographer, the legal expert and other disciplines. Moreover, a quantified assessment of this form of migration is difficult due to the lack of reliable statistics.

Morocco is concerned with the brain drain phenomenon and cannot stop it. Certain skills opt for life abroad, which is the case in most countries of the South now. Morocco, which has ratified most of the international human rights instruments, cannot undermine this principle by imposing restrictions on its citizens’ right to freedom of movement or by preventing its skilled subjects from leaving the country. Some foreign skills are residing in Morocco. The skilled Moroccan emigrants are primarily members of the Moroccan diaspora. They are foreigners who emigrated for various reasons, mainly to work.

This article aims to answer four key questions: What are the determinants of the skills exodus from Morocco? Are there any effects on Morocco? What are the strategies and policies for the return of the skilled emigrants and what is their role in the development of the country?

This article will present the determinants of departure and causes of return of the skilled migration in Morocco, analyze the issues raised by this migration and define the channels that mitigate its negative repercussions.

**Determinants of the brain drain**

In order to control migration, it is crucial to understand why people are migrating. The brain drain is the product of a combination of several factors. This multitude of causes seems to share a strong propensity to emigrate. The logics that underlie this flow are both endogenous and exogenous (push and pull factors).

Although there are a few factors that can be identified in several countries as the forces of “drive” or “attraction” that stimulate migration in most cases, the only way to understand the dynamics involved in the brain drain is the analysis of variables in the context of a specific region or country.

**Endogenous factors**

They are of different natures and do not have the same intensity in all countries. These factors are:

- Economic: the existence of an economic divide between the North and the South;
- Political: the lack of democratic mechanisms to ensure the equality of opportunity for all (meritocracy);
- Professional: the inability of the national economy to meet the aspirations of those who have acquired high level qualifications;
- Total or partial unemployment, often attributable to the inadequate implementation of the education, employment and science and technology policies;
- The failure of the entrepreneurial system whose main features are the little importance granted to research and development and the weak mentoring of the Moroccan companies;
- The limited budget allocated to research: Morocco’s overall expenditure represents less than 0.3% of the GDP, well below the rates recorded in developed countries (2% in EU countries);
- The weak means of intellectual stimulation (laboratories, libraries, professional associations) coupled with bureaucratic inertia.

**Exogenous factors**

The incubation of the project to emigrate is often triggered by exogenous factors, the phenomenon being intensified by an international demand for the brain drain. The current globalization plays a paramount role in accelerating this elite migration. The restructuring of the production systems has led to a hike in the demand for highly qualified personnel. And this is sometimes accompanied by aggressive recruitment policies as evidenced
by the Green Card in Germany which led to the proliferation of recruitment companies and of websites specialized in “talent hunting”.

Other exogenous factors of a professional nature encourage this elite to wake up from its latent phase, step up to the plate and emigrate. It is indeed the attractive environment in developed countries characterized by auspicious working and living conditions: a quest for excellence; an organizational flexibility; a competitive spirit; promotion prospects and access to opportunities; sectoral attractions related to the new trades of the new technologies. These professional factors are sustained by others of a rather personal nature: the wage incentives, the promotion systems and the opportunities at hand; the effective social security systems; the possibility to help parents and to be spoilt for choice on children’s schooling.

Zimmermann (1996) distinguishes between the factors that “push” people out of their countries of origin and the factors that “attract” them to a new “host” country. Some home unfavorable internal conditions are the unsatisfactory educational capacity, the low living standards, the limitations of technology, the inadequate training and employment and the uncertainty of tomorrow, the political malaise, the armed conflicts, the absence of realistic labor policies and the economic instability (Chang, 1999).

«Impulse» factors

The barriers to achieving educational goals or the lack of career opportunities (e.g. due to cuts in the budget allocated to public universities, as is the case in most African countries) can be an “Impulse” towards migration.

The establishment of a subsidiary of an international company, or the relocation of factories, is also pushing skilled workers abroad, particularly to the developed world where some IT companies relocate some categories of skilled workers in countries such as India. There is evidence that deteriorating economic conditions are responsible for the brain drain in South Africa (Bhorat et al., 2002). However, for the skilled black South Africans, the feeling of estrangement from the political status quo and the loss of confidence in the government’s ability to improve the living conditions – particularly human rights violations – seem to play an important additional role.

The “Impulse” factors can be summarized as follows: (World Migration 2003: 218):

1. Higher wages abroad, although there are cases of underemployment: Example of African holders of doctoral degrees who drive taxis or work in hotels and security agencies;
2. Greater job mobility and professional career development;
3. Few bureaucratic controls and high living standards;
4. Acquisition of high-level qualifications impossible at home as the Higher Education sector lacks resources and staff;
5. Foreign scholarships and support for education;
6. Unsatisfactory socio-economic conditions and African populations deprivation in many countries;
7. Active presence of recruiters.

«Attraction» Factors

The factors of attraction include better personal and professional opportunities in the host country, propitious policies for the immigration of the better-educated, wage differentials, differences in the quality of life, education for children, interaction with other professionals, political stability, and job security (Hillman and Weiss 1991, Porés 1991). Countries such as Canada, New Zealand, Germany, the United States and the United Kingdom now have aggressive recruitment policies for highly qualified foreigners to increase their own skilled labor force, particularly in a globalized global economy where intellectual worker are highly coveted.

From an economic perspective, the fundamental motivation for migration is the hope to score a net gain. There are at least two potential economic benefits to migration for those participating in the labor market.

---

4 For example, a number of countries in Africa have experienced serious conflicts over the last 15 to 20 years. These include South Africa, Zimbabwe, Mozambique, Angola, Democratic Republic of Congo, Central African Republic, Kenya, Somalia, Sudan, Uganda, Ethiopia, Eritrea, Burundi, Rwanda, Algeria, Côte d’Ivoire, Senegal, Gambia, Sierra Leone, Liberia and Guinea.
The first is linked to the gains in the labor market or to income more generally. The second advantage is employment. People can move elsewhere to increase their income in the labor market; migration is then the result of the job search process. They may also move to increase their chances of landing a job, and in this case, migration is an intrinsic part of the job search.

Skilled Moroccans leave the homeland mainly to work. The working conditions they enjoy in their country of residence are generally better than those offered by their country of origin. Moroccans who emigrate choose to live abroad, but in fact it is their employers who choose them. Indeed, migration for work has always been the choice of the host countries (especially rich countries), since in most cases these countries encourage and accept only people who are sought after in their labor market. These skilled Moroccans abroad have become not only providers of intelligence for their host countries, but also “knowledge workers” in the new globalized order and new actors in international cooperation.

Nowadays, it seems that the “Moroccan emigration to Quebec is more important than the French one. There are nearly 100,000 Moroccans in Canada, immigrants or merely students, 80% of whom are settled in Quebec. Approximately 2,500 of them cross the Atlantic every year” (Bladi, 2009). The emigration of skilled Moroccans to Canada, and more particularly to Quebec, seems to have been increasingly the choice of Moroccans for quite some time. This migration is also in line with the orientations of the country’s migration policy. In addressing the theme of “Globalization and the brain drain: the case of Quebec immigration policy towards Moroccan candidates”, a Moroccan migration specialist underlined that “the new policies orientations in the North tend to encourage/facilitate the reception and residence of certain occupational profiles of foreign professionals”. He added that “the quota policy is one of the visible aspects because it contains the idea of selection according to needs and interests”. The author pointed out in his study that “the Quebec immigration policy with regard to Moroccans in particular is part of this trend” (Mohamed DIOURY Conference, 2001, http://www.afrology.com/eco/fuitemg.html).

The same study concluded that the Moroccans living in Quebec are more educated than the average of other immigrants and that they are more educated than the average of Quebeckers. The author deduced that “this situation represents a net positive contribution for Quebec and a net loss for Morocco” (DIOURY, 2001).

The brain drains effects

The cost of the brain drain includes different components: the training cost since preschool and the opportunity cost for the country of origin: what this country loses in the absence of the skilled trainee (productivity, income, etc.). Furthermore, it would be possible to add other additional costs: the costs assumed by the families of the trainees (education, health, housing, leisure, etc.); the cost ensuing from the trainee’s absence incurred by his family and eventually the children.

The assessment of the brain drain cost requires the availability of various and fairly detailed data. In the case of Morocco, however, some of these data are either unavailable or difficult of access. For example, the cost of training an engineer requires a joint review of both operating and investment budgets of the institutes and training schools (as well as those of educational institutions from preschool to university). Yet, in most cases, investment data and its internal composition are difficult to produce5.

An engineer’s training cost

Morocco devotes a significant part of its financial efforts to the education sector. In 2007, the budget dedicated to national education and vocational training represents one quarter of the State general budget. The cost of training an engineer includes the primary school, the secondary school, the higher secondary, the

---

5 It is true that Morocco is changing and that, since the 2000s, Morocco has experienced major reforms in all areas, but the country is still in a transition period. “Anti-law” practices inherited from the old regime persist and give rise to injustice and discrimination, which push some skills to expatriate themselves in search of more equity and democracy.
preparatory classes and engineering school. The 2005 data show that an engineer’s training in Morocco costs an average of 95,460 dirhams (about 12,000 dollars) before entering the engineering institute or school.

The branches where the biggest deficits are and which have given rise to a war for talents are the NICT. Recruiters from around the world are vying for these specialists, dipping mainly into countries such as India, where 43,000 computer scientists expatriated in 1999 and 50,000 in 2000. In fact, the race for these geeks explains why the most coveted laureates in Morocco are those graduating from the Grandes Ecoles: Institut National des Postes et Télécommunications (INPT), Ecole Nationale Supérieure d’Informatique et d’Analyse de Système (ENSIAS) & l’Ecole Mohammadia des Ingénieurs (EMI) whose 50 to 60% of the laureates in 2000 had, according to a Moroccan daily, already left or were due to leave at the time of the closing ceremony (Abd Al Ilah Al Mouttaqi, 2010, p.15).

