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PAPER

# Inflow of Foreign Capital as a Factor of the Development of Current Accounts of the Eastern European Countries

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**Abstract** The influence of foreign investments onto export, import and current account balances of five emerging market economies of Eastern Europe is identified in the paper. Constructing vector autoregression models and performing Granger causality tests revealed the impact of foreign investments onto the formation of current accounts components of Czech Republic, Slovak Republic, Poland, Hungary and Ukraine.

For a more comprehensive assessment of the influence of foreign capital on the recipient countries a new economic indicator, the coefficient of international transaction compensation of foreign investment income reparation (CINR) is introduced. Analysis shows that attracting foreign capital has significant influence on the external economic positions of Czech Republic, Slovak Republic, Poland, Hungary. However, this influence is ambiguous.

On the one hand, it has led to an improvement in the trade balance of the countries, on the other – to the outflow of capital as foreign investment income. The revealed in the paper increasing trend of the CINR coefficients is positive, but the high level of return on liabilities controlled by foreign direct investors requires constant monitoring of its influence on current accounts and foreign liabilities accumulation.

**Keywords:** international economics; direct; portfolio and other investments; foreign capital income; export; import; income balance; current account; return on liabilities.

**JEL classification:** F14; F21; F23; F32; F34; O52; O57

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## 1. Introduction

The inflow of foreign investments has played a significant role in the development of many countries. For the foreign investments origin countries, these are mainly developed states, the outflow of investments leads to decreasing production costs, increasing sales on the foreign markets, to inflow of foreign investments income, etc. For the developing countries foreign investments, especially foreign direct investments, contribute to the development of industry and technology transfer, create new jobs and improve the skills of the workforce, increase international competitiveness of national economy.

However, the positive effects of attracting foreign investments for developing countries are often accompanied by the negative effects related to the outflow of foreign investment income from the host countries, which has a significant impact on the national current accounts, especially for emerging market economies. Therefore, there is a constant need to study the different aspects of foreign investments influence on the economy and the balance of payments of the recipient countries.

This paper explores the influence of foreign investment inflows on the development of current accounts of the five countries of Eastern Europe - Czech Republic, Slovak Republic, Poland, Hungary and Ukraine. The countries were selected based on their rapid and efficient integration into the European Union, except Ukraine which so far is only striving to repeat the successful integration experience of the neighbour East European countries.

## 2. Literature review

The issues of international capital flow in general and of the foreign investments impact on the economies of origin and recipient countries in particular have been widely studied in the literature.

Barkauskaite & Naraskeviciute (2016) explore the foreign direct investment (FDI) impact on economic indicators of the Baltic countries. The results have shown that foreign direct investments have positive influence on economic development of all Baltic Republics through gross domestic product and labour productivity growth, though foreign direct investments do not influence the unemployment rate in all Baltic countries.

Li & Tanna (2019) study the relationship between inward foreign direct investment and total factor productivity (TFP) growth using cross-country data for 51 developing countries over the period of 1984–2010. In the beginning of research the results show a weak direct effect of inward foreign direct investment on total factor productivity growth but, after accounting for the roles of human capital and institutions as contingencies in the FDI-TFP growth relationship, authors find a robust FDI-induced productivity growth response dependent on these 'absorptive capacities'. However, the relevance of the human capital contingency effect diminishes when the effect of institutions is also considered, which suggests that improving institutions is relatively more important than human capital development for developing countries to realize productivity gains from FDI. In the paper by Wacker (2011) the impact of FDI on developing countries' terms of trade is evaluated. Data on 111 developing countries between 1980 and 2008 is analyzed

using panel data methods. The empirical results show that there is no reason to believe multinationals' activities were responsible for a possible decrease of the developing countries' net barter terms of trade. On the contrary, from the author's point of view, foreign direct investments play a positive role for developing countries' terms of trade. Lisický & Maleček (2012) analyze the accumulation of net liabilities of Czech Republic to the rest of the world. Authors note, that the bias towards equity and a low level of debt in the net international investment position are positive factors that reduce the exposure of the Czech economy to international financial disturbances. However, the foreign investment inflow has led to a rising gap in unit labor cost between the tradable and non-tradable sectors, as non-tradable sector was not able to keep pace with the productivity increases achieved in the tradable sector. Authors conclude that, despite the numerous benefits foreign capital brought to the Czech economy, it has also given rise to risks that could undermine its competitiveness over the medium-term. For the net international investment position to stabilize at the current level (relative to GDP), the trade balance would have to run sustained surpluses around 6% of GDP in the medium term.

The paper by Rogach & Dziuba (2017) investigates the role of exchange rate risk of investing in Ukrainian and other frontier equity markets during the period between 2006 and 2016. It is proven that frontier markets group represents substantial exchange rate risk for foreign investors and that among frontier markets Ukraine had the biggest exchange rate risk for foreign investors.

The paper by Muço et al. (2018) examines the impact of foreign direct investments on productivity growth and unemployment in eight Balkan countries: Albania, Bosnia, Bulgaria, Croatia, Montenegro, Macedonia, Romania and Slovenia. The empirical analysis shows significant positive impact of both investments and FDI on productivity growth in the respective countries. Additionally, the data shows a positive impact of FDI on university enrollment, but not a negative correlation between FDI and unemployment. The results show that FDI effects may have positive consequences in the recipient country depending on its level of economic development and institutional quality.
Authors study the influence of foreign investments on the economies of individual EU countries – Lomachynska et al. (2018); European economic integration – Beer et al. (2017); and disintegration processes within the European Union – Sydorova & Yakubovskiy (2017).

For a more comprehensive assessment of the influence of foreign capital on the recipient countries Rodionova (2013) introduced a new economic indicator, the "coefficient of coverage of foreign investments", which is the ratio of total investment income in the corresponding cumulative financial account inflows. According to the results of the research foreign direct investment income outflow had large negative impact on the balance of payments of Peru, Chile, Czech Republic, Poland and Slovak Republic. In the paper by Yakubovskiy et al. (2019) the impact of income from foreign investments onto the formation of external economic positions of nine emerging market economies of Central and Eastern Europe and Latin America is identified. Results of the research show the significance of the foreign direct, portfolio and other investment income repatriation

from the emerging markets economies, especially for the countries of Eastern Europe.

## 3. Hypothesis, methodology and data

In general, in empirical studies the influence of different types of foreign investments on the external economic position of the countries has not received enough attention. Foreign direct investments and portfolio or other investments are fundamentally different, since the foreign direct investments are associated with participation in the management of companies, while portfolio or other investments are not. In the paper the impact of different types of foreign investments on the dynamics of national export, import and current accounts will be evaluated.

