CEA
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CEA Journal of Economics.....

ISSN 1857-5250
UDK 33

Price: 300 MKD (5 EUR)

Volume 11
Issue 2
1-90 pages

Skopje, Macedonia
December 2016

CEA Journal of Economics

ISSN 1857-5269
UDK 33
Volume 11, Issue 2
Skopje, December 2016
International Journal
Published since 2006

Contents

CEA Journal of Economics
Volume 11, Issue 2
1 - 90 pages
Skopje, Macedonia
December, 2016

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UDC 338.121:330.43(100)

IMPACT OF STRUCTURAL BREAKS PRESENCE ON ECONOMIC DEVELOPMENT OF EMERGING COUNTRIES

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Abstract

The panel group of 21 emerging countries is examined in the paper by employing the growth model. The impact of financial development and trade openness on economic development of emerging countries is estimated for the period 1995-2013 on the quarterly basis. The paper examines the presence of structural breaks in series and how the impact on financial development and trade openness on economic growth of emerging countries varies in the presence of structural shifts. Recent panel techniques are employed in this study, such as the Westerlund (2006) panel cointegration test and Im et al. (2005) unit root test that allow presence of structural shifts. Estimation results demonstrated that exposion of emerging countries to structural shifts significantly decrease the impact of financial development and trade openness on economic development.

JEL: *F 43*

Key Words: *Economic growth, financial development, trade openness, emerging markets, cointegration test, structural shifts.*

1. Introduction

The neoclassical and endogenous growth theories aimed to explain the correlation between economic growth and financial development by analyzing financial liberalization and trade openness since the last decades. Solow (1956) indicated that the policy change did not influence long-run economic growth. As stated in the endogenous growth theory literature financial development may lead to long-run economic growth

(Romer (1986), Lucas (1988), Rebelo (1991), Grossman and Helpman (1991), Pagano (1993), Khan (2001)). Financial development increases economic growth (Bagehot (1873), Schumpeter (1934), Hicks (1969), McKinnon (1973), Shaw (1973), and Claessens and Laeven (2005)). Economic growth may be triggered by increasing the pace of financial liberalization (Bekaert and Harvey (2000), Bekaert et al. 2001, 2002, and 2005). According to Blackburn and Hung (1998) economic growth is not affected by financial development and trade liberalization.

The endogenous growth theory states that in the long run economic growth may be achieved through policy changes. Financial development may create capital accumulation, technological innovation, and efficient allocation of resources (Menyah, Nazlıoğlu, and Wolde-Rufael, 2014). Trade openness and policies utilize competition, economies of scale, increasing inputs and production, capacity utilization, and spillover effects to influence the economy. Higher human capital, increasing returns on investment and savings rate raise the aggregate output levels in financially developed economies (Kar, Peker, and Kaplan, 2008). Rajan and Zingales (2003) suggest that financial development stems from higher levels of capital flows and trade. Trade openness and financial development are positively correlated in the long-run (Kim et al., 2010). Financial development increases net exports (Wolde-Rufael, 2009).

Levine (2003) states that financial development may increase the returns to saving and decrease risk; thereby decreasing savings and in turn economic growth. Robinson (1952) indicated that financial development is led by economic growth. Lucas (1988) stated that the role of finance on economic growth is overemphasized. Schumpeter (1934) argued that financial development increases economic growth through efficient allocation of resources that leads to technological innovations. Patrick (1966) suggested the demand following hypothesis, and the supply leading hypothesis. The direction of causality has four categories: (i) supply leading hypothesis - unidirectional causality from financial development to economic growth, (ii) demand following hypothesis - unidirectional causality from economic growth to financial, (iii) bidirectional causality between economic growth and financial development, and (iv) neutral hypothesis - no causality between financial development and economic growth.

The relationship between economic growth and financial development is analyzed in studies that utilize Granger causality tests, cross-section analysis (Goldsmith (1969), Atje and Jovanovic (1993), King and Levine (1993a and 1993b), Levine and Zervos (1998)), panel time-series analysis (Levine, 2005), panel GMM estimation (Levine, Loayza, and Beck, 2000; Beck, Levine, and Loayza, 2000) with fixed and random effects estimators (Hsiao et al., 1989; Pesaran and Smith, 1995; Weinhold, 1999; Nair-Reichert and Weinhold, 2001), and panel cointegration analysis (Neusser and Kugler, 1998; Christopoulos and Tsionas, 2004). Trade and financial liberalizations lead to economic growth (Roubini and Sala-i-Martin, 1991). Higher economic growth rates are witnessed in well-functioning financial markets of the developed and developing countries (Hassan et al., 2011, Kar et al., 2011).

Panel data causality test assuming slope heterogeneity is applied by Hurlin (2008). Bai and Kao (2006) indicate that the assumption of cross-sectional independence may not be satisfied by panel data which may create biased and inconsistent results. Konya (2006) assumes cross-sectional dependency and coefficient heterogeneity using a panel Granger causality test for 24 OECD countries between 1960 and 1997 based on SUR systems and Wald tests for two models. The bivariate model analyzes the GDP and exports relationship and the trivariate model studies the relationship between GDP, exports, and openness. Authors find one-way causality: (i) test results for the export led growth hypothesis reflect the direction of causality to be from exports to GDP for Belgium, Denmark, Iceland, Ireland, Italy, New Zealand, Spain, and Sweden, and (ii) test results for the growth driven exports hypothesis state the direction of causality to be from GDP to exports for Austria, France, Greece, Japan, Mexico, Norway, and Portugal. Two-way causality between exports and economic growth is observed for Canada, Finland, and the Netherlands. No evidence of causality was found for Australia, Korea, Luxembourg, Switzerland, the UK, and the USA.

Authors such as King and Levine (1993a), Savvides (1995), Levine et al. (2000), Khan and Senhadji (2003), Hassan and Bashir (2003), Chuah and Thai (2004), Christopoulos and Tsionas (2004), Al-Awad and Harb

(2005), and Shahbaz (2009) indicate that financial development and economic growth are positively correlated. Many studies indicate that the causality is from financial development to economic growth and not vice versa (King and Levine, 1993a and 1993b; Levine, 1997 and 2005; Levine et al., 2000; Khan and Senhadji, 2003; Christopoulos and Tsionas, 2004; Habibullah and Eng, 2006). A negative relationship between financial development and economic growth is stated by Friedman and Schwartz (1963) and Lucas (1988).

The long-run relationship between financial development and economic growth is analyzed (Kyophilavong et al., 2014). Authors apply the ARDL bounds testing approach to cointegration and indicate that while unidirectional causation running from economic growth to financial development supports the demand following hypothesis, unidirectional causation running from financial development to economic growth supports the supply leading hypothesis. The supply leading hypothesis shows that the causality runs from financial development to economic growth (Shahbaz and Rahman, 2012).

The causal relationship between financial development and economic growth for a heterogenous panel dataset of 19 high income countries for the period 1974-2001 is analyzed by Kemal et al. (2004) who underline that under high inflation rates financial development may affect economic growth negatively. A causal relationship between finance and economic growth or vice versa is also not found. Authors state that finance and growth literature consists of different groups: (i) finance promotes growth (Schumpeter, 1934), (ii) finance hurts growth (Levine, 2003), (iii) finance follows growth (Robinson, 1952), and (iv) finance does not matter (Lucas, 1988).

Hassan et al. (2011) apply Granger causality tests to find the direction of causality and analyze the relationship between financial development and economic growth across geographic regions and income groups in low and middle income countries. They find a strong positive correlation between financial development and economic growth in developing countries in the long run. Two-way causality is reflected for all the regions except Sub-Saharan Africa, East Asia and Pacific in the short run (Demetriades and Hussein (1996), Blackburn and Hung (1998), Luintel and Khan (1999), Khan (2001), Shan et al. (2001), Calderon and Liu (2003)), contradicting with McKinnon (1973), King and Levine (1993a), Levine et al. (2000), Christopoulos and Tsionas (2004) who state unidirectional causality from finance to growth. Economic growth increases the demand for financial services and thereby financial development (Kemal et al. (2004); Gurley and Shaw (1967); Goldsmith (1969), and Jung (1986)). The causal relationship is unidirectional, from growth to finance for Sub-Saharan Africa, East Asia and Pacific regions.

The supply-leading hypothesis stating financial development increases economic growth is supported by Hsueh et al. (2013) in their study of Asian countries such as China. The correlation between financial development and economic growth is stronger for the 84 countries analyzed for the period 1960-2003 (Rousseau and Wachtel, 2005). The correlation between financial development and economic growth for the Middle Eastern and North African (MENA) countries is explained by Kar et al. (2011) who apply panel causality test controlling for cross-sectional dependence. Their results indicate that, while most of the cross-sectional and panel studies find a positive correlation between financial development and economic growth most of the literature employing time series states either unidirectional or bidirectional causality. Kar et al. (2011) suggest that economic reforms and efficient financial systems may enhance economic growth in the long-run, and trade openness may influence financial development.

Panel cointegration approach is analyzed for ten MENA countries for the period between 1969 and 2000 (Al-Avad and Harb, 2005). The causal relationship between financial development and economic growth may be stronger in the long-run. Achy (2004) analyzes five MENA countries between 1970 and 1997 by controlling human capital and private investment and taking trade openness into account, and finds that financial development may not explain economic growth. Schich and Pelgrin (2002) apply a panel error correction approach to data for 19 OECD countries between 1970-1997, and state that there is a strong correlation between financial development and investment levels in the long-run for low and middle income economies.

The analysis of human capital, trade liberalization and financial development on economic growth for the

period 1960-2004 shows that trade and financial liberalizations affect economic growth positively (Kar et al., 2008). Habibullah and Eng (2006) using a panel data set with GMM technique, support the supply leading hypothesis and suggest that financial development and economic growth are strongly correlated in the developing countries.

Christopoulos and Tsionas (2004) employ panel unit root tests and panel cointegration and find unidirectional causality from financial development to economic growth in the long-run. Menyah et al. (2014) find support for the demand-following hypothesis for three countries out of 21 by allocating a bootstrapped panel causality analysis in order to explain the causality between financial development, trade openness, and economic growth. Limited causal relationship is found between financial development and trade openness. Results found by Agbetsiafia (2004) support the supply-leading hypothesis for Sub-Saharan Africa. Odhiambo (2007) finds supply-leading hypothesis for Tanzania, but demand-following hypothesis for Kenya and South Africa. Bidirectional causality is found between financial development and economic growth for Kenya (Wolde-Rufael, 2009). Fowowe's (2011) results state homogeneous bidirectional causality for the so-called variables.

The growth model extended for financial development tand trade openness is estimated for the presence of the long-run relationships. The long-run relationships are examined fro 21 emerging countries[1] for the period 1995-2013 on quarterly basis. The novelty of this study is the analysis of the long-run relationships in growth model of emerging countries in the presence of structural breaks. The rest of the paper is organized as follows. In the next section, the applied methodological approach is presented. In section 3, the obtained empirical results are reported, and finally, the last section concludes.

2. Methodology

Level of the financial development and a degree of the trade openness in developing countries are considered in the literature as most important determinants of economic development in emerging countries (Halicioglu, 2007, Vo, 2010, Polat et al., 2014). In order to estimate impact of financial development and of trade openness on economic growth the following linear model is employed:

$$\ln EG_{\mathrm{j,t}} = \beta_0 + \beta_1 \ln FD_{j.t} + \beta_2 \ln TO_{j,t} + \varepsilon \quad (1)$$

where $EG_{j,t}$ is economic growth of the j^{th} country at period t, and is presented by the real income per capita. $FD_{j,t}$ is the ratio of Money Supply (M2) to the GDP of the j^{th} country, which represents the financial development of the estimated country. Finally, $TO_{j,t}$ is the ratio of sum of export and import to GDP at period t, and represents the trade openness of the j^{th} country. ε_t is the error term associated with each observation at period t. It is expected that the improved level financial development and the higher degree of trade openness will increase economic growth of a country, therefore coefficients β_1 and β_2 are expected to have positive signs.

2.1 Unit root tests[2]

This paper employs two types of the panel unit root tests, those that do not allow for structural changes in series, and those that do allow for structural shifts. The first type of the panel unit root tests are the Levin, Lin and Chu (LLC) test (Levin et al., 2002), the Im, Pesaran and Shin (IPS) test (Im et al. 2003), the Fisher-

1) Estimated 21 emerging countries are: Argentina, Brazil, Bulgaria, Chile, Colombia, Estonia, Hungary, India, Indonesia, Lithuania, Malaysia, Mexico, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey and Ukraine.

2) Theoretical explanations in sections 2.1 Unit root tests, 2.2 Stability test and 2.3 Cointegration tests, are heavily relies on Ketenci (2013)

type tests using ADF and PP tests Maddala and Wu (1999) and the Choi (2001), and the Hadri (Hadri, 2000) test. The LLC test is based on orthogonalized residuals and on the correction by the ratio of the long-run to the short-run variance of each variable. One of disadvantages of the LLC test is that it allows for heterogeneity only in the constant term of the ADF regression. The IPS test is the superior test to the LLC test and was proposed by Im et al. (2003) as a solution to the homogeneity issue. This test allows for heterogeneity in both the constant and slope terms of the ADF regression. An alternative test is proposed by Maddala and Wu (1999) and Choi (2001) and employs the Fisher test, which is based on combining the P-values from the individual unit root test statistics such as ADF and PP. One of the advantages of the Fisher test is that it does not require a balanced panel. Finally, the Hadri test is a heterogenous panel unit root test that is an extension of the test of Kwiatkowski et al. (1992), the KPSS (Kwiatkowski–Phillips–Schmidt–Shin) test, to a panel with individual and time effects and deterministic trends, which has as its null the stationarity of the series.

The second type of tests that are employed in this study allow for structural shifts in series. Im et al. (2005) proposed the LM unit root test that is a panel extension of the Schmidt and Phillips (1992) test. The LM test allows for one and two structural shifts in the trend of a panel and of every individual time series. Im et al. (2005) illustrated that in the series where structural shifts do not exist the size of distortions and loss of power in the panel unit root tests remain insignificant when structural shifts are accommodated. However, size distortions and loss power in the tests were found to be significant when unit root tests were applied to the time series without taking into account the existing structural shifts. The break date in the Im et al. (2005) test is chosen using the minimum LM statistics of Lee and Strazicich (2003, 2013). In this method, the break date is selected when the t-statistic of possible break points is minimized.

2.2 Stability test

The stability of series is the requirement for panel cointegration tests that allow for structural shifts. Estimation of parameter stability in cointegration relationships has been done by employing the Hansen's (1992) stability test. The test is based on the fully modified OLS residuals proposed by Phillips and Hansen (1990). The stability test produces three test statistics: *supF*, *meanF* and *Lc* and requires data to be non-stationary. The null hypothesis of the *supF* statistic tests is cointegration with no structural shift in the parameter vector versus the alternative hypothesis of cointegration in the presence of sudden structural shifts. The *meanF* and *Lc* statistics test for a cointegration with constant parameters against an alternative hypothesis of gradual variance in parameters, which is considered no cointegration. Particularly, the *meanF* statistic is used to capture the overall stability of the model.

2.3 Cointegration tests

The long-run relationships in the growth model of emerging countries are examined by two different tests. First test does not allow for structural breaks and is proposed by Pedroni (1999). The second one is proposed by Westerlund (2006) and allows for multiple structural breaks in series. The following system of cointegrated regressors is considered for estimation in cointegration tests:

$$y_{it} = \alpha_i + \beta x_{it} + \varepsilon_{it} \quad (2)$$

Where i=1,…, N, and t=1,…., T, α_i are constant terms, β is the slope, y_{it} and x_{it} are non-stationary regressors, and ε_{it} are stationary disturbance terms.

Pedroni (1999) tests for the null hypothesis of no cointegration in dynamic panel series with multiple regressors proposing a panel and group cointegration test where seven residual-based tests (with four panel statistics and three group statistics) were introduced. The first four panel cointegration tests, which are defined as within-dimension-based statistics, use the following null and alternative hypotheses: $H_0 : \phi = 1, \quad H_1 : \phi < 1$ assuming the homogeneity of coefficients under the null hypothesis. The other three group statistics, which

are defined as between-dimension-based statistics, use $H_0 : \phi_i = 1,$ versus $H_1 : \phi_i < 1$ for all *i*. In this case for each *i*th unit it is necessary to calculate *N* coefficients, where slope heterogeneity across countries is now allowed under the alternative hypothesis.

In the long run, macroeconomic series such as economic growth, money supply and trade are exposed to structural shifts in emerging countries. Therefore, Westerlund (2006) methodology is employed in this study that allows for structural shifts. This is the panel cointegration test that allows for multiple structural breaks accommodation in the level as well as in the trend of cointegrated regression. This test is based on the panel cointegration residual-based LM test proposed by McCoskey and Kao (1998), which does not allow for structural shifts. The advantage of Westerlund's test is that it allows for the possibility of known a priori multiple structural breaks or it allows for breaks the locations of which are determined endogenously from the series. At the same time this test allows for a possibility of structural breaks that may be placed at different locations in different individual series. Westerlund (2006) showed in his work that the test is free of nuisance parameters under the null hypothesis and that the number and location points of structural shifts do not affect the limiting distribution. The null of the test is $H_0 : \phi_i = 0$ for all $i = 1,...., N,$ versus alternative hypothesis: $H_1 : \phi_i \neq 0$ for $i = 1,...., N_1,$ and $\phi_i = 0$ for $i = 1,...., N,$ One of important advantages of this test is that the alternative hypothesis is not just a general rejection of the null like in the commonly used LM panel cointegration test of McCoskey and Kao (1998), but allows ϕ_i to differ across individual series.

3. Empirical Results

3.1 Unit root tests

The Hansen (1992) stability test requires series to be non-stationary, therefore firstly the integration order of panel series has to be examined. Five alternative unit root tests, the LLC, IPS, ADF, PP, and Hadri tests are employed in this study. The null hypothesis of the LLC test is the presence of the common unit root process in panel series, while the Hadri test has the opposite hypothesis of no unit root in the common unit root process. The presence of individual unit root in series is investigated by the IPS, the ADF, and the PP tests. The results of the unit root tests are presented in Table 1. The unit root presence was detected in levels and no unit root was found in the first differences of Economic Growth and Trade Openness series by all four tests. However, results for the Money Supply variable are mixed, where the unit root presence in levels was rejected by the LLC test. However, the presence of common sources of non-stationarity may lead to over-rejection the null of non-stationarity by the LLC test (Banerjee et al. 2004, 2005). Different reasons of the possible weak performance of the LLC test are discussed in the literature. Tests that do not require pooling in series may performer better relative to the LLC test, which is based on the pooled regressions (Banerjee et al. 2004, 2005). Serially correlated errors may lead the test to over-reject the null hypothesis (Im et al., 2003). Presence of individual specific trends in pooled series may lead the LLC test to loose a power (Breitung, 2000). Taking into consideration weaknesses of tests we conclude that all series are generated by a non-stationary stochastic process.

In order to acquire stronger evidence of the nonstationarity of series additional test Im et al. (2005) that allows for one and two structural shifts in series is applied to the series. Results for the LM unit root tests with structural shifts are reported in Table 2 for the case of one structural shift, and Table 3 for the case of two structural shifts. Both unit root tests provide strong evidence of the unit root presence in the panel series, irrespective of the presence of structural shifts. The LM unit root tests for two structural shifts demonstrated stronger power to reject the null hypothesis stationarity.

Stability test

The non-stationarity of panel series allows us to employ the Hansen's (1992) stability test. The test consists of three different statistics, the *supF*, the *meanF* and the *Lc* statistics. Results of estimations are reported in

Table 4. The *supF* statistic rejects the stability of model parameters indicating the presence of structural shifts in parameters for Argentina, Brazil, Bulgaria, Chile, Hungary, India, Indonesia, Philippines, Poland, Thailand, Turkey, and Ukraine. Parameters of all other countries are estimated as stable. The *meanF* statistics of Colombia, Estonia, Mexico, South Africa, and Ukraine failed to reject the hypothesis of cointegration, and failed to reject the null hypothesis in favor of the instability of the overall model for the rest of countries. The null hypothesis of constant parameters is not rejected by the *Lc* statistic in cases of Estonia, Mexico, Peru, and South Africa. In all other countries, the statistic rejects the hypothesis of constant parameters. Basing on results of the stability test we divide estimated countries into two groups, stable – where the evidence of structural breaks was not detected, and unstable – where the presence of structural shifts was detected by the stability test. Group of stable countries include Estonia, Mexico, and South Africa. All other countries are included in the group of unstable countries.

Cointegration test

The Westerlund (2006) panel cointegration test in the presence of multiple structural breaks may be employed for the group of countries where structural breaks were detected, unstable group. Results of the Westerlund (2006) panel cointegration test estimations are reported in Table 5. Panel A illustrate the results of estimations with structural shifts allowed in constant. Panel B demonstrates results with structural shifts allowed for both constant and trend of the regression. The Westerlund (2006) test detected up to five breaks for estimated countries. Detected structural shifts are concentrated around specific dates. For example, there is a prevalence of breaks around periods 1997-1998 and 2003-2004. The 1997-1998 period is characterized by the Asian financial crisis, where many emerging countries were affected. The 2003-2004 period has experienced rapid growth of commodity prices such as nickel, copper, zinc and others. This may be one of reasons of considerable growth in emerging markets (Arbatli and Vasishtha, 2012).

The LM statistics of the Westerlund (2006) cointegration test reject the null hypothesis of cointegration in both cases where constant and constant with trend are allowed. The estimation results do not provide evidence of cointegration in the estimated model of economic growth. Therefore we conclude that there are no long-run relationships between economic growth, financial development and trade openness in emerging countries when their economies are exposed to structural shifts.

The Pedroni (1999) panel cointegration test is employed to test cointegration characteristics in countries where structural shifts were not detected, stable group. The Pedroni (1999) panel cointegration test may be applied only to non-stationary variables. After finding evidence of non-stationarity (Table 1) of series the test was employed. Table 6 reports the results of the Pedroni (1999) panel cointegration test for stable countries. All six statistics of the cointegration test rejected the null hypothesis of cointegration in both cases when only constant and constant with trend are included. However only the group ADF-statistics failed to reject the null hypothesis. Most of statistics of the Pedroni (1999) test provide strong evidence of stable long-run relationships among panel series.

Empirical results provide strong evidence for the existence of long-run relationships in the growth model of the estimated emerging countries, which are not exposed to structural shifts. However there is no evidence supporting the long-run relationships in the growth model in countries where structural shifts are detected. Therefore it can be concluded that financial development and trade openness do not determine economic growth in emerging countries that are exposed to structural breaks. At the same time stable emerging countries experience long-run relationships between economic growth, financial development and trade openness.

4. Conclusion

This paper investigated the long-run relationships in the growth model between economic growth, financial development, and trade openness in 21 emerging countries. In order to investigate long-run relationships in the growth model of emerging countries recently developed econometric methods were applied, such as the Im et al. (2005) unit root test in the presene of structural shifts and the Westerlund (2006) panel cointegration test in the presence of multiple structural shifts. Quarterly series for the period 1995-2013 are estimated. Additionally the Hansen's (1992) stability test is employed for investigation of series for the presence of structural shifts. As a result, only three countries out of 21 estimated emerging countries were determined by the stability test as stable countries without structural shifts. The Westerlund (2006) cointegration test was applied to the panel of unstable countries, allowing for maximum five breaks and the Pedroni (1999) panel cointegration test was applied to stable countries. There was no evidence found for the long-run relationships in the growth model of emerging countries, which are exposed to structural shifts. Opposite to the results of the Westerlund (2006) test, the Pedroni panel cointegration test provided strong evidence of cointegration for the group of stable emerging countries.