These three Ecoles witness a more or less substantial departure flow, depending on the period. And this is the reason why we shall limit the assessment of the cost to these three institutions, focusing on the case of the INPT for which fairly accurate data are available. Within the INPT, the unit cost of an engineer’s training is of the order of 93,380 dirhams per year (Ministry of National Education, INPT, 2007). This figure has the advantage of including investments (depreciation), the INPT having an adequate analytical accounting. If one adds the scholarships (excluded from the institute budget) and the costs of preliminary training, the training of an INPT engineer would cost 389,700 dirhams. For the EMI and the ENSIAS, the average unit cost of an engineer’s training from 2000 to 2007 is 144,000 dirhams over the three years of training (Ministry of National Education: Assessment and Long-Term Planning Department), if we add the scholarship, the total sum is then 158,100 dirhams per engineer. Thus, the average overall training cost is about 253,560 dirhams, or about 32508 USD per engineer.

Today (more than ever before), the Moroccans needed in Europe and also in North America are mostly people with a good academic background and often a proven track record of success. A great deal of the Moroccan graduates from the most prestigious Grandes Ecoles emigrate annually and more than 15% of Moroccan students are based abroad, about 50 000 students. A certain portion of the population of the Kingdom positions itself in this new type of migration opportunity.

Other negative consequences of this brain drain

Until recently, it was assumed that the brain drain could only be pernicious to the country of origin. As early as the 1970s, well-known economists, chief among them was Jagdish Bhagwati, defended this pessimistic view and put forward the following arguments (Bhagwati, J.N., 1974, pp. 19-42):

☑️ The brain drain is fundamentally a negative externality imposed on the population residing in the country of origin;
☑️ It can be analyzed as a zero-sum game, where rich countries get richer and the poor countries become poorer; &,
☑️ In terms of economic policy, the international community should introduce compensatory transfer mechanisms in favor of the countries of origin.

Finally, it should be noted that in the Moroccan case, the losses recorded are all the more detrimental to its economy since, on the one hand, those who leave the country are recruited mostly amongst the locally employable graduates and not graduates who have difficulty finding a job; on the other hand, the country is confronted with crucial deadlines: the upgrading of the Moroccan companies and the various major projects underway (the Emergence program and other sectoral programs) suffer from this brain drain. Upgrading and achieving productivity gains do require competence-based management.

Nevertheless, if the economic analysis is now making a more nuanced assessment of the brain drain effects on developing countries, it is mainly due to the fact that by inflating the expected return on human capital, the perspectives of emigration can contribute to boosting the investment in education in the countries of origin.

---

6 See Survey on International Moroccan Student Mobility: EMEMI project in http://www.uae.ac.ma/dossiers/down/recherche/EMEMI/SUPPORT-EMEMI.pdf
**Economic contributions of the returning migrants**

Obviously, the brain drain can in principle at least be accompanied by positive feedback for the countries of origin, such as remittances from migrant workers; their return after they have accumulated savings or new qualifications; and even the participation of these migrants in scientific and business networks promoting the circulation of technological and industrial knowledge.

- As a revealing sign of the importance of remittances, almost half of the emigrants have transferred more than 1000 Euros per year, this amount is slightly higher for emigrants opting for the voluntary return (49.1%) than for those forced to return (45.6%). More than 85% of the returnees had transferred more than 500 Euros per year, and 37% of emigrants, between 500 and 1000 Euros. These transfers are allocated to different uses, mainly to sustain their families back in the homeland (85.3%) to which must be added the children schooling (14.2%), which highlights the importance of the transfers assigned to consumption. Investment is commonplace in 69.2% of cases, including 38.6% for the acquisition or construction of a house, 14.8% for an economic project, 12.6% for the purchase of land and 3.2% for the purchase of agricultural equipment.

- Concerning the realization of investment projects in Morocco, the survey reveals that 82% of the returnees made one or more investments in their country of origin. In this respect, it should be borne in mind that, in general, traditional investments made by emigrants in the region relate primarily to housing (86.5%) and then to coffee/restaurant-type of service activities, which explains the importance of the two projects section: 45.5% including 46.6% for emigrants whose return is voluntary and almost 40% for those whose return is forced. The strong propensity to save in the latter category, aware of the precariousness of its situation, explains the respective rate.

- The location of the project is mainly due to convenience and, secondarily, to economic reasons. The main lessons learned are:
  - The relatively high share of investment in the place of residence before emigrating (36.2%) for those who opted for the voluntary return (35.7%) and those forced to return as well (40.5%). This can be explained by this desire to flaunt one’s social success before the eyes of one’s family and acquaintances.
  - The relatively high share, but to a lesser extent, of investment in a place other than the place of birth and residence before emigrating (24.6%). Generally, the choice falls on a larger city than the town or village of origin (the capital of the province, Tangier or Tetouan), which is for the emigrant “both a geographical and social promotion”.
  - The place of birth ranks third and is of particular interest to migrants who were forced to return rather than the others, which can be explained by their choice of a place where they could rely on family solidarity.

- The two main sources of investment financing for returning migrants are self-financing (98.8%) and bank loans (42.8%).

- Concerning the number of jobs created, apart from real estate, the investments made are micro-projects which in almost 60% of the cases employ fewer than five people and in almost 86% less than 10. Only 1.4% of the projects employ more than 50 people, and are therefore medium-sized enterprises.

- More than half of returning migrants contributed to the realization of a collective welfare. Yet, emigrants returning voluntarily are more inclined to collective investment than emigrants returning involuntarily, i.e. almost 60% and nearly 37% respectively. Participation in the construction of mosques is by far the main collective investment.

The three main benefits of migration are the migrants’ remittances, recruitment and return. The repatriation of migrant workers funds could be maximized by reducing transfer costs. Moreover, emigration countries must apply a realistic exchange rate and their governments must encourage and channel investments made with the repatriated money (Martin and Straubhaar, 2002). Another option mentioned is the taxation of the skilled expatriates, or the reimbursement of the higher education expenses that these expats received in their country.
of origin (The Economist, 2002). This is easier said than done, as migrant workers do not provide information about their place of residence in the countries of origin.

Another form of human capital profitability for foreign nationals may be through the system of networks (Brown, 2000). Skilled migrant workers can be an important resource and their qualifications can be used to establish research partnerships, special programs to encourage knowledge transfer and joint ventures. Bhagwati (1974) proposed taxing the additional income of emigrants at a higher rate than that applied by the host country taxation system, which is to be used eventually to finance the developing countries.

Ideally, skilled migrants should enjoy all their rights, both in their host country and in their country of origin, move from skills exodus to elite mobility (from “brain drain” to “brain gain”) and make the brain drain an asset for the development of the countries of origin and not a hindrance to their development. This could be achieved through the establishment of an international scientific community capable of fostering international cooperation and serving both the host country and the country of origin. This community could maintain links with the nationals to improve the scientific and technical training in the country of origin and thereby contribute to the internationalization of the national scientific communities. This is what Morocco is currently trying to do with its diaspora. However, all governmental and non-governmental, national and international active actors in the countries of origin as well as the countries of residence must be involved in this process, without any exclusion.

The brain drain is therefore one of the main challenges facing Morocco to upgrade its economy. But if we believe in the freedom of individuals to emigrate, we should think of a policy of return, even in the framework of the pendulum migration of these skilled migrants.

Strategies & Political Options to Manage the Brain Drain

The problem of the brain drain could be resolved fairly if the rights and interests of all parties involved are taken into account: the migrants, the country of origin and also the host country. The problem could be solved in several ways, nationally and internationally. For instance, it is necessary to:

- Introduce reforms in the country of origin to mitigate the brain drain (democratization, the rule of law and equality among citizens, recognition of all competences without discrimination or specific preferences);
- Make the skilled expatriates a development engine of the country of origin by their permanent or occasional physical or only virtual return;
- Maintain links with the expats and create collaboration and mutual assistance opportunities between the skilled at home and those abroad;
- Discuss the brain drain and its consequences worldwide;
- Create a kind of “qualified immigration tax” that could be managed by a specialized United Nations fund, which host countries would pay whenever they receive skilled migrants and benefit from their knowledge.

Morocco is aware of the shortfall resulting from the settlement of some of its skilled migrants abroad, mainly in Europe and North America and tries to encourage and facilitate their return. The country is also aware that the Moroccans living abroad want to bring added value to the world and to their country of origin with which they have not ceased to have deep ties, as witnessed by the formidable “rush” to the homeland during the summer holidays, which is a fairly unique phenomenon in the world.

Morocco seeks to consolidate its ties with its community living abroad to make it a development tool, to build and strengthen the bridges with the diasporic networks and to “cash in on the diasporic talents” to make them contribute, each according to their level and their means, to the development of the country. The Moroccan authorities endeavor to make the Moroccans Living Abroad a “second hand” that the country needs to build up

7 For example, in the case of certain European countries such as Spain and Italy, the change in the economic and political situation resulted in the mitigation of the MCHQ, without stopping it however.
its development and front-line ambassadors that strengthen the relationships and boost cooperation with the host countries (Le Matin du Sahara, 2009). Indeed, the Moroccan migration policy has always been oriented towards the consolidation of ties with the diaspora, particularly with the 2nd and 3rd generations of emigrants, the majority of whom were born abroad and acquired their education and training in the host country.

Then, maximize emigration benefits by:

- Policies to promote the return of migrants to their countries of origin.
- Recruitment policies of international migrants which do not limit their numbers and reduce the protective measures that hinder admissions.
- Initiatives to re-engage the expatriates through increased communication, transfer of knowledge and funds, as well as investment.
- Restorative policies that will make the host countries reimburse the countries of origin to offset their loss on human capital, or just tax emigrants directly.

Another approach is to make emigration unnecessary by strengthening the national educational institutions, adapting trade, investment and assistance policies to speed up economic development. These are called the five conservative policies to prevent graduates from leaving.