To test the hypothesis that the inflow of foreign investments has impact on national export, import and current accounts, the vector autoregression (VAR) framework is chosen since it provides a systemic way to capture the rich dynamics in multiple time series. Specifically, to provide evidence on the dynamic interactions between national export, import, trade and current account balances and the inflow of foreign investments, the following VAR systems are estimated to test Granger non-causality:

$$\begin{aligned} NT_t &= \alpha_1 + \sum_{i=1}^{p} \beta_{1i} IFI_{t-i} + \sum_{i=1}^{p} \gamma_{1i} NT_{t-i} + \varepsilon_{1t} \\ IFI_t &= \alpha_2 + \sum_{i=1}^{p} \beta_{2i} NT_{t-i} + \sum_{i=1}^{p} \gamma_{2i} IFI_{t-i} + \varepsilon_{2t} \end{aligned} \quad (1),$$

where NT, IFI and ε denote respectively: components of a nation's transactions with the rest of the world – export, import, trade and current account balances; inflow of foreign investments depending on type of foreign capital – direct, portfolio and other investments; and error term. α is a constant term, β and γ denote the coefficients to be estimated, p is the lag order selected. The null hypothesis of Granger non-causality from IFI to NT and from NT to IFI are $\beta_{1i}=0$ and $\gamma_{2i}=0$, respectively. The rejection of the null hypothesis of the Granger non-causality from IFI to NT implies that the past investment can help predict the country's transactions with the rest of the world and vice versa.

The model is estimated as follows. First, an unrestricted VAR is estimated. Then Granger causality testing is performed. The optimal number of lag length was chosen by looking at AIC and SIC criteria. The stability of VAR was checked: all AR roots are inside the unit circle and Autocorrelation LM test states that no serial correlation in the residuals was detected.

Quarterly data is used, taken from the Balance of Payments Statistics of the International Monetary Fund.

As it was highlighted in the papers by Rodionova (2013) and Yakubovskiy et al. (2019) the inflow of foreign investments to the emerging market economies causes the significant outflow of investment income, repatriated by investors. In the paper the compensation coefficient for repatriated income outflow will be calculated for each country as a ratio of balance of trade and services to the income outflow of all types of foreign investments.

$$CINR^t = \frac{TSB^t}{FIIO^t} \quad (2),$$

where CINR – annual compensation coefficient for repatriated income; TSB – annual balance of trade and services; FIIO – annual income outflow from direct, portfolio and other investments (FIIO is calculated by subtracting the foreign investment income credit from the foreign investment income debit); t – year.

Due to the fact that for the entire period for all of the studied countries sign of FIIO was positive, a negative sign of CINR indicates a negative trade and services balance in the country. If CINR is in the range from zero to 100 percent, this means that repatriated income outflow is only partially covered by balance of trade and services. If the value of CINR exceeds 100 percent, it means that the country has completely freed itself from the negative influence of foreign investment income outflow.

For a more thorough assessment of the impact of foreign investment on the external position of the countries the return on liabilities, which are controlled by foreign investors, will be calculated for each country as a ratio of income to the international investment position for every type of foreign investments.

$$RoL_x^t = \frac{FII_x^t}{IIPL_x^t} \quad (3),$$

where RoL – the return on liabilities, FII – foreign investment income, IIPL – liabilities in international investment position of the country, t – year, x – type of foreign investments - direct, portfolio and other investments.

Comparison of RoL for different types of foreign investments will allow to determine which foreign investments liabilities lead to the largest outflow of capital from the countries, and which to the smallest. Comparison of annual RoL will allow to observe these trends over the past decades.

## 4. Results

The results of the Granger test that evaluate the hypothesis of the influence of foreign investment flows on the development of foreign trade of the Czech Republic, Slovak Republic, Poland, Hungary and Ukraine are shown in the table 1.

**Table 1.** Granger's test for foreign trade (EXP and IMP) and capital inflows (FDI, PI, OI - direct, portfolio and other investments respectively)

| Country | Indicators | Lags | | | | |
|---|---|---|---|---|---|---|
| | | EXP | IMP | FDI | PI | OI |
| Czech Republic (1994Q1 2018Q4) | Exp | 23.89 (0.00)[a] | 29.07 (0.00)[a] | 1.96 (0.74) | 18.58 (0.00)[a] | 0.15 (0.7) |
| | Imp | | | 12.1 (0.03)[b] | 7.37 (0.19) | 2.77 (0.74) |
| | FDI | 8.39 (0.08)[c] | 8.95 (0.11) | | | |
| | PI | 8.45 (0.08)[c] | 12.39 (0.03)[b] | | | |
| | OI | 1.93 (0.16) | 5.91 (0.32) | | | |

| Country | Indicators | Lags | | | | |
|---|---|---|---|---|---|---|
| | | EXP | IMP | FDI | PI | OI |
| Slovak Republic (1994Q1 2018Q4) | Exp | | 2.36 (0.80) | 4.93 (0.29) | 1.87 (0.76) | 1.64 (0.80) |
| | Imp | 4.03 (0.55) | | 4.05 (0.40) | 9.21 (0.10) [c] | 1.53 (0.91) |
| | FDI | 14.69 (0.01) [a] | 6.91 (0.14) | | | |
| | PI | 7.34 (0.12) | 5.30 (0.38) | | | |
| | OI | 2.89 (0.58) | 3.90 (0.56) | | | |
| Hungary (1994Q1 2018Q4) | Exp | | 4.88 (0.43) | 4.20 (0.52) | 9.56 (0.09) [c] | 2.30 (0.81) |
| | Imp | 2.85 (0.72) | | 5.54 (0.35) | 13.41 (0.02) [b] | 3.66 (0.60) |
| | FDI | 11.01 (0.05) [b] | 7.07 (0.22) | | | |
| | PI | 28.14 (0.00) [a] | 22.68 (0.00) [a] | | | |
| | OI | 40.46 (0.00) [a] | 36.26 (0.00) [a] | | | |
| Poland (2000Q1 2018Q4) | Exp | | 5.19 (0.07) [c] | 5.97 (0.05) [b] | 7.30 (0.12) | 18.63 (0.00) [a] |
| | Imp | 16.40 (0.00) [a] | | 4.97 (0.03) [b] | 0.94 (0.81) | 18.34 (0.00) [a] |
| | FDI | 2.64 (0.27) | 1.47 (0.23) | | | |
| | PI | 8.36 (0.08) [c] | 9.97 (0.02) [b] | | | |
| | OI | 2.39 (0.67) | 0.28 (0.87) | | | |
| Ukraine (1994Q1 2018Q4) | Exp | | 21.56 (0.00) [a] | 1.27 (0.26) | 1.94 (0.16) | 6.30 (0.28) |
| | Imp | 18.83 (0.00) [a] | | 5.59 (0.13) | 11.78 (0.04) [b] | 3.79 (0.58) |
| | FDI | 11.22 (0.00) [a] | 6.26 (0.09) [c] | | | |
| | PI | 2.96 (0.09) [c] | 9.36 (0.09) [c] | | | |
| | OI | 22.14 (0.00) [a] | 22.29 (0.00) [a] | | | |

Note: behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a, b, c represent the 1%, 5%, and 10% significance levels, respectively. All coefficients are filled in the table.

Source: authors` calculations, data from IMF (2019).

According to the Granger causality test for Czech Republic inflow of portfolio investments has impact on national export, inflow of direct investments has impact on national import; dynamics of export causes FDI and portfolio investments inflows, dynamics of import causes portfolio investments inflow.