This study illustrates that the financial development and trade openness are making an economy to work only if this economy is not exposed to structural shifts. If an emerging country experiences instability, improvement in financial development and increasing degree of trade openness may not benefit the broken system, and other sources of economic growth have to be searched for.

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6. Appendix: Tables

Table 1. Unit root tests

	GDP/capita		Money Supply		Openness	
	level	Δ	level	Δ	level	Δ
LLCa	0.85	5.84	-7.03**	-4.38**	0.34	-24.64**
	I(1)	I(1)	I(0)	I(0)	I(1)	I(0)
IPSb	5.17	-15.71**	-1.44	-14.99**	4.03	-27.11**
	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)
ADFb	18.89	301.41**	68.51**	314.86**	17.43	475.91**
	I(1)	I(0)	I(0)	I(0)	I(1)	I(0)
PPb	53.20	439.20**	115.39**	502.57**	25.31	517.62**
	I(1)	I(0)	I(0)	I(0)	I(1)	I(0)
Hadric	28.35**	-0.91	28.74**	8.02**	27.73**	0.47
	I(1)	I(0)	I(1)	I(1)	I(1)	I(0)

Note: Estimations are made with inclusion of constant and trend, estimations are made with 1 specified lag, with increase of lag length the power of tests increases in favor of unit root presence in level estimations. * denotes significance at the 5% significance level. a. tests the hypothesis of the presence of the common unit root process,

b. tests the hypothesis of the presence of the individual unit root process, c. tests the hypothesis of no unit root in the common unit root process.

Table 2. Panel unit root test with one structural break

Country	GDP/capita			M2			Openness		
	LM	Break	Lag	LM	Break	Lag	LM	Break	Lag
Argentina	-5.77**	2009Q1	5	-4.33**	1999Q2	7	-4.47*	2010Q2	7
Brazil	-5.78**	2010Q3	5	-6.08**	2009Q2	1	-6.99**	2011Q2	1
Bulgaria	-6.27**	2011Q1	5	-4.65**	2002Q3	7	-6.76**	2004Q2	1
Chile	-5.62**	2010Q4	5	-4.17**	1998Q2	7	-3.91	2009Q3	7
Colombia	-5.42**	1999Q1	5	-4.99**	1998Q2	7	-4.48*	2009Q2	7
Estonia	-5.51**	2005Q1	5	-8.54**	1998Q3	1	-4.45*	2010Q1	7
Hungary	-5.52**	2010Q4	5	-9.06**	1998Q3	1	-7.62**	2003Q4	1
India	-5.49**	2009Q4	5	-5.39**	2006Q3	8	-4.47*	2005Q1	7
Indonesia	-5.39**	1998Q1	5	-4.22**	2010Q2	7	-6.33**	2005Q4	1
Lithuania	-5.43**	1998Q4	5	-4.78**	2011Q3	8	-7.24**	2006Q2	1
Malaysia	-5.59**	1998Q3	5	-3.66**	2005Q3	6	-6.39**	1999Q4	1
Mexico	-5.55**	1998Q2	5	-5.32**	2005Q3	8	-4.01	1998Q4	7
Peru	-5.50**	1998Q1	5	-5.56**	2001Q4	8	-5.61**	2004Q1	0
Philippines	-5.94**	1998Q3	5	-5.72**	2005Q1	8	-8.16**	2000Q1	1
Poland	-5.79**	1998Q2	5	-4.32**	2000Q4	8	-7.97**	2002Q1	1
Romania	-5.32**	2000Q1	5	-4.06**	1998Q3	3	-4.55*	1999Q4	7
Russia	-5.56**	1997Q4	5	-4.72**	2004Q2	7	-7.95**	1997Q4	1
South Africa	-5.44**	2009Q3	5	-4.92**	1998Q4	7	-8.52**	2001Q1	1
Thailand	-5.24**	2009Q4	5	-3.68**	1998Q2	7	-4.63**	2004Q2	7

Turkey	-5.78**	2011Q2	5	-6.55**	1997Q3	1	-7.03**	2008Q2	1
Ukraine	-6.11**	2011Q1	5	-4.00**	2003Q2	7	-7.77**	2010Q4	1
MinLM	-6.11**	2011Q1	5	-4.00	2003Q2	7	-7.77**	2010Q4	1
LM statistic	-28.57**			-24.95**			-32.26**		

Notes: The critical values for the panel LM test with a break at the 1%, 5% and 10% are −2.326, −1.645 and −1.282, respectively. The 1%, 5% and 10% critical values for the minimum LM test with one break are −5.11, −4.50 and −4.21, respectively (Lee and Strazicich [2013]). **denotes significance at the 1% level.

Table 3. Panel unit root test with two structural breaks

Country	**GDP/capita**				**M2**				**Openness**			
	LM	Break	Lag	LM	Break	Lag	LM	Break	Lag			
	LM	Break1	Break2	Lag	LM	Break1	Break2	Lag	LM	Break1	Break2	Lag
Argentina	-6.42**	2003Q3	2006Q2	5	-8.06**	2000Q1	2010Q2	1	-7.85**	2000Q1	2010Q3	1
Brazil	-6.39**	2001Q1	2005Q2	5	-7.68**	1998Q2	2001Q4	1	-8.42**	1999Q3	2010Q2	1
Bulgaria	-7.04**	2005Q4	2010Q2	5	-7.29**	1998Q1	2002Q3	1	-8.49**	1997Q4	2002Q4	1
Chile	-6.45**	2005Q3	2010Q1	5	-8.72**	1999Q2	2008Q1	1	-8.66**	1999Q2	2009Q4	1
Colombia	-6.55**	2000Q4	2010Q3	5	-9.73**	1999Q1	2004Q1	1	-7.68**	2004Q1	2004Q4	1
Estonia	-6.28**	2005Q1	2011Q1	5	-9.68**	1998Q4	2003Q4	1	-8.08**	1998Q4	2004Q1	1
Hungary	-6.27**	2005Q3	2010Q1	5	-9.94**	1998Q3	2003Q4	1	-8.59**	2002Q1	2005Q2	1
India	-6.19**	2004Q3	2010Q3	5	-8.15**	1998Q2	2000Q1	1	-8.59**	2007Q1	2009Q2	1
Indonesia	-6.79**	1999Q4	2009Q3	5	-8.34**	1998Q2	2003Q1	1	-8.53**	2001Q2	2004Q4	1
Lithuania	-6.77**	1999Q3	2009Q2	5	-9.32**	1998Q1	2002Q4	1	-8.74**	2001Q2	2006Q2	1
Malaysia	-6.61**	1999Q2	2009Q1	5	-5.09**	2000Q3	2011Q2	7	-8.01**	2001Q1	2004Q2	1
Mexico	-6.86**	1999Q1	2008Q4	5	-5.71**	2005Q3	2010Q4	7	-8.15**	1999Q3	2008Q1	1
Peru	-6.85**	1998Q4	2008Q3	5	-5.92**	2002Q4	2007Q2	7	-8.53**	2000Q2	2011Q1	1
Philippines	-6.37**	1997Q4	2003Q4	5	-6.08**	1999Q3	2005Q1	7	-8.89**	2000Q1	2010Q4	1
Poland	-6.20**	1997Q3	2003Q3	5	-7.51**	1998Q3	2008Q3	1	-8.98**	2000Q1	2003Q2	1
Romania	-6.44**	1998Q1	2007Q4	5	-7.19**	1998Q1	2003Q1	2	-7.81**	1998Q2	2004Q4	1
Russia	-6.09**	1999Q3	2003Q1	5	-7.77**	1999Q2	2004Q3	1	-8.57**	1998Q2	1999Q2	1
South Africa	-6.61**	1997Q3	2007Q2	5	-5.36**	1998Q3	2004Q1	7	-9.81**	1999Q2	2001Q3	1
Thailand	-5.73**	2004Q2	2007Q4	5	-6.80**	1997Q3	2009Q4	1	-9.18**	1999Q1	2004Q1	1
Turkey	-6.39**	2007Q1	2011Q2	5	-7.34**	1999Q1	2002Q3	1	-9.56**	1998Q4	2003Q4	1
Ukraine	-6.67**	2006Q4	2011Q1	5	-7.15**	1998Q4	2002Q2	1	-8.87**	1998Q3	2003Q3	1
MinLM	-6.67**	2006Q4	2011Q1	5	-7.15**	1998Q4	2002Q2	1	-8.87**	1998Q3	2003Q3	1
LM statistic	-35.15**				-42.99**				-50.68**			

Notes: The critical values for the panel LM test with a break at the 1%, 5% and 10% are −2.326, −1.645 and −1.282, respectively. The 1%, 5% and 10% critical values for the minimum LM test with two breaks are −5.823, −5.286 and −4.989, respectively (Lee and Strazicich [2003]). **denotes significance at the 1% level.

Table 4. The Hansen (1992) stability test in cointegrated relations

Country	SupF		MeanF		Lc	
	test	p-value	Test	p-value	test	p-value
Argentina	1.05	0.01	9.35	0.01	16.54	0.03
Brazil	1.36	0.01	12.12	0.01	17.59	0.02
Bulgaria	1.36	0.01	39.83	0.01	96.49	0.01
Chile	0.78	0.02	15.19	0.01	26.13	0.01
Colombia	0.12	0.20	2.46	0.20	27.04	0.01
Estonia	0.26	0.20	4.29	0.18	13.15	0.11
Hungary	1.09	0.01	20.65	0.01	75.24	0.01
India	1.59	0.01	75.57	0.01	469.85	0.01
Indonesia	1.17	0.01	28.00	0.01	84.90	0.01
Lithuania	0.58	0.06	73.59	0.01	666.74	0.01
Malaysia	0.35	0.20	9.02	0.01	41.48	0.01
Mexico	0.38	0.19	3.39	0.20	8.03	0.20
Peru	0.57	0.07	6.44	0.04	13.28	0.10
Philippines	0.96	0.01	13.21	0.01	76.66	0.01
Poland	1.48	0.01	34.82	0.01	246.96	0.01
Romania	0.57	0.07	19.53	0.01	219.26	0.01
Russia	0.48	0.11	8.62	0.01	17.46	0.02
South Africa	0.16	0.20	3.54	0.20	9.69	0.20
Thailand	1.61	0.01	29.78	0.01	80.72	0.01
Turkey	1.06	0.01	25.55	0.01	57.20	0.01
Ukraine	0.62	0.05	5.12	0.11	17.54	0.02

Table 5. Estimated structural breaks using the approach of Westerlund (2006).

Panel A breaks in constant						
Country	Breaks	Date				
Argentina		1995Q2	2001Q3	2006Q1		
Brazil		1995Q2	2006Q1	2009Q2		
Bulgaria		1995Q4	1999Q2	2002Q2	2005Q2	2009Q2
Chile		1995Q4	2000Q3	2003Q4	2006Q3	2010Q3
Colombia		1995Q4	1998Q3	2003Q2	2006Q1	2010Q3
Hungary		1995Q3	1998Q1	2001Q1	2004Q1	
India		1995Q1	2005Q2			
Indonesia		1995Q4	1997Q4	2003Q1	2006Q2	2009Q3
Lithuania		-	-	-	-	-
Malaysia		1995Q2	1997Q4	2002Q1		
Peru		1995Q2	2004Q1	2007Q1		
Philippines		1995Q4	1997Q4	2003Q3	2006Q4	2009Q4
Poland		1995Q2	2003Q3	2006Q3		
Romania		1995Q3	1998Q2	2002Q2	2005Q2	
Russia		1995Q3	1997Q4	2006Q1	2008Q4	
Thailand		1996Q1	1997Q4	2000Q3	2003Q2	2006Q1
Turkey		1995Q3	1998Q4	2004Q2	2010Q1	

Ukraine		1995Q3	1998Q3	2002Q1	2004Q4	
Lm	4.14					
Panel B breaks in constant and trend						
Country	Breaks	Date				
Argentina		1995Q3	1998Q3	2003Q1	2008Q4	
Brazil		1995Q3	1998Q4	2002Q4	2007Q3	
Bulgaria		1995Q2	1997Q4	2008Q4		
Chile		1995Q3	1998Q2	2004Q3	2008Q4	
Colombia		1995Q3	1998Q3	2002Q3	2008Q3	
Hungary		1995Q4	1998Q3	2001Q3	2005Q3	2008Q3
India		1995Q3	1998Q3	2004Q1	2008Q3	
Indonesia		1995Q3	1997Q4	2000Q4	2004Q4	
Lithuania		1995Q4	1997Q3	2000Q3	2005Q3	2008Q4
Malaysia		1995Q4	1997Q4	2000Q4	2003Q3	2008Q3
Peru		1995Q4	1997Q3	2000Q2	2004Q1	2007Q1
Philippines		1995Q4	1997Q4	2000Q3	2006Q1	2010Q3
Poland		1995Q4	1999Q1	2001Q4	2004Q3	2008Q3
Romania		1995Q4	1998Q2	2001Q1	2004Q3	2007Q3
Russia		1995Q3	1998Q2	2004Q3	2008Q4	
Thailand		1995Q3	1997Q3	2003Q1	2009Q3	
Turkey		1995Q3	1999Q2	2002Q1	2006Q1	
Ukraine		1995Q4	1998Q2	2002Q3	2005Q2	2008Q4
Lm	10.86					

Notes: The CV at the 1 per cent level is 2.28.

Table 6. Panel cointegration tests

	Stable countries	
	c	c&t
Pedroni		
Panel v-Statistic	6.52**	4.04**
Panel rho-Statistic	-5.29**	-4.05**
Panel PP-Statistic	-3.82**	-3.69**
Panel ADF-Statistic	0.56	1.62
Group rho-Statistic	-2.696**	-2.04*
Group PP-Statistic	-2.67**	-2.61**
Group ADF-Statistic	-0.61	0.22

Note: The critical values are based on Pedroni (2004). Null hypothesis for cointegration tests: No cointegration. ** and * reject hypothesis of no cointegration at 1% and 5% level of significance. Lag selection is based on the SIC with automatic selection. c denotes constant, c&t – constant and trend, U – group of countries where structural breaks were detected, unstable countries, S – group of countries, where structural breaks were not detected, stable countries.

7. Appendix: Data

The quarterly data for the period between 1995 Q2 and 2013 Q2 for 21 emerging countries are employed in this study. Quarterly GDP data are acquired from the International Monetary Fund Financial Statistics (IFS). Current domestic prices are used, which are converted into current dollars by using the exchange rates obtained from the same source. Money Supply (M2) data are obtained from sources like the OECD, the World Bank, and Central Banks of estimated countries. Finally, quarterly data on import are obtained from the IFS and the FED Saint Louis database. In some cases, where values are provided on the annual basis, the transformation approach to quarterly data was employed. Estimations employ the logs of individual data.

UDC 330.101.541:[338.57.055.3:665.61(100)"1998/2015"

THE EFFECTS OF FALLING CRUDE OIL PRICES ON MACROECONOMIC PERFORMANCE AND POLITICAL STABILITIES IN THE FIRST SEVEN NET OIL EXPORTERS' COUNTRIES

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Abstract

The fluctuations in oil prices have potentially significant effect on macroeconomic money meters of countries. At the present time, production and economic growth ease off especially in China and in the world, the USA started to produce oil shale, a substitute for conventional crude oil. In the meantime, OPEC decided to keep production quotas intact and consequently crude oil prices declined to 33 USD in January 2016 with respect to 147 USD in June 2008. In this case, Russian Ruble significantly weakened against U.S. dollar and Euro; then, Saudi Arabia has declared a huge deficit in its budget. Therefore changes in oil prices should be monitored closely as an important macroeconomic variable.
In this study, the effects of oil prices in first seven net oil exporters' countries (Saudi Arabia, Russia, Canada, Nigeria, Kuwait, Kazakhstan and Venezuela) on national income, export and political risk structure were analyzed with a new generation of panel data analysis for the period 1998-2015. At the end, it was found that change of oil prices impacts macroeconomic variables of countries simultaneously but it impacts political stability of countries in different directions.

Keywords: *Oil Prices, Politic Risk, Export, GDP.*
Jel Codes: *G32, O13.*

Introduction

Fluctuations in oil prices have been encountered as a complicated phenomenon in the agenda of policy makers and primary players in the business world for years. Since WWII, shock waves in both supply and demand sides have evolved survey of the world economy persistently; intensified the stress on oil and relevant alternative energy prices. As a latest development in our contemporary world, commodity prices have decreased by 38% afterwards of September 1st, 2014; and the most significant decrease was observed with

crude oil by 43% among energy prices. Such that, while barrel price was 147 USD in June 2008, it fell to 28 USD by January 2016 (www.wrtrg.com). Decrease in oil prices has reached 80% levels.

Such significant decrease in oil prices along recent periods has especially influenced oil exporter countries, companies, governments and consumers considerably. Oil exporter countries were adversely affected from this situation because of various impacts such as stress on income, budget and foreign trade balance. Developed and developing importer countries have gained important opportunity in terms of low input cost, superior competitive upper hand in foreign trade, decreasing inflation rate in domestic markets or higher tax income from oil products by increasing tax income so that they could improve their budget balance.

It was observed that various causes such as slowing growth rate across the world and especially in China, the second largest energy importer of the world, unexpected energy production growth in countries such as Iraq and Libya, unanticipated decrease in demand, increasing pace of exploration and production of alternative energy e.g. shale gas and developments in international money markets have resulted in decrease in oil prices. Although the U.S. is the largest net oil importer of the world, its share in the world oil production has grown since 2010; and according to the U.S. Energy Information Administration (EIA), it was ranked as the first place in 2014. All these developments have shifted the balance between supply and demand dynamics of the economy and required an investigation into the extent of the effect of change in oil prices on macroeconomic variables.

From the theoretical point of view, there are numbers of causes reported on the effect of changes in oil prices on macroeconomic variables. Increasing oil prices result in increase in prices of oil-intensive produced goods; and this situation stimulates inflation rates upward (Ball and Mankiw, 1992:7). When it is taken from the production point of view, intensive energy consumer industries especially oil refineries and chemistry industries have imposed limitations on production due to increasing production costs; this situation cause loss of efficiency on capital and labor; and decrease in potential output level (Lee and Ni, 1992; Cunado and De Gracia, 2005). Negative impact of decreasing efficiency of production factors on real wages resulted in decrease in supply of labor to the industry. In sum, increase in oil prices negatively affected productivity and cause decease in overall labor supply.

Increasing oil prices also caused income transfer between importer countries and exporter countries. In recent years, in parallel to the decreasing oil prices, advantageous position between oil importer and exporter countries shifted. In periods when oil prices were in rise, while exporter countries were taking advantage of the high prices, in circumstances when oil prices decreased, importer countries gained an upper hand by cutting import cost. Accordingly, expectations among importer countries have emerged regarding decreasing production costs and inflation rates. However, this strong expectation displayed difference among countries with respect to oil dependency of production capacity of countries, to their money policies, inflation transition mechanisms and policies of their labor offices regarding determination of minimum wage (Leblanc and Chinn, 2004; Conti et al., 2015).

The extent of the effect caused by decreasing oil prices has become more significant on exporter countries than importers; and this impact was in negative direction. Russian Ruble depreciated in with respect to the US Dollar and Euro. Whine USD and Ruble exchange rate was 23.43 in the beginning of July 2008; it was 75.52 on the first day of 2016 (www.tr.investing.com). 222% depreciation experienced with the Russian Ruble and shrinking economy subject to the decreasing oil prices along the last two years have fed the pessimistic expectations concerning the long term persistence of difficult economic conditions of the country. On the other hand Saudi Arabia, one of the major oil producers of the world, has given considerable amount of budget deficit. While the size of this budget deficit was 98 billion US Dollars in 2015, it put the country in a risky position. In the report published by the International Money Fund (IMF) in October 2015, Saudi Arabia was included among the countries which might bankrupt in the next five-year period because 90% of its income obtained from oil sales. Based on this report, cash reserve of the country has eroded with a great pace; and it was estimated that all of its financial assets will disappear in case decreasing trend in oil prices continues. Thus, change in oil prices is considered as a significant macroeconomic variable that needs to be monitored closely.

The primary purpose of the present study is to investigate the effects of oil prices on export, national income and political risk structure in the first net oil exporter countries (Saudi Arabia, Russia, Canada, Nigeria, Kuwait, Kazakhstan and Venezuela) through new generation panel data analysis methods by running data from the period of 1998-2015. Within this framework, whereas the reasons for decrease in oil prices were probed in the second section, empirical studies from the relevant literature were reviewed in the third section. In the fourth section, an empirical analysis was conducted and acquired results and suggestions were shared. It was expected that this study to draw attention of the countries with oil-weighted economies to the aforesaid risks; and to emphasize the necessity of taking precaution for diversifying their production and export items.

2. CAUSES OF DECREASING OIL PRICES

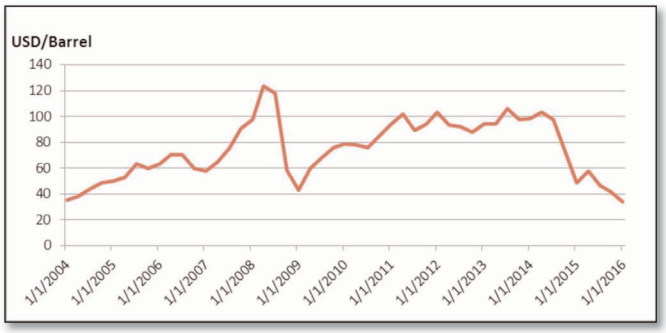
2008 financial crisis was directly influent on oil prices such that whereas oil price was 147 USD in June 2008, it fell to 43 USD in the beginning of 2009.

Figure 1:

Crude Oil Prices for period 2004-2016 (Quarterly, USD)

Resource:

US. Energy Information Administration (EIA)



Thereafter, oil price was again in increasing trend from the end of 2009 until April 2014 subject to limited supply of the OPEC and increasing demand of countries with high oil demand such as the U.S. and China. Afterwards of April 2014, a sharp decrease was observed with the oil prices because of number of factors relevant with supply and demand. These factors could be given as slowing production and economic growth across the world and especially in China; introduction of shale gas production in the U.S. as an alternative to oil; improving energy efficiency and finally OPEC's initiative not to limit oil production quota.

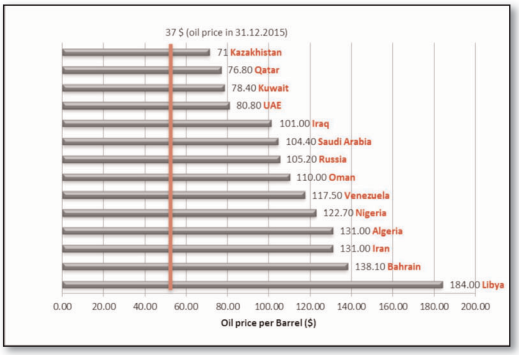
2.1. OPEC's Initiative to Maintain Production Quota

In the general assembly of the OPEC comprised of primary oil exporter countries in the world in November 2014, no any limitation was imposed on oil production quotes of member countries although significant decrease has been experienced in oil prices. While Venezuela and Iran were the members backing up limitation on production quote; Saudi Arabia and other gulf countries suppressed on the opposite side. Existing trend towards alternative energy resources such as shale gas pushed Saudi Arabia and other gulf countries to take such a step to ensure not to lose their market share. The OPEC displays its weight as balance producer in determination of oil price in the global markets since it supplies 40% of world oil production alone. However, the view that decision of the organization is in conformity with interests of certain member countries without any legal foundation has been prevailed. Based on this characteristic, although the organization exhibits a cartel quality, it does not have official format to consider it as a cartel (Eğilmez, 2014). On the other hand, expectation that limitation on oil production could stimulate oil prices upward could elevate the pace towards alternative energy resources further (Gürses, 2014).