The brain drain is therefore one of the main challenges facing Morocco to upgrade its economy. But if we believe in the freedom of individuals to emigrate, we should think of a policy of return, even in the framework of the pendulum migration of these skills. These skills could be the indicated actors of circular migration.

However, it should be emphasized that the emotional and cultural attachment of this elite is not sufficient. It should be supported by economic incentives and an adequate investment environment. This implies a review by the various institutions of their perception of the current and potential role of migrants.

The encouragement of the return of skilled Moroccan expatriates has characterized the government actions since the 1990s. Qualified people living abroad are often invited to return to Morocco to contribute to the development of the country and consolidate its democratic achievements. Several speeches and actions of Moroccan officials echoed this invitation for skilled Moroccan migrants abroad to return. It is in this spirit that some initiatives such as the TOKTEN and FINCOME Programs were carried out in Morocco or similar initiatives by the civil society.

(i) The TOKTEN Program

The TOKTEN (Transfer of Knowledge Though Expatriate Nationals) program was initiated by the PNUD in 1977 in some 50 countries. Its mission is to identify the scientific skilled migrants living abroad and to set up a network that enables them to promote research and development for the benefit of their native countries.

While this program seems to have yielded encouraging results worldwide, as in China and Turkey, the results are rather meager in the case of Morocco: the two meetings organized under this program in 1993 in Rabat and in 1994 in Casablanca did not come out with convincing results.

(ii) International Forum of Skilled Moroccans Living Abroad (IFSMLA/FINCOME).

The IFMCLA/FINCOME program (The IFMCLA/FINCOME website (FINCOME means “where are you”, in Moroccan dialect), http://www.fincome.ma) is "a space that will allow to establish institutional links with the skilled Moroccan migrants abroad». This program intends to establish a database of these skilled Moroccans, both in the public and private sectors. The national strategy of Mobilizing the Skilled Moroccans Living Abroad aims in particular at achieving the following objectives:

- Support for research and development and training;
- Transfer of technology and know-how;
- Assistance to expertise, to devising sectoral development strategies and assessment of research projects and programs;
- The attraction of investment and business partnerships;
- The synergy between the skilled Moroccans living home and those living abroad, particularly through research networks;
- The contribution to strengthening bilateral cooperation.
In the framework of the implementation of the IFMCLA/FINCOME program, the CNRST and R&D-Morocco, with the financial support of the Ministry of National Education, Higher Education, Managers Training and Scientific Research, launch each year a call for tender to support actions that would implicate the skilled Moroccans living abroad and would benefit a Moroccan entity, public or private. Support involves two types of actions: expertise and meetings.

(iii) Other initiatives are to be mentioned. The association “Savoir et Développement” (150 to 200 members).

Was created in 1999 on the initiative of a number of Moroccan researchers specializing in different disciplines (computer mathematicians, economists, managers, etc.). In addition to these scientists, the association remains open to the professional world, businessmen and young promoters of innovative projects.

The scope of the association covers most French regions and some European and American countries. The objective of the association is to promote scientific and technological transfers in favor of Morocco.

(iv) Council of the Moroccan Community Abroad (CMCA/CCME)

The CMCA/CCME is working to bring back the Skilled Moroccans living abroad. For his Secretary-General, “Faced with a lack of highly qualified human resources, Morocco has a fairly large number of profiles among its diaspora that could help to fill this gap”. He adds: “It is in this perspective that for more than a decade, more and more determined attention has been paid to skilled Moroccans living abroad to contribute directly to the ongoing projects or to act as scientific, economic, social levers in some sectors or even newly identified niches” (the interview of Mr. Abdellah Boussouf, electronic Magazine of Moroccans Living Abroad, Yabiladi, 2009).

Several other institutions had been created with a view to safeguard and develop the ties with “the Moroccans of the world”. Thus, in addition to the diplomatic missions and several Moroccans-Living-Abroad associations operating abroad, there are various national institutions in charge of the Moroccans Living Abroad: The Ministry in charge of the Moroccan Community Abroad before the Prime Minister, the Hassan II Foundation for the Moroccans Living Abroad, the Mohammed IV Foundation for Solidarity, etc. Some government actions target specific categories of Moroccans living abroad. Recently, actions are directed more particularly towards the skilled women in the diaspora, who represent more than 45% of the Moroccans Living Abroad. Two meetings organized on “Moroccans from here and elsewhere” showed that migrant women seem more attached than men to the country of origin and are ready to contribute to the development of the country (The Moroccan newspaper L’Economiste, 2010). The civil society sometimes encourages the return of skilled migrants and contributes to the fight against the brain drain. For example, the Horizons-Maroc Forum, initiated by the Association of Moroccans of the Grandes Ecoles (AMGE), strives to encourage the return of the young graduates living in France. One of the persons responsible for the organization of this forum stated that “the phenomenon is gaining importance and more and more qualified young people are ready to return to Morocco, provided they are offered a position that meets their expectations” (Forum-Horizons-Maroc, 2009).

However, in its endeavor to attract the skills of the diaspora, Morocco is aware that there is an international competition for the capitation of this highly qualified elite which is a boon mainly to the countries of the North, and that there are radical changes affecting these skilled people including their feminization and the transformation of their socio-professional profiles due to the rising levels of education.

Conclusion

There is no treasure more precious than human capital. This is why we must take into consideration the brain drains from the countries of the South to the countries of the North and address the main causes of these departures and their consequences. It is true that freedom of movement is a human right and that the skilled migrants from the South cannot be held back from traveling and choosing to reside outside their countries of origin, but the interests of their countries of origin that had often invested large sums of money for their training is also to be accounted for.

The Moroccan trade unions, the political parties and the civil society organizations should be more involved in migration policies in order to better defend the rights and interests of all migrants: Moroccan emigrants and foreign immigrants on an equal footing. All skilled immigrants in a country should normally enjoy the same
rights and benefits granted to persons with the same level of education and similar training, without any distinction based on origin and provenance.

Thanks to globalization, the circulation of capital and skilled people has revved up. It would be difficult to stop this circulation. But we must ensure that globalization is not synonymous with the reinforcement of injustices, the denial of migrants’ rights, inegalitarian laws in the name of the law of the strongest: countries importing labor. It is also necessary to reconcile the two facets of skilled migration: voluntary migration and impelled migration.

At the end of this article, it seems impossible to deny the role of the system of education and training, research and development in the economic growth. We have shown the importance of the skills of the diaspora. As demonstrated in the Moroccan experience, the great paradox often underlined is the brain drain under conditions of scarce qualifications and especially the financial resources while the import of the know-how is at its peak.

And this is the result of an almost widespread neglect of the local skills and know-how. Morocco is worried today about the brain drain, the flight of brains, skills, so many qualifiers to name the ability to create, to innovate. Indeed, these departures are a loss on several levels. The migrant graduates who have cost a small fortune in terms of investment in training are, on the one hand, not directly involved in the national economic activity and, on the other hand, not passing on their knowledge, know-how and experience to the local businesses.

Generally speaking, by 2020, Morocco will have to become a land of attraction for all kinds of investments, both material and non-material. It shall not be just a land of fiscal attraction or improved foreign exchange regulations only. Morocco (which still has many assets) shall have to respond favorably to the demands of the brain drain, be it in terms of the quality of everyday life, of the education system, of leisure, of tourism, of cultural life or of social life debureaucratization. This indeed underlines how titanic is the task that awaits all our leaders.

REFERENCES


26. Electronic Magazine of The Moroccans Living Abroad Yabiladi, l’interview de Monsieur Abdellah Boussouf, le Secrétaire Général du CCME publiée le 01 décembre 2009, the interview of Mr. Abdellah Boussouf, the Secretary General of the CCME published on December 01, 2009. in: http://www.yabiladi.com/article-economie 2226.html


Seasonality of Employment in Poland and a Selected Countries of the European Union

RADLIŃSKA Kamila¹, KŁONOWSKA-MATYNIA Maria²

¹ Koszalin University of Technology, Faculty of Economic Sciences (POLAND)
² Koszalin University of Technology, Faculty of Economic Sciences (POLAND)
Emails: kamila.radlinska@tu.koszalin.pl, maria.klonowska-matynia@tu.koszalin.pl

Work code CJ02F5008

Abstract

Every economy is characterised by its variability over time. This variability may concern long, medium and short period of time. Scientific research usually concerns long- and medium-term changes, while changes occurring in economies in short periods of time are excluded or removed from analyses. This procedure seems to be unjustified, as only consideration of all fluctuations, including short-term, allows for full characterisation of researched phenomena. Similarly, phenomena on the labour market are subject to variability over time, while their short-term research seems to be particularly important. It results from the fact that variables of the labour market, i.e. employment, unemployment, remuneration, concern not only economic, but mainly social aspects.

This paper aims at the analysis of diversity of seasonality of a number of employees in Poland and in selected countries of the European Union. One attempted to determine the value and trend of changes in the seasonality of employment and their distribution throughout a year. Analyses concerned the comparison of seasonal fluctuations of employment estimated for Poland with seasonal fluctuations of employment in selected EU countries, i.e. a group of highly developed European countries (France, Germany and Great Britain) and a group of countries of Central and Eastern Europe (Bulgaria, Slovakia, Slovenia, Romania, and Lithuania). The study uses quarterly data on a number of employees in Poland and in selected EU countries for the period from the first quarter of 2008 to the fourth quarter of 2016 from EUROSTAT resources. The CENSUS X12 procedure based on seasonal ARIMA models was applied for the selection of a seasonal component. The obtained results indicate that the seasonality of employment in Poland and in selected EU countries was low. In a group of Western European countries, the seasonality of employment was characterised with lower average annual level than Poland. An average annual seasonality of employment in countries of Central and Eastern Europe was higher than the seasonality estimated for Poland. Distribution of fluctuations of seasonal employment throughout a year in Poland and in selected EU countries was similar in both analysed groups of countries. Peak to peak value of the seasonality of employment constituted a differentiating feature. Western European countries and Poland were characterised by a lower amplitude of fluctuations of the seasonality of employment throughout a year than countries of Central and Eastern Europe.