For Slovak Republic inflow of portfolio investments has impact on national import; dynamics of export causes FDI investments inflow. Inflow of portfolio investments to Hungary has impact on the dynamics of export and import; dynamics of export causes

FDI, portfolio and other investments inflows, dynamics of import causes portfolio and other investments inflows.

For Poland inflows of FDI and other investments have impact on national export and import; dynamics of export and import causes portfolio investment inflow.

Inflow of portfolio investments to Ukraine has impact on the dynamics of import; dynamics of export and import causes all kind of investments inflows.

For Czech Republic, Poland and Ukraine there are mutual causality for export and import which is associated with the use of a significant number of imported components in the production of the exported goods. The results of the Granger test evaluate the hypothesis of the influence of foreign investment flows on trade and current account balances of the Czech and Slovak Republics, Poland, Hungary and Ukraine are shown in the table 2.

**Table 2.** Granger's test for trade and current account balances (TB and CA) and capital inflows (FDI, PI, OI - direct, portfolio and other investments respectively)

| Country | Indicators | Lags | | | | |
|---|---|---|---|---|---|---|
| | | TB | CA | FDI | PI | OI |
| Czech Republic (1994Q1 2018Q4) | TB | | | 24.86 (0.00)[a] | 3.33 (0.65) | 0.98 (0.96) |
| | CA | | | 5.69 (0.22) | 5.55 (0.23) | 4.06 (0.40) |
| | FDI | 15.95 (0.01)[a] | 1.62 (0.80) | | | |
| | PI | 12.02 (0.03)[b] | 12.76 (0.03)[b] | | | |
| | OI | 6.72 (0.24) | 3.82 (0.58) | | | |
| Slovak Republic (1994Q1 2018Q4) | TB | | | 6.59 (0.25) | 7.11 (0.13) | 4.83 (0.44) |
| | CA | | | 3.84 (0.43) | 6.41 (0.17) | 2.97 (0.23) |
| | FDI | 14.10 (0.02)[b] | 14.22 (0.01)[a] | | | |
| | PI | 1.88 (0.76) | 2.69 (0.61) | | | |
| | OI | 3.90 (0.56) | 2.34 (0.31) | | | |
| Hungary (1994Q1 2018Q4) | TB | | | 3.26 (0.19) | 7.64 (0.10)[c] | 7.85 (0.09)[c] |
| | CA | | | 6.38 (0.09)[c] | 12.76 (0.03)[b] | 7.82 (0.10)[c] |
| | FDI | 3.28 (0.19) | 1.89 (0.60) | | | |
| | PI | 4.07 (0.40) | 3.82 (0.58) | | | |
| | OI | 10.87 (0.03)[b] | 22.63 (0.00)[a] | | | |

| Country | Indicators | Lags | | | | |
|---|---|---|---|---|---|---|
| | | TB | CA | FDI | PI | OI |
| Poland (2000Q1 2018Q4) | TB | | | 3.43 (0.06)[c] | 5.97 (0.11) | 24.40 (0.00)[a] |
| | CA | | | 9.41 (0.05)[b] | 7.33 (0.06)[c] | 15.01 (0.00)[a] |
| | FDI | 0.79 (0.38) | 6.98 (0.14) | | | |
| | PI | 15.34 (0.00)[a] | 7.39 (0.06)[c] | | | |
| | OI | 1.36 (0.24) | 5.42 (0.07)[c] | | | |
| Ukraine (1994Q1 2018Q4) | TB | | | 12.82 (0.01)[a] | 16.45 (0.01)[a] | 4.70 (0.32) |
| | CA | | | 13.97 (0.02)[b] | 15.54 (0.01)[a] | 2.35 (0.80) |
| | FDI | 3.59 (0.31) | 5.21 (0.39) | | | |
| | PI | 17.82 (0.00)[a] | 8.73 (0.12) | | | |
| | OI | 23.78 (0.00)[a] | 15.65 (0.01)[a] | | | |

Note: behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a, b, c represent the 1%, 5%, and 10% significance levels, respectively. All coefficients are filled in the table.
Source: authors` calculations, data from IMF (2019).

According to the Granger causality test for Czech Republic inflow of FDI has impact on trade balance; dynamics of trade balance causes FDI and portfolio investments inflows, dynamics of current account causes portfolio investments inflow.

For Slovak Republic dynamics of trade and current account balances causes FDI investments inflow.

Inflows of portfolio and other investments to Hungary have impact on the dynamics of trade and current account balances, inflow of FDI has impact on current account; dynamics of trade and current account balances causes other investments inflow.

For Poland inflows of FDI and other investments have impact on trade and current account balances, inflow of portfolio investments has impact on current account; dynamics of current account causes portfolio and other investment inflows, dynamics of trade balance causes portfolio investment inflow.

Inflows of FDI and portfolio investments to Ukraine have impact on trade and current account balances; dynamics of current account causes other investment inflow, dynamics of trade balance causes portfolio and other investment inflows.

Annual coefficients of trade and service balance compensation of foreign investment income and return on liabilities controlled by foreign investors for every type of foreign investments are presented in Table 3.

**Table 3.** Annual compensation coefficients for repatriated income and return on liabilities controlled by foreign investors

| Country | Year | Annual compensation coefficients for repatriated income, in % | Return on liabilities, in % | | |
|---|---|---|---|---|---|
| | | | for FDI | for Pi | for OI |
| Czech Republic | 2000 | -159.4 | 6.4 | 5.4 | 6.4 |
| | 2010 | 44.7 | 10.4 | 3.4 | 0.9 |
| | 2018 | 101.9 | 10.5 | 2.3 | 0.9 |
| | average* | 31.7 | 10.1 | 3.9 | 3.0 |
| Slovak Republic | 2000 | -125.4 | 0.9 | 6.4 | 5.6 |
| | 2010 | -23.0 | 9.1 | 3.1 | 0.9 |
| | 2018 | 22.5 | 7.1 | 2.4 | 0.5 |
| | average* | -46.5 | 6.8 | 5.0 | 1.8 |
| Hungary | 2000 | -66.6 | 8.8 | 6.7 | 4.3 |
| | 2010 | 84.3 | 7.0 | 4.4 | 2.0 |
| | 2018 | 71.2 | 7.7 | 3.5 | 1.3 |
| | average* | 35.8 | 6.5 | 4.8 | 2.5 |
| Poland | 2000 | -757.8 | 2.0 | 5.1 | 3.9 |
| | 2010 | -44.9 | 8.2 | 3.7 | 1.7 |
| | 2018 | 88.0 | 7.8 | 2.7 | 1.4 |
| | average* | -97.7 | 7.3 | 3.9 | 2.4 |
| Ukraine | 2000 | 147.6 | 1.1 | 14.4 | 3.5 |
| | 2010 | -65.9 | 4.2 | 5.7 | 3.6 |
| | 2018 | -138.8 | 8.1 | 7.2 | 3.2 |
| | average* | -23.5 | 3.9 | 6.8 | 3.3 |

** - for the period 2000-2018.*
Source: authors` calculations, data from Eurostat (2019), IMF (2019).

Results of calculation show that in 2000 it was only Ukraine that was able to compensate the foreign investment income outflow by the positive balance of trade and services. For the period from 2000 to 2018 due to the positive influence of foreign, first of all, direct investments, on the trade balance of the countries of Eastern Europe annual compensation coefficients for repatriated income for Czech Republic, Slovak Republic, Hungary and Poland became positive, but only for Czech Republic it exceeded 100% from 2016.