However, views of other OPEC countries such as Saudi Arabia regarding production quota in 2016 are in the public interest. Oil exporter countries such as Saudi Arabia, Russia and Venezuela will continue to give budget deficit in every day as oil price is below 100 USD.

Figure 2:

Breakeven Price of Oil Production Costs for 2015 (USD/Barrel)



Resource: http://knoema.com/vhzbeig/oil-statistics-production-costs-breakeven-price

According to the Chart 2 above, oil price that would maintain budget balance of oil exporter countries survey rather above the current oil price level. Sustainability of this situation depends on the decisions of the OPEC in the future.

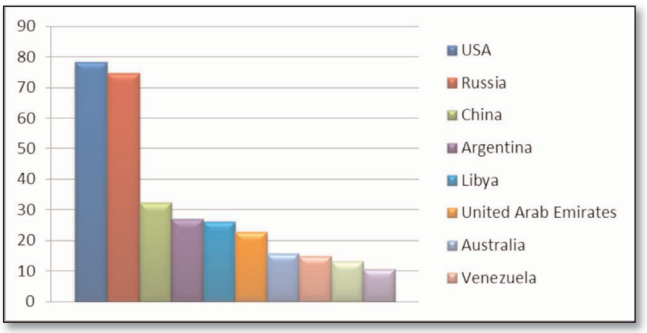
2.2. Alternative Energy Resources

Increasing production of alternative energy resources such as shale gas is considered as another downward factor effective on oil prices. Especially new shale gas reserves explored in the U.S. have increased oil production of the country. New technology investments of the U.S. (horizontal drill and hydraulic fracturing) for developing new oil drill methods have been a factor reducing the processing costs. However, shale gas exploration process is still taken as an expensive method. In comparison with the oil production costs in Saudi Arabia which ranges from 10 USD to 27 USD in some regions, shale gas production cost is in the range of 42 to 80 USD in the U.S. (Rystad Energy, 2015a).

Figure 3:

Shale Gas and Oil Resources of First Ten Countries (Technically Recoverable/Billion Barrel) (2014)

Resource: EIA

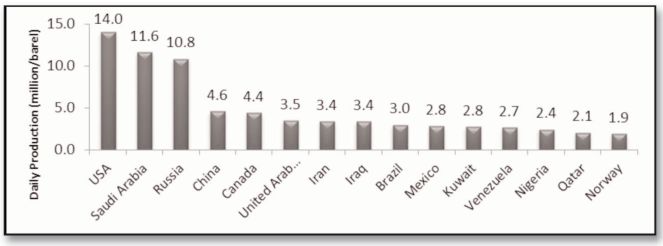


Whereas accessible shale gas resources of the U.S. were 58 billion barrel in 2013, as a result of recent discoveries, this figure has reached to 78.2 billion barrel 2015 (EIA, 2015). Although Russia and Venezuela have usually been the first ten countries in the world in terms of shale gas reserves, higher production costs of shale gas in comparison with conventional oil production costs has been viewed as an obstacle before further production efforts. Explorations of new reserves and technological advancements have placed the U.S. the largest producer position in the world.

Figure 4:

The Largest 15 Oil Producers (2014)

Resource: EIA



As the U.S. has taken the first place in oil production over from the Saudi Arabia, it reduced the dependency to the oil import. Increasing oil supply in the U.S. with the first place in world oil consumption has also been influent on the demand side; and this situation puts decreasing effect on oil prices.

2.4. Growth Survey Across the World

Slowing growth in the economies of the world and especially China, the largest economy of the world, has been the factor, cause of decreasing demand towards oil and its derivatives.

Table 1: World Oil Demand and Supply (Nationalon Barrels per day)

	2011	2012	2013	2014	2015	2016*
OECD Demand	46.4	45.9	46	45.7	46.1	46.2
Non-OECD Demand	43.1	44.8	45.9	47.1	48.3	49.4
Total Demand	89.5	90.7	91.9	92.8	94.4	95.6
OECD Supply	18.9	19.8	21	22.9	23.8	23.3
Non-OECD Supply	29.9	32.7	32.9	33.3	33.9	33.8
OPEC Supply	35.8	38.4	37.5	37.5	38.7	39.25
Total Supply	88.6	90.9	91.4	93.7	96.4	96.44
Stock Exchange	-0.9	0.2	-0.5	0.9	2	

* Data estimated for 2016

Resource: EIA, Oil Market Report,09.02.2016

When global oil demand and supply are taken into consideration, economic slowdown observed all around the world suggests that there would not be a pressure on the demand side. Especially, although countries under geo-political risk such as Iraq and Libya have been supplying oil production under their 2012 levels, oil stock change was reported as positive for 2015. That is, oil supply continues to give two million barrel/day surplus with respect to demand. In 2015, China, the second largest oil importer of the world after the U.S., has recently been one of the important determinants on oil prices due to its increasing oil demand. Thus, slowing growth in China has negative impact on oil prices which accelerates decrease of prices.

Decreasing oil consumption due to concerns relevant with environmental deterioration and national energy security is considered as another factor stimulating fall of oil prices. Subject to different political practices and technological infrastructures, oil exporter countries are not affected by the demand shocks in the same direction. Countries with higher political instability are more vulnerable against the aforesaid shocks with respect to other countries (Rowland and Mjelde, 2016).

In general, whether decreasing trend in oil prices, which depends on multiple factors, would continue or not, depends on the persistence of the same factors. A pressure that might arise on the demand side in the global market would result in an increase in oil prices once again.

3. LITERATURE REVIEW

Mork, Olsen and Mysen (1994) analyzed changes in national incomes of the U.S., Canada, Japan, West Germany, France, the G.B. and Norway that arise as a result of fluctuations in oil prices for the 1967-1992 period. As a result of their study, increases in oil prices have negative impact on the change in the national income of countries except Norvay; and findings were statistically significant. On the other hand, decreases in oil prices were usually positively effective on countries; but the results were only statistically significant for the findings with the U.S. and Canada. Obtained findings suggest that effect of oil prices on national incomes of some countries is asymmetric. Whereas two-way direction of the oil prices in the U.S. could affect the economic development negatively, Japan could be affected by increasing oil prices in negative way and be affected by decreasing oil prices positively. It was observed by the researchers that the positive impact of decreasing oil price on national income would be more moderate with respect to the situation experienced during decreasing.

Kandil (1999) analyzed the effect of oil supply and oil price shocks experienced in 18 Arab countries on their national income, budget balances and current deficit for the period of 1971-1997 by means of the panel VAR analysis method. In this regard, regarding the eight oil exporter countries covered by the study (Algeria, Bahrain, Kuwait, Libya, Oman, Qatar, Saudi Arabia and the United Arab Emirates), it was emphasized that when oil price increased, their national incomes increased and accordingly positive expansion effect in these countries arise because of the increase in oil prices. However, when oil price decreased in the aforesaid countries, their economies experienced that export income decreased and this eventually caused a serious depression.

Dibooğlu and Aleisa (2004) investigated in the effect of Saudi Arabia on real oil prices and the extent of the effect of fluctuations in oil prices on the S.A. For the long term, it was concluded that fragile structure of the national income of Saudi Arabia has persisted against the incidents experienced in oil prices; commercial shocks were largely result of changes in oil prices; and shocks in commercial figures could result in 35% change in national income on the long run.

In the study of Mehrara and Oskousi (2007), origins of the macroeconomic fluctuations occurred in oil exporter countries (Iran, Saudi Arabia, Kuwait and Indonesia) were analyzed by means of the VAR model for the period of 1970-2002. In the mentioned study, it was reported that especially Iran and Saudi Arabia were crucially sensitive to against the shocks experienced with oil prices. Due to intense dependency of economies of both countries to oil, it was observed that effect of increasing oil price was positive on their national incomes. On the other hand, while shocks experienced with oil prices resulted in 13% change on national income of Kuwait, supply shocks caused change on national income by 87%.

Brückner et al. (2012) investigated effect of fluctuations in oil prices along the period of 1960-2007 on democratic and political phenomenon such as political democracy, administrative restrictions and political competition measurements by means of the two-stage least squares method. It was reported that a 1% increase in oil prices in the oil exporter OPEC countries and 1% increase in the GDP would result in 0.2% increase in political democracy score. In the aforesaid study, fluctuations in oil prices emerge as a determinant factor in democratization process of countries whose export relies heavily on oil products.

Göçer and Bulut (2015) analyzed the effect of changes in oil prices on Russian economy through multiple structural break cointegration and symmetrical causality test methods. At the end of the study covering the period of 1992Q1-2014Q3, it was concluded that fluctuations in oil prices were significantly effective on Russia's macroeconomic parameters. It was observed that a 1% increase in oil prices would result in 1.01% increase in export, 0.27% on foreign trade balance and 0.13% in national income of Russia.

Liu et al. (2016) analyzed the effect of fluctuation in oil prices on country risk (political, economic and financial risk) evaluations for oil exporter countries. Periods of 1999-2006, 2007-2009 and 2010-2014 were individually analyzed by means of the panel data analysis method; and it was concluded that shocks experi-

enced especially in the 2008 global crisis were effective directly on country risk. Whereas decreases in oil prices caused economic losses among oil exporter countries, in the meantime adversely affected risk evaluations of aforesaid countries.

In this study, the other empirical literatures aforesaid above and were also considered and results motivated us to use panel data analysis methods similar to those used by Liu et al. (2016) in their work. While using the first and second generation of panel data analysis, test series procured lapsed results when structural breaks ensued. A shock that could happen in oil prices has potential to affect macroeconomic figures of countries comprising the panel simultaneously. Therefore, this study provides a significant contribution to the existing field of knowledge because new generation of panel data analysis methods which take horizontal cross-sectional dependency and structural breaks into consideration were preferred.

4. ECONOMETRIC ANALYSIS

4.1. Data Set

In the present study, in order to investigate the effects of changes in oil prices on macroeconomic figures of the first seven net oil exporter countries,[3] 1998-2015 period, Gross Domestic Product (Billion $, *GDP*), total export (Billion $, *X*), crude oil price (Brent oil, $, P_{Oil}) and political stability index (*PIST*) data were employed[4].

In this study, GDP and X were preffered as the macroeconomc parameters of countries because GDP component of selected countries mainly relies on oil products sector. For this reason, oil prices fluctuations could have a significant impact on oil exporter countries. The economic welfare of these countries is mainly dependent on oil prices because it may affect politic risk structures of countries. Therefore, the relationship between oil prices and political risk index of countries were analyzed for the new perspective. Political risk index (published in the range of 1 to 100) acquired from the website of the "Heritage" (www.heritage.org/index/explore) as they are estimated based on weighted variables such as property rights, corruption, economic liberty and business freedom in the relevant countries. As the index score close to 100, it indicates positive status with the relevant country about the considered variable. Whereas the GDP data was obtained from the World Bank (www.worldbank.org), export data was from the IMF (www.data.imf.org), crude oil prices were acquired from the U.S. Energy Information Office (www.eia.doe.gov). Logarithm of all of time series was calculated before included in analysis.

4. 2. Model

In this study, in order to investigate the effect of the changes in oil prices on macroeconomic parameters of countries, studies of Dibooğlu and Aleisa (2004)[5] and Brückner et al. (2012) were followed and the relevant models were structured as below:

Model 1: $$GDP_{it} = \beta_{0i} + \beta_{1i} Poil_t + u_{it} \quad (1)$$

Model 2: $$X_{it} = \alpha_{0i} + \alpha_{1i} Poil_t + \varepsilon_{it} \quad (2)$$

Model 3: $$PIST_{it} = \gamma_{0i} + \gamma_{1i} Poil_t + \epsilon_{it} \quad (3)$$

Since oil prices employed in these models are the same across the world, they remain unchanged according to countries. Therefore, individual impacts (i) on "Poil" variable were not included.

3) Saudi Arabia, Russia, Canada, Nigeria, Kuwait, Kazakhstan and Venezuela.

4) In preference of the analysis period, the period with abundant available data was taken into consideration.

5) Dibooğlu and Aleisa (2004) analyzed vulnerable effects of oil price fluctuations on term of trade and GDP of Saudi Arabia. Although their empirical methods were different from our studies, we used the relationship between oil prices and GDP and export accordingly their results.

4.3. Method

In the study, first, dependency among horizontal cross-sections (countries) which comprised panel was investigated by means of the $CDLM_{adj}$ (Adjusted Cross-sectional Dependence Lagrange Multiplier) test developed by Breusch and Pagan (1980) and adjusted by Pesaran et al. (2008). Stability of series was tested by the second-generation unit root test of the PANKPSS (Panel Kwiatkowski-Phillips-Schmidt-Shin) method developed by Carrion-i-Silvestre et al. (2005). Cointegration coefficients' homogeneity was analyzed by the test method developed by Pesaran and Yamagata (2008). Existence of cointegration relationships among series was analyzed by means of the presence of both cross-sectional dependence and multiple structural breaks method developed by Basher and Westerlund (2009) and which considers horizontal cross-sectional dependency and structural breaks in the cointegration vector. Cointegration coefficients were estimated through the AMG (Augmented Mean Group) method developed by Eberhart and Bond (2009) and which considers horizontal cross-sectional dependence.

5.3. Cross-Sectional Dependence

Whether horizontal cross-sectional dependency among series is taken into consideration, or not is crucially important on results (Breusch and Pagan, 1980). Therefore, before the analysis, it is necessary to determine horizontal cross-sectional dependency in series and cointegration equation because during selection of unit root and cointegration tests this situation must be taken into consideration. Otherwise, conducted analyses could yield erroneous results (Pesaran, 2004, P.14).

Studies on existence of horizontal cross-sectional dependency were introduced by Berusch and Pagan's (1980) CDLM test. This test yields deviated results when group average is zero and individual averages are different than zero. Pesaran, Ullah and Yamagata (2008) corrected this deviation by adding variance and average onto the test statistic. Therefore, it is referred as corrected CDLM ($CDLM_{adj}$) test. The preliminary form of the CDLM test statistic is given below:

$$CDLM = T\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{\rho}_{ij}^{2} \sim \chi^{2}_{\frac{N(N-1)}{2}} \qquad (2)$$

Afterwards of the correction, following equitation is obtained:

$$CDLM_{adj} = \left(\frac{2}{N(N-1)}\right)^{1/2}\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{\rho}_{ij}^{2}\frac{(T-K-1)\hat{\rho}_{ij}-\hat{\mu}_{Tij}}{\upsilon_{Tij}} \sim N(0,1) \qquad (3)$$

Where μ_{Tij} refers the average; ν_{Tij}

Where μ_{Tij} refers the average; ν_{Tij} refers variance. Test statistic that will be obtained from here exhibits asymptotically standard normal distribution. H_0 hypothesis of test was determined as "*there is no horizontal cross-sectional dependency*" (Pesaran, et al. 2008). In the present study, existence of horizontal cross-sectional dependency among variables and in the cointegration equation was tested with the $CDLM_{adj}$ method and obtained results were exhibited in Table 2.

Table 2: Results of Cross-Sectional Dependence Test

Variables	CDLMadj	P- values
GDP	1.515*	0.065
X	2.180**	0.015
PIST	9.101***	0.000
Poil	5.286***	0.000
Model 1	17.227***	0.000
Model 2	16.227***	0.000
Model 3	55.710***	0.000

Note: *, ** and *** denote, respectively, significance at the 10%, 5% and 1% levels. *, ** and *** refer existence of horizontal cross-sectional dependency at following significance levels 10%, 5% and 1%, respectively.

According to results in Table 2, concerning the variables and models, H_0 hypothesis was rejected; and it was concluded that there was horizontal cross-sectional dependency among countries.[6] Thus, an economic shock encountered by aforesaid countries could affect the others as well. It was considered that this dependency is result of the fact that oil prices are set by international market and oil producer countries were accepting bids. Change in oil prices affects macroeconomic figures of countries simultaneously.Therefore, it could be stated that developments relevant with other oil exporter countries must be taken into consideration while oil production policies of mentioned countries are determined. Additionally, regarding the selection of methods that will be employed in further stages of the analysis, methods which take horizontal cross-sectional dependency into consideration were preferred.

5.4. Panel Unit Root Test

The first issue encountered with the panel unit root test is that whether horizontal cross-sections which constitute panel are independent from each other. At this point, panel unit root tests are classified into two groups: the first and the second generation tests. Of the first generation tests, there are group of tests introduced by Maddala and Wu (1999); Hadri, (2000); Choi (2001); Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003) and Breitung (2005). These tests rely on the assumption that horizontal cross-sectional units comprising the panel are independent and that a shock that affect one of the units constituting the panel would affect all horizontal cross-sectional units at the same level. Nevertheless, it would be more realistic approach that individual units comprising the panel are affected by a shock at different levels. In order to resolve this deficiency, the second generation unit root tests were developed, which analyze stability by taking dependency among the horizontal cross-section units into consideration. Among the prominent second generation unit root tests, there are the MADF (Multivariate Augmented Dickey Fuller) introduced by Taylor and Sarno (1998); the SURADF (Seemingly Unrelated Regression Augmented Dickey Fuller) introduced by Breuer, Mcknown and Wallace (2002); and the CADF (Cross-sectional Augmented Dickey Fuller) introduced by Bai and Ng (2004) and Pesaran (2006a).

However, these tests series provide deviated results as if there is unit root when structural break occur (Charemza and Deadman, 1997: 119). In order to fix this problem of the tests, Carrion-i-Silvestre et al. (2005) developed a second generation unit root test, the PANKPSS test, to check stability of series effectively in case horizontal cross-section dependency and multi structural breaks exist. Aforesaid test could test stabili-

6) Normally, horizontal cross-sectional dependency was not expected among these countries with different economic characteristics in different geographic regions. However, it was considered that these countries could be affected from each other since common ground of these countries is that they are all oil producer and exporter and oil prices are determined jointly around the World; and these tests were conducted. Test result confirmed our assumption.

ty of series when structural breaks exist with the average and trend of series comprising the panel. Furthermore, it allows different number of structural breaks on different dates in each horizontal cross-section unit comprising the panel. Thus, stability of series could be estimated for panel generally and for each horizontal cross-section separately (Güloğlu and İspir, 2011, P. 209). Test model is given as follows:

$$Y_{it} = \alpha_{it} + \beta_{it} t + \varepsilon_{it} \qquad i = 1,2, \ldots, N \;\; ve \;\; t = 1,\ldots \tag{4}$$

$$\alpha_{i,t} = \sum_{k=1}^{m} \theta_{i,k} K1_{it} + \sum_{k=1}^{m} \gamma_{i,k} K2_{i,t} + \alpha_{i,t-1} + u_{i,t} \tag{5}$$

$$\beta_{i,t} = \sum_{k=1}^{n} \varphi_{i,k} K1_{i,t} + \sum_{k=1}^{n} \delta_{i,k} K2_{i,t} + \beta_{i,t-1} + v_{i,t} \tag{6}$$

Where, K_1 and K_2 are dummy variables; they could be described as below:

$$K_1 = \begin{cases} 1, & t = T_B + 1 \\ 0, & otherwise \end{cases} \qquad K_2 = \begin{cases} 1, & t > T_B + 1 \\ 0, & otherwise \end{cases}$$

In this equation, T_B refers break point; it allows m and n number of structural breaks with fixed term and trend, respectively. Carrion-i-Silvestre et al. (2005) organized the test as it would allow maximum five structural breaks. This test determines structural break dates as the points which minimize error sum of squares by following Bai-Perron (1998) procedure. Bai-Perron (1998) suggested two different processes for determination of structural break dates: the first process depends on modified information criterions developed by Liu, Wu and Zidek (1997); the second process depends on the F-statistic. In determination of number of structural break, Carrion-i-Silvestre et al. (2005: 164) employ the first process for the model with trend; and the second process for the model without trend. H_0 hypothesis of the test was determined as "*series is stable*". Estimated test statistics were compared with the critical values estimated by means of the bootstrap (Carrion-i-Silvestre, et al. 2005: 164). In the present study, stability of series was tested by means of the PANKPSS method; obtained test statistics and critical values were exhibited in Table 3.

Table 3: Results of Unit Root Tests

	GDP	*Break Dates*	*GDP*	*X*	*Break Dates*	*X*	*PIST*	*Break Dates*	*PIST*	*Poil*	*Break Dates*	*Poil*
Saudi Arabia	0.195 (0.131)	2004 2010	0.178* (4.050)	0.199 (0.184)	2004	0.183* (0.194)	2.536 (1.882)	2000	0.066* (0.347)	0.167 (0.159)	2004	0.105* (0.208)
Russia	0.168 (0.158)	2003 2006	1.298* (2.227)	0.127 (0.091)	2003 2006	0.125* (0.203)	1.726 (1.591)	1999	0.087* (0.209)	0.167 (0.159)	2004	0.105* (0.208)
Canada	0.167 (0.156)	2003 2006	0.054* (4.365)	0.194 (0.185)	2004	0.092* (0.336)	1.381 (0.453)	2001 2006	0.110* (0.163)	0.167 (0.159)	2004	0.105* (0.208)
Nigeria	0.149 (0.132)	2003 2009	0.145* (2.545)	0.113 (0.101)	2003 2009	0.134* (0.271)	2.480 (2.141)	2000 2006	0.075* (0.185)	0.167 (0.159)	2004	0.105* (0.208)
Kuwait	0.175 (0.165)	2002 2005	0.297* (4.770)	0.211 (0.180)	2004	0.156* (0.176)	2.132 (1.610)	2001 2011	0.099* (0.213)	0.167 (0.159)	2004	0.105* (0.208)
Kazakhstan	0.226 (0.155)	2003 2006	3.027* (5.505)	0.166 (0.093)	2003 2006	0.172* (0.232)	2.282 (2.222)	1998 2005	0.226* (0.287)	0.167 (0.159)	2004	0.105* (0.208)
Venezuela	0.158 (0.157)	2006 2012	0.103* (5.150)	0.229 (0.180)	2004	0.144* (0.237)	2.210 (1.513)	2003 2008	0.168* (0.332)	0.167 (0.159)	2004	0.105* (0.208)
Panel	7.313 (4.185)	-	91.118* (77.339)	5.158 (2.108)	-	5.054* (5.717)	17.253 (17.053)	-	1.341* (2.340)	3.489 (2.048)	-	1.312* (6.066)

Note: Critical values were produced through 1000 iteration by means of bootstrap with 5% significance level. *; 5% significance level refers that series was stable. As the test model, the model which allows structural break either in stable or trend was selected. Since time dimension of dataset is short, maximum three structural breaks were allowed.

According to the results in Table 3, it was observed that series were not stable for countries and for overall panel; it became stable when their first difference was taken; that is, they were *I(1)*. This situation suggests that economies of the relevant countries were not stable; and that there were significant fluctuations in oil prices, national income, export and political stability. In this case, it was decided that cointegration test could be conducted among these series. The test method successfully determined the structural breaks in countries. According to the obtained results, in 2004, when monetary expansion period applied between 2002 and 2004 was ended in the U.S., corresponds to the global economic crisis in the period of 2008-2009.

5.5. Homogeneity Test of Cointegration Coefficients

Preliminary studies for determination whether the slope coefficient was homogenous or not was introduced by Swamy (1970). Pesaran and Yamagata (2008) developed the Swamy test. In this test, whether slope coefficients in cointegration equation were different with respect to horizontal cross-sections. H_0 hypothesis of the test was given as "*slope coefficients are homogenous*". Pesaran and Yamagata (2008) developed two different test statistics to test the hypotheses:

For large sampling groups: $$\tilde{\Delta}= \sqrt{N}\left(\frac{N^{-1}\tilde{S}-k}{2k}\right)\sim\chi^2_k \quad (7)$$

For small sampling groups: $$\tilde{\Delta}_{adj}= \sqrt{N}\left(\frac{N^{-1}\tilde{S}-k}{v(T,k)}\right)\sim N(0,1) \quad (8)$$

Where, *N* refers number of horizontal cross-section; *S* refers statistic of the Swamy test; *k* refers number of explanatory variable and υ (T, κ) refers standard error. For Equation (3), homogeneity test was conducted for the slope coefficient and obtained results were summarized in Table 4.