Keywords: employment, seasonality, labour market, EU countries

Introduction

Every economy is characterised by its variability. This variability may be analysed in various periods of time, i.e. long, medium and short. In economic analyses the fluctuations of economic phenomena constitute a frequent subject of research. However, usually they are analysed in the context of long-term and cyclical changes, while short-term changes are omitted or eliminated from analyses. Exclusion of short-term fluctuations from research seems to be unjustified, as they may constitute an important component of the analysed phenomenon [1].
Analysis of the seasonality of employment in Poland and in selected countries of the European Union constituted the main issue of conducted research. Therefore, this paper aims at the analysis and assessment of diversity of seasonality of a number of employees in Poland and in selected countries of the European Union.

A significant question to which one attempted to answer was whether in Poland and selected EU countries the seasonality of employment is present. If yes, what is its level and trend of changes, and what is its distribution throughout a year? In addition, one tried to distinguish the formula of seasonality of employment valid in two selected groups of European economies, i.e. in a group of Western European countries and in a group of Central and Eastern European countries. It was assumed that in Poland and Western European countries the seasonality of employment is lower than seasonality in countries of Central and Eastern Europe. In empirical research the data on quarterly employment collected by EUROSTAT for the period from the first quarter of 2008 to the fourth quarter of 2016 were applied. A seasonal component was selected with use of the CENSUS X-12 ARIMA procedure.

Introduction to the issues of seasonality of the labour market

Seasonality constitutes an issue that may concern both entire economy and its particular markets or sectors. Labour market belongs to the markets on which short-term (seasonal) changes in their particular categories constitute a natural phenomenon. Usually, seasonality on the labour market is analysed in the context of changes in employment and unemployment. Although it should be emphasised that short-term changes concern also other variables characterising the labour market, e.g. remuneration.

Seasonality on the labour market means regular, repetitive over time, throughout a calendar year, economic and social changes in categories. A reason for short-term changes may concern natural and institutional factors.

Natural conditions include e.g. regular climatic changes related to the occurrence of seasons, periods of higher and lower temperatures, rain and snowfall, more sunny hours throughout a day. These conditions affect peripheral regions [2] to a greater degree. Institutional aspects of seasonality on the labour market depend on religious, ethical, cultural and social factors valid in society and economy. Seasonal changes can be relatively easily foreseen, as they appear in specific periods of a year with great regularity. Despite that their limitation is still hampered.

From the point of view of the labour market, seasonality constitutes a negative phenomenon, manifested mainly with reduction of employment or remuneration in specific periods of a year, which has been broadly described in the source literature [3, 4]. Results of research concerning the variability of labour markets in selected countries confirm that in particular countries they are characterised by diverse distribution of seasonal fluctuations of basic categories of the labour market throughout a year and with a different value of monthly deviations [5, 6].

Method and data sources

The main purpose of research is constituted by the verification whether in Poland and in selected EU countries the seasonality of employment is present. If yes, what is its level and trend of changes, and what is its distribution throughout a year? In addition, one tried to distinguish the formula of seasonality of employment in two selected groups of European economies, i.e. in a group of Western European countries and in a group of Central and Eastern European countries. The group of Western European countries includes states in the western part of Europe, being members of the European Union for at least 40 years, characterised by the highest share of GDP in the GDP of entire European Union (from 15.0% to 21.1%). These countries include: France, Germany, and Great Britain. The group of Central and Eastern European countries includes economies located in Central and Eastern Europe, which membership in the European Union is relatively short (year of accession 2004 and 2007) and characterised by low share of GDP in the GDP of entire European Union (from 0.3% to 1.1%). These countries include: Slovakia, Slovenia, Romania, Bulgaria, and Lithuania.
In the research of seasonality, the selection of research methodology is significant. It may be measured with use of e.g. dynamic models where the role of dependent variable is played by time. Time does not constitute a reason for the phenomenon, but it is rather a set of variables forming the phenomenon. Main, periodical and incidental reasons are generally responsible for the time course of phenomena. Determination of a value of variables related to their causes is called the decomposition of a time series, which consists in the selection from an initial series ($Y_t$) of components: trend-cycle ($T_t$), irregular component ($I_t$), effect of a various number of working days ($D_t$), holiday effect ($E_t$), and seasonal component ($S_t$) [7]. This procedure may be written in the following formula:

$$Y_t = T_t \bullet S_t \bullet I_t \bullet E_t \bullet D_t$$

where:

- $\bullet$ – depending on the considered multiplicative or additive model it means a multiplication or addition sign, accordingly.

Among many methods of decomposition of a time series, methods based on procedures TRAMO/SEATS and CENSUS X-12 ARIMA [8] are usually applied. The seasonal component ($S_t$) selected in such a way was subject to tests of statistical significance and further analyses, e.g. analyses of an average annual level of seasonality or an average monthly distribution of seasonality throughout a year.

Research concerning the seasonality of employment in Poland and in selected EU countries was conducted based on quarterly data, from the first quarter of 2008 to the fourth quarter of 2016, 36 observations in total.

Collected data constituted a sufficient set of observations to conduct the planned analyses. For the research purposes, data on a number of employees in Poland and in selected countries of the European Union were collected, i.e. France, Germany, Great Britain, Bulgaria, Slovakia, Slovenia, Romania, Lithuania. Information on employment originated from the research of the European Union workforce (EU-LFS). According to the EUROSTAT definition, a person employed in economy is the person in work relationship on a full-time and part-time basis at the age of 15 and older.

The course of employment in Poland and in selected countries of the European Union from 2008 to 2016 causes the necessity of application of a multiplicative model to the decomposition of a time series. The seasonal component was selected with use of the CENSUS X-12 ARIMA procedure, while applying Eviews 9.0 software.

The research procedure was planned according to the following scheme:

- Stage 1. Analysis of an average annual seasonality of employment in Poland and in selected countries of the European Union from 2008 to 2016.
- Stage 2. Analysis of an average monthly seasonality of employment in Poland and in selected countries of the European Union from 2008 to 2016 throughout a year.

**Research results**

Analysis of the seasonality of employment in Poland and selected countries of the European Union was preceded with the characteristics of a long-term trend of changes in employment. Based on the analysis of annual data on a number of employees from 2008 to 2016, it was stated that employment in Poland was regularly increasing, starting from the first quarter of 2010. Just like in France, Germany and Great Britain. In Central and Eastern European countries an annual number of employees was declining on a period to period basis. An exception was constituted by the labour market in Slovakia, where employment was characterised by the similar course as in Poland and in Western European countries.
While analysing quarterly data on a number of employees in Poland and in selected EU countries, it was noticed that the course of a number of employees was characterised by minor, but relatively regular short-term changes in all analysed countries.

**Analysis of an average annual seasonality of employment in Poland and in selected countries of the European Union from 2008 to 2016**

The first stage of the analysis of seasonality of employment in Poland and in EU countries was constituted by the selection of a seasonal component from a time series and verification of its statistical significance. The selected seasonal component was verified with regard to statistical significance with use of the Friedman Test, Kruskal-Wallis Test and mobile seasonality test. Estimated seasonal fluctuations of a number of employees in Poland and selected countries of the European Union were statistically significant. Tab. 1 presents tests of significance of a seasonal component.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Statistical significance tests</th>
<th>Friedman</th>
<th>Kruskal-Wallis</th>
<th>mobile seasonality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td></td>
<td>28,26(^a)</td>
<td>33,30(^b)</td>
<td>---</td>
</tr>
<tr>
<td>Germany</td>
<td></td>
<td>11,35(^a)</td>
<td>27,57(^b)</td>
<td>---</td>
</tr>
<tr>
<td>France</td>
<td></td>
<td>10,91(^a)</td>
<td>32,32(^b)</td>
<td>---</td>
</tr>
<tr>
<td>Great Britain</td>
<td></td>
<td>3,37(^a)</td>
<td>28,44(^b)</td>
<td>0,05(^c)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td></td>
<td>108,12(^a)</td>
<td>31,51(^b)</td>
<td>---</td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td>11,90(^a)</td>
<td>23,28(^b)</td>
<td>2,53(^b)</td>
</tr>
<tr>
<td>Slovenia</td>
<td></td>
<td>46,94(^a)</td>
<td>26,82(^b)</td>
<td>---</td>
</tr>
<tr>
<td>Romania</td>
<td></td>
<td>151,53(^a)</td>
<td>34,20(^b)</td>
<td>7,33(^b)</td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
<td>39,11(^a)</td>
<td>27,98(^b)</td>
<td>6,79(^b)</td>
</tr>
</tbody>
</table>

\(^a\) means significance at the level of 0.1% \(^b\) significance at the level of 1% \(^c\) significance at the level of 5% --- no evidence of mobile seasonality at the level of significance of 5%

Source: own calculations based on EUROSTAT data [@: http://ec.europa.eu/eurostat/data/database]

Average annual seasonality of a number of employees in Poland from 2008 to 2016 was relatively low. It did not exceed 1% in the entire period of the analysis. In addition, in 2016 in comparison to 2008 an average annual level of the seasonality of employment in Poland decreased.

While analysing the level of average annual seasonality of a number of employees in selected EU countries, it may be noticed that in a group of Western European countries, i.e. Germany, France and Great Britain, seasonality of employment was characterised by a lower level than the seasonality of employment in Central and Eastern European countries. In addition, trend of changes is also different. An average annual seasonality of employment in countries of Western Europe is characterised by a small decreasing trend, while in Central and Eastern European countries the dynamics of changes is greater. Such a situation may constitute the basis for claiming that it is right that a level and course of an average annual seasonality of employment depends on the level of a country’s economic development. The higher the level of the country’s economic development, the higher the stability on its labour market and the lower the level of seasonal employment.