Results of calculating the return on liabilities show that foreign direct investments are the most profitable among all other investments for all explored countries, except Ukraine. Profitability of the foreign portfolio investments are on the second place and other investments liabilities are the least profitable. Slovak Republic due to its membership in the euro zone area has the smallest return on other investments liabilities.

## 5. Conclusions

Empirical estimations of the impact of foreign investments on export, import, trade and current account balances showed that these indicators have a significant impact

on the development of East European countries. The results of the Granger causality test for components of a nation's transactions with the rest of the world and all types of investment income flows show that: foreign direct investments have influence on trade balance of Czech Republic, on trade and current account balances of Poland and Ukraine; foreign portfolio investments have influence on current account of Poland, on trade and current account balances of Hungary and Ukraine; foreign other investments have influence on trade and current account balances of Hungary and Poland.

The results of the calculation of the compensation coefficients for repatriated income show the negative influence of foreign direct, portfolio and other investments on the current accounts of the countries of Eastern Europe. There is only Czech Republic for which the positive trade and services balance was able to compensate the negative income balance for the period of 2016-2018. For other explored countries the compensation coefficients for repatriated income are less than 100%.

Moreover, for Slovak Republic, Poland and Ukraine average compensation coefficients for repatriated income for the period of 2000-2018 are negative.

Returns on liabilities, which are controlled by foreign direct investors, in the Czech and Slovak Republics, Poland, Hungary are extremely high with the highest amount of more than 10% for the Czech Republic in 2018.

For Ukraine the ratio of return on liabilities is the smallest among the studied countries. It could be explained by the active use of non-market transfer pricing in foreign trade between Ukrainian affiliates and their "parent" companies, the majority of which are registered abroad as the companies with offshore jurisdiction. The main aim of these operations is to diminish the taxable income in Ukraine.

Thus, the results of the analysis show that the attraction of foreign capital has significant influence on the external economic positions of Czech Republic, Slovak Republic, Poland, Hungary. However, this influence is ambiguous. On the one hand, it has led to an improvement in the trade balance of the countries, on the other – to the outflow of capital as foreign investment income. The revealed rising trend for the annual compensation coefficients for repatriated income is positive, but the high level of return on liabilities controlled by foreign direct investors requires constant monitoring of its influence on current accounts and foreign liabilities accumulation.

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PAPER

# The problem of differentiation between private and public law

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**Abstract** The object of research is division of law. This study is focused on the fact that, in addition to branches in the structure of law, legal norms can be divided into two large groups: private and public law. The division of the system of law to public and private is the most researched and widely recognized in jurisprudence. The purpose of the article to provide criteria for public and private law division.

**Keywords:** Legal norm; private law; public law; bodies of state power; social relations.

**JEL Classification:** K21; L40

Formulation of the problem. The problem of private and public law division is a trendy area of the theory of law. The essence of this study is that, in addition to the branches of law in the structure of law, legal norms can be divided into two categories: - private and public law. The division of the law system into public and private is considered widely researched and recognized by scholars. Such a division was recognized even in the days of Ancient Rome. However, this subject remains relevant today, as scientists propose new theories and ideas.

The division of the right to public and private is universally recognized, however criteria for the division remain controversial.

**Analysis of the recent research and publications.**

Significant contribution to the development of this problem was made by such scientists as S.S. Alekseev, L.V. Borysova, L.Y. Gudtsina, N.D. Eriashvili, S.O. Ivanova, V.V. Kopeichikov, V.O. Kotyuk, V.V. Lazarev, M.M. Marchenko, N.M. Onischenko, Y.S. Kharitonova and others.

To date, criteria for the division of the right to private and public remain a a dynamic category in the theory of law, as well as the importance of the division of law, which has an important theoretical and practical significance, remains unresolved and is insufficiently researched in the theory of law and legal science.

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Goal. Goal of this study is to prove that the main criteria for the division of the law to private and public depends on the relationships and interest of the subjects of the law and their legal relationship. According to this, private law is governed by the rules and principles of the legal relationship between individuals and legal entities that satisfy an individual interest.

**Presentation of the main research subject.**

Several opinions are presented in the scientific literature regarding the division of law for public and private. For example, according to M.M. Marchenko practically there is no division of the law to private and public in the Anglo-Saxon law system. [24, c. 252-253]. According to the researchers Borisova L.V, Grudtsyna L.Y., Ivanova S.O., Kharitonova Y.S., Eriashvili N.D. etc., the division of the law to private and public is based on the the method of establishing legal relations (the theory of subordination and coordination) According to these researchers, the legal relationship between legally-equal entities are governed by private law, and the legal relationship between the legally-dominant and (subordinate) is governed by the public law.

However, this theoryis not applicable for legal relationships where legal subjects are non-subordinate (equal). For example, for legal relationships driven by public agreements between states (or parts of states), administrative agreements between public authorities, collective labor agreements between the employer and employees. Moreover, public legal rights and obligations can be implemented not only in power relations.

For example, per Article 55 Part 1 of the Constitution of Ukraine “Rights and freedoms of a person and a citizen are defended by the court” [1]. Therefore, everyone is guaranteed a right to appeal in court decisions, actions or inactivity of state authorities, local self-government bodies, and state officials.

Therefore, Article 55, Part 1 of the Constitution of Ukraine outlines the general norm: right of everyone to go to the court if rights or freedoms have been violated or being violated, there are any obstacles to realize these rights, or other violations of human rights and freedoms have been created or being created. The above norm obliges courts to accept applications for review even in the absence of a special provision on judicial protection in the law.

According to the Article 64 of the Constitution of Ukraine, court cannot refuse to accept court claims or complains that are submitted according to the law, as this will be a violation of the court protection law per the Constitution of Ukraine. [1]

Thus, the provisions of Article 55 Part 1 of the Constitution of Ukraine documents one of the most important guarantees to exercise of both constitutional and other rights and freedoms of a person and a citizen.

Article 55 Part 1 of the Constitution of Ukraine addresses obligations of Ukraine related to the ratification of the International Covenant on Civil and Political Rights [5, (582-12)] and the Universal Declaration of Human Rights (Rome, 1950) [6, (995_004)] by Ukraine, which is part of the national legislation of Ukraine according to Article 9 of

the Constitution of Ukraine. Everyone has the right to get their case hearted by the court and the judge of the jurisdiction. A citizen has the right to sue, and the court is obliged to accept the case for review. Of course, this is according to the public law, but is the case in the situation of authority and subordinate? Of course not, since neither citizen nor court submits in this case to each other, each of them only realizes its legal rights and obligations.