Table 4: The Homogeneity Test

		S	***P-Values***
Model 1	$\tilde{\Delta}$	7.566	0.000
	$\tilde{\Delta}_{adj}$	8.244	0.000
Model 2	$\tilde{\Delta}$	9.642	0.000
	$\tilde{\Delta}_{adj}$	10.507	0.000
Model 3	$\tilde{\Delta}$	12.217	0.000
	$\tilde{\Delta}_{adj}$	13.313	0.000

According to the results in Table 4, H_0 hypothesis was rejected strongly and it was considered that slope coefficient was not homogenous in the cointegration equation. In this case, cointegration comments about the general panel may not be valid. Instead, individual results must be taken into consideration.

5.6. Panel Cointegration Test with Structural Break

This test developed by Basher and Westerlund (2009) was to determine cointegration relationship among nonstationary series in level with existence of horizontal cross-section dependency ve multiple structural. The method allows breaks in fixed term and in trend. The test statistic developed by Basher and Westerlund (2009: 508) was given as below:

$$Z(M) = \frac{1}{N}\sum_{i=1}^{N}\sum_{j=1}^{M_i+1}\sum_{t=T_{ij-1}+1}^{T_{ij}}\frac{S_{it}^2}{(T_{ij}-T_{ij-1})^2\hat{\sigma}_i^2} \quad (9)$$

Where, $S_{it} = \sum_{s=T_{ij-1}+1}^{t}\hat{W}_{st}$. $\hat{W}_{it}$ is type of least squares not altered fully; they are residual vector obtained from an effective estimator. $\hat{\sigma}_i^2$ is long-term variance estimator based on $\hat{W}_{it}$. When *Z(M)* reduced to the equation below by averaging horizontal cross-sections:

$$Z(M) = \sum_{t=T_{ij-1}+1}^{T_{ij}}\frac{S_{it}^2}{(T_{ij}-T_{ij-1})^2\hat{\sigma}_i^2} \sim N(0,1) \quad (10)$$

This test statistic displays standard normal distribution. H_0 hypothesis of the test was determined as "*There is cointegration relationship among series*". In the study, Basher and Westerlund's (2009) cointegration test was conducted and obtained results were summarized in Table 5.

Table 5: Results for Panel Cointegration Test with Structural Breaks

	Test Method	*Z (M)*	Asymptotic P-Values	Bootstrap P-Values	Decision
Model 1	Constant (No breaks)	0.008	0.497	0.578	Cointegration √
	Constant and Trend (No breaks)	-0.157	0.562	0.522	Cointegration √
	Constant (Breaks)	1.097	0.136	0.877	Cointegration √
	Constant and Trend (Breaks)	-93.880	1.000	0.887	Cointegration √
Model 2	Constant (No breaks)	-0.096	0.538	0.767	Cointegration √
	Constant and Trend (No breaks)	-1.034	0.850	0.937	Cointegration √
	Constant (Breaks)	5.828	0.000	0.444	Cointegration √
	Constant and Trend (Breaks)	-18.943	1.000	0.795	Cointegration √
Model 3	Constant (No breaks)	-1.059	0.855	0.945	Cointegration √
	Constant and Trend (No breaks)	-1.754	0.960	0.868	Cointegration √
	Constant (Breaks)	-0.437	0.669	0.927	Cointegration √
	Constant and Trend (Breaks)	-42.687	1.000	0.894	Cointegration √

Note: Probability values were obtained by means of bootstrap after 1000 iteration.

According to the results in Table 5, cointegration relationship was observed among series. Based on this result, it was concluded that these series act together on the long run; long-term analysis conducted on level values would not include false regression problem; and obtained results would be reliable. Furthermore, in the cointegration equations of the countries comprising the panel, method with break in constant and determined structural break dates were exhibited in Table 6.

Table 6: Estimated Breaks

Country	Model 1	Model 2	Model 3
Saudi Arabia	2010	2010	-
Russia	2006	2010	2003
Canada	2008	2013	-
Nigeria	2009	2013	2006
Kuwait	2011	2010	-
Kazakhstan	2008	2008	-
Venezuela	-	-	2008

Note: These are the sates determined by means of the model allowing structural break in its constant. Since time scope of the panel is not extensive, a structural break was allowed in the cointegration test.

Structural break points in Table 6 were included in analysis in estimation of cointegration coefficients with dummy variables.

5.7. Estimation of Cointegration Coefficients and Error Correction Model

In case of existence of horizontal cross-section dependency, the first estimator developed for estimation of the cointegration coefficients was Pesaran's (2006) CCE (Common Correlated Effects) method. After individual cointegration coefficients were estimated; it estimated cointegration coefficient of the general panel by means of the CCMGE (Common Correlated Mean Group Effects) method by averaging coefficients. Nevertheless, it is more reasonable that individual effect of each country on the general panel differs from each other with respect to their individual economic figures. While dependency among horizontal cross-sections was taken into consideration in the Panel AMG (Augmented Mean Group) method developed by Eberhardt and Bond (2009), in the meantime, the result with the general panel was estimated through weighting individual coefficients. In this respect, it is considered as more reliable than the CCMGE (Eberhardt and Bond, 2009). Panel AMG method could also take joint factors in series and joint dynamic effects into consideration; effective results could be produced in unbalanced panels and they could be used in the existence of internality problem relevant with error term (Eberhardt and Bond, 2009). In this study, cointegration coefficients were estimated with the Panel AMG method and obtained results were exhibited in Table 7.

Table 7: Coefficients of Cointegration

	Model 1			Model 2			Model 3		
Country	Poil	D1	Invariable	Poil	D2	Invariable	Poil	D3	Invariable
S. Arabia	0.63***	-0.067	3.37***	1.10***	0.01	0.72***	-0.024**	-	4.24***
	[18.52]	[-1.24]	[25.92]	[50.60]	[0.45]	[8.58]	[-1.89]		[82.75]
Russia	0.98***	0.089	2.79***	0.99***	-0.15	1.52***	-0.015*	0.80	4.00***
	[18.14]	[1.11]	[13.34]	[38.32]	[-0.15]	[15.05]	[-1.34]	[0.25]	[87.17]
Canada	0.47***	-0.045**	5.19***	0.36***	0.17	4.41***	0.80***	-	4.02***
	[3.13]	[-2.04]	[89.48]	[14.93]	[1.25]	[46.71]	[8.97]		[113.77]
Nigeria	0.93***	-0.18*	1.28***	1.04***	0.01	-0.35**	0.055***	-0.14	3.75***
	[10.10]	[-1.28]	[3.55]	[22.12]	[0.39]	[-1.92]	[2.55]	[-0.58]	[43.62]
Kuwait	0.86***	-0.027	0.96***	1.20***	-0.45*	-1.01***	-0.006	-	4.21***
	[24.57]	[-0.47]	[7.38]	[40.95]	[-1.39]	[-8.90]	[-0.78]		[21.14]
Kazakhstan	0.92***	0.024	0.57***	1.34***	0.06	-1.94***	0.18***	-	3.29***
	[24.21]	[0.42]	[4.07]	[34.11]	[0.78]	[-12.71]	[8.46]		[37.62]
Venezuela	0.66***	-	2.53***	0.79***	-	0.73***	-0.19***	0.59	4.55***
	[4.63]		[4.15]	[19.79]		[4.66]	[-4.94]	[0.45]	[29.84]
Panel	0.78***	-0.029	2.38***	0.98***	0.87	0.58	0.012	0.15	4.01***
	[10.83]	[0.029]	[3.90]	[8.16]	[0.45]	[0.75]	[0.28]	[1.02]	[26.45]

Note: Problems with autocorrelation and varying variance results in estimations were fixed with the Newey-West method. *, ** and *** refer significance at 10%, 5% and 1% levels. Values in squared brackets are *t*-statistics and they were estimated by means of the Newey-West standard error. D_i is the dummy variable which receives 1 for determined structural break date at each model; otherwise 0.

According to the results in Table 7, while increase in oil prices positively contribute in national income and export figures of countries included in analysis, it has various impact on countries' political stability. For example, while increasing oil prices distorted political stability in Saudi Arabia, Russia and Venezuela, it improved political stability in Canada, Nigeria and Kazakhstan. The rationale behind this finding was that whether these countries transfer some of these surplus incomes to the stability funds when they gain extra income because of increasing oil prices. For instance, Russia established a cautionary fund against the risk caused by fluctuations in oil prices on January 30th, 2008; aimed to transfer 10% of their GDP to this fun. However, based on the data from April 1st, 2016, transfers to this fund have reduced after 2009 and total transfer to this fund sum up to only 6.3% of total income (Russian Ministry of Finance, 2016). Obtained results are conforming to the findings in the relevant literature reported by Kandil (1999), Dibooğlu and Aleisa (2004), Brückner et al. (2012) and Liu et al. (2016).

CONCLUDING REMARKS

In the present study, effect of changes in oil prices on countries' national incomes, exports and political stabilities by utilizing from the first seven net oil exporter countries' 1998-2015 data under horizontal cross-section dependency by means of panel unit root and panel cointegration methods with structural break.

The results show that 1% increase in oil prices would increase national incomes of S.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%. Especially, it was determined that national incomes of Russia, Nigeria and Kazakhstan were highly sensitive towards oil prices. Although this situation seemed positive, it is important in terms of revealing the potential of effects of changes in oil prices on country economies.

Additionally, 1% increase in oil prices would increase export incomes of S. 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%. Of the obtained findings, largeness of the ones relevant with Kazakhstan, Kuwait, S.Arabia, Nigeria and Russia was remarkable. Although these countries gain considerable amount of income from oil export, there is potential of harm subject to the decrease in oil prices in the meantime. Accordingly, it will be beneficent for aforesaid countries to diversify their export products.

It was observed that increasing oil prices were effective on political stability in different directions. While increasing oil prices were distorting political stability in Saudi Arabia, Russia and Venezuela, they contribute in stability in Canada, Nigeria and Kazakhstan. It was considered that negative impact of increasing oil prices on political stability of countries could be result of the Dutch Disease. Accompanied with the increase in oil prices, improving political stability could be related with appropriate utilization from surplus income from oil by aforesaid countries.

Based on the findings of the present study, it was concluded that oil exporter countries in pursuit of increasing their export and national income, acquiring balanced and high economic growth and maintaining political stability must diversify their export items, market oil in value-added forms rather than the crude type. Additionally, they must reserve a stability fund from the surplus income when they make subject to high oil prices so that they could utilize from this fund when they experience negative incidents with oil prices to obtain stable domestic economic atmosphere. Otherwise, they could not avoid a fragile status against the shocks experienced in oil prices and in other countries. Especially international organizations like OPEC are expected to ensure stability in oil prices so that they could contribute into stability of the economies of their member countries.

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UDC 339.56:[339.5:657.471(560)
339.56:339.743(560)

THE POWER OF TRADE COSTS OVER INTERNATIONAL TRADE: CAUSALITY ANALYSIS IN FREQUENCY DOMAIN FOR TURKEY

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Abstract

The purpose of this paper is to find out the relation between foreign trade of Turkey and international trade costs (international commodity prices, transportation costs and exchange rate) by finding causality relations according to monthly time period. The data of our paper were taken from Central Bank of the Republic of Turkey (CBRT), United Nations Conference on Trade and Development (UNCTAD) and Bloomberg Markets database. The sample consists of 12 years in the period 2004:01 - 2015:12. We employ frequency domain Granger causality analysis that allows to short-run and long-run causality. The estimation of causality relation in frequency domain reveals that international trade costs could not be seen as causality indicator for international trade of Turkey except international commodity costs. Besides, causality relation between international commodity prices and import has been observed as of 4th month according to results. Therefore, the test results may draw new international trade strategies of Turkey.

Key Words: *Exchange Rate, International Commodity Index, International Trade, Transportation Cost.*

JEL Classification: *F14, F15, F19.*

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1. Introduction

International trade costs have close relationship with transaction and transportation costs. Intensification of economic transactions after Industrial Revolution has changed the perception towards trade costs. Sourdin and Pomfret (2012) believe that the reduction in trade costs provides trade facilitation which is an increasingly important for bilateral and regional trade agreements. According to Spulber (2007), international trade costs are called 'the four Ts': Transaction, Transportation, Tariff and non-Tariff and Time costs. Components of trade costs cover a wide range from transportation to language barriers of countries. That is, measurement of international trade costs varies among countries (Novy, 2009).

According to "2023 Turkey Export Strategy" the export share of country aims to reach 1.5% of global trade. Therefore, in this paper we use the dataset of global trade costs regarding transportation, input prices and exchange rates to find causality relation with international trade of Turkey. Econometric analysis of the study focuses on the real and nominal exchange rates, commodity prices and transportation costs. It is possible to add tariff rates to the analysis however free trade agreements and economic co-operation ties throughout the world has led to decrease the share of tariff rates on the trade costs. Besides, yearly computed tariff rates are not suitable for our monthly dataset. Instead of traditional Granger causality paper analyses the relation by decomposing Granger causality in the frequency domain. This econometric approach reveals the causality relation with respect to certain frequency (ω) rather than time. To the best of our knowledge, causality analysis from international trade costs to foreign trade of Turkey has not been studied via frequency domain. Results of the analysis will guide to decision makers regarding international trade policies of Turkey and provide opportunity to reach "2023 Turkey Export Strategy" targets Turkey by taking international trade costs.

The first section of the paper focuses on the literature about not only on Turkey but also global ones. In second section we introduce data and methodology of the study. Section three presents the empirical results of tests. In fourth section we conclude the paper with our findings.

1. REVIEW OF LITERATURE

Increasing trend of world population and development of countries require more intensified international trade ties. Although international costs of foreign trade are considered in the related literature individually, studies do not take into account collectively like our paper.

Initially, trade costs for a good affect world-based comparison of country in terms of comparative advantage over others and as a result of this transportation cost of international trade has been accepted as one of the most obvious cost for trade though trade theory neglects it (Deardorff, 2004). Sheppard (2012) mentions that 2008 global crisis had negative impacts on freight transportation all around the world and economies based on logistics experienced a particular kind of crisis. In addition to this transport costs of trade relate with many fields. Jong et. al. (2013) imply that full freight models cover from economic activities to assignment of vehicles in all supply chain structure. Krugman (1992) tries to explain intra-industry trade via imperfect competition with transportation costs. Also, study of Berthelon and Freund (2008) show that distance related trade costs have remained same for many sectors and high initial trade costs of goods, such as tariff and transportation, give more importance to distance sensibility.

Another cost for international trade is about input prices. A change in costs of inputs leads to shift the supply curve. Higher input prices will attract to produce less and lead to shift supply curve to the left (Begg et. al., 1994). Therefore, global commodity prices affect the international trade volume throughout the world. Sugden (2009) considers that international commodity prices volatility challenges economic management in Asia and Pacific and causes to high inflation and prices that threat growth. Slow growth is directly able to decrease the international trade volume of the country.

Thirdly, the relation of exchange rate and international trade has been seen as a popular topic by scientists for many years. Numerous studies regarding this topic have focused on this relation. Hooper and Kohlhagen

(1978), Cushman (1983), Grauwe (1988), Viaene and Vries (1992), Tenreyro (2007) are some of them who study regarding the impact of exchange rate volatility and risks over international trade. Moreover, Anderson and Wincoop (2004) define the exchange rate as one aspect of international trade costs.

However, academic studies on trade costs and international trade of Turkey literature generally discuss the impact of real exchange rate over trade of Turkey. Whereas Oz (2011) and Tapsin and Karabulut (2013) find out relation in their papers, Yildirim and Kesikoglu (2012) state that there was no relation between real exchange rate and international trade of Turkey. On the other hand, Kustepeli et. al. (2012) focus on effect of highway infrastructure investments over international trade of Turkey. The empirical results imply that there is no such a relation between two variables for the period of 1970 to 2005. Besides, Isik (2013) studies impact of international financial crisis on the international trade of Turkey. Author finds that global financial crisis affected trade of Turkey negatively due to high dependency regarding intermediate goods of Turkey's produced ones.

This paper takes these fundamental trade costs that never been studied together and examines the impact of trade costs over international trade of Turkey within a multidimensional perspective. The study aims to contribute not only providing theoretical infrastructure but also practical results to international trade literature.

2. DATA AND METHODOLOGY

We argue that the causality of trade costs over the international trade of Turkey via monthly declared datasets. To test the frequency domain Granger causality, we collect ten year interval monthly data (publication period of trade statistics of Turkey is monthly) between 2004:01 – 2015:12. Although the number of related study is limited, some papers discuss regarding to detect and measure international trade costs. The costs of international trade in the literature have certain dimensions including transportation, international commodity prices and exchange rates.

Golub and Tomasik (2008) estimate a new method for country specific transport costs which is based on direct measures of air, maritime and road transport costs by calculating as costs of goods per kilogram. Besides, Gaulier et. al. (2008) use a new method for transportation cost calculation via CIF/FOB ratio. Additionally, seaborne shipments carried four fifths of total world merchandise trade and two thirds of total belongs to dry cargo shipment (UNCTAD, 2015). Therefore, Baltic Dry Index (BDI) is included to causality test for international trade of Turkey. BDI was created by Baltic Exchange which was established in 1744 at negotiations between merchants and ships' captains for price of cargo sea transportation services. The Baltic Exchange is designed by the expectations of sea transportation brokers to determine price levels for a given line and goods to transport and time to delivery. BDI index is seen a reliable and independent source for cost of maritime transportation and volume of international trade operations (Oomen, 2012). Apergis and Payne (2013) mention that BDI is a significant component for the cost of trade and sensitive to demand changes for raw materials and global trade.

Besides, the raw materials that are compositions of commodities are initial part of production process. The data sets of international commodity price index are provided by United Nations Conference on Trade and Development (UNCTAD). The commodity price index has been calculated as of January 1960 by monthly. The data set covers all food (food and tropical beverages, vegetable oilseeds and oils), agricultural raw materials (cotton, linseed oil, tobacco, wool, woods and rubber) and minerals, ores and metals (phosphate, manganese, iron ore, aluminum, copper, zinc, gold, silver, crude petroleum and nickel).

Lastly, exchange rate is another discussable topic for international trade papers and literature. Effective exchange rates in terms of real and nominal (US Dollar - Turkish Lira) are obtained from Central Bank Data of Turkey. The calculation of real effective exchange rate differs from nominal effective exchange rate that shows weighted average value of Turkish Lira relative to currencies of major trade partners. Real effective exchange rate is computed prices in Turkey relative to prices of basic trade partners as geometric average including 36 countries (Central Bank of Turkey, 2014).

Our paper analyses the causality relation with trade figures of Turkey under frequency domain that provides frequency bands as it depends on time. Benhmad (2012) emphasizes that economic time series are usually analyzed time domain tests. Therefore it is the main motivation of using frequency domain analysis in our study. Initially we start to test the variables for unit roots in order to find suitable stationary levels of the datasets. In particular, the analysis of the variables is problematic due to data period that covers crisis years. Standard unit root tests possibly lead to misleading results due to number of datasets structural breaks. Rapid fluctuations of the series for a short period change the stationary levels of the variables. Therefore, the study employs the Kapetanios (2005) m-breaks unit root test which allows at most five unknown structural breaks of the series endogenously. Kapetanios (2005) unit root test was developed from Zivot and Andrews (1992) and Lumsdaine and Papell (1997) unit root tests. The following model (1) is the main result of Kapetanios (2005) m-breaks unit root test:

$$y_t = {}_0 + {}_1 t + y_{t-1} + \sum_{i=1}^{k} \gamma \Delta y_{t-i} + \sum_{i=1}^{m} \phi_i \, DU_{i,t} + \sum_{i=1}^{m} \psi \qquad (1)$$

The dummy variables DUi,t = 1 (t > T b,i) and DTi,t = 1 (t > T b,i) (t-T b,i) indicate structural break in the mean and trend. Also, Tb,i denotes the time of ith structural break and or 0 according to if argument of the function is true, indicator function takes 1 however otherwise it takes 0. The null hypothesis is H0 = ρ = 1, μ1 = 1 = 2 = …. = smax = ψ1 = ψ2 = …. = ψsmax = 0. The minimum t-statistic for all ρ up to m breaks minimize sum of squared residuals in the (1) equation estimation up to i structural breaks (Kapetanios, 2005).

We use Granger causality for revealing the relation between international trade costs and international trade of Turkey. Causal effect of one time series to another was formulated by Granger (1969, 1980) studies. Some papers such as Yildirim and Tastan (2012) demonstrate that the significance and direction of the Granger causality in time domain can change after integrating in frequency domain test (Aslanoglu and Deniz, 2012). Breitung and Candelon (2006) Granger causality test that is based on a new methodology by contributing to studies of Geweke (1982) and Hosoya (1991) takes into notice of these drawbacks. Test of Breitung and Candelon allows testing the causality over different frequencies in a VAR system (Bozoklu and Yilanci, 2013). Frequency domain demonstrates that how a variable changes other one over time. This technique provides more decisive interpretation of Granger causality with a decomposition of interdependence between two series by giving specific time period (Tiwari et. al., 2015).

Initially, let zt = [xt , yt] is a two-dimensional vector that is observed at t = 1, …… , T and zt has a finite-order VAR in the form of:

$$(L)z_t = \quad t, \qquad (2)$$

The Moving Average (MA) representation of system that is assumed as stationary is:

$$z_t = \phi(L)_t = \begin{bmatrix} \phi_{11}(L) & \phi_{12}(L) \\ \phi_{21}(L) & \phi_{22}(L) \end{bmatrix} \begin{bmatrix} \varepsilon_1 t \\ \varepsilon_2 t \end{bmatrix} = (L)_t = \begin{bmatrix} \psi_{11}(L) & \psi_{12}(L) \\ \psi_{21}(L) & \psi_{22}(L) \end{bmatrix} \begin{bmatrix} \eta_1 t \\ \eta_2 t \end{bmatrix}, \qquad (3)$$

where $\phi(L) = \phi(L)^{-1}$ and $\psi(L) = (L)G^{-1}$. G represents the lower matrix of Cholesky decomposition G G = $\sum^{-1}$, such that E(tt) = I and $_t = G\varepsilon_t$. Based on representation the spectral density of x_t can be written as:

$$f_x(\ ) = \frac{1}{2\pi}\{| \ {}_{11}(e^{-i} \ )|^2 + | \ {}_{12}(e^{-i} \ )|^2\} \qquad (4)$$

In the stationary case, causality for Breitung and Candelon (2006) as in the following form:

$$M_{y \ x}(\ ) = \log 1 + \frac{|\psi_{12}(e^{-i\omega})|^2}{|\psi_{11}(e^{-i\omega})|^2} \qquad (5)$$

If $(\psi_{12}(e\text{-}i\omega)) = 0$, it means that y does not cause x at frequency ω.

3. EMPIRICAL ANALYSIS

The study takes the each dataset separately to find out their relations with international trade of Turkey. Initially, unit root analyses of variables are required to make accurate forecasting. Application of least squares regressions on non-stationary variables is able to clear away spurious regression misleading estimation of relationship between variables (Mahadeva and Robinson, 2004). Absence of the unit root means stationary of data and fluctuations around a constant long-run mean and finite variance. Meanwhile, non-stationary series do not reject the random-walk hypothesis and shocks of past that have impact on current values (Granger and Swanson, 1997). Kapetanios m-break unit root test results are given at Table 1:

Table 1. Kapetanios Unit Root Test Results

Level	**BDI**	**Com.**	**Exp.**	**Imp.**	**Nom. Exc.**	**Real Exc.**
t- stat	5.49**	3.60	4.291	3.648	3.827	4.545
Break Dates	July 2008	July 2005	Sep 2008	Jan 2008	Dec 2004	April 2011
	1st Differences of Variables					
t- stat	-	5.686**	14.083***	12.412***	11.84***	9.958***
Break Dates	-	March 2008	May 2008	Jan 2009	March 2005	October 2005

*, ** and *** denote significance successively at the 0.1, 0.05 and 0.01 level.