Seasonality of employment in Poland shows a similar course and dynamics of changes as the seasonality of employment in Western European countries (Fig. 1).
Analysis of an average monthly seasonality of employment in Poland and in selected countries of the European Union from 2008 to 2016 throughout a year

The second stage of research was constituted by the analysis of distribution of seasonal fluctuations of a number of employees throughout a year. Seasonal fluctuations throughout a year in Poland created one annual cycle with a decline of seasonal employment in the two first quarters of a year and with an increase of the seasonality of employment in the last two quarters of a year. This situation may result from the fact that the increase in production occurs mainly at the end of the second quarter. Therefore, it should be expected that an increase in demand for seasonal employment shall occur only after the second quarter, where previous labour force is fully used.

Distribution of the seasonality of employment throughout a year in analysed EU countries was characterised by a similar course of the seasonality of employment. In all countries a decrease in the seasonality of employment occurred in the two first quarters of a year and an increase in seasonality – in the third and fourth quarter. Labour markets of France and Romania constituted exceptions. Larger differences among groups of countries are observed in an amplitude of fluctuations of the seasonality of employment. In a group of Western European countries, the amplitude of fluctuations of the seasonality of a number of employees was relatively low and came in Germany to 1.34%, in France to 1.29%, and in Great Britain to 0.63%, while in a group of Central and Eastern European countries it was described with a relatively high amplitude of fluctuations.

The highest peak to peak value was noted in Romania (4.76%) and Bulgaria (4.74%), while the lowest – in Slovakia (1.25%).

While analysing the course and amplitude of an average monthly seasonality of employment in Poland and in selected EU countries, it may be observed that the seasonality of employment in Poland is characterised by a similar course as the seasonality in both groups of countries. The amplitude of fluctuations of the seasonality of employment in Poland indicates the similarity with the amplitude of Western European countries and is lower than the amplitude for Central and Eastern European countries (Fig. 2).
Results of the analysis of average annual and monthly seasonal fluctuations of employment indicate that the level of economic development of countries may affect the value of short-term fluctuations of employment. The higher the level of development of a given country, the lower the short-term fluctuations, both average annual and monthly. However, the country’s level of economic growth does not affect the distribution of fluctuations of the seasonality of employment throughout a year. In general, all tested countries, i.e. countries of Western Europe and of Central and Eastern Europe, were characterised by one annual cycle, with reduced seasonality of employment in the two first quarters of a year and with increased seasonality in the third and fourth quarter.

Conclusion

The conducted analysis constituted an attempt to emphasise the significance of analyses of seasonality in research concerning the activity of labour markets in Poland and in selected EU countries. The analysed empirical material allowed for the formulation of the conclusions below. Firstly, the labour market in Poland and in selected EU countries was characterised by a generally low level of fluctuations of seasonal employment. The second observation concerns the distribution of the seasonality of employment. In Poland there occurs an annual cycle of the seasonality of employment, with reduced seasonality of employment in the first and second quarter of a year and higher seasonal fluctuations in the third and fourth quarter of a year. Poland noted low peak to peak values of the seasonality of employment.

While comparing the seasonality of employment among groups of countries, significant differences were observed among them. Western European countries were described with a low level of average annual seasonality of employment. One annual cycle, with reduced seasonality in the two first quarters and increased seasonality in the two last quarters, and with a low amplitude of fluctuations. Central and Eastern European countries noted higher levels of average annual seasonality. Seasonality of employment was characterised by one annual cycle, with reduced seasonality in the two first quarters and increased seasonality in the two last quarters, and with a relatively high amplitude of fluctuations. Seasonality of employment in Poland, both average annual and average monthly levels, was characterised by a similar level, distribution throughout a year and an amplitude of fluctuations to the seasonality of employment estimated for a group of Western European countries.

Reasons for this state of affairs may be found in a different level of social and economic development of countries, which shall constitute a direction of future research for the authors.

REFERENCES

The Author’s Model of Assessing the Possibility of Achieving a Competitive Advantage Based on the Business Model and Position in the Supply Chain

KONIECZNA Izabela

1 The Jan Kochanowski University in Kielce (POLAND)
Email: izakonienzna@ujk.edu.pl

Work code CJ02F5009

Abstract

The aim of the article is to create a procedure for assessing the possibility of achieving a competitive advantage on the basis on the analysis of the degree of strategic objectives implementation through a business model, and analysis of the organization’s position in the supply chain. Authorial model of the possibility of achieving a competitive advantage has been developed basing on the authorial definition of the business model.

In the article is presented the matrix on which can be presented graphically in two-dimensional space results of the interaction of the degree of strategic objectives implementation by the business model and the position in the supply chain. The matrix consists of four areas that show the possibility of achieving a competitive advantage. Depending on the area in which the organization is located after calculations, it can read the possibility of achieving a competitive advantage.

Keywords: Business model, supply chain, competitive advantage, matrix

Introduction

Competitive advantage is obtained when an organization develops or acquires a set of attributes (or executes actions) that allow it to outperform its competitors. There have been many articles over the way in which companies seek to develop sustainable competitive advantage. There have occurred two main approaches – the market-based approach associated with M. Porter, and the resource-based approach based on broadly similar views from a number of authors. The market-based approach of strategy argues that industry factors and external market orientation are the primary determinants of firm performance, while the resource-based approach of the firm draws attention to the firm’s internal environment as a driver for competitive advantage and emphasizes the resources that firms have developed to compete in the environment [1].

According to M. Porter, competitive advantage can be identified through the value chain model – a basic tool for analyzing the sources of competitive advantage [2]. M. Srivastava, A. Franklin and L. Martinette state that some of the major organizational levers that are highly likely to influence a company’s competitive advantage are: leadership – company vision, mission, leadership and governance; incentives – reward and performance management systems; organizational culture – corporate orthodoxies and values; organizational design – organizational structure, globalization, collaboration effects; organizational systems – strategic planning, information technology infrastructure [3]. V. K. Ranjith used select case studies to establish the causal relationship between business models and the competitive advantage. According to his results firms with multiple business models demonstrated higher chances of gaining competitive advantage [4]. V.P. Rindova and C.J. Fomburn look at the company’s competitive advantage development as logical outcome of six processes, i.e. strategic investments, industry paradigms, resource allocations, strategic plots, strategic projections, and definitions of success [5]. G.L. Adams and B.T. Lamont claim that organizations achieve competitive advantage through the systematic application of learning, knowledge acquisition, and knowledge application via product, service, and process innovation [6]. The research conducted by M. Hakkak and M. Ghodsi [7] show that the
implementation of the balanced scorecard has the impact on the sustainable competitive advantage. The essence of the M.A. Peteraf’s model is that four conditions underlie sustained competitive advantage, all of which must be met. These include superior resources (heterogeneity within an industry), ex post limits to competition, imperfect resource mobility and ex ante limits to competition [8]. BCG has developed an analytical framework – the Global Advantage Diamond – for assessing a company’s current market position and devising strategies to achieve global competitive advantage. These are: market assess that leads to growth advantage, local adaptation that leads to “manyness” advantage, resource access that leads to resource leverage advantage, and network coordination that leads to integration advantage [9].

Despite the large number of approaches to assess the possibility of achieving a competitive advantage, there is no assessment of the possibility of achieving a competitive advantage based on both the business model and the position of the organization in the supply chain. Yet both the business model and a position in the supply chain are very important for an organization in order to create the best possible competitive advantage.

Therefore, the aim of the article is to create a procedure for assessing the possibility of achieving a competitive advantage on the basis on the analysis of the degree of strategic objectives implementation through a business model and analysis of the organization’s position in the supply chain. The first part of the article presents the author’s method of assessing the possibility of achieving competitive advantage, taking into account the position in the supply chain, and individual elements of the business model and their impact on the implementation of strategic objectives using the proposed method based on the analysis of such elements as: factors affecting sales revenues, customer value, value chain, resources/competencies and actions for the owners.

In the second part of the article is presented an empirical verification of theoretical assumptions on the example of dairy cooperatives. This verification is based on the results of face-to-face interviews with representatives of senior management of dairy cooperatives using the interview questionnaire.

The model of the possibility of achieving a competitive advantage

Authorial model of the possibility of achieving a competitive advantage has been developed basing on the authorial definition of the business model: the business model is a description of the elements constituting the value, both from the perspective of the organization and its customers. It includes identification of the sources of revenues basing on the value chain, and determines the value creation on the basis of a unique combination of resources/competencies that the organization possesses. The aim of the business model is to obtain such conditions of running the business in order to meet the needs of owners and act in their interest [10].

According to the assumptions regarding the method of evaluating the implementation of strategic objectives [11] and taking into account that the implementation of strategic objectives in the case of sources of sales revenues and activities for owners takes place when the organization has more sources of income and indicates more activities for owners, the following formulas can be used to determine the degree of achievement of strategic objectives:

\[ I_s = \frac{k}{n} \]

wherein:

- \( I_s \) – index of strategic objectives implementation determined on the basis of sources of sales revenues,
- \( k \) – the number of sources of sales revenues identified by the organization,
- \( n \) – the number of possible variants to choose out of sources of sales revenues.

\[ I_a = \frac{k}{n} \]

wherein:

- \( I_a \) – index of strategic objectives implementation in the case of actions for members of the organization,
- \( k \) – the number of actions for owners identified by the organization from the presented variants,
- \( n \) – the number of variants to choose from.
In the case of the value chain, it can be assumed that the strategic objectives are implemented to the greatest extent when the organization have an impact on the implemented activities, and have control over outsourced activities [11]. In this case, the following formula can be used to determine the degree of implementation of the strategic objectives:

\[ I_c = \frac{M(a + b)}{n} \]

\( I_c \) – index of the implementation of strategic objectives in the case of the value chain,  
\( M \) – mean,  
\( a \) – the number of activities carried out by the organization,  
\( b \) – the number of outsourced activities that are under control of the organization,  
\( n \) – the number of possible response options.