Therefore, the method of constructing legal relationships cannot be considered as a universal criterion for the division of the right to private and public. A reference to the fact that in private law the relationship is between equal parties, and in public law the parties are unequal (subordinate to each other), does not always reflect the specifics of private and public law: in some cases, in public relations, the subordination of one subject to another does not exist.

Per researcher Muromtsev S.O., the criteria of the distinction between private and public law is considered a way to protect the rights of their participants [25, c. 169]. According to this concept, private law governs the legal relationship, where the initiative to protect an infringed subjective legal right is given to the person concerned, and if the protection is initiated by the competent authorities, then the legal relationship is governed by public law. Regarding this position, it can be noted that although the method of protection in practice can only manifest itself after the violation of subjective legal rights, however, it, and, consequently, the nature of subjective law is determined for the offense, and not after it.

However, an attempt to define the concept of private or public law through the means of judicial protection inevitably leads to the definition of "X" through "X": private law is a right protected by a private action, and a private claim is a way of protecting private law [7, p. 31]. According to the author, another problem is the way of protection as the basis for the distribution of the right to private and public, and that public authorities can file lawsuits to protect the private subjective legal rights of citizens.

For example, according to Article 56 of the Civil Procedure Code of Ukraine [2] and Article 23 of the Law of Ukraine "On Public Prosecutor's Office" a prosecutor may file an application for the protection of the rights, freedoms and legitimate interests of a citizen based on the a citizen's health, age, incapacity and other objective reasons that can prevent him to file a lawsuit in person. Therefore, the method of protection can not be considered a criteria for the division of law to private and public.

As the basis for such a division is often referred to as the nature of the realization of legal relationships of interest [18]. According to this, researchers argue that private law is directed at the satisfaction and protection of individual interests, and public - the common interests. Given that public interests are sometimes viewed as a set of private interests, that is, common interest is understood as a collection of individual. But if public interest can be regarded as a set of individual (private), then the totality of not all private interests can claim general significance. [8, p. 60].

The general is not the same as a set of individual phenomena, the general is only what unites all these phenomena. Consequently, the general is not a mechanical connection of individual phenomena. Public interest is an interest that affects society as

a whole, and not individual members of the society who for various reasons may or may not recognize the general interest, and vice versa, they sometimes tend to regard their private interests as public.

In the public law common interest is realized by its participants to somehow satisfy their own private interests [20, p. 24].

However, if the satisfaction of the public interest does not preclude the possibility of realizing private interest along with it, then in the case of private interests only public interest is not satisfied. Because the law in general must reflect and protect both public interests and private interests at the same time [11, p. 13].

In the medical field, the right to differentiate public and private interests is necessary, Oleh Zaiarnyi in his work notes, States, a damage caused by the medical organizations, due to the use of the AIS, should be compensated in full amount. Medical organizations are obligated to compensate both the real cost of health services, which result in negative consequences, deterioration of the patient's health, expenses for professional rehabilitation and the lost profits caused by the loss of working capacity and the terms for the proper treatment of the patient. In the same way the practice of legal regulation of moral (non-property)harm, caused to a patient due to illegal use of his/her harm, caused to a patient due to illegal use of his/her personal data for thepurpose of machine learning or due to not reporting about the use of the AIS in the process of providing medical services, infringement of honor, dignity or business reputation of the patient, in any other way, by using information systems should be developed. [17, p.363]. Therefore, the responsibility for the offense depends on the type of public interest of the state or the doctor personally.

This can be reduced to two conceptual approaches. Thus one group of research adheres to the general approach, according to which the developer should bear responsibility for the offenses connected with the development and technological support of the use of the AIS, unless something does not follow directly from the terms of contract between this subject and the medical organization employing AIS. [12 , p.383-402 ].

The author completely shares the opinion of reserchers, however if we consider private and public law separately, then the first protects rights and obligations, realizing which subjects meet their personal interests, and public law - rights and obligations the realization of which concerns the interests of society as whole. Therefore, the integrity of the law does not deny the difference, the isolation of the reflected and the interests that protect it.

Since it is believed that the nature of interest is a manifestation of subjectivity in the law, but in no case is an essential feature. [8, p. 19]. It does not take into account subjectivity can only be demonstrated when subjective rights and responsibilities are being realized. Objective legal norms since the real differentiation between public and private interests is being established.

In some cases, this criteria is being applied when private norms are being defined as relations that the state gives defers to dependent decisions of citizens to use them or not to use their subjective rights [9, p. 64]. At the same time, researchers note that the content of public law cannot be determined or changed by the agreement of the

legal relationship participants [26, p.269-277]. However, here it is not considered that the use of subjective rights in contrast to duties always depends on the discretion of their owners. And the conclusion of contracts, which involves the independent use of subjective rights by the parties to the contract process, is regulated not only by private but also by public law.

Worth to state the other criteria for the division of private and public law – it's subjective structure of legal relationships [25]. Consequently, in accordance with it, private law regulates the legal relationship of citizens (subjects) with each other, that is the legal relationship between persons subordinated not to each other, and to bodies of public authority and in this sense equal to each other. Public law, in turn, regulates the legal relationship, where one of the parties is necessarily a state or part thereof in the person of the authorized bodies.

However, there is also the point of view that if the subject of public authority carries out its activities in accordance with the same legal requirements that apply to a private person, has the same subjective rights and carries the same duties, carries out the same acts , as well as a private entity (for example, the conclusion of agreements for state needs, other legal relations between citizens and the state as a treasury, that is, the state as a carrier of property rights and obligations), then it carries out private law activities [20, p. 95].

Although, the legal relationships are regulated by civil law, physical (legal) persons realize in this case their personal interests, while the state (municipal) authorities act in the public interest [27, p. 533-541].

Therefore, they may be imposed on any additional restrictions that are not in relation to the same activity of a physical or legal person. So, we can say that such legal relationships are regulated not only by private but also by public law.

Some researchers, while not finding a universal basis for demarcating private and public law, try to use several criteria at a time. For example, R. Iering names the nature of interest together with the basis and method of protection as the criteria for the division of the right to private and public [21, p. 181-183].

According to scientists D. E. Erofeeva and R. V. Shagieva, as base for the classification of legal norms on the norms of public and private law, they propose to consider the role they play in society, what they are doing, and the nature of the interests that they protect. However, what exactly is the identity between an act, which of them performs private, and which public law, scientists do not finally determine. [18, p. 109]. The author agrees with the opinion of the scientist V.V. Bolgov that in applying the "complex" criteria, we are in an ambiguous position. On the one hand, filling gaps, we overcome the disadvantages that exist in each individually, and on the other - we combine their shortcomings. [9, p. 28]. At the same time, the simultaneous use of several criteria does not always lead to a combination of their shortcomings.

## Conclusions

In our opinion, the basis for defining if the law is considered private and public are:

First, the nature of interests and the structure of the legal relationship. Private law includes the rules and principles that govern the legal relationship between individuals and legal entities that satisfy individual and private interests.