Note: Com., Exp., Imp. and Nom. Exc. mean successively International Commodity Price Index, Export of Turkey, Import of Turkey and Nominal Exchange Rate.

Datasets of export and import are stationary at levels. However, BDI, Commodity Price Index nominal exchange rate and real effective exchange rate are stationary at first differences. Also, all variables have one break date that generally occurs in during 2008 global financial crisis. Break dates of BDI and international commodity price index may be seen as global pre-indicators for 2008 financial crisis. We also test the causality relationship between international trade costs - transportation, raw material and exchange costs - and international trade of Turkey both export and import in following figures at Table 2 by using Breitung and Candelon (2006) frequency domain causality test:

Table 2. Causality Test Results in Frequency Domain

		$0 < \omega < 0.5$	$0.5 < \omega < \pi$
International Costs	*Frequency*	*Higher than 12 Months*	*2 Months to 12 Months*
BDI	causes Export	No	No
	causes Import	No	No
Commodity Prices	causes Export	No	No
	causes Import	*Yes*	*Yes* (but no up to 4 months)
Real Exc. Rate	causes Export	No	No
	causes Import	No	No
Nominal Exc. Rate	causes Export	No	No
	causes Import	No	No

The critical value of $\chi 2$ distribution with 2 degrees of freedom for 5% is 5.99 which is drawn as horizontal dashed lines by representing the frequency (ω) $\square$ (0, π). According to the test results, all variables except commodity prices have no causality over the international trade of Turkey. Null hypothesis is rejected for import or partially by commodity prices. The causality relation between international commodity prices and import of Turkey is observed as of 4 months. On the other hand, for short periods (until 4 months) the causality relation between international commodity prices and import has not been observed.

4. CONCLUSION REMARKS

The main target of this paper is to investigate causality link between international trade costs and international trade of Turkey as a developing country. Breitung and Candelon (2006) frequency domain approach demonstrates causality relations of series. Empirical test results indicate that there is no causality between transportation costs and exchange rates with international trade of Turkey in the period 2004:01 - 2015:12. Conversely, international commodity price index is Granger cause of Turkey's import for frequencies less than 1.7 that corresponds to 3.7 months and higher month-cycles. International commodity prices have capacity to affect the import of Turkey for short and long term periods in that term.

The trade share of raw materials -iron, steel, chemical products- of Turkey can be seen the reason of this causality relation. For next years, Turkey could shift the structure of export to more value added and technological goods to decrease the direct impacts of international commodity prices. According to Turkey country economic memorandum report by World Bank (2014), high-tech export capacity is low and this causes to lack of comparative advantage among other peers.

Additionally, Turkey international trade causality relation with other international cost variables has not been observed between 2004:01 and 2015:12. However, Oz (2011) states that the real exchange rate affects foreign trade balance via import as the result of Tapsin and Karabulut's (2013) study. Another study Yildirim and Kesikoglu (2012) find out that there was no relation between real exchange rate and international trade of Turkey. The study reveals that the causality from real and nominal exchange rates to import and export is not valid for trade of Turkey. It is possible to say that high import proportion in export products -the parts of vehicles other than railway, machineries and mechanical appliances, electrical machinery and equipment are common for the top five place of export and import- lead to remove causality effect of nominal and real effective exchange rate. Also, communiqué in 17/05/2011 official gazette about the inward process regime states that Turkey allows importing for export of automotive sector and textile up to 65%, for leather, cement and ceramic products up to 60%, for forestry products up to 70%. The high share of import and low-tech goods composition in export leads to be affected from international commodity prices. As a result, international trade costs could not be seen as causality indicator for international trade of Turkey except international commodity costs. The low share of Turkey in world trade is another key factor for frequency domain causality. The import share of Turkey is 1.3% whereas export is 0.8% in total world trade as of 2014. When trade share of Turkey increases, the causality relations might changes. Paper also demonstrates the BDI as global financial crisis indicator via break date (July 2008). Policy makers of Turkey can take into account these results before deciding to new strategies. International commodity prices directly impacts over import of Turkey in last decade. Nevertheless, future studies can focus on not only internal dynamics but also externals for international trade of Turkey because it is undeniable fact that the period of study covers a global financial crisis which affected all around the world.

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APPENDIX

Figure 1.

Causality Test in Frequency Domain: BDI ➔ Export

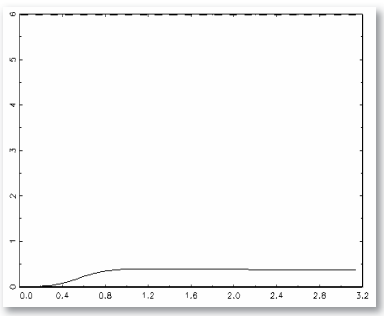


Figure 2.

Causality Test in Frequency Domain:
Commodity Prices ➔ Export

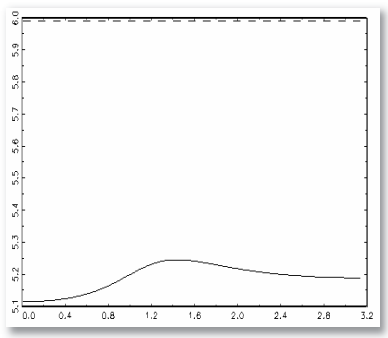


Figure 3.

Causality Test in Frequency Domain:

Real Exchange Rate ➔ Export

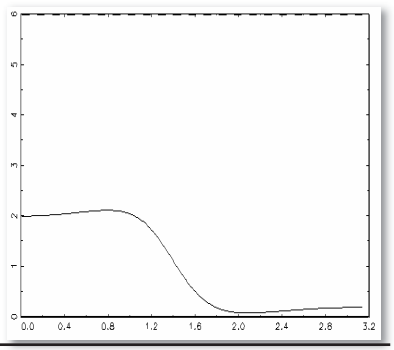


Figure 4.

Causality Test in Frequency Domain:

Nominal Exchange Rate ➔ Export

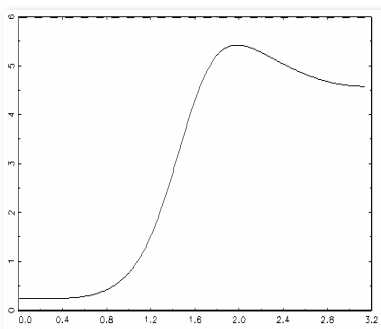


Figure 5.

Causality Test in Frequency Domain: BDI ➔ Import

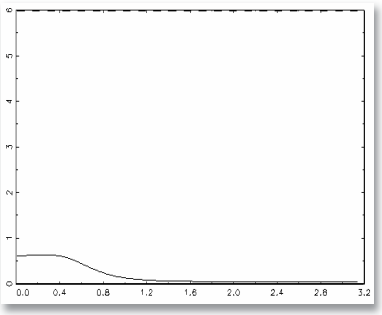


Figure 6.

Causality Test in Frequency Domain:

Commodity Prices ➔ Import

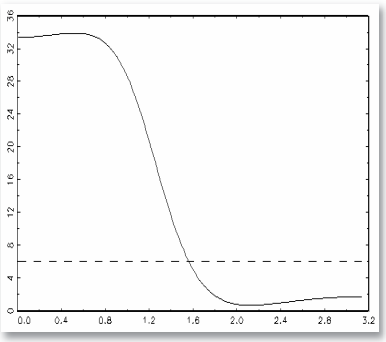


Figure 7.

Causality Test in Frequency Domain:

Real Exchange Rate ➔ Import

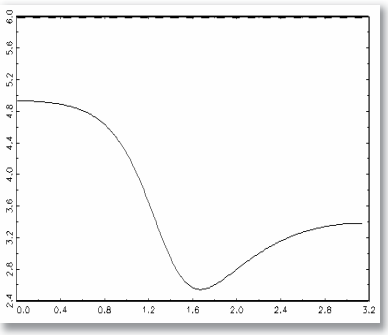
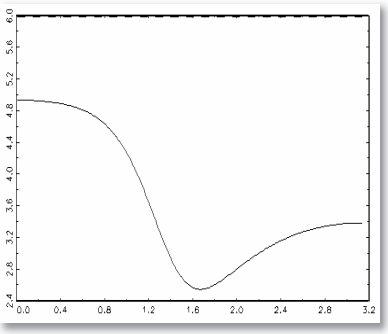


Figure 8.

Causality Test in Frequency Domain:

Nominal Exchange Rate ➔ Import



UDC 339.74(497.7)"2004/2016"

DETERMINANTS OF THE INTERNATIONAL RESERVES IN THE REPUBLIC OF MACEDONIA

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Abstract

Adequate level of international reserves is an indicator of the stability of a country. The research for the determinants of the international reserves and their appropriate level was intensified after the Asian crisis in 1996 and especially after the world financial crisis in 2007.The main purpose of this paper is to try to identify the determinants of the foreign exchange reserves in the Republic of Macedonia. We used quarterly data for the period 2004-2016 mainly from the state statistical system of the country using OLS estimation technique. The empirical results from our OLS model show that there is a statistically significant relationship among foreign exchange reserve as a dependent variable and the policy interest rate, UPI of exports, nominal GDP and exchange rate (Euro/denar) as independent variables. The results show that the highest impact on the level of foreign reserves in Republic of Macedonia has the exchange rate.

Key Words: *International reserves, exchange rate, interest rate, GDP, imports*

JEL Classification: *C01,C31, C32, E51,G01,G21*

Introduction

The International Monetary Fund defines the international reserves as external stock of assets which are available to the country's monetary authorities to cover external payment imbalances or to influence the exchange rate of the domestic currency through intervention in the exchange market or for other purposes".

8) The views expressed in this paper are those of the authors and do not represent the views of the National Bank of the Republic of Macedonia

Hence, the international reserves represent an important indicator for the stability of the country in the international arena.

According to European Central Bank the world foreign exchange reserves grew from USD 1.2 trillion in January 2005 to more than USD 4.0 trillion in September 2005.There are very interesting facts regarding the structure of this increase; a large part of this increase is due to the increment in emerging Asia, 57% of the foreign reserves are held by 5 central banks, of which Japan and China are the top two,accounted for about half of the international reserves accumulation. According to the IMF data, the world international reserves amounted 5.4 trillion of US dollars in 2014, representing 65% increase in comparison with 2008. This shows that the financial crisis which started in USA with the collapse of the Lehman and Brothers bank had future impact on the level of the reserves which governments are holding for precautionary purposes. According to ECB there is progress towards more active management of official reserves and investments in more diversified and in instruments with a longer maturity. Furthermore, substantial share of official foreign assets has been channeled in to instruments with other than reserve holding (oil funds in Norway and Russia, stabilization funds).

According to BIS (Bank for international settlement) there are three motives for holding reserves: a transaction motive, an intervention-related or precautionary demand motive and wealth related or portfolio demand motive. The motives for holding reserves and the appropriate levels have been in the focus of many researchers tracing their way up to the sixties of the previous century. However, the analysis of the motives and the appropriate level of the reserves became very popular after the breakup of the Soviet Union and the communism, as well as after the Asian crisis in 1997-98. Most of the authors agree that the appropriate level of the foreign reserves depends on the external exposure of the economy, the size of the economy, the type of the exchange rate, the constrains on international trade and capital flows as well as the opportunity costs for holding reserves. However, it is accepted as a general rule by the international organizations, that a country is required to have international reserves in the level of at least three months of projected imports.

Despite the before mentioned factors for having international reserves, for a small open developing country like Republic of Macedonia, which has struggled in the past with high inflation, the foreign reserves are not just a mean for maintaining price stability, but also an indicator of the stability of the country and overall economy. Therefore, the management of the international reserves has been of crucial importance for the Republic of Macedonia. Even though the level of the international reserves throughout the years have increased constantly, in the first quarter of 2016 there was substantial withdrawal of the Denar deposits, as well as substantial increase of the foreign currency demand on the foreign exchange market which caused depletion of the international reserves. The reason for this withdrawal was the prolonged political crisis which created economic uncertainty. Thanks to the well liquid financial system and the appropriate reaction of the Central Bank there was no major banking crisis, but this was a driving motive for us to investigate the determinants of international reserves in Macedonia.

In this paper we are trying to determine the variables which influence the level of the international reserves in the Republic of Macedonia. We are using time series data and analyzing macroeconomic variables. We develop an Ordinary least squares model in order to determine the statistical significance of the variables towards the international reserve level and additionally see the linkage/dependence of these determinants with the level of international reserves.

The structure of the paper is as follows: after this introduction we present the literature review. The literature review is an overview of older papers from the sixties and seventies in the previous century, as well as contemporary papers from this century which have analyzed the topic of the international reserves. The third section discusses the developments of the foreign exchange reserves in Macedonia. In the fourth section we present our model with the description of the procedure and obtained results and in the last part we present the conclusions of the research.

Literature review

Traditional approaches to international reserves determinants are usually trade-based, focusing on the influence of the imports propensity, variability of international receipts and payments and the opportunity costs to the level of the foreign exchange reserves. The early empirical work was focused on establishing direct proportions between reserves and other macroeconomic variables. Hence, Heller (1966) analyzed the determinants of the foreign exchange reserves and he concluded that reserves are mostly held for liquidity motives and that propensity to import is the main driver of the level of the reserves. He developed a cost-benefit model to analyze the effect of adjustments to external equilibriums, according to which the optimal level of reserves depends on the costs of adjusting to an external balance, the cost of holding the liquid international reserves and the probability that there will actually be a need for reserves. On the other hand (Clark 1970) argues that the need for reserves is obviously related to the degree of variability in a country's international transactions. The author tests the rudimentary theory of reserve-holding behavior. In his model he analyzes 38 countries. The main conclusion which he derives from his research is that countries use reserves to finance payments deficits, but at the same time take steps to bring their actual holdings of reserves back to the desired level, which according to this author are the main driver of the level of the international reserves. These conclusions are also brought by Edwards (1983). Frankel J. (1974) widened the analysis through the estimation of separate demand functions for international reserves by developed and less-developed countries. He shows that the behavioral parameters of the two groups are significantly different. As a by-product, he also concludes that the association between reserve holdings and the relative size of the foreign trade sector is positive. Streeter (1970) finds a significant relationship between the level of foreign reserves and countries trade deficit, as well as the opportunity costs of holding reserves. In accordance to the previously mentioned literature (Chowdhury at all, 2014) groups the determinants of the foreign exchange reserves in the early literature in to 5 categories: economic size, current account vulnerability, capital account vulnerability, exchange rate flexibility and opportunity costs. On the other hand in the reserve demand models of the present day more variables like free capital mobility, inflation and inflation targeting, risks arising from different types of foreign exchange regimes as well as precautionary motives are incorporated. The Asian crisis is maybe the strongest reason for this. Mendoza (2004) analyzed the increase of the foreign reserves after the Asian crisis and concludes that this trend of high increment of the levels of the international reserves is present in most of developing countries. On the other hand Dabla-Noris.E (2007) present a cost-benefit approach which includes the precautionary motive for low income countries. She concludes that the three months of imports rule of thumb is simply not enough and that governments should make more efforts in increasing the level of the reserves. Jeanne (2007) presents a simple framework for a cost-benefit analysis of the optimal level of reserves to deal with capital account crises. His work shows that the demand for reserves will depend on the size of the capital flight and output loss in a crisis, the opportunity cost of accumulating reserves; the relative risk aversion of the domestic consumer, and the probability of a crisis (which is endogenous to the level of reserves if they have a role in crisis prevention). Furthermore, the same author in 2016 developed a cost-benefit model for optimal reserves management for financially closed economies suggesting that the governments should have more active policy when using foreign reserves, not only during balance of payments or other types of crisis.

In the region of Europe the level of international reserves was investigated by Badinger (2004). In his research he analyzes the demand for the international reserves in small and open economies – the case of Austria with formerly fixed exchange rate regime Vis a Vis the German mark. By using the vector error correction approach he addresses two main questions: whether the Austrian national bank is managing the international reserves rationally, and whether the monetary approach to the balance of payments holds for Austria; and if it does would that imply that an excess of money demand (supply) is associated with an inflow or outflow of international reserves in the short run. The author analyzes the Austria's reserve demand over the period 1985 – 1997 using quarterly data and concludes that in the period of the investigation Austria's long-run policy reserves have been guided by the scale of the foreign trade, uncertainty and opportunity costs of holding reserves (domestic minus foreign interest rate). On the other hand in the short run, the

reserve movements were additionally driven by imbalances on the national money market, confirming the monetary approach to the balance of payments of Austria.

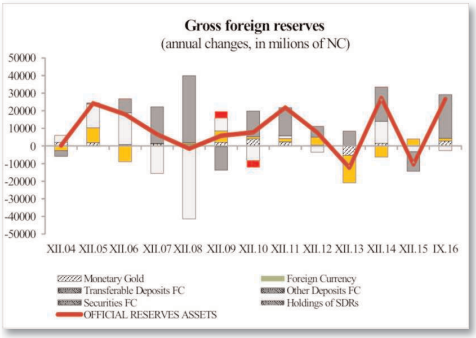
The level of international reserves was also a topic of extensive research for the emerging market economies, especially the economies of the Asian countries. In this context Dash P.(2007) investigates the factors that influence foreign exchange reserves of India using the VECM – Johansen Maximum likelihood vector error correction model. The author comes to the conclusion the shocks on imports and exchange rate have permanent effects on reserves, on level as well as volatility. On the other hand Chowdhury at all, (2014) in his analysis of the determinants of the foreign reserves finds that there is a strong relationship among foreign exchange reserves, exchange rate, remittance, home interest rate, broad money M2, Unit Price Index of export and import and per capita GDP.

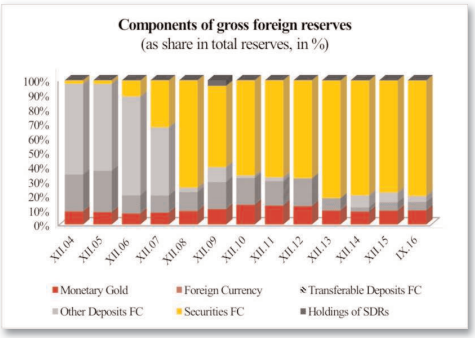
Overall even though there is a lot of literature in this topic there is no consensus or consensual evidence in the literature as to which variables determine the level of the international reserves. Additionally, throughout our research we couldn't find any relevant literature on this topic for the SEE countries and especially for the Republic of Macedonia, so this paper would contribute in enriching the overall literature in this area of research.

Developments of the international reserves in Macedonia

According to the Law on the National Bank of the Republic of Macedonia, one of the main tasks of the National Bank is managing the foreign reserves of the Republic of Macedonia. This is closely linked to achieving the primary objective of the monetary policy, providing liquidity to maintain the stability of the domestic currency in circumstances of applied monetary strategy of a de facto fixed exchange rate of the Denar against the Euro. Also, the foreign reserves management ensures sufficient liquidity for regular settlement of the financial liabilities of the Republic of Macedonia abroad (Report on foreign reserve management, NBRM). According to NBRM Statistics the foreign reserves are those external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs and for intervention in exchange markets in order to affect the currency exchange rate. Also, the purpose of foreign reserves is to maintain confidence in the currency and the economy, and serve as a basis for foreign borrowing. The foreign currency reserves are consisted of: monetary gold, SDRs, transferable deposits, securities, foreign currency and other deposits.

During the period of analysis 2004-2016, the structure of the gross foreign reserves have changed. In 2004, around 88% of the foreign reserves were transferable deposits and other deposits in FC, while in 2016 the dominate part are the securities in foreign currency which present the investment of the central bank in bonds (mainly in Germany and USA). This shows an improvement of the international reserves management and foreign currency liquidity.

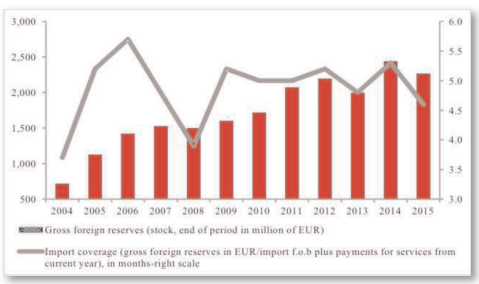


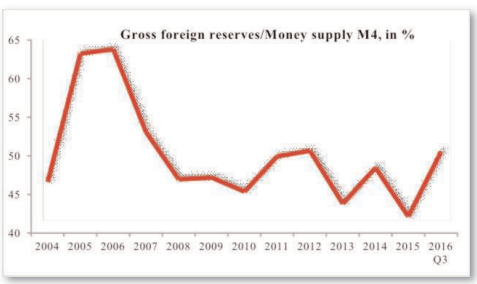


Cumulative change for September 2006

Source: NBRM data

In the last twelve years, the gross foreign reserves increase around 4 times, from 717 million euros in 2004 to 2.699 million euros in Q3 2016. The gradual liberalization of the capital account, the admission to CEFTA, the EU candidate status, higher credit rating, as well as the aggressive policy of the Government for attracting foreign capital in the country contributed to incremented inflow of foreign currency. Also, the inflows from the direct foreign investments and foreign borrowing from the government contributed to the increase of the foreign reserves. During this period, the foreign reserves had different dynamic, influenced by economic and non-economic factors. It started with significant increase of the foreign reserves in 2005, when they went up by 406 million euro, as a result of favorable movements on the foreign exchange market. The increase in the gross foreign reserves was primarily generated from the realized net purchase of foreign exchange by the NBRM on the foreign exchange market and from the realized net inflows of government deposits. The increase was also influenced by the allocated funds on the basis of the banks' reserve requirement on the foreign currency deposits and inflows originating from interest on foreign currency deposits with foreign banks. Part of the total annual increase of the foreign reserves was due to the inflows based on Eurobonds aimed at repayment of the debt to the London Club of Creditors. The increase of the foreign reserves continued in the following years, together with the high volume of foreign currency inflows. This was expected having in mind the liberalization of the capital account and the stabilization of the environment. Most of the foreign currency inflows were result of private transfers and also from the high amount of used foreign credits and loans by the private sector, the greater export activity, the growth in the portfolio-investments and the sale of government shares. The satisfactory level of foreign reserves in 2007, contributed to early payments towards several international institutions (Paris Club of Creditors, IMF, MBDP). The global financial crisis that hit the world in 2007-2009 caused unfavorable movements in the balance of payments and increase of debt in the private sector. The effect of the global financial crisis was especially felt in the first half of 2009, when there was an increase in the demand for foreign exchange on the foreign exchange market and pressure on the denar exchange rate. In the second half of 2009, the conditions of the foreign reserves improved, as the result of stabilization of the current account, monetary policy measures and improved conditions of the foreign exchange market. Also, the issued Eurobond that year also influenced on the foreign inflows and significant increase of the foreign reserves. In the next three years, the foreign reserves continued to grow, counting an increase of 478 million euro for the period 2010-2012. Still, in 2013 there was a decline of foreign reserves on annual basis as a result of negative price changes and currency differences. The withdrawal of banks' foreign currency deposits with the National Bank also contributed to the reduction of foreign reserves as a one-off factor. The stabilization of the foreign reserves was registered the next year, when they went up, as the result of the stable macroeconomic environment and foreign exchange market. Unfortunately, very soon, the management of foreign reserves once again was put on test, due to uncertain political situation in the country. The foreign reserves declined, which was primarily influenced by the net repayments of government liabilities abroad. Furthermore, in the second quarter of 2016 there was a substantial withdrawal of the Denar deposits, as well as substantial increase of the foreign currency demand on the foreign exchange market which caused depletion of the international reserves. In the third quarter of 2016, the international reserves increased due to gradual stabilization and inflow from the new Euro bond.