The measurement method of the degree of implementation of the strategic objectives of the organization by the adopted business model in the case of customer value and resources/competencies may be the index calculated according to following formulas [11]:

\[ I_w = \frac{\sum_{k=1}^{n} k}{n \cdot m} \]

\[ I_z = \frac{\sum_{k=1}^{n} k}{n \cdot m} \]

wherein:  
\( I_w \) – the degree of implementation of the organization’s strategic objectives in the case of customer value,  
\( I_z \) – the degree of implementation of the organization’s strategic objectives in the case of resources/competences,  
\( k \) – average rating of the elements from particular areas taken into account,  
\( n \) – number of areas,  
\( m \) – maximum value of the scale, where the maximum value means the best situation in the assessment from the point of view of the organization.

In order to determine the degree of implementation of strategic objectives by the business model, the following formula can be used:

\[ I = M(I_s + I_c + I_w + I_z + I_a) \]

\( I \) – the degree of strategic objectives implementation by the business model,  
\( M \) – mean,  
\( I_s \) – the degree of strategic objectives implementation in the case of factors affecting sales revenues,  
\( I_c \) – the degree of strategic objectives implementation in the case of the value chain,  
\( I_w \) – the degree of strategic objectives implementation in the case of customer value,  
\( I_z \) – the degree of strategic objectives implementation in the case of resources/competences,  
\( I_a \) – the degree of strategic objectives implementation in the case of actions for the owners.

The higher \( I \), namely \( I \to 1 \), the more the strategic objectives are implemented [11].

For the assessment of organization’s position in the supply chain are taken into account the position of the organization in relation to suppliers and customers. When determining the position to suppliers and customers, the following possibilities and values assigned to them are taken into account:

- Lack of bargaining power – 0
- Very weak bargaining power – 0.2
• Weak bargaining power – 0.4
• Average bargaining power – 0.6
• One of the key partners – 0.8
• Leader of the supply chain – 1

The following formula can be used to determine the organization’s position in the supply chain:

\[ K = M(k_d + k_c) \]

wherein:
- \( K \) – position in the supply chain,
- \( M \) – mean,
- \( k_d \) – position in relation to suppliers,
- \( k_c \) – position in relation to customers.

Having calculated the degree of implementation of strategic objectives through the business model \( (I) \) and the position in the supply chain \( (K) \), it is possible to determine the probability of achieving a competitive advantage by placing the obtained results on the matrix.

Using the matrix can be presented graphically in two-dimensional space results of the interaction of the degree of strategic objectives implementation by the business model and the position in the supply chain.

The position in the supply chain is on the abscissa axis, and the degree of achievement of strategic objectives by the business model is on the ordinate axis (Fig. 1).

![Fig. 1. The matrix of the assessment of the possibility of achieving a competitive advantage](source)

The possibility of achieving a competitive advantage the matrix locates in four areas, separated on the basis of the degree of strategic objectives implementation by the business model and the position in the supply chain. These areas are:
1. **Very low** possibility of achieving a competitive advantage, which occurs when the indexes \( I \) and \( K \) reach the values less than or equal to 0.5;
2. **Low** possibility of achieving a competitive advantage that occurs when the \( I \) index reaches value lower than or equal to 0.5 and the \( K \) index reaches value above 0.5;
3. **Average** possibility of achieving a competitive advantage, which occurs when the $I$ index reaches value above 0.5, and the $K$ index reaches value lower than or equal to 0.5;

4. **High** possibility of achieving a competitive advantage, which occurs when the indexes $I$ and $K$ reach the values higher than 0.5.

**Assessment of the possibility of achieving a competitive advantage based on the adopted model**

Empirical verification of the assessment of the possibility of achieving a competitive advantage based on the adopted model was developed on the basis of the results of face-to-face interviews conducted with representatives of senior management of dairy cooperatives using an interview questionnaire. Representatives of all cooperatives from section 10.5 of the PKD\(^8\) from voivodeships of south-eastern Poland, i.e. Świętokrzyskie, Lubelskie, Podkarpackie, Małopolskie and Śląskie, were invited to the survey. Due to the willingness of the cooperatives to participate in the research, the research was conducted in 20 cooperatives, i.e. over 33% of the population. The distribution of the sample is representative in that it reflects the most important characteristics of the population of which it is a part. The selection of the sample was purposeful.

The purposefulness of sampling involved the assignment of cooperative’s activities in accordance with the PKD, as well as the location of cooperatives in the indicated area covered by the survey.

After calculating the indexes, $I$ and $K$ (Table 1), the obtained results can be shown in the graph (Fig. 2).

<table>
<thead>
<tr>
<th>Cooperative</th>
<th>$I$ index</th>
<th>$K$ index</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.512</td>
<td>0.6</td>
</tr>
<tr>
<td>B</td>
<td>0.426</td>
<td>0.6</td>
</tr>
<tr>
<td>C</td>
<td>0.500</td>
<td>0.6</td>
</tr>
<tr>
<td>D</td>
<td>0.448</td>
<td>0.6</td>
</tr>
<tr>
<td>E</td>
<td>0.438</td>
<td>0.6</td>
</tr>
<tr>
<td>F</td>
<td>0.456</td>
<td>0.6</td>
</tr>
<tr>
<td>G</td>
<td>0.496</td>
<td>0.6</td>
</tr>
<tr>
<td>H</td>
<td>0.482</td>
<td>0.6</td>
</tr>
<tr>
<td>I</td>
<td>0.450</td>
<td>0.6</td>
</tr>
<tr>
<td>J</td>
<td>0.428</td>
<td>0.6</td>
</tr>
<tr>
<td>K</td>
<td>0.550</td>
<td>0.6</td>
</tr>
<tr>
<td>L</td>
<td>0.410</td>
<td>0.6</td>
</tr>
<tr>
<td>M</td>
<td>0.562</td>
<td>0.6</td>
</tr>
<tr>
<td>N</td>
<td>0.530</td>
<td>0.7</td>
</tr>
<tr>
<td>O</td>
<td>0.510</td>
<td>0.8</td>
</tr>
<tr>
<td>P</td>
<td>0.564</td>
<td>0.6</td>
</tr>
<tr>
<td>R</td>
<td>0.548</td>
<td>0.6</td>
</tr>
<tr>
<td>S</td>
<td>0.564</td>
<td>0.6</td>
</tr>
<tr>
<td>T</td>
<td>0.484</td>
<td>0.6</td>
</tr>
<tr>
<td>U</td>
<td>0.458</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*Source: Compiled by author.*

---

\(^8\) Polish Classification of Activities
Due to the fact that the difference in the results of $I$ index for individual cooperatives is small, therefore for greater clarity of the obtained results on Fig. 3 is shown a part of the Fig. 2.

**Fig. 2.** The possibility of achieving a competitive advantage by dairy cooperatives

*Source: compiled by author.*
As is apparent from Figures 2 and 3, twelve cooperatives have a low possibility of achieving a competitive advantage, since the $I$ index, which shows the degree of strategic objectives of the business model, is in the range between 0 and 0.5, and a $K$ index that shows the position in the supply chain is higher than 0.5. Eight cooperatives, on the other hand, have a high possibility to achieve a competitive advantage, as both $I$ and $K$ indexes reach the values above 0.5.

**Conclusion**

The article presents the method of assessing the possibility of achieving a competitive advantage in the form of a matrix, in which are taken into account two variables: 1. the degree of implementation of strategic objectives of the organization by individual components of the business model, i.e. factors affecting sales revenue, customer value, value chain, resources/competences and activities for the owners, and 2. position in the supply chain as a result of the position in relation to suppliers and customers. According to the author, the proposed method can be a new approach to the research and the use of the business model in assessing the possibility of achieving a competitive advantage.

The research results show that the proposed method can be a tool in the process of assessing the possibility of achieving a competitive advantage. This method has been verified empirically in terms of the possibility of achieving a competitive advantage by cooperatives. The results of the calculations developed on the basis of
the proposed method and transferred to the matrix showed that twelve cooperatives have a low possibility to achieve a competitive advantage, and eight have a high possibility to achieve a competitive advantage.

According to the author, the presented method shows that every element of the business model has the same impact on the entire model, that there is no more important or less important element. All are equally important and affect the degree of realization of the strategic objectives and, as a result, the possibility of achieving a competitive advantage. Similarly, when analyzing the position of an organization in the supply chain it can be seen that the position towards suppliers and customers is equally important because they jointly influence the possibility of achieving a competitive advantage. On this basis, there can be formulated some guidelines for further research that seem to be needed to be able to use the proposed method more fully. The basis for further research should be the extension of the scope to other organizational and legal forms of enterprises and other industries. Further research should show whether the proposed method can be directly replicated to other sectors of the economy.

REFERENCES

Skewed Integration: the Negative Representation of Poles by Expatriate Managers

ALLEN Gregory

Greenwich School of Management, (UK)
Email: allen.greg@outlook.com

Abstract

This paper provides a critique of a cross-cultural management (CCM) framework in understanding the interaction between Western expatriate managers in Poland and their Polish colleagues/subordinates based on data from 32 semi-structured interviews with British expatriate managers working in Poland. By critically analyzing the discourse of the expatriate managers, this paper argues that an interpretive approach highlights two dynamic elements crucial to such interactions which quantitative approaches fail to capture. These two dynamic factors provide a perspective from which the expatriate managers’ representation of Poles as managerially and culturally inferior can be better understood. By implication, it is proposed that similar representation on the part of expatriate managers can be observed in any scenario of Western expatriation to countries they perceive as being less economically developed.