Secondly, public law covers the norms and principles that allow participants in the legal relationship to serve interests of the society as whole (possibly, along with the individual interests of individuals). In this case, in the public legal relations of at least one of the parties is the state or its representatives.

Thirdly, the distinction between private and public law is as follows:

a. public law is aimed at regulating legal relationships whose participants satisfy the interests of society as whole (possibly with personal interest), and private law subjects are individual, personal interests;
b. in public law relations one side always has a state (its separate parts) in the person of authorized bodies, the other party may be as another state (part of the state) and a physical (legal) person. Participants in private legal relations are only individuals and legal entities;
c. the core of private law is regulation private property; the basis of public law are relations that are related to the organization and competence of public authorities.

Fourthly, in modern times in some cases the convergence of private law and public law principles is observed, as the state (its separate parts) actively engages in civil legal relations, legalized and widespread term “public services”. However, this convergence does not facilitate their merger. Private and public law exist objectively, regardless of the recognition or non-recognition of such a unit.

Fifth, private and public law - these are objectively existing, relatively independent, interacting units of law as a system. The reasons for their differentiation are the nature of the legal relationships of interests and features of their subjective composition. Only the joint use of these criteria allows the most consistent and clear separation of subsystems of private and public law.

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PAPER

# Skewness-Based Portfolio Selection: Implications for International Investing in Frontier Markets

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**Abstract** Using the Morgan Stanley Capital International index monthly data for 28 frontier markets during the period between January 2011 and December 2018 the paper investigates the impact of skewness on portfolio selection. The existence of skewness in returns distributions is illustrated in terms of frontier markets. The skewness ranks matrix is developed. It demonstrates that only 6 markets can be regarded as not skewed from USD and 11 – from EUR perspective. The study does not find strong evidence on positive or negative skewness character. All in all, skewness for local currencies is slightly higher than for foreign currencies. It is the factor of international portfolio investing in frontier markets but its impact should not be overestimated. Analytical framework for skewness-based investing in frontier markets is developed. It does not indicate strong evidence that skewness is a more important portfolio selection factor for international investments than for domestic ones. Skewness is rather more relevant for domestic portfolio investing. Using the approach of relative foreign exchange percentage differential, the study proves the more notable impact of skewness for EUR than for USD international investors. As to the preferable moment, the found evidence is weak but rather in favor of skewness than return for local investing and in favor of return for international investing.

**Keywords:** international portfolio investing; skewness; frontier markets; returns distribution moments; relative foreign exchange percentage differential

**JEL Classification:** F21; G11; G15; C46

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## 1. Introduction

Skewness and kurtosis of returns distributions is something known enough in the field of international investing while being something rather recent at the same time. On the one hand the idea of downside risk consideration originates from early 1950-s and its development began together with the portfolio theory itself. On the other hand, the contemporary build-up of post-modern portfolio theory can be dated not earlier than mid 1990-s and this theory is intensively developing nowadays. The principal ideas of post-modern portfolio theory can be summarized as follows. First, considering not only traditional risks and returns while investing in portfolios of securities but skewness of returns distributions as well, and later – kurtosis of such distributions. In mathematical term it goes about the third and the forth moments of random variable distribution. Second, considering downside risk that is often much more relevant risk measure than traditional variance or standard deviation. In fact, the pure version of post-modern portfolio theory implies just the third moment of returns distribution – skewness. As to the kurtosis that is the fourth moment of random variables returns distribution, it also refers to the post-modern portfolio theory though this idea appeared later.

Many empirical studies support the concept of post-modern portfolio theory confirming that using higher moments of returns distributions in portfolio strategies often results in much more efficient portfolios. In these terms, we should stress that these higher moments do not change the existing paradigm of portfolio selection. Markowitz portfolio theory still represents the underlying fundamental approach while the post-modern portfolio theory is actually just introducing additional portfolio selection parameters such as skewness and kurtosis. Theoretical considerations give the grounds to talk about certain internal shift of the paradigm and its improvement rather than about the changes of the paradigm itself. Allowing for above mentioned, no wonder that the following definite questions naturally appear. Is the new higher moments approach really more effective for portfolio investors? If so, what is the scope of this difference, and does this scope stand for domestic or international portfolio investing?

Answering the pointed questions in terms of international investing requires considering exchange rate exposure, country risks, market risks of different countries and other issues that are not faced by portfolio investors in local markets. However, even within the international portfolio investing universe there are strongly defined clusters of countries identified using different criteria. These criteria can be completely different though the typical ones can include geography, type of returns distribution, level of market development etc. The last one is used most often. It implies that equity markets are typically divided into three groups: developed, emerging and frontier markets. In our study we focus on the least developed group – frontier markets. These markets are traditionally identified as riskier considering general and exchange rate risk, less reliable in terms of country and political risks, less developed in the light of institutional environment and market infrastructure. These markets are the main focus of the present study.

## 2. Literature review

The issue of application of higher moments of returns distribution in portfolio selection has been widely studied in the literature. Notwithstanding that early portfolio theory utilized just the simple standard deviation as a risk measure, Markowitz (1959) suggested to use the semivariance for estimating portfolio and individual securities risks. Unlike the variance, the semivariance considers just the values lower than the average. Such approach focuses on a so-called downside risk. This idea became fundamental but not sufficient to complete the composition of post-modern portfolio theory. The last one is agreed to become formally matured in mid-1990-s and refers to the study of Rom & Ferguson (1993). They actually introduced the term 'post-modern portfolio theory' and identified the theory itself as the more general version with the modern portfolio theory being the particular detached version for the case of symmetric returns distribution. This point is the second fundamental and at the same time sufficient to finalize the methodology of skewness-based investing. However, the downside risk utilization was going on during the whole prior period.

The principal precondition to expand the traditional methodology of portfolio selection using the third moment is that in practice most returns are actually distributed asymmetrically, undermining the basic assumption of traditional portfolio theory about normal distribution of returns. Considering the downside risk idea investors would rather prefer the right-tailed distributions, since the upside risk is not really the risk in terms of possible losses. This setting also corresponds with basic behavioral condition according to which investors would rather not suffer from losses than get profits. In the empirical part of their study Rom & Ferguson (1993) compared three portfolios: minimum variance portfolio, maximum efficiency portfolio and equivalent risk portfolio from American investor's perspective. They generally conclude that portfolios composed using the downside risk (relative to minimum accepted return – *MAR*) are more appropriate and allow for much higher level of diversification. Outstanding developments in the field of skewness analysis in portfolio management cover the elaboration of the new risk adjusted return ratio – Sortino ratio. As well as the traditional Sharpe ratio the new index developed by Sortino & Van Der Meer (1991), Sortino & Price (1994) and Sortino (2001) implies the relation of a risk premium to standard deviation. However, the risk premium itself is computed in another way – as a difference between expected return and *MAR* but not the risk free rate. The standard deviation also differs and not just technically. It is a target downside deviation calculated using the new risk premium values. Many contemporary studies confirm the reasonability of using Sortino ratio for portfolio optimization such as Dey & Mitra (2012), Galloppo (2010), Rollinger & Hoffman (2013), Washer & Johnson (2013), Swisher & Kasten (2005) etc. However, Washer & Johnson (2013) point out that though Sortino ratio produce mostly better results major researchers and practitioners go on using the traditional Sharpe ratio as well.