Source: NBRM data

Despite the challenges that the foreign reserves faced during the period of analyze 2004-2016, the indicators stayed stable, and foreign reserves ensure coverage of the import of goods of around 4 months. Also, during this period, the short term debt is fully covered by the foreign reserves. The foreign reserves present a sound coverage of the liabilities of the domestic monetary system to the private sector, which can be seen by the indicator for the correlation of the gross foreign reserves and the broadest money supply M4, which equals around 50% in 2016.

The efficient management of the foreign reserves will continue to be one of the main strategy objectives of the National bank of Republic of Macedonia. According to NBRM Strategic plan 2017-2019, the management of the foreign reserves of the Republic of Macedonia will rely on the optimal balance of the principles of safety, liquidity and return on investment. In the next two years, the national bank is planning to adjust the investment strategy towards increasing the investments in financial instruments and currencies with positive yields and more stable economic perspectives. Also, the National Bank will continue to further strengthen the institutional capacity for managing foreign reserves by participating in the Reserves Management and Advisory Program (RAMP), improvement in the risk management in foreign reserve management in accordance with the best practices recommended by the World Bank, improved efficiency through implementation of new trade strategies, ensuring technical assistance and exchange of experience and constant trainings of employees (NBRM Strategic plan 2017-2019).

Methodology

As a methodology for analyzing the determinants of the international reserves we selected the multinomial regression (OLS) model. The multinomial regression model was chosen because of the following reasons: 1.) through this model we can determine the explanatory power of the selected (independent) variables towards the dependent variable through the coefficient of determination, 2.) The OLS regression shows us whether the independent variables have statistically significant impact to the independent variable and 3.) Through the model we can determine the linkage or correlation (positive/negative) of the explanatory variables with the dependent variable.

In our model we have 4 independent variables: the exchange rate (euro/denar), the nominal GDP, Unit Price Index of export and the policy interest rate and the international reserves as a dependent variable. The series of data used in the model are quarterly data for the period 2004-2016 obtained from the database of the National Bank of Republic of Macedonia and the State statistical office. In total 50 observations were included in the model. According to the abovementioned information the model would have the following form:

FDR=β□+ β□Exchange rate+ β□NGDP + β□UPI Export+ β□Policy interest rate+εi

In order to obtain the needed parameters, it's necessary for the multinomial regression model to satisfy the asymptotic properties concerning the characteristics of the deterministic and stochastic part:

1.) The regression model is linear in the coefficients, is correctly specified, and has an additive error term.

2.) Zero mean value of disturbance ui

3.) All explanatory variables are uncorrelated with the error term i.e. zero covariance between ui and Xi, or E(uiXi) = 0.

4.) There is no perfect multicollinearity i.e. there are no perfect linear relationships among the explanatory variables.

5.) Homoscedasticity or equal variance of ui i.e. the error term has a constant variance.

6.) No autocorrelation between the residuals i.e. the observations of the error term are drawn independently from each other.

7.) The error term is normally distributed with..

8.) Correct specification of the model

9.) The values of the regress to be predetermined in advance in the process of random drawing of the sample

10.)There is enough variability of the regresses

In order to test the fulfillment of the asymptotic properties and define whether we have a good fitted model the following tests were performed:

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1.) Breusch-Godfrey Serial Correlation LM Test (p)
2.) Heteroscedasticity Test: White (p)
3.) Histogram Normanility test (p)
4.) Ramsey Reset test

The first three, test the asymptotic properties of the residuals and the Ramsey Reset test was conducted in order to determine whether there are or not mistakes in the specification of the model. Additionally a correlation matrix was conducted and the variance-inflation factor-VIF was calculated, for determining whether there is perfect multicollinearity or not in the model. The square root of the VIF coefficient was also calculated in order to see the deviation of the standard errors of the model in comparison with the standard errors of the "perfect model",

For the conduction of the analysis and the tests, the econometric software package E-views 6 was used.

In order to perform the OLS test, we first have to test the stationarity of the series. Stationarity means that if in a series a shock is performed at some point of time, its impact with decline over time. On the other hand if the series are not stationary the shock performed in a time series will continue and will eventually lead us to having a spurious regression. For the above mentioned reasons we perform the Augmented-Dickey-Fuller test.

From the raw data of the series it was concluded that the series were not stationary. The best method for solving this problem is by differentiating the series or finding their log value. The series where differentiated, and in the first level all of the five variables showed stationary with the Augmented-Dickey-Fuller test.

Augmented-Dickey-Fuller test results

Variables	Difference	t-statistics	5% level	Alpha (5%)	Probability	Outcome
Foreign reserves	I (1)	-7.041	-2.925	0.05	0	Stationary
Exchange rate (euro/denar)	I(1)	-6.947	-2.927	0.05	0	Stationary
UPI of Export	I(1)	-2.303	-1.948	0.05	0.022	Stationary
NGDP	I(1)	-4.358	-2.928	0.05	0.001	Stationary
Reference interest rate	I (1)	-3.695	-2.924	0.05	0.007	Stationary

After determining the stationarity of the series a regression was performed. Two regression analysis were performed, one consisted with four independent variables (exchange rate, UPI of export,[9] NGDP and the reference interest rate) and another with three independent variables (exchange rate, UPI of export and NGDP). From the obtained results both models pass the Breusch-Godfrey Serial Correlation LM Test and the Heteroscedasticity White test. The Ramsey Reset stability test wasn't passed by the second model and both models don't pass the Jarque Bera Normality test. Having in mind these results and the higher value of the adjusted r-square coefficient of the first model 0.30, compared to 0.22 of the second model the first model with four variables was chosen for further analysis.

Variables	Model 1	Model 2
Constant	0.979	0.853
Exchange rate (euro/denar)	0.001	0.003
UPI of Export	0.054	0.045
NGDP	0.012	0.021
Reference interest rate	0.020	
Adjusted R-squares	0.305	0.229
Breusch-Godfrey Serial Correlation LM Test (p)	0.118	0.548
Heteroscedasticity Test: White (p)	0.286	0.191
Jarque Bera Normanility test (p)	0.010	0.008
Ramsey Reset Test (p)	0.123	0.043

A correlation matrix was performed with the data of the first model in order to see if there is perfect multicollinearity of the data. From the obtained correlation matrix we see that we have a relatively low coefficients of correlation (the highest correlation coefficient being -0.47 between the UPI of export and the ngdp). Despite getting these results the VIF coefficient of the model were estimated in order to make sure that there is no multicollinearity in the model.

The Correlation matrix Model 1

	DFR	DEURO	DNGDPE	DE	DINT
DFR	1	-0.409	0.269	0.053	-0.197
DEURO	-0.409	1	-0.164	0.200	-0.214
DNGDPE	0.269	-0.164	1	-0.477	0.119
DE	0.053	0.200	-0.477	1	-0.144
DINT	-0.197	-0.214	0.119	-0.144	1

VIF coefficient

Dependant variables	NGDP	Reference Interest rate	UPI of Export	Exchange rate (euro/denar)
VIF coefficient	1.3	1.06	1.33	1.09
vVIF	1.14	1.03	1.15	1.04

*The VIF coefficient, shows us the deviation of the standard errors of the model in comparison with the standard errors of the "perfect model", in which the variables are not correlated

After obtaining the values of the variance inflation factor-VIF, the question arises, how much should the coefficient of the simple correlation

9) We use Unit price of exports in order to avoid the significant price influences specially in the metal industry and energy.

be, i.e. how high should the value of the VIF be if there is no multicollinearity problem. Neter at all (1990) suggest that we examine the highest value of the variance inflation factor, as an indicator for colinearity. There are different opinions on this question, but its generally accepted that if the VIF ratio is higher than 5, than the multicolinearity of the variables should be treated as a problem. As we can see from the table, none of the VIF coeffients doesnt exceed the value of 2, which is an additional indicator that the multicolinearity in the model isnt a problem and that we have a "good" model.

After determining the model and concluding that it fulfills the asymptotic properties, we proceed in analyzing the results. From the obtained results of the model we get a coefficient of determination of 0.36. The coefficient of determination shows us the explanatory power of the independent variables over the dependent variable. The coefficient of determination of 0.36, tells us that the independent variables together explain 36% of the motion of the dependent variable. Unfortunately, the R-square coefficient has two major weakness which we have to bear in mind: First, the coefficient of determination rises artificially with each independent variable that we add to the model and second, if a model has too many predictors and higher order polynomials, it begins to model the random noise in the data. This condition is known as overfitting the model and it produces misleadingly high R-squared values and a lessened ability to make predictions. Therefore in models which have more than one independent variable is important to use the Adjusted R-square (adjusted coefficient of determination). The adjusted R-square is a modified version of R-squared that has been adjusted for the number of predictors in the model. The adjusted R-squared increases only if the new term improves the model more than would be expected by chance. It decreases when a predictor improves the model by less than expected by chance.

Dependent Variable: DFR
Method: Least Squares
Sample (adjusted): 2 50
Included observations: 49 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006	0.246	-0.026	0.979
DEURO	-9.227	2.465	-3.743	0.001
DNGDPE	0.004	0.002	2.612	0.012
DE	0.030	0.015	1.984	0.054
DINT	-0.877	0.362	-2.422	0.020

R-squared	0.363	Mean dependent var	0.136
Adjusted R-squared	0.305	S.D. dependent var	1.991
S.E. of regression	1.660	Akaike info criterion	3.948
Sum squared resid	121.279	Schwarz criterion	4.141
Log likelihood	-91.732	Hannan-Quinn criter.	4.021
F-statistic	6.258	Durbin-Watson stat	2.236
Prob(F-statistic)	0.000		

In our model we have an adjusted R-square of 0.30. This coefficient tells us that the independent variables together explain 30% of the movements of the foreign reserves. That means that in 30% of the cases we can explain the movement of the foreign reserves of Republic of Macedonia through the movement of the exchange rate, NGDP, UPI of exports and the policy interest rate. In different words, the movements of the exchange rate (euro/denar), NGDP, UPI of exports and the policy interest rate together explain 30% of the movements of the international reserves.

The second conclusion that we can come to, through analyzing the results is that all of the independent variables are statistically significant at the level of 5%, except for the UPI of export which is statistically significant at the level of 5.35%. The results show us that the exchange rate, NGDP, UPI of export and the interest rate have a statistically significant impact on the level of foreign reserves of Republic of Macedonia.

The third conclusion which we derive from the interpretation of the coefficients of the regression is that the exchange rate (euro/denar) and the policy interest rate are negatively correlated with the international reserves. On the other hand UPI of export and NGDP are positively correlated with the level of foreign reserves. The coefficients show us that if the exchange rate rises for one percent (ceteris paribus) the foreign reserves will decline for 9.22% and if the interest rate rises for one percent (ceteris paribus) the foreign reserves will drop by 0.87%. On the other hand if the Nominal GDP rises for one percent (ceteris paribus) the foreign reserves will rise 0.004%, and if the UPI of export rises for one percent (ceteris paribus) the for-

eign reserves will rise 0.03%. From the obtained data we can see that the highest impact on the level of foreign reserves of Republic of Macedonia has the exchange rate. This is expectable having in mind that Macedonia has a de facto fixed regime course with the euro, and every increase in the euro/denar exchange rate (depreciation of the denar) would mean that Macedonia would have to sell foreign reserves (decline the level of foreign reserves) in order to maintain a stable exchange rate regime.

Conclusion

Adequate level of international reserves is an indicator of stability for a country. For the International Monetary Fund and the others international financial institutions the level of the international reserves is one important indicator of financial vulnerability, which can mitigate or absorb different economic or political shocks in one economy. The research for the appropriate level of the international reserves and the determinants was intensive after the Asian crisis. However, there is not much research for the Balkan region. In the Republic of Macedonia, after the independence from Yugoslavia, there were several negative shocks which were mitigated thanks to the appropriate monetary policy and the satisfactory level of the international reserves. The biggest shocks were in 2001 when there was a security crisis, as well as in 2015-2016 when we are facing political crisis. Thanks to the mature monetary policy of the Central bank, but also on the appropriate level of the foreign reserves, there was no bankruptcy procedure for the country. The main purpose of this study is to identify the determinants of the foreign exchange reserves by estimating the appropriate international reserves function. We used data mainly from the state statistical system of the country using OLS estimation technique. Our OLS model delivered the results pointing the significant determinants of the international reserves. We found that significant variables are UPI of Exports, NGDP, Interest reference rate and the exchange rate. From the results it derived that the highest impact on the level of foreign reserves of Republic of Macedonia has the exchange rate (eruo/denar). This is expectable having in mind that Macedonia has a de facto fixed regime course with the euro, and every increase in the euro/denar exchange rate (depreciation of the denar) would mean that the National Bank of Republic of Macedonia would have to sell foreign reserves (decline the level of foreign reserves) in order to maintain a stable exchange rate regime.

Having in mind that there is no extensive research in this field for the South-East Europe, as a future research we recommend analysis of the determinants of the foreign reserves in this region, using panel data.

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IMPORTANCE OF THE MOTIVATIONAL FACTORS: EMPIRICAL ANALYSIS OF STUDENTS AND EMPLOYEES

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Abstract

The degree of the workforce motivation is crucial for organizations in achieving organizational goals. But what are the most important factors that motivate employees? In this respect, compared with the theoretical postulates of the theories of motivation, this paper conducted a survey designed to determine the motivational factors that the students of the last academic year of study as future employees have recognized as influential for better work performance and to assess whether the factors change by changing the environment and the employment status by determining the motivational factors that improve the work performance recognized by the current employees with different demographic characteristics.

Key Words: *workforce motivation, theories of motivation, motivational factors, work performance, students, employees*

JEL Classification: *O15*

1. INTRODUCTION

One of the most important drivers of success of an organization, whether it is a public or privately owned, is the degree of workforce motivation in achieving organization goals. This is confirmed by the organizational structure of today's corporations in which the human resource sectors are presented as a major "core" function of the companies. Many corporations believe that human resources are their most important value, competitive and strategic advantage. But how can the companies exploit this strategic advantage effectively and

efficiently? Companies and their managers must understand and try to fulfill the factors that motivate their employees to perform their duties. Highly motivated employees are the reason for high levels of productivity and consequently higher profits for the organization. But the next question that arises is what factors motivate employees?

Numerous studies on employees motivation that have been conducted in the past and still are endless source of discussion and consideration, had a single common goal to provide more of evidentiary information for determining the factors that motivate employees as an important segment in the creation of environment which positively influences the motivation of employees. In this regard, in this paper we conducted a quantitative research to determine the motivational factors that students as future employees have recognized as important for better work performance, compared with the motivational factors recognized by employees of different age, education and gender groups. Through research, we conclude that the factors of motivation for the new employees change over time by changing the environment and their needs, compared with the theoretical background and findings of research in this area.

2. LITERATURE REVIEW

In general, motivation is more or less affected by factors or events that move, lead and guide human behavior at specific times and in specific conditions. It is not a permanent condition and it is strongly influenced by the personal changes and changes in the environment such as personal, psychological, social and financial factors and organizational factors. From the multitude of definitions in the literature for the concept of motivation, for purposes of this paper we use the definition set by Greenberg and Baron (2003) which is easy to understand because it relates to the individuals and their behavior. These authors define motivation as a "set of processes that arouse, direct, and maintain human behavior toward attaining some goal." (Greenberg et al, 2003, p190).

2.1. THEORIES OF MOTIVATION

To understand what motivates employees and how to motivate them is a subject of many studies that follow after the results of Hawthorne studies conducted by Elton Mayo from 1924 to 1932. These studies found that employees are not motivated solely by money and employee behavior is linked to their attitudes. The studies also showed that the work performance of employees depends on social factors and job satisfaction. Financial incentives and better working conditions are generally less important to improve employee productivity than the fulfillment of personal needs, desire for belonging to a group and involvement in decision-making (Dickson, 1973).

In order to understand the theoretical tenets of motivation, in this article we explain the theory of Maslow (Maslow, Need theory, 1943), Clayton Alderfer's ERG (existence - relatedness - growth) theory (Alderfer, ERG theory, 1969), Vroom's Expectancy theory (Vrooms, Expectancy theory, 1964), John Adams's Social Equity theory (Adams, Social equity theory, 1965), Herzberg's Two Factor theory (Herzberg, Two Factor theory, 1959), Daglas McGregor's theory "X" and theory "Y" (Mac Gregory, theory X and Y, 1960), and Skinner's Reward theory (Skinner, reward theory, 1953).

According to Maslow, employees have five levels of needs (Maslow, 1943): physiological, safety needs, social needs, esteem needs and self-esteem and self-actualization needs. He argues that low-level needs must be satisfied before higher. Clayton Alderfer's ERG (existence, relatedness, growth) theory (Alderfer, 1969) states that employees needs can be satisfied in any order. According to him, not only unsatisfied, but satisfied needs motivate human behavior. Vroom's theory is based on the belief that effort leads to employee productivity and productivity leads to rewards (Vroom, 1964) which can be positive or negative. Positive rewards affect greater employees motivationin terms of negative. Adams's theory states that employees strive for equality between them and the other workers. The equality is achieved when there is a balance

between the worker's contribution and reward and the contribution and awards to other employees (Adams, Social Equity Theory, 1965). Frederick Herzberg's Two Factor theory (Herzberg, Two Factor Theory, 1959) establishes that there are factors at work that cause satisfaction (motivators) and others that cause dissatisfaction (hygiene factors). According to him, if the motivators are fulfilled, the employee becomes more motivated and contributing. Hygiene factors are associated with satisfying the biological needs and are corresponded to Maslow's physiological and safety needs. Theory "X" theory "Y" (McGregor, Theory X and Y, 1960) generally provides that there are two groups of workers - lazy employees and ambitious employees. Lazy workers are represented by X theory which has the characteristics of an authoritarian style of management and leads to direct regulation and strong control. Ambitious employees are represented by Y theory that leads to a democratic type of regulation by delegation of powers, enriching the content of the work and improve relations. Skinner's Reward theory (Skinner, Reward Theory, 1953), simply suggests that the behaviors that lead to positive results will be repeated in the future, and the behaviors that lead to negative results will be repeated only if the management positively encourages employee behavior that leads to positive results.

2.2. REVIEW OF RESEARCH FINDINGS ON MOTIVATIONAL FACTORS

Despite the motivational theories, recent researches in economic literature and psychology have shown that employees are not solely motivated by financial benefits from the workplace, but they are also motivated by other non-financial factors that play a significant role for better work performance. Grant et al. (2008) conducted a field research on motivational factors of fundraising agents who work on collecting donations. The findings suggest that task significance may play an important role in increasing job performance and productivity of agents for 100%. There are also similar techniques associated to non-financial incentives in form of publicly announced ranking employees according to their individual performance (Blanes i Vidal and Nossol, 2011) or public recognition of work performance by selecting the employee of the month or the year (Markham et al. 2002; Kosfeld and Neckerman, 2011) that significially influenced increasing work productivity of employees. A recent study conducted by Kosfeld, Neckerman and Yang (2016), examined the impact of "meaningful work" in combination with various financial and non-financial motivators and shows that the employee who is familiar with his importance in the overall project is more productive versus the employee who had been told that his work role is not that important. The results coincide with the findings of other studies. This research proves that financial motivators are stable and have a positive effect on productivity, regardless the information about the importance of employee's work role, while non-financial motivators, such as *meaning of work* and *public recognition* have a positive impact on the employees whose job wasn't rated as very important (Kosfeld et al. 2016).

Although there are numerous studies that try to give solid foundations and ranking of the primacy of motivators by introducing advanced econometric tools, the common argument is that the motivational factors are the same as those given in the theoretical postulates of many years ago, but their meaning is different, depending on the environment, the characteristics of business processes and the individual characteristics of employees.

3. AIMS AND METHODOLOGY OF THE SURVEY

3.1. AIMS OF THE SURVEY

This survey aims to determine the motivational factors recognized as influential for better work performance by the students of the last academic year of education as future employees, compared with the motivational factors recognized by current employees with different demographic characteristics (gender, education, age) and allows two-way analysis. The results of the students can be used as a documentary evidence which may be useful for companies in future employment of the graduates. On the other hand, the introduction of the target group - existing employees of different gender, age and educational structures will outline whether

the importance of each motivational factor remains stable or is it individually changing due to employment status and other demographic characteristics of the respondents (gender, education and age).

This quantitative research will further try to perform a ranking of the primacy of motivators that affect better work success in correlation with the findings set out in the classical theories of motivation and with the findings in the scientific researches.

3.2. METHODOLOGY OF THE SURVEY

The quantitative research was done by conducting a questionnaire via electronic service for collecting and analyzing data research - *Survey Monkey,* which was sent to 150 respondents. The questionnaire contains questions that determine the demographic characteristics of the respondents such as age, gender, employment status and education level of the respondents who were employed and ten motivational factors that the respondents rated by level of importance on a scale from 1 – 5, where ***1*** is least important and ***5*** is most important. The determination of the motivational factors which were involved in the questionnaire is in line with the findings in the theories of motivation and numerous economic studies and researches in the field of psychology:

a) ***good working conditions*** and ***good wages*** refer to the first and the second level of Maslow's theory of needs or the *physiological* and *safety* needs (Maslow, Need theory, 1943) and *existence* ofERG theory (Alderfer, ERG theory, 1969).

b) ***fixed working tim****e* and ***flexible working hours*** (*or the opportunity for flexible organizing 8 hours - day working time*), refer to the third level of Maslow's hierarchy of needs – *the social needs* (Maslow, Need theory, 1943) and *relatendess* of ERG theory (Alderfer, ERG theory, 1969). These two factors are set out in this group because recent findings of many studies show that the organization of working time has an impact on increasing the possibility of work-life balance, social life and communication (ILO, 2007). Working time with a fixed beginning and end, which is the most frequent form of working time in Macedonian companies, provides an opportunity for predictability of the work obligations, but it can cause a work stress because of the inability to complete the obligations or satisfy the needs related to the family and social life. Conversely, the possibility of flexible organization of working time through various forms, such as compressed working time - staggered 40 hours a week, i.e four days per nine hours a day, and on Friday four hours a day, indicates a better chance of work-life balance, social life and communication (ILO, 2007).

c) ***job satisfaction, advancement in the organization, recognition and respect by superiors, teamwork, management / organizational styles*** and ***fulfillment of the organizational goals*** refer to satisfying *social needs, esteem, self-esteem* and *self-actualization needs*, i.e third, fourth and fifth level of Maslow's hierarchy of needs (Maslow, need theory, 1943) and *growth* of ERG theory (Alderfer, ERG theory, 1969) . ***Recognition and respect by superiors*** can be compared with Adam's social equity theory which indicates that if the employee feels that there is a lack of recognition and respect for his work performance by superiors over another worker, it can cause a feeling of inequality and discouragement (Adams, Social Equity Theory, 1965).

We used the statistical software SPSS for the calculation of the results.

4. RESEARCH RESULTS

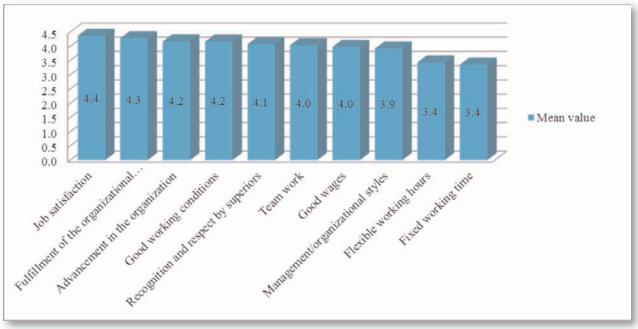
4.1. FINDINGS ON MOTIVATIONAL FACTORS FOR ALL RESPONDENTS

The analysis of the average/mean value of the respondents' answers which is done in order to rank the motivational factors by importance, finds out that *top five factors* that have an impact on better work performance recognized by all respondents are (Chart 1):

1. Job satisfaction
2. Fulfillment of the organizational goals
3. Advancement in the organization
4. Good working conditions
5. Recognition and respect by superiors.