Keywords: critical management studies, cross cultural management, expatriation

Introduction

The field of Cross Cultural Management (CCM) studies has, at long last, begun to engage critically with the western-centric origins of the field with increasing regularity (Jack and Westwood). Global West to rest flows of power underpin both CCM theory and western managerial knowledge transfer. These flows of power influence western expatriate managers often resulting in perceptions of managerial and cultural superiority manifested in the negative representation of the local Other. This paper presents and analyses examples of such representation and critically confronts the predominant positivistic methodology of quantifying national culture and the related fundamental inability to address this discourse.

The analysis is based on data from 32 semi-structured interviews with British expatriate managers working in Poland. By critically analysing the expatriate manager discourse, it is argued that an interpretive approach highlights two dynamic elements crucial to such interactions which quantitative approaches (Hofstede dimensions, GLOBE survey, etc.) fail to capture. The first of these dynamic elements involves the superordinate position in organisational structures which the British expatriate managers almost exclusively hold. The second element which the orthodox CCM approach fails to take into account involves changes in behaviour when managers are expatriated to a country which they perceive as economically less developed. These two dynamic factors provide a perspective from which the expatriate managers’ representation of Poles as managerially and culturally inferior can be better understood. By implication, it is proposed that similar representation on the part of expatriate managers can be observed in any scenario of Western expatriation to countries they perceive as being less economically developed.

Armstrong et al., (2017) rightly explore the ethical aspects of expatriation, but in so doing assume that the direction of travel (West to East, North to South or vice versa) is not a factor in interactions between the expatriated manager and the locals they may work with. This paper argues that the direction of travel is a crucial and understudied factor in such relationships to such an extent that the term expatriate is limited in its common
usage to Westerners living abroad. Those from the Central and Eastern Europe (CEE) region living in Western European countries, regardless of their profession and qualifications, are commonly represented as “economic migrants”. Nelson’s 2009 study of German representation of Polish immigrants is based on the hypothesis that “in spite of the remarkable progress made, there is a counterintuitive continuity in how Poland is publicly perceived and portrayed in public discourse.” (p. 173). Such negative representation and associated behaviors are something that the static Hofstedian approach fails to capture and address. Without a recognition of the superordinate position the expatriate managers are almost invariably hold, and the associated representation of the local Other, the idealistic goal of cultural integration is skewed in the direction of the foreign management.

In other words, integration is assumed to be towards the norms of the Western manager rather than local cultural/managerial norms or a compromise between the two. This paper argues, based on the empirical data collected, that Western expatriate managers who are in positions of higher authority represent the subordinate Poles they interact with as inferior.

Methodology

Interviews with 32 expatriate managers were held over an eleven-year period from 2004 to 2015. There were two phases of data collection with 18 managers interviewed in the 2004 to 2006 period and the remaining 14 interviews taking place between 2012 and 2015. The criteria set for choosing interview partners were that they were Western, English native-speakers (interview partners were from the US, Canada and the UK) working as managers or directors with western firms and had a minimum of six months’ experience living and working in Poland. No sampling technique was used and, due to the relatively small pool of potential interview partners, anyone who was willing, available, and matched the criteria was included in the study. The interviews typically lasted between 45 and 90 minutes and were held away from the interview partners’ place of work – either in a café, or at the Polish Academy of Sciences which provided logistical support with this study. Whilst this may not be the same as a first-class compartment as proposed by Easterby-Smith et. al. (2012), their examples of interviews held outside of the managers’ offices producing better results was a main factor in decisions regarding setting. The interviews themselves were semi-structured and loosely organized around an interview schedule which was not shared with the partners. Above all, partners were encouraged to tell stories. When a general statement was made, they were asked to give examples and often subsequently asked to expand further on their example. The goal of this story-telling approach is not to arrive at ‘facts’ or ‘truths’ but to produce a discourse within which is provided the managers’ own representation of the Other. Such a storytelling approach is increasingly being utilised by researchers as a way to investigate narratives (Driessen, 1997). Furthermore, my own position as an expatriate in Poland allowed for a close-up, partial ethnographic approach more conducive to an open, unguarded setting (Alvesson, 2003).

A critical discourse analysis (CDA) approach has been adopted as an analytical framework as CDA provides the opportunity to better understand the representation of Poles by the expatriate managers interviewed. Fairclough points out that representation is “clearly a discursal matter, and we can distinguish different discourses, which may represent the same area of the world but from different perspectives or positions” (Fairclough, 2006, p.26). Furthermore, CDA provides a framework through which discoursal examples of self-identifying and Othering can be analyzed. Intertextuality, which “accentuates the dialogically of a text, the dialogue between the voice of the author of a text and other voices” (Fairclough, 2006, p.9), is expected to provide rich data providing an insight into the representation of Poles through the selected retelling of others’ experiences and accounts.

The Static Perspective of the Hofstede Paradigm

The work of Hofstede provides a popular starting point for the management literature and introductory academic studies of cross-cultural dynamics in the workplace. Hofstede describes himself as “one of the most-
cited authors in social science” and points to the four decades of “constant attention and extension” of his work as evidence of the “unflagging interest” in the Hofstedian paradigm (Minkov and Hofstede, p.11). His five-dimensional model (sometimes four, sometimes six) of culture has become a foundation on which a multitude of studies have been based. As an analytical tool however, it is limited. The field of Cross Cultural Management studies has however, at long last, begun to engage critically with the Western-centric origins of the field on a more frequent basis. Global West to East/North to South flows of power underpin CCM theory and produce findings reflecting the presumed superiority of the ‘Western’ and implicitly white and male manager (Primecz, et al., 2016). This flow of power and presumed superiority exists not only in CCM theory but also in the cross-cultural interactions the theory attempts to describe.

It is important to remember that the Hofstede data originates from respondents living and working in their own country at the time. Furthermore, the respondents are from similar professional backgrounds. Through the Hofstede model it is possible to see, for example, that Americans generally prefer individualistic decision-making processes whereas Germans prefer collectivist. From this, one may deduce what types of problems are likely to arise when an American and a German meet in a business setting. As with all models in the social sciences however, the Hofstedian model provides us with a simplification of reality based on a number of assumptions.

While the Hofstede dimensions may prove adequate as a static measure of national cultures in isolation, they have inherent limitations in modelling power dynamics in first – second world (as well as first – third world) cross cultural interactions. Hofstede (2001) notes that according to his paradigm, the degree of inequality that members of a given culture accept or expect is a static one. Pesch and Bouncken point out however that “this optimistic view of cultural distance might be clouded by interactional obstacles driven by perceived cultural distance” (2017, p.33). The alternative approach adopted here is based on the understanding that the quantitative, static measures of culture distance which have been predominant in cross cultural management literature over the last 30 years “are not sufficient to fully understand this complex concept” (Chapman, et al., p. 217). In short, the approach adopted by orthodox CCM research through the Hofstede paradigm and methodologically comparable studies fails to capture two dynamic elements. The first of these elements is the adaptive behavior of the Western managers when expatriated to Poland. The second element is the superordinate position in which the Western managers almost exclusively find themselves. These failures are due to noted naïve assumptions in the model (Holden, 2002; Allen, 2016 and Mc Sweeney, 2002) regarding the nature of the reality in which real-world CCM interaction takes place.

Taras and Steele (2009) note that of ten postulates deriving from the Hofstede paradigm, the eighth states that matched samples should be used to study cultural differences, thus implying that matched sampling allows one to compare like for like, with culture alone responsible for the observed differences. The point that this paper addresses, however, is the inability of the Hofstede paradigm to be able to model the non-theoretic reality of one of two actors, or both, changing their behavior when interacting with each other. Can the stability of culture (Taras and Steele’s postulate number 3) be assumed? If we accept Hofstede’s numerous assumptions then the methodology can in fact operate as a reasonable comparator for two national cultures – in this example culture A and culture B in isolation. In the non-theoretic, real world however, cross cultural interaction does not take place in isolation but rather within a cultural setting which is not the national culture of one or both of the actors.

To illustrate this point, think of Hofstede’s dimensions of a given national culture (culture A) as a set within which is contained culture A’s, or set A’s, cultural characteristics. Then according to the Hofstedian model, we could compare set A to one for culture B (set B) and in so doing ascertain the similarities and differences between the two cultures. The ubiquitous Venn diagram (Fig. 1) can be used to illustrate this relationship. This simplification of the Hofstede model helps to illustrate the erroneous assumption. The Hofstede paradigm compares national cultures based on data collected in respondents’ own countries, but the model is used as a predictor of interactions between two or more individuals from different national cultures (e.g. sets A and B).
Thus far, the Hofstedian Venn diagram works reasonably well. Using set theory notation, this can be formulated as:
\{x: (x ∈ A) and (x ∈ B)}

\[ \text{A} \cap \text{B} \] represents the intersection of objects that belong to set A and set B. In our example, \( \text{A} \cap \text{B} \) is the intersection of cultural traits common to both cultures A and B.

\[ \text{A} \setminus \text{B} = \{x: (x ∈ A) and (x \notin B)\} \] on the other hand represents the objects that belong to set A, but not set B. In other words, the cultural traits unique to culture A which are not found in culture B. The problem with our Hofstede-Venn diagram, and the Hofstede paradigm in general, is that cross cultural interaction does not take place in culturally neutral isolation. For such interaction, at least one of the two individuals (‘a’ from culture A and ‘b’ from culture B) must interact in a setting where the national culture is not his or her own. In the example of the study this paper is based on, it is the Western (let us say British for example) manager ‘a’ from British culture A interacting with Polish manager ‘b’ from culture B. Crucially, this interaction takes place within the geographical constraints of culture B or, in our example, Poland.