Among the first to prove the skewness validity in portfolio selection was Arditti (1967) who showed that unlike the correlation between asset and market returns the second and third moments of returns distribution are relevant risk measures while

the geometric mean is considered as the average or an expected return. The author states that the first three moments contain all the information about assets' returns. The positive (right-tailed) distributions are proved to be preferred by investors. Samuelson (1970) emphasized the traditional mean-variance approach for the case of a so called 'compact' probabilities when risk levels are low. Though the traditional view is generally supported by the author he suggests the more general *r*-moment model while skewness being more appropriate for the above mentioned case. Lai (1991) proved that considering skewness brought an investor to optimize a portfolio with contradicting objectives, such as maximizing return and skewness while minimizing risk at the same time was impossible. Thus, investor's final decision depends on the preference between objectives, and the optimal portfolio always exists. This is also true for kurtosis and higher moments. However, in a three-dimensional framework the traditional Markowitz efficient portfolio can become inefficient while the risk-return-skewness portfolio can be inefficient in traditional understanding. Sun & Yan (2003) state that positive ex post skewness is persistent for individual securities but not for portfolios, that weakens its positions in portfolio selection. The reason is that such portfolios are efficient only in terms of mean and variance. They instead test the persistency of mean-variance-skewness efficient portfolios for Japanese and American investors and find out that considering the skewness preference enhances portfolios' persistency over time.

Mencía & Sentana (2009) focus on more technical issues of portfolio selection considering skewness. They analytically derive the mean-variance-skewness frontier formula under assumption of location-scale mixture of normal distributions of portfolio components. The efficient three moments frontier implies the maximum skewness for any given combination of mean and variance and is obviously built up in a three dimensional system of coordinates. The study also shows that new efficient set can be spanned by three funds: two traditional funds (risk-free and risky assets) for mean-variance set and a skewness-variance efficient set (maximum skewness for a given variance). Kerstens, Mounir & Van de Woestyne (2011) specify crucial aspects of mean-variance-skewness efficient frontier geometric presentation that is very suitable for portfolio selection but brings an investor again to the utility function that is now much more complicated. In three-dimensional framework investors have some skewness preferences and are ready for an increased risk thereof. Utilizing the shortage function as a measure of efficiency the study supports the general idea of dominating portfolio paradigm that efficient portfolios are not diversified enough while diversified portfolios are not efficient. This is true for mean-variance as well as for mean-variance-skewness portfolios. The three dimensional efficiency is always smaller than the two-dimensional one. Further Briec, Kerstens & Van de Woestyne (2013) expand the mean-variance-skewness analysis comparing the more traditional polynomial-goal programming (PGP) approach and the shortage function approach finding the point where they can be matched under risk-free asset existence. They introduce a so-called unit variance mean-skewness section being generated using the shortage function with a fixed level of variance that equals unity. PGP portfolios are located on this section that is in turn part of a more general mean-variance-skewness set and they are efficient in three dimensions.

Conrad, Dittmar & Ghysels (2013) explore the relation between volatility and skewness on the one hand and returns on the other. Using the option data, they find out that higher moments do impact the further returns. Particularly high volatility brings about low returns, and vice versa. High skewness in turn results in lower subsequent returns and the general relation is negative confirming investors' preference towards positive skewness. The study also proves that implied distributions are much more stable than historical ones. For implied physical distributions there exists a reverse relation between skewness and expected traditional Sharpe ratio. Similar option prices based approach (in terms of implied volatility) was utilized by DeMiguel et al. (2013). The authors argue that using option-implied information can improve portfolio performance; particularly exploiting option-implied volatility reduces the portfolio volatility. Option-implied skewness brings about a substantial increase in portfolio's Sharpe ratio either with short selling and transaction costs or without them. Bhattacharyya, Hossain & Kar (2014) develop the fuzzy portfolio optimization model that operates a multi-objective algorithm implying maximization of expected return and skewness while minimizing portfolio variance and cross-entropy. The last ratio shows the accuracy of probabilistic forecasts in terms of deviation of returns from its desired value. Jiang, Ma, An (2016) consider systematic skewness in portfolio selection by which they mean the normalized asset's co-skewness reflecting the co-movement between asset's return and market squared return. It is proved that the necessary coskewness can be achieved at the expense of traditional efficiency. Efficient portfolios composed using this mean-variance-coskewness approach have higher skewness than traditional mean-variance efficient portfolios.

Some not so clear evidence regarding the interrelation between individual assets and portfolio skewness can be found in Kim (2015). It is empirically shown that variables which are traditionally considered to define the portfolio skewness (coskewness uppermost) do not do this in practice. Few theories can bind positive coskewness and negative portfolio skewness, while the number of securities in a portfolio shows much stronger impact. Kim et al. (2018) investigate the portfolio three-dimensional risk including not only the traditional standard deviation but skewness and kurtosis as well. They find out that all others equal increasing the number of securities in a skewed fat-tailed portfolio brings about the decrease of variance as well as skewness and kurtosis. Herewith skewness diminishes much slower than variance and kurtosis meaning weaker possibilities to diversify it.

More specific in terms of our study country selection is the research by Cenela & Collazo (2007) that focuses on different industries in emerging markets. The polynomial goal programming approach utilized by the authors showed that considering skewness altered the optimal portfolios' structure substantially and required investors to equilibrate between expected return and skewness. Still the study confirms the asymmetry of distributions for 46 industrial indices in emerging markets that makes asymmetry an appropriate international portfolio selection factor. Todoni (2015) reveals two shortcomings of traditional for post-modern portfolio theory Sortino ratio. It does not consider the two sub-parts of the returns distribution: unrealized returns (positive

but lower than the average, or the mode, or the target) and losses (negative returns). The author instead suggests the alternative risk-adjusted measure that utilizes a special global risk rather than the target return. It is computed using the multipliers method. The suggested global risk measure is actually not a risk in terms of geography but in terms of the whole returns distribution range coverage, including losses and unrealized returns. The developed multipliers method implies that for all of the above mentioned sub-parts returns are explored with different weights defined by special multipliers. Using the elaborated approach along with the traditional Sortino ratio, the paper investigated the five Central and Eastern European markets concluding that skewness does matter in international portfolio investing while the proposed measure being more relevant than the traditional one.