Chart 1:

A rank order of 10 motivational factors by importance (mean value) – all respondents



We found that the motivational factor which concerns the work-time organization regulations - *fixed working time* and *flexible working hours*, is ranked ninth and tenth place by importance by all of the respondents. This finding suggest that satisfying the social needs, expressed by the way of work-time organization in order to establish a better work – life, social and collective balance, is not recognized by level of importance as the most important or very important motivational factor.

It is also important to emphasize that the motivational factor - *higher salary* which refers to satisfying the physiological needs, is not ranked among the top five motivators.

If we analyze the obtained results by gender, we find that there are differences between the male and female respondents. These top 5 factors remain the same for the female respondents, while on the other hand, the males recognize the following *top five factors of motivation*:

1. Fulfillment of the organizational goals
2. Advancement in the organization
3. Team work
4. Job satisfaction
5. Good working conditions.

The results suggest that *teamwork* is a significant *top five motivational factor* for men. This can be explained by the traditional fact that male population from an early age is often included in collective sports, which determine their propensity to collectivization, hence, they also emphasize the team work and collectivity as significant in work placements.

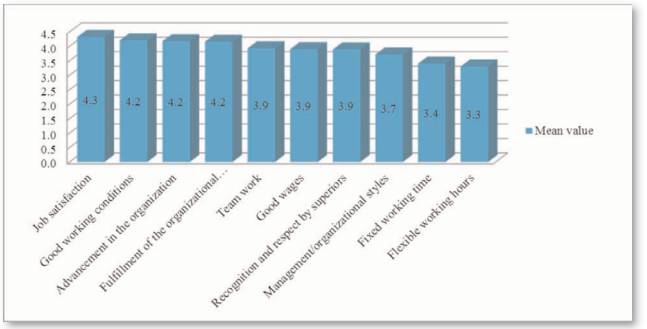
4.2. FINDINGS ON MOTIVATIONAL FACTORS - STUDENTS

Analyzing the results by target groups, we found that students of the last academic year of study, as future employees, consider that satisfying the esteem, self-esteem and self-actualization needs, expressed by the way of a *job satisfaction, the opportunity for an advancement in the organization* and *the fulfillment of the organizational goals* and the safety needs expressed through *better working conditions*, are important moti-

vators that improve the work performance. *Good wages,* in point of satisfying the basic physiological needs, is recognized as an important motivational factor, although it is ranked lower on the ranking scale. Among young people, or those without family responsibilities, *fixed working time* is selected before *flexible* because it allows a better predictability and opportunity to plan the social life after their working hours. Also, we assumed that *fixed working time*, in most cases, is the first choice in the organizations in Macedonia because it is actually a long practiced *work - time organization* in our country. The reason refers to the incomprehension of the different forms of flexible organizing 40 working hours per week, hence, in the selection the known always prevails over the unknown (Chart 2).

Chart 2:

A rank order of 10 motivational factors by importance(mean value) – target group: students



If we analyze the results by gender, we prove that the male students as future employees, ranked the *teamwork* as a very important motivational factor in the workplace, while for the female students, *job satisfaction* is considered as the most important motivational factor to step up the labour productivity.

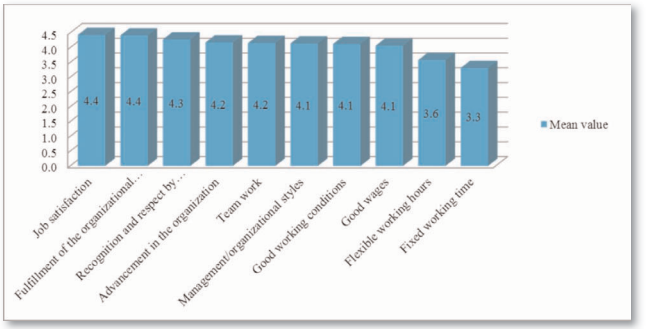
Considering the working time preferences the male students consider both types of working time, flexible and fixed, as equally important. The female students on the other hand prefer the fixed working time and the same is recognized as a better opportunity for a family balance since in Macedonia we are still witnessing the traditional form of understanding family way of life where the women have certain obligations in the household. Shared responsibility or shared parenting is still not widely accepted.

4.3. FINDINGS OF MOTIVATIONAL FACTORS - EMPLOYEES

The analysis of the mean value of the employees' answers indicates that *job satisfaction*, *fulfillment of the organizational goals*, *recognition and respect by superiors*, *opportunity for an advancement in the organization,teamwork*, *management/organizational goals*, *good working conditions* and *good wages* are equally important motivational factors for the employees. This target group also don't recognize the *work-time organization* as the most important motivational factor (Chart 3).

Chart 3:

A rank order of 10 motivational factors by importance (mean value) - target group: employees



Based on the same methodology and criteria, on this category of respondents additional observations were made by gender and by their level of education. Employees with higher level of education / MSc / PhD, find the same mentioned above motivational factors as most important. Some changes appear in the results of the employees with secondary and lower education according to which *recognition and respect by superiors, job satisfaction* and *teamwork* are equally ranked on the first place in the rank order as the most important motivators for a better work performance. In this target group there is a difference which refers to *work-time organization*, compared with the results of the students. This motivational factor is recognized as a very important factor and on the same level with the importance of the *good wages*.

All that is mentioned above, leads to the conclusion that people with lower levels of education are usually assigned to different work positions on the lower levels and feel that management does not always appreciates and recognizes their work and considers their contribution to the company is limited. Also, it can be concluded that people with lower levels of education are mostly involved in a team way of working, but they believe that the individual recognition in a collective action can strongly motivate them. These individuals often work in jobs in which the organization includes a shift work or night shift, just as production, work desk etc., which could have a strong impact on satisfying their need for work – life and collective balance.

Concerning the gender differences in choosing a motivating factor the same findings are again confirmed as in the student target group that was divided according to gender. There is a shift in female employees concerning the organization of the working time or in, other words, the fixed working time is considered very important compared to the flexible working hours which has a medium importance. The orientation towards fixed working time can be assigned to the influence of the family obligations and the creation of family-working balance.

5. CONCLUSION

Regarding the whole sample, the findings showed that satisfying the esteem, self-esteem and self-actualization needs are very important and they are set on the highest level of the ranking scale of motivational factors. The following factors of motivation by importance are satisfying the physiological needs, safety needs and last, satisfying the social needs expressed by forms of work – time organization.This finding differs from Maslow's theory in which Maslow stated that the needs are satisfied by moving upwards on the pyramid, and it is closer to Alderfer's ERG theory which finds that the need can be satisfied in any order and at any time. This finding also coincides with Herzberg's theory which suggests that for the purpose of achieving a real job satisfaction as a basis of motivation for a better work performance, managers should create conditions that lead to satisfaction of the higher levels of the hierarchy.

Following the findings of the target group - students from the last academic year of study as future employees, we come to the conclusion that the new employees will be motivated if they are satisfied with the job, if they have good working conditions, if they have the opportunity for an advancement in the workplace and if they fulfill the organizational goals. However, it is important to point out that the male students strongly prefer the teamwork, while the female students give a higher importance to the work – time organization and they prefer fixed working time.

Against the students, the current employees believe that the job satisfaction, the fulfillment of the organizational goals, the recognition and the respect by their superiors, the opportunity for an advancement in the organization, the teamwork, the management/organizational styles, good working conditions and the good wages are all equally important motivational factors. The same are only differentiated among the people with lower than university education. Those employees are connected with Adams's theory of equality which shows that if the employee feels a lack of recognition and respect of their work success by their superiors in comparison with other workers it can lead to a feeling of inequality and demotivation.The students ranked the management/organizational styles aproximately at the end of the ranking scale, while the employees recognized this motivational factor as very important for increased labor performance, which coincides with Douglas's McGregor theory Y (1960) which stated that individuals are encouraged to take a greater responsibility for planning and appraising their own contribution to organizational objectives, and the accompanying effects on egoistic and self-fulfillment needs are substantial.

This target group also doesn't put high importance to *working time* in its both suggested forms as a significant motivational factor. Still, when compared to the student target group the chart shows that the current employees appreciate more flexible forms of organizing the working time which confirms that this factor is changing due to the surroundings. Namely, in this case we presume that the employees are mostly people with families and therefore they recognize this form as more appropriate compared to the fixed working time. It is again in order to provide working-family balance.

Guided by the above given conclusions this research paper can serve as a starting point in Macedonian companies in their understanding of students' needs as future employees. Furthermore, through including the already employed as a research target group we have proved that the motivational factors are not stable, in other words, they change according to the surrounding, the characteristics of the working processes as well as the employees personal traits.

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UDC 657.37:005.57]:004.738.5

TOWARDS INTEGRATED REPORTING: ANALYSIS OF INFORMATION PUBLISHED ON THE COMPANIES' WEBSITES THAT COULD BE PART OF THE INTEGRATED REPORTING

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Abstract

Integrated reporting is a new approach to corporate reporting which is rapidly gaining international recognition. Integrated reporting is based on integrated thinking, which include interconnectivity of strategy, performance, risk and incentives and helps to identify sources of value creation. In this paper are summarized the need for integrated reporting, companies' benefits of its implementation as well as content of the integrated report. The aim of the paper is to increase the awareness of the companies about integrated reporting especially in the Republic of Macedonia due to the absence of its implementation in Macedonian companies realized by pre-research phase about implementation of integrated reporting conducted on companies listed on Macedonian stock exchange. Furthermore, as a result of the negative results from the pre-research phase, it is made qualitative analysis about publication of information through the companies' websites that might be part of the integrated report if it commence to be prepared by the companies.

Key Words: *integrated reporting, integrated report, integrated reporting framework*
JEL: *M400, M410, M480, M490*

INTRODUCTION

Integrated reporting as an activity in the organizations and as a term in the business environment exist many years ago but in different forms and different meanings. Last years it gain big popularity and immense importance in the organizations and especially various stakeholders. Integrated reporting in its full meaning

demonstrates how organizations really create value: it is a concise communication of an organization's strategy, governance and performance, it demonstrates the links between its financial performance and its wider social, environmental and economic context, and it shows how organizations create value over the short, medium and long term. As such it is practiced in not many organizations and in the most of them only on voluntary bases. The companies in the Republic Macedonia, although many of them are international, are far from integrated reporting in its full meaning and real implementation. What we can do now is to increase awareness of the companies about the importance and value creation of the integrated reporting for themselves and to map the current situation about its implementation. For the purpose of this paper, the mapping of the current situation of Macedonian companies about reporting nonfinancial, social and environmental information will be done through their websites. This would be preparation phase to integrated reporting because nonfinancial information are reported on the websites but they are not included in the annual report together with the financial information and performance. This practice is noticed in other countries too, where the amount of reported social and environmental information expand, organizations increasingly began to separate out social and environmental disclosures from annual reports and to disclose them on their websites (de Villiers & van Staden, 2011)

VERY FIRST ACTIVITIES FOR INTRODUCING INTEGRATED REPORTING ON GLOBAL LEVEL

It is well known that the accounting, beside other, is informative subsystem in the general information system. Accounting information that are result from accounting methodological procedure are from financial nature. However, it should be taken into consideration that strategic and operational management activities are driven by non-financial goals (Weisenberger & Angelkort, 2011). Recent years, accounting reporting is more and more subject to discussions how and where to disclose non-financial information related with the business. FASB within AAA as well as the Council by IFAC are the most authoritative bodies who devoted special attention to the issues related with the disclosure of non-financial measures in the frame of annual reports. Many academicians and practitioners stress out that reporting related with customer satisfaction, quality and other results from non-financial measures do not have big impact over investors in their decision making based on financial statements. However, researchers propose that companies should report both financial and non-financial information on voluntary bases (Maines, et al., 2002) regarding environmental, social and governance aspects of organizations' activities (Abeysekera, 2013) (Eccles, Krzus, & Serafeim, 2011). Few years ago FASB and IFAC's Council form International Integrated Reporting Council – IIRC[10] in which own representatives have the big corporations, accounting regulatory bodies etc. The Mission of the IIRC is to act in direction of including non-financial information and other information into annual reports which are not disclosed in the current financial statements set. Beside IIRC, the concept of integrated reporting is promoted by the King Report on Governance for South Africa (King III) (IRCSA, 2011).

If we all acknowledged that the phase of sustainability reporting lead up to integrated reporting, we have to acknowledge that there are significant differences between them. Besides the content and form of the information disclosed, there is a different target audience – while sustainability reporting aims at providing social, environmental and economic information to a wide range of stakeholders, integrated reporting seek to present information related to broad risk evaluation and potential future value growth thus be more attractive and necessary to capital providers and investors (de Villiers, Rinaldi, & Unerman, 2014). This means that the focus is changed from stakeholders to shareholders.

The idea for integrated reporting and its importance appear strongly after the global financial crises when market participants were focused more on short term results and performance rather than on long term value creation. Long term performance and long term value creation are the main postulates of the integrated reporting. This financial crises gave impetus to integrated reporting driven by a perceived need for an improved method of reporting that incorporates a range of financial and nonfinancial information necessary for effective decision making and risk management in the current environment (Wild & van Staden, 2013). Besides financial crises there are other factors account for the current sense of urgency of integrated reporting: increasing awareness of the effects of climate change and natural resources limitations, growing impor-

tance of human capital to value creation in developed economies and human rights in developing countries and recognition of the essential role of good corporate governance and risk management in order to prevent major corporate disasters (de Leo & Vollbracht, 2011) Integrated reporting 'integrates' financial, social and environmental information into a single report for stakeholders in a format that is concise, clearly expressed, consistent and comparable (Eccles & Krzus, 2010).

Although integrated reporting is still in its developmental stage and mostly is not mandatory, a growing number of companies are producing integrated reports. Including those in IIRC's Pilot Programme there are 80 business and 25 investor organizations from more than 20 countries, and more over IIRC has published Emerging Examples Database which provides access to a comprehensive range of examples of current best practices in reporting (source: IIRC website).

INTEGRATED SYSTEM FOR ACCOUNTING INFORMATION FOR INTERNAL AND EXTERNAL REPORTING

Companies nowadays, inspired by latest financial crises and new investors' requirements and expectations, put accent on non-financial performance measurement. This impose the requirements and necessity of usage of nonfinancial measures and implementation of contemporary concepts in performance measurement area which require from organizations to adapt on the new rules and to introduce appropriate procedures which in turn will improve accounting information system. After well-known accountability failures (like Enron, WorldCom, Tyco), a new generation of nonfinancial reporting have moved from the extraordinary to the exceptional to the expected, and in the process establishes a new standard of transparency unimaginable even a decade or two ago (White, 2005).

In traditional accounting practice it is well known that the information from financial accounting are used for external reporting and the information from management accounting (controlling and budgeting) are used for internal reporting. Contemporary accounting practice start to do not have clear border between internal and external reporting because the process of decision making of investors and other stakeholders more and more has need of nonfinancial information and information regarding performance measurement concepts.

Financial reporting has institutional rightful as a result of numerous factors including standards for measurement, valuation, reporting and auditing; effective executive mechanisms such as court for reimbursement from fraud in financial statements, sophisticated internal controls and performance measurement systems, as well as information technologies which allow fast collection and processing of data. However, financial reporting has disadvantages related to its complexity and difficult understanding of information by the users of financial statements, except those who are accounting well educated. Because of this, information from financial statements become irrelevant, late and obsolete. This information are inadequate for minimizing risks undertaken from organizations in value creation for stakeholders. (Eccles & Saltzman, 2011). Also, it could not be surely stated that financial statements give real and objective report about the position of the organization because financial statements do not contain information about nonfinancial performance which can help in completing long-term financial picture of the organizations. Moreover, traditional reporting is assessed as lengthy, complex and strictly regulated that contribute to lack of responsiveness to new value drivers and changing business context (Adams & Simnett, 2011). For better informing of external users of financial statements, companies start on voluntary basis to disclose nonfinancial information. The first issue with which are faced in such practice is the absence of standards such as those for financial reporting. But, besides this, and besides subjectivity of nonfinancial information, the investors put pressure on companies for disclosure of nonfinancial information together with financial statements in order to have complete picture for the organization.

The organizations have two possibilities: first, the evidence used for financial accounting and reporting to be used for management accounting and performance measurement too, and second, usage of separate system for evidence, "other books", used by the management accounting. In the first case, implementation of

integrated system for generating information for both financial and management accounting, additional advantage is the fact that the information from management accounting are generated by relatively low incremental costs, as well as the opportunity all stakeholders to receive the only one version of information, and "only one truth" for company's performance. The second case is related with additional costs for maintenance and governing of separate information system for generating data for management accounting, but the advantage is the great flexibility in decision making for using financial and other resources from case to case, separately on each situation (Weisenberger & Angelkort, 2011).

Management accounting systems are defined as those parts from formal information system which are used by the organizations to influence management behavior in direction of fulfilling goals (Horngren, Bhimani, Datar, & Foster, 2002). In developing management accounting system conceptually are possible two interrelated dimensions: how detail and how often the statements are generated. This approach is based on the fact that the managers from some organizations have more benefit from detailed and frequent accounting information, while in other organizations is trend to be aggregated, with less details and not often generated (Bouwens & Abernethy, 2000; Davila, 2000). Management accounting use financial information in the systems for budgeting and standard costs and nonfinancial information for the products' quality, customer satisfaction, operational efficiency etc. According to Gerdin (2005), management accounting information systems are classified in three groups: elementary (all types of accounting information are aggregated and are not often generated), systems of broader range (budgeting and operational information are detailed and often generated in a form of reports) and traditional (detailed reports for budgeting and products and/or services costs which are often generated). The first system compared with the remaining two is lowest, accounting information are not detailed and are rarely generated, and because of that is called elementary. The second and third systems have mutual denominator of sophisticated planned system who generate detailed and often information. But, regarding financial and nonfinancial information, these two systems are significantly different. Management accounting systems in the second group are characterized with often generating of detailed nonfinancial information, while the financial information are secondary information. Because of that, this group of systems has similarities with so called management accounting systems from broader range (Bouwens & Abernethy, 2000; Mia & Chenhall, 1994). The third group of management accounting systems has opposite profile from the previous group. That means that it has well developed system of financial information, but it is much less based on nonfinancial information. As such, this system has many similarities with traditional accounting systems because are limited on providing only financial information (Bouwens & Abernethy, 2000; Gul & Chia, 1994; Mia & Chenhall, 1994).

During the economic globalization, multinational companies are faced with similar issue about integrating information systems for the aim of financial reporting because the accounting regulation of the country where the parent company operate is different from the accounting regulation of countries where subsides operates. Recently, these differences are minimized because of convergence to International Financial Reporting Standards. However, certain fiscal differences or national characteristics still remain to be regulated with the national accounting regulation. Differences exist and because of implementation of non-up-to-date version of IFRS because of non-updating of translations.

In terms of integrated accounting system, performance measurement, budgeting and controlling will be based on financial accounting information prepared in accordance with IFRS, which eliminate the necessity of additional costs for developing and maintenance of separate base of data in "double accounting" or "third books". In this case financial performance measures, such as ROI or residual income are consistent with measures based on IFRS. What is very important, management accounting become less subjected to mistakes and errors and more reliable because the data it used from financial accounting are subject to rigorous laws and regulations (Wagenhofer, 2006). In endeavoring to develop integrated reporting contribute the new revised IFRS which should be adjust in order to be used in internal accounting and internal controls (Ewert & Wagenhofer, 2007).

10) IIRC е формиран во јули 2009 г. од страна на IFAC.

From all previously mentioned could be concluded that IFRS have established clear usage in financial reporting striving to be adjusted for developing integrated information system, as well as disclosure of financial and nonfinancial information in the annual set of financial statements. However, IFRS and Corporations Act largely take care of shareholders and investors with a direct monetary interest in the companies, even though there are stakeholders with direct or indirect equitable interest in the organization (Abeysekera, 2013). This situation rise the idea for integrated reporting, where financial statements are only one part of the integrated report, which is on its very beginning. In recent years, with establishing IIRC, are posed the basis for integrated reporting concepts, although South Africa pioneered in such practices and posed integrated reporting as listing requirement, what means that guidelines for integrated reporting were being developed before the formation of the IIRC (Cheng, 2014). Combining financial and nonfinancial reporting in one integrated report is going to have unintended side effects of making the reports longer and more difficult to read (Wild & van Staden, 2013).

THE NEED FOR INTEGRATED REPORTING

Contemporary approaches for performance measurement have in mind that financial information are not the only one indicator for real results of the companies, but equally important, even more than them, are nonfinancial information too which are reliable indicator for current and future companies' results. Investors as a key stakeholder have changed their needs and requirements from only financial returns to broad sustainable responsible performance meaning that it is increased awareness of taking care for society in order to avoid repairing damages caused from the short-term benefits of the companies (Abeysekera, 2013). For that reason, the key stakeholders continually send strong messages to the top management, accountants, employees in finance departments and board of directors that their nonfinancial information are of immense importance for them and insist these information to be disclosed and presented in the annual report set.

The term "integrated reporting"[11] understand inclusion of financial and nonfinancial statements into "one statement" (Eccles & Saltzman, 2011) with different level of integration. With such reporting the gap between information disclosed currently by the organizations and information required by the investors and other stakeholders for valuation the value of the companies on the capital markets is overcome. With integrated reporting can be gained information for both short and long term results. The main output of Integrated Reporting is an Integrated Report – a single report that the IIRC anticipates will become an organization's primary report, replacing rather than adding to existing requirements (IIRC, 2011).

The organizations that already start the implementation process of integrated reporting, from the very beginning of its implementation have noticed numerous improvements in their business processes, better communication with their shareholders and other stakeholders. Sought Africa is the only country where integrated reporting is mandatory. In recent time, many countries from Europe, such as Denmark, Norway, Sweden, France etc., start to include nonfinancial information in the annual reports what means that integrated reporting start with practical implementation in these countries. As examples of companies that have started the pilot-project for integrated reporting can be stated Southwest Airlines, American Electric Power and United Technologies Corporation in USA, Philips in Netherlands, BASF in Germany, Novo Nordisk in Denmark and Natura from Brazil. Organizations part of this pilot project are in different stages of integrated reporting implementation. Some of them already have prepared integrated reporting which are not published, but serve them for internal needs in order to test the system and the processes. Other organizations combine financial and nonfinancial information as a first step toward integrated reporting. However, there are organizations with incorporated concepts and principles of integrated reporting in their annual reports (according to IIRC).

With integrated reporting is improved corporate reporting in a whole. It is support to the business activities of the organizations and help to investors in their decision making. Disclosure of relevant financial and nonfinan-

11) The first document for practicing integrated reporting is published on January 25, 2011 on press-conference held on Stock Exchange in Johannesburg, what is assessed as a kind of precedent because only few of the 30 best stock exchanges gives some directions and ask from the organizations to publish nonfinancial information in their annual statements.

cial information help investors and other stakeholders to better understand the decisions made by the management related with the long-term development of the organizations. Insufficiently disclosure of relevant information for risk factors and other strategic information in annual reports contribute information to investors to be doubtful. More precisely, there is certain gap in information disclosed by organizations and information required by investors and other stakeholders. Such example are information related for how organizations react on fast-growing environmental changes or balancing short and long term management interests.