**Adaptive Behavior of Expatriate Managers**

The previous section established the static perspective of the Hofstede model and its limitations in modelling inter-cultural contact in which one actor is likely to be in their own country and the other abroad. Can we expect the actor who is abroad however, let us say the British expatriate, to behave in the same way as if she or he were in the UK? Furthermore, can we expect the Pole to behave in the same way to the British manager as to another Pole? Research from this study indicates that neither of these are realistic assumptions. Shankar’s 2001 study supports these findings and points out that the Hofstede model conceals the different roles of “home” and “host” environments. (from Bjerregaard *et al.*, 2009). Analysis of the western manager interviews shows that the very fact that they are not in their own country influences their behavior and influences their chosen management style. Furthermore, the specific country they are expatriated to also has an impact. Analysis of the data indicates that the expatriate managers adapt their behavior to a given environment based on a number of factors including:

- their own preconceptions of the country;
- the depth of their immersion in the local culture;
- ability (or inability) to communicate in the local language;
- the degree of their contact with the expatriate community;
- their day to day on-job experiences;
- the strength of the organizational or corporate culture in their workplace.

It is important to note that interview partners were encouraged to tell stories of their experiences rather than asked specific questions. As such, they were not led towards pre-established conclusions. One interview partner,
a senior British manager from an international chemical company, shared a story typical of those told in many other interviews:

“I knew before I came to Poland, based on the experiences of my predecessor and other colleagues, that Poles are not good at planning and following through with plans. You know, deadlines and things like that. So, I knew. Before I came I mean. I knew that I would have to be more hands on. It’s not my job but I knew I had to.”

When asked if his actual experience after seven months in the country reinforced his expectations, he embellished his story with an interesting metaphor:

“Yes. Definitely. You see, they are grasshoppers. You cannot catch them. You cannot (inaudible) them, if you want to catch them they jump. And if they, if you try to catch them from another side, they jump in another direction. The only thing to do is to (pause) watch them. You must monitor things much more carefully here. But this takes time away from the work I should be doing.”

Finally, when asked if he managed people in Poland in the same way he had in the UK, the answer was simply, “No. I don’t. You can’t”.

Analysis of the interviews suggests that pre-existing assumptions or stereotypes about one another have a strong influence on cross cultural interaction. According to the data the managers, for the most part, displayed more negative attitudes to being in Poland, where they feel detached from local culture, than if they were in another Western country.

Super ordinary In Ccm Relationships

Within the Hofstede paradigm, and methodologically related studies, one of the key components which is missing is extra-cultural (outside of a given culture) power in cross cultural interactions. Data from interviews with the 32 western expatriate managers living in Poland, none were subordinate to Polish managers yet all 32 had Poles working under them as subordinates in their corporate structures. Such a distinction, which the Hofstede paradigm fails to capture, is a significant one. This power is not the Hofstedian dimension of power distance which refers to the internal workings within a culturally homogeneous organization, but rather the power dynamic present in real-life cross-cultural interaction. It is such power discrepancies through which expatriate managers perceive and represent themselves as both managerially and culturally superior. This can be framed in terms of Hurvitz’s 1965 superordinate-subordinate role relationships in which individuals see themselves in relationship to the other as dominant, equalitarian or submissive.

Expatriate managers interviewed as part of this study were asked to compare their own culture (national, corporate, institutional, etc.) with their experiences of the Polish equivalents in a non-leading fashion. The responses included value judgements and invariably interviewees described their own management culture (national and corporate) as superior and many implied that they felt their own national culture was, as a whole, superior to Polish. Those who compared their Polish experiences most negatively vis-à-vis that in their home country also tended to be the ones who had come to Poland with the most negative preconceptions of the country prior to their placement. Interview partners were also asked, in a neutral, non-leading manner, about workplace integration between expatriate management and local employees. Their responses were framed invariably in terms of stories of Polish staff integrating with what the managers perceived as Western norms. Integration itself was seen by the expatriate managers as a higher to lower interaction chain in which Poles are expected to integrate to ‘western norms’ without the need for a similar or reciprocal west to east integration. One interview partner, an American director of an IT firm which had recently expanded into Poland, discussed “the effective
transfer of knowledge” in such a manner that there was no doubt as to who should be, in his opinion, both disseminating and receiving this knowledge. The following comment was framed within a story about how he viewed his role in Poland:

“They’ve been through a lot – the Poles – and it’s been difficult. They say, they think, that they’re very entrepreneurial – and they are – but it’s not very sophisticated. Not very developed. What we need to do is show them – teach them. It’s about the effective transfer of knowledge so that they can develop their systems and their ways of working. And it’s nice to be able to do that. You know, to play a part in their development.”

When asked about the integration of his team, the interview partner also echoed the sentiments of many others that the Western managers’ perception of an integrated team is, in fact, one which conforms to the manager’s own cultural norms:

“It’s getting better. When they learn these things it’s easier for us to operate in an efficient way and some of them have been to the states to see what we’re doing there – how we do things. I wish we could take them all over ‘cos it would be great for them to be part of it, and to learn, and to see how much better it is when everyone understands. We’re getting there though. There’s a lot of learning left to do but we’re getting there.”

The preconceptions of other Western cultures compared more favorably to those of Poland amongst interview partners. Their opinions differed when asked about their attitude towards a subordinate Pole in Poland compared to a subordinate from another Western country (France, Germany and Canada were used as examples). Extra-cultural power distance seems to vary based on the preconceptions of the national culture of the person one is interacting with. The behavior of the Western managers may be affected by the dominant position they almost exclusively hold in such a context. Arrogance and feelings of superiority among individuals (Western managers) have consequences in organizations and produce systems of defense or resistance in those who are subject to such behavior in such a context (Allen, 2003). Furthermore, the CCM notion of cross cultural integration is undermined by Stahl and Voigt’s findings that cultural distance is less detrimental under conditions of higher autonomy and lower interdependency within interorganizational collaborations (2008).

Ethnocentrism, the idea that one’s own race, nation, group, etc. is better than any other, was evident in the stories told by interview partners about the Poles they interacted with in their workplace. This representation of the Other as inferior in a management context has an Orientalist element (Allen, 2015) in which Westerners in hierarchically superordinate positions represent the non-Western world “as something ontologically inferior to the west, and hence needing firm western supervision, guidance and assistance for becoming fully civilized, and developed/modern. (Banerjee and Prasad, p. 92). Another example illustrating this ethnocentric representation comes from a qualitative study of human resource management practices in foreign corporations operating in China. Chen and Cheung (2008) found evidence of “asymmetrical understanding” between Chinese and non-Chinese managers. Their analysis showed that Chinese managers are expected to be knowledgeable about western business and cultural norms but western managers were not expected have similar levels of knowledge and understanding about the local equivalent.

More geographically relevant, although not a study of expatriate management, is Nelson’s 2009 study of contemporary German-Polish relations which is “based on the hypothesis that, in spite of the remarkable progress made, there is a counterintuitive continuity in how Poland is publicly perceived and portrayed in public discourse.” (p. 173). In support of this hypothesis, Nelson provides examples of a popular discourse in which Poland is represented as “the inferior and threatening Other” (p. 175). Huntington’s The Clash of Civilizations? (1993) famously referred to this cultural divide in Europe as the Velvet Curtain of cultural difference. (p. 177).
Conclusions

This paper is based on data from 32 semi-structured interviews with Western expatriate managers in Poland which has been analyzed with a view to examining manifestations of power in the representation of Poles by Western expatriate managers. The findings suggest that the managers’ perception of an integrated team is actually synonymous with a team that conforms to the managers’ own cultural norms and that the Poles with whom the Western managers work are often represented as managerially and culturally inferior. Hofstede’s methodology provides an insight into national business cultures, but the model is unable to accurately describe the dynamic relationships present in the cases studied. As an example, according to Hofstede’s model of comparing national scores over cultural dimensions, managers coming from various Western countries should face different challenges in dealing with Poles in a business context. According to the data however, this is not the case. Most managers, viewing Poland as a non-western country, feel a bond with other Westerners of a similar status and had surprisingly similar accounts of working with Polish subordinates. Chapman et al., (2008) came to a similar conclusion in their comparison of German and British interaction with Polish managers. By comparing the respondents’ attitudes towards their foreign colleagues, the authors showed that respondents from countries with high scores for culture distance in Hofstedeian terms often perceived the cultural distance as not being so great. Their study found that German and British managers perceived themselves as more culturally similar to each other than to Polish managers despite the Hofstede paradigm measuring significantly closer similarity for Poles and Germans.

Whilst the approach adopted by this paper attempts to engage, in its own way, with the theory of “positive scholarship” in cross cultural management scholarship (Stahl and Tung, 2015), it raises legitimate and observed obstacles to the approach. The question of integration in a cross-cultural context raises the question of which cultural systems integration should be directed towards. In other words, whose integration? In an expatriate management context, managers are often sent from economically more developed, Western countries to those which are less developed or understood to be so. In such a scenario there may be resistance on the part of the expatriate manager regarding integration towards local culture yet, at the same time, an expectation of integration towards the work/management culture of the parent company. Polish employees were frequently represented by the interview partners as managerially and culturally inferior and showing a lack of integration to what the expatriate managers regard as Western cultural norms.

The continued proliferation of the Hofstede paradigm, as well as other methodologically similar models, have led to an assumption that “national cultural identity remains separate and distinct throughout the process of integration” (Boyacigiller et al., 2004). Rather than lessening difference, the predominant CCM paradigm can be seen as reinforcing it. As Said’s Orientalism posited, the cataloguing of difference and subsequent representation on the part of those controlling the discourse (Western CCM scholars in this case), reinforces difference and division. The findings of this paper suggest that such quantification of difference fails to address the underlying representation of the Other in real cross-cultural interaction and that changes in managerial behaviours when Western managers are expatriated to Poland, combined with their superordinate positions vis-à-vis the Poles they interact with, renders the orthodox CCM approach significantly limited.

REFERENCES

27. Taras, V., & Kirkman, B. L. (2009). Beyond Hofstede: Challenging the ten testimonies of cross cultural research. In C. Nakata (Ed.), Beyond Hofstede: Culture frameworks for global culture research (pp. 40-61).