Integrated reporting understand incorporating material and non-material values of the organizations, which are fully included in financial statements and have influence over the financial results of the organizations. In integrated reporting are included economic contribution from nonfinancial factors such as environmental costs, social costs, products and services benefits, reputation, market positioning, talents, skills and improvements of employees.

Within integrated reporting frame are included directions for interrelation of information that should be disclosed. Integrated reporting allow to be done more extensive analysis about organizations activities than traditional reporting. Integrated reporting informs how the employed capital influence over the current and forecast performance measures as well as future opportunities of the organizations that are base for defining future strategic goals. Integrated reporting integrate in one report capital resources, financial and nonfinancial information, risks, strategies and performance measures, information for management and board directors working and incentives, environments in which operate the management, opportunities and risks for the organizations as well as past, current and future activities and performance of the organizations (www.theirc.org, 2012). With including such information, integrated reporting contribute for relating organizational performance with all important internal and external factors contributing for long term organizational development.

BENEFITS OF INTEGRATED REPORTING

The final result of the integrated reporting for the organizations is the report in which are included financial and nonfinancial information. Integrated reporting summarize the information for financial and nonfinancial results as well as the relation between financial and nonfinancial performance measures.

In the literature dedicated to the integrated reporting are differentiated numerous benefits grouped in three groups: internal benefits, benefits related with external markets and managing regulatory risk (Eccles & Saltzman, 2011). The internal benefit is related with improvement of internal resources allocation, higher commitments to shareholder and other stakeholders and allowing lower reputation risk. The benefit from external markets understand satisfaction the needs of the main investors who require nonfinancial information through disclosure of sustainability indexes and assurance that nonfinancial information are correctly reported. The benefit of successfully managing with regulatory risk is related with the requirements from the stock exchanges etc.

However, the companies who have implemented integrated reporting, the main goal and benefit relate with the opportunity given with this kind of reporting for making relevant decisions by stakeholders. Even more, companies with mandatory sustainability reporting as a part of integrated reporting evidenced positive effects in the three pillars of corporate social responsibility – society (employees training becomes a higher priority for companies), governance (corporate boards supervise management more effectively) and environment (prioritization of sustainable development) as well as noticed increased implementation of the ethical practices and decreased bribery and corruption (Ioannou & Serafeim, 2011).

At the end, having in mind the long term orientation of the integrated reporting, its effects will need number of years to materialize, making them more difficult to be detected and measured.

CONTENT OF THE INTEGRATED REPORT

It is well known that most of the countries use IFRS/IAS for financial reporting or at least combine them with national accounting standards. According to this, financial reporting of organizations relating to financial per-

formance is mandated by accounting standards and is legal requirement in many countries to inform and safeguard investors, shareholders and creditors (Abeysekera, 2013). For now, reporting for nonfinancial information is posed only on voluntary basis in organizations interested to present more useful and reliable information to stakeholders. Usually this voluntary reporting relating to intellectual, social and environmental performance is reported in an ad-hoc fashion (Abeysekera, 2013) which diminishes the fundamental reporting qualities of relevance and understandability of different report's users.

In order to avoid the low quality of nonfinancial information disclosed by organizations and to increase credibility and comparability of the integrated reports, the Institute of Social and Ethical Accountability and the Global Reporting Initiative (GRI) were among the membership organizations that took part in developing the most enduring and widely adopted reporting and assurance standards for social and environmental reporting (Buhr, Gray, & Milne, 2014).

The content of the integrated report is mostly define within integrated reporting framework published by IIRC in late 2013 in order to bring together financial, environmental, social and governance information in a clear, concise, consistent and comparable format. IIRC has developed pilot programme with aim to provide members of the programme with "the opportunity to discuss and challenge developing technical material, test its application and share learning and experience" (IIRC, 2014).

Even White (2005) who stated that integrated reporting is a process, not event emphasizes six core elements of an integrated reporting which are discernible: leadership (dedication of the CEO and top management), benchmarking (comparisons within the same industry through identified best practices), execution (implementation and continual improvement of the reporting require cross-functional involvement, engagement of non-financial stakeholders, monitoring and assurance (infrastructure of professional standards and protocols applied to financial reporting). With developing and publishing Integrated Reporting Framework (in late 2013) the content and structure of the integrated report become well-structured and defined. The two main postulates of this framework are Guiding Principles and Content Elements, described below in tables according to the explanations and definitions launched by IIRC.

Table 1: Guiding Principles of Integrated Reporting

1 Strategic focus and future orientation	Insight into the organization's **strategy** and how it relates to the organization's ability to **create value** in the short, medium and long term and to its **use of and effects on the capitals.**
2 Connectivity of information	Holistic picture of the **combination, interrelatedness and dependences between the factors** that affect the organization's ability to create value over time.
3 Stakeholder relationships	Insight into the nature and quality of the organization's relationships with its key stakeholders, including how and to what extend the organization understands, takes into account and responds to their legitimate needs and interests.
4 Materiality	Disclosure of information about matters that substantively affect the organization's ability to create value over the short, medium and long term.
5 Conciseness	Concise.
6 Reliability and completeness	Include all material matters, both positive and negative, in a balanced way and without material error.
7 Consistency and comparability	Consistent presentation of the information and presentation of the information in a way that enables comparisons with other organizations to the extend it is material to the organization's own ability to create value over time.

Source: IIRC

Besides Guiding Principles that should be followed in the process of Integrated Reporting and developing integrated report, there are content elements that should be part of integrated report: organizational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, basis of preparation and presentation and in doing so, takes account of General reporting guidance, presented in the table below:

Table 2: Content Elements of the Integrated Reporting

1 Organizational overview and external environment	What does the organization do and what are the circumstances under which it operates?
2 Governance	How does the organization's governance structure support its ability to create value in the short, medium and long term?
3 Business model	What is the organization's business model?
4 Risks and opportunities	What are the specific risks and opportunities that affect the organization's ability to create value over short, medium and long term, and how is the organization dealing with them?
5 Strategy and resource allocation	Where does the organization want to go and how does it intend to get there?
6 Performance	To what extend has the organization achieved its strategic objectives for the period and what are its outcomes in terms of effects on the capital?
7 Outlook	What challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?
8 Basis of preparation and presentation	How does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated?

Source: IIRC

In the process of preparation of integrated reports the general reporting guidance should be taken into account. The following general reporting matters are relevant to various Content Elements: disclosure of material matters, disclosures about the capitals, time frames for short, medium and long term and aggregation and disaggregation. Special attention deserve the types of capital should be disclosed in the integrated report. According to Integrated Reporting Framework, all organizations depend on various forms of capital for their success, although organization preparing an integrated report are not required to adopt this categorization. Integrated Reporting presents a progressive accounting framework which articulates and respects the management of and interplay between all forms of capital, not just financial capital, that are significant to an organization and necessary for the creation of lasting prosperity. These forms of capital include:

- financial capital – the pool of funds that is available to an organization for use in the production of goods or provision of services obtained through financing, such as debt, equity or grants, or generated through operations or investments;
- manufactured capital – manufactured physical objects (as distinct from natural physical objects) that are available to an organization for use in the production of goods or the provision of services including buildings, equipment and infrastructure;
- intellectual capital – organizational knowledge based intangibles, including intellectual property (patents, copyrights, software, rights and licences) and "organizational capital" (tacit knowledge, systems, procedures and protocols);
- human capital – people's competencies, capabilities and experience and their motivation to innovate, including their alignment with and support for an organization's governance framework, risk manage-

ment approach, and ethical values, ability to understand, develop and implement an organization's strategy, loyalties and motivations for improving processes, goods and services, including their ability to lead, manage and collaborate social and relationship and natural;

- social and relationship capital – the institutions and the relationships within and between communities, groups of stakeholders and other networks, and the ability to share information to enhance individual and collective well-being. Social and relationship capital includes: shared norms, and common values and behaviours, key stakeholder relationships, and the trust and willingness to engage that an organization has developed and strives to build and protect with external stakeholders, intangibles associated with the brand and reputation that an organization has developed, an organization's social licence to operate;
- natural capital – all renewable and non-renewable environmental resources and processes that provide goods or services that support the past, current or future prosperity of an organization including air, water, land, minerals and forests and biodiversity and eco-system health.

REQUISITES NECESSARY FOR SUCCESSFUL DEVELOPMENT OF INTEGRATED REPORTING

The process of integrated reporting is fundamental change of traditional information presented into financial statements where accountants will have the crucial role on 'measurers' and 'assurers' of financial and non-financial information. Accountants all around world are preoccupied with updating performance measurement systems which will include both financial and nonfinancial measures. They find the simplest solutions into developing integrated reports which will true and reliable present the business performance.

In the evolution of the integrated reporting the big issue is definition of financial and nonfinancial measures and their concise relationship in the integrated report (Watson & Monterio, 2011). Disclosing corporate performance with the accent only on financial performance in isolation of the social and environmental performance would fail to fulfil its aim. For example, the absence of clear relation between nonfinancial and financial information and performance is fundamental disadvantage of integrated reporting. This disadvantage become even more important on global level for development of integrated reporting. Accountants have special role in education of all stakeholders about the importance of interrelation between financial and nonfinancial information. The accounting profession appears in many roles, as developers and as auditors of integrated reporting, as well as, as internal or external councilors for hot to use financial and nonfinancial performance information in the process of decision making.

In order to have successful implementation of integrated reporting, there are various ways to promoting it either with passive regulator and emerging of integrated reporting as a result of the market forces such as voluntary adoption by companies because they see the benefits in doing so, pressure from large institutional investors and customers (de Leo & Vollbracht, 2011) or through active regulator who supplement market forces (a) through regulation dedicating mandatory reporting by companies, (b) by providing incentives for companies to report, (c) governmental endorsement of the GRI Guidelines, (d) by recommending or proposing voluntary guidelines with or without reference to international standards or (e) by transferring the regulatory power to self-regulating authorities like a stock exchange (Ioannou & Serafeim, 2011). From an accounting point of view, very important for integrated reporting is the willingness of accountants to be part of it. Accountants occur in multiple roles as heads of finance, controllers, auditors or accountants only. It is necessary in the process of introducing integrated reporting accountants to deepen their knowledge of operational activities in their organizations and environment in order to gain deeper knowledge about nonfinancial information that should be disclosed in the integrated reports (Watson & Monterio, 2011).

CONDITIONS FOR IMPLEMENTATION OF INTEGRATED REPORTING IN THE REPUBLIC OF MACEDONIA BASED ON THE INFORMATION PUBLISHED ON THE COMPANIES' WEBSITES

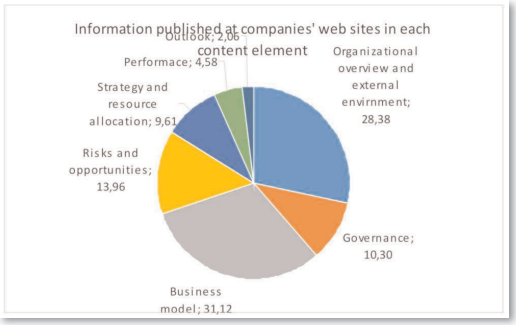
In conditions when the Macedonian economy is still feeling the effects of perennial global economic and financial crisis and when the implementation of the performance measurement systems can be found only in organizations dominated by foreign capital, it is still early to talk about integrated reporting, which is ongoing project worldwide. Although within the conducted pre-research 56% of organizations answer that their annual reports include information from the performance measurement system, that information are mainly concerning the results of basic financial measures calculated from the financial statements which are mandatory for publishing. Furthermore, most organizations (65%) said they do not disclose information about their control activities pertaining to variations from the plans, goals, undertaken corrective or preventive actions, etc. Even if part of the financial statements disclose information regarding the management incentives, which is mandatory requirement under the Companies Law (Article 384, paragraph 7), only 39 % said that disclose such information. This part of the report does not include information on setting up and implementing incentive system.

Having in mind that lot of information required to be disclosed in the integrated report are already known and in the most of the cases published "somewhere" on the companies' website without intention for integrated reporting, the further research and analysis are focused on examining information published on the companies' websites with potential to be included in the integrated report. As a sample were taken all companies listed on the official market on Macedonian Stock Exchange, 113 companies, but only 42 of them were analyzed. The rest of 71 companies either do not have valid website, or they do not publish any single information that could be included in the integrated report.

The research was conducted through checklist on almost all components of the Integrated Reporting Framework except the last one regarding basis for presentation since there is no integrated report presented. Also, according to the IR Framework, there are analyzed not only the general content elements, but detailed questions and parts incorporated in each content element. The questions and information analyzed are presented in Table 3 together with percentage of the companies publishing particular information on their websites. Published information summarized into all content elements are presented at Chart 1. Most of the published information were found in the section for general information for the companies, audited financial statements and annual reports.

Chart 1.

Percentage of the information published on companies' web sites that could be part of integrated report.



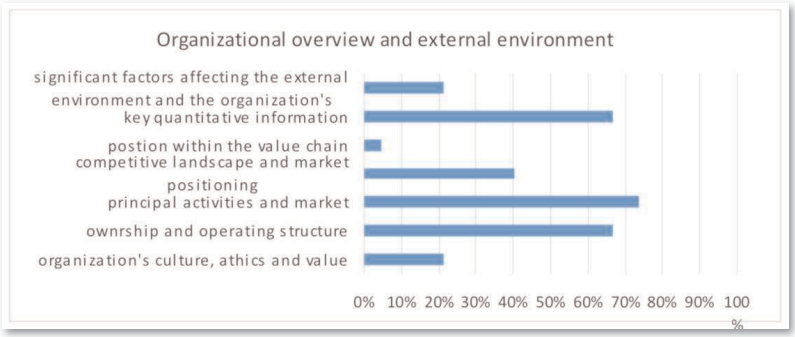
Regarding the first content element – organizational overview and external environment (Chart 2), it could be noticed that the most published information are those about ownership and operating structure, principle activities and markets as well as key quantitative information, most usually published under section for general information and profile of the companies. Although almost each company has its internal code of ethics, as well as information for company's culture and value, these data are not public. Only 21,43% of the analyzed companies have published such data as separate statement(s). The same percentage of companies publishes information about external environment, especially information about macro and micro economic

conditions and environmental challenges. The other aspects of the external environment, such as societal and political issues, are not covered. Ownership and operating structure are published in high percentage of the firms due to the mandatory requirement about discloser of the company's ownership. Companies also very often publish their operating structure, management, departments etc. Very often published information are those under key quantitative information section including number of employees, profit, markets etc. The information about principal activities and markets usually are published under separate tab on the websites. Within these content element should be noted that the information about position within the value chain are almost not published.

Within the second content element relating to the companies' governance, the most published information is about company's leadership structure including skills and diversity of those charged with governance following the regulatory requirements about the governance design. On the other hand, information about remuneration and incentives although legally

Chart 2.

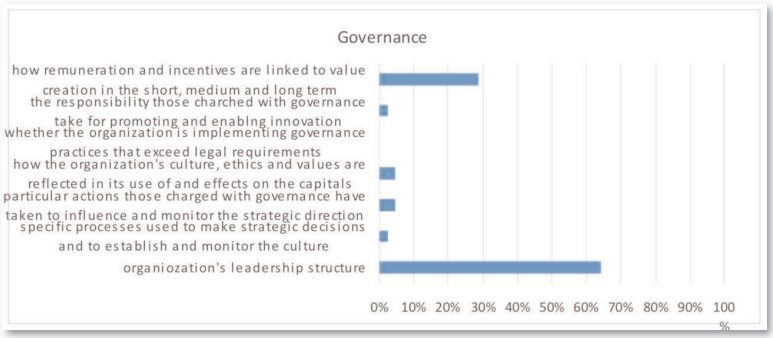
Published information regarding organizational overview and external environment



required to be disclosed, only 28,57% of analyzed companies publish such information. The other information regarding governance are published only in few companies or are not published at all.

Chart 3.

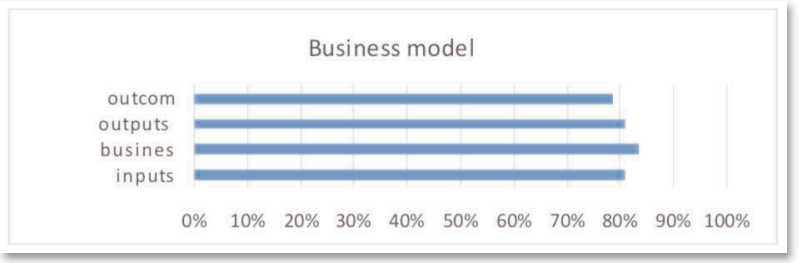
Published information regarding governance



It is very important to be noted that the information about business model (Chart 4), although not required by law, are published in high percentages (inputs and outputs 80,95%, business activities 83,33% and outcomes 78,57%) and these are the only information highly published on the companies' websites and are not required by law. This can be explained with the basic purpose of the website to serve as a mean for informing stakeholders about the main business activities, outputs and outcomes.

Chart 4.

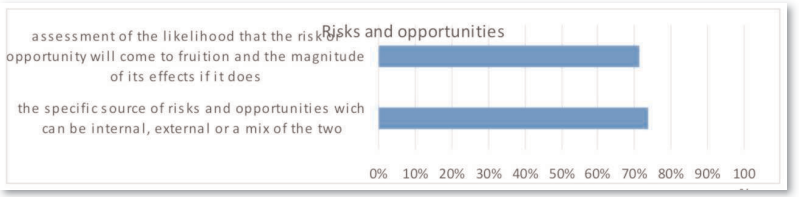
Business model



The next content element about risks and opportunities((Chart 5) is also highly published especially in the audited financial statements due to the regulatory requirement of risk disclosure.

Chart 5.

Published information regarding risks and opportunities



Regarding the strategy and resource allocation (Chart 6), the information about strategic objectives are published in 64,29% although not often divided into short, medium and long term, but in the same time significantly lower disclosure has the information about strategies in place or intended to be implemented in order to be achieved specified strategic objectives (only 33%). More worryingly is the companies do not publish information about resource allocation plans in order to implement the strategy.

Chart 6.

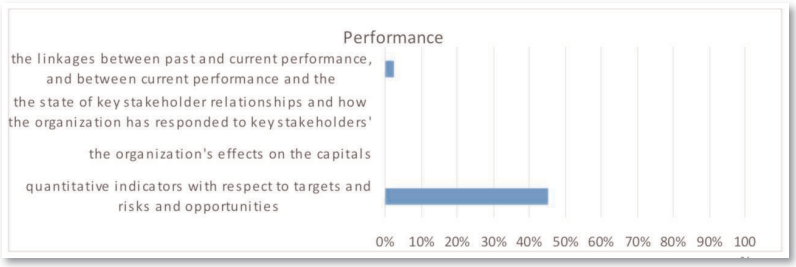
Published information regarding strategy and resource allocation

The only information published about performance (Chart 7) are quantitative indicators calculated from the company's financial statements, but not always is explained their significance. The qualitative information about performance are not published. If it is known that quantitative indicators reflect past activities and performance, the companies are not focused on future activities and plans. It can be also realized in the next content element relating outlook where only 7,14% of the analyzed companies have published information about expectations and future challenges. These information about outlook, the companies that publish them, do it in separate statement about future plans and expectations.

From the above it can be concluded that companies in the Republic of Macedonia barely meet statutory requirements for financial reporting. On the other hand, regarding integrated reporting according to IIRC, it is not implemented in the country as it is defined but many companies disclose and publicly publish information through their websites that could be part of the integrated report. The overall result from the analysis show that the significant amount of information are published in each content element, but not all aspects of each content element are covered. Most of the

Chart 7.

Published information regarding performance



information publicly disclosed are those required by law in the statements that are also mandatory. However, the companies also publish information that are not legally required, like a business model or performance, and are usually resulted from the internal management accounting. Having in mind that the companies already have ready significant amount of information that could be part of the integrated report and publish them through their websites, it is required relatively small effort to animate the companies about the benefits of integrated reporting in order to start to collect and to publish all of these information into single report and with time to increase the information disclosed that will contribute to increasing the completeness of the integrated report.

Considering the importance of integrated reporting and inclusion of both financial and nonfinancial information in it, the focus of organizations in the future should be given on producing integrated annual report, from which , in the end, however, most will benefit the organizations due indirect benefits that would be received by all stakeholders as a result of their complete and relevant information.

I		**Organizational overview and external environment**	
	1	organization's culture, ethics and value	21,43%
	2	ownership and operating structure	66,67%
	3	principal activities and market	73,81%
	4	competitive landscape and market positioning	40,48%
	5	position within the value chain	4,76%
	6	key quantitative information	66,67%
	7	significant factors affecting the external environment and the organization's response	21,43%
II		**Governance**	
	1	organization's leadership structure, including the skills and diversity	64,29%
	2	specific processes used to make strategic decisions and to establish and monitor the culture, including its attitude to risk and mechanisms for addressing integrity and ethical issues	2,38%
	3	particular actions those charged with governance have taken to influence and monitor the strategic direction of the organization and its approach to risk management	4,76%
	4	how the organization's culture, ethics and values are reflected in its use of and effects on the capitals, including its relationships with key stakeholders	4,76%
	5	whether the organization is implementing governance practices that exceed legal requirements	0,00%
	6	responsibility those charged with governance take for promoting and enabling innovation	2,38%
	7	how remuneration and incentives are linked to value creation in the short, medium and long term	28,57%
III		**Business model**	
	1	inputs	80,95%
	2	business activities	83,33%
	3	outputs	80,95%
	4	outcomes	78,57%

IV		**Risks and opportunities**	
	1	the specific source of risks and opportunities which can be internal,external or a mix of both	73,81%
	2	assessment of the likelihood that the risk or opportunity will come to fruition and the magnitude of its effects if it does	71,43%
V		**Strategy and resource allocation**	
	1	short, medium and long term strategic objectives	64,29%
	2	strategies in place or intended to be implemented in order to achieve strategic objectives	33,33%
	3	resource allocation plans in order to implement the strategy	2,38%
	4	how will be measured achievements and target outcomes for the short, medium and long term	0,00%
VI		**Performance**	
	1	quantitative indicators with respect to targets and risks and opportunities, explaining their significance, their implications and the methods and assumptions used in compiling them	45,24%
	2	the organization's effects (both positive and negative) on the capitals, including material effects on capitals up and down the value chain	0,00%
	3	the state of key stakeholder relationships and how the organization has responded to key stakeholders' legitimate needs and interests	0,00%
	4	the linkages between past and current performance, and between current performance and the organization's outlook	**2,38%**
VII		**Outlook**	
	1	the expectations about the external environment the organization is likely to face in the short, medium and long term	7,14%
	2	how that will affect the organization	7,14%
	3	how the organization is currently equipped to respond to the critical challenges and uncertainties that are likely to arise	7,14%
VIII		**Basis for presentation**	**N/A**

CONCLUSION

The last decade the idea of integrated reporting is on the front pages in scientific and professional journals in the field of accounting. The accounting profession actualize the need for establishing a globally acceptable framework for integrated reporting which is done in the late 2013. The whole concept of integrated reporting is very embryonic, and applied on a voluntary basis in voluntary organizations involved in the project to develop integrated reporting. Increasing the awareness of the companies about the importance of the integrated reported and awareness that they already publish some of the information separately on their websites could derive to increased implementation of integrated reporting and putting that information together into single report. Surely it can be argued that the integrated reporting has aspirations to become a compulsory concept for the organizations listed on the stock exchanges. The essence of integrated reporting is to involve nonfinancial information, in addition to financial, as a part of the annual report. The integrated reporting system is a overall reporting of the financial and operational activities in the organizations. Thus enabling stakeholders to be fully informed and enabled to make relevant decisions based on relevant information.

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Publisher Center for Economic Analyses - CEA

For the publisher Marjan Nikolov

Title CEA JOURNAL OF ECONOMICS

Cover & pre-press GLOBAL Communications, Skopje

Skopje, December 2016