## 3. Hypothesis, methodology and data

Although there exists a deep pile of scientific research devoted to different aspects of considering skewness in international portfolio investment decisions, only few studies investigate frontier markets. That can be quite distinct allowing for the low level of these markets development and extremely little share of their international portfolio assets and liabilities. In most cases such markets are unstable, have highly volatile returns and exchange rates but are still potentially attractive for foreign investors. In our research we are going to explore the level of frontier equity markets skewness and infer these results into the space of international portfolio investing strategies formulation.
Herein we put forward two working hypotheses. First, frontier markets return distributions are skewed and this skewness is positive making the post-modern portfolio theory framework appropriate for these markets in terms of foreign investors holdings of these markets assets in their portfolios. This hypothesis appeals since most empirical research as well as theoretical and methodological findings concern developed markets and in few cases emerging markets. Frontier markets are poorly explored though they represent extremely high potential of international portfolio investing. Second, skewness is different when measured in different currencies, particularly different foreign currencies and local currency. Contemporary portfolio investing theory is unique in terms of its being universal. It is valid for local investing as well as for international. There is no special paradigm for international investing; it uses the traditional Markowitz approach as well as other theories and concepts. However, of central interest is the question of how appropriate the post-modern portfolio theory is for domestic and for international portfolio investing.

These hypotheses will be tested using the Morgan Stanley Capital International (MSCI) index data (MSCI-1, 2019). The main point of our analysis are the indices for individual frontier markets and the group index as a benchmark. As of April 30, 2019 the frontier markets group covered the following markets (MSCI-2, 2019): Argentina, Jamaica, Panama, Trinidad & Tobago (Americas sub-group); Croatia, Estonia, Lithuania, Kazakhstan, Romania, Serbia, Slovenia, Bosnia & Herzegovina, Bulgaria, Ukraine

(Europe & CIS sub-group); Kenya, Mauritius, Morocco, Nigeria, Tunisia, WAEMU[1], Botswana, Ghana, Zimbabwe (Africa sub-group); Bahrain, Jordan, Kuwait, Lebanon, Oman and Palestine (Middle East sub-group); Bangladesh, Sri Lanka and Vietnam (Asia sub-group). Out of these 34 markets the following 10 are not presented in the group index: Jamaica, Panama, Trinidad & Tobago, Bosnia & Herzegovina, Bulgaria, Ukraine, Botswana, Ghana, Zimbabwe, Palestine. However, MSCI do not provide the index data for Palestine and the named WAEMU markets, so our selection will cover 30 markets except the mentioned ones.

As to the period in question, it had better be as long as possible but here the technical problem of data availability arises. The longer the period the more markets must be excluded from the research. In these terms, we decide on the following compromise: exclusion of only one market (Panama) allows us starting the period since January 2011. Besides the mentioned technical issue, we consider two more reasons here. First, Panama is not the market that attracts portfolio investors by its real investment characteristics, including returns, variance and skewness. It is a known offshore center where regulation is the major factor pulling foreign capital. Second, the financial and statistical vision of the period selected tells us that we have 8 years that make 96 months (periods) in total. All others equal 60 periods are considered to be statistically appropriate. However, we still exclude Ghana for which the data for 2018 is not provided. That finally makes our dataset consisting of 28 markets and a benchmark frontier markets index (FM).

Using the respective index values and the standard methodology we compute indices' monthly returns and their standard deviations. Though there are several approaches to skewness computation (see Brys, Hubert & Struyf (2004) for example) we use the most traditional one implying the relation of the third moment to the second moment raised to the 2/3rd power:

$$R_{SKEW} = \frac{\sum_{i=1}^{n} w_i (r_i - \bar{r_i})^3}{\sigma(r_i)^3}, \quad (1)$$

All indices' values cover the standard capitalization range including large, medium and small-capitalized firms. The index level considers prices only. Distribution moments statistics is calculated using the index values in USD, EUR and local currencies.

The relative foreign exchange percentage differential will be used to compare the relative importance of return and skewness in foreign currencies as to the local currency. This methodology was described and used by Rogach & Dziuba (2017) and implies the computation of a relation of difference between returns (skewnesses) in local and foreign currencies to the return (skewness) in local currency multiplied by hundred percent. Moreover, since the most important issue of this methodology is to retain the sign from the numerator (it demonstrates the unknown difference) we take the devisor in magnitude. Thus, the results should be interpreted as follows: negative values of the

[1] West African Economic and Monetary Union (WAEMU) includes the markets of Benin, Burkina Faso, Ivory Coats, Guinea-Bissau, Mali, Niger, Senegal and Togo with securities from only Senegal, Ivory Coast and Burkina Faso markets being considered for some sub-regional indices. Individual indices for these markets are not provided.

differential testify the relative attractiveness of investing in a foreign currency while the differential positive sign means that local currency investing is more relevant all others equal.

## 4. Results

### *4.1. Estimation of markets skewness*

Computation results are presented in Table 1.

**Table 1.** Three moments of frontier markets returns distribution (January 2011 – December 2018)

| Market | $\bar{r}_i$ | | | $\sigma(r_i)$ | | | $R_{SKEW}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | **USD** | **EUR** | **Local** | **USD** | **EUR** | **Local** | **USD** | **EUR** | **Local** |
| Argentina | 0.09 | 0.21 | 0.09 | 11.46 | 11.16 | 11.46 | 0.25 | 0.42 | 0.25 |
| Bahrain | -1.19 | -1.03 | -1.19 | 5.15 | 5.13 | 5.12 | -0.37 | 0.01 | -0.38 |
| Bangladesh | -0.24 | -0.05 | -0.08 | 6.85 | 7.29 | 6.63 | -0.74 | -0.68 | -0.78 |
| Bosnia and Herzegovina | -0.82 | -0.69 | -0.69 | 5.15 | 4.34 | 4.34 | 0.71 | 0.78 | 0.78 |
| Botswana | -0.73 | -0.58 | -0.26 | 6.08 | 5.86 | 5.57 | -0.31 | -0.28 | 0.06 |
| Bulgaria | -0.25 | -0.16 | -0.16 | 7.65 | 6.67 | 6.66 | 1.17 | 1.46 | 1.46 |
| Croatia | -0.37 | -0.24 | -0.24 | 4.54 | 3.48 | 3.39 | 0.39 | 0.37 | 0.40 |
| Estonia | 0.20 | 0.32 | 0.32 | 6.22 | 5.35 | 5.35 | 0.27 | 0.62 | 0.62 |
| Jamaica | 1.31 | 1.48 | 1.72 | 5.99 | 6.11 | 5.69 | 0.79 | 0.65 | 0.69 |
| Jordan | -0.44 | -0.26 | -0.44 | 4.62 | 4.97 | 4.60 | 0.85 | 0.94 | 0.85 |
| Kazakhstan | -0.21 | -0.07 | -0.21 | 7.49 | 7.28 | 7.49 | -0.10 | 0.10 | -0.10 |
| Kenya | 0.62 | 0.77 | 0.83 | 6.04 | 5.83 | 5.56 | -0.31 | -0.34 | -0.15 |
| Kuwait | -0.26 | -0.10 | -0.18 | 4.16 | 4.05 | 4.05 | 0.17 | 0.08 | 0.16 |
| Lebanon | -0.54 | -0.35 | -0.54 | 3.82 | 4.44 | 3.82 | 0.94 | 1.11 | 0.94 |
| Lithuania | -0.24 | -0.12 | -0.12 | 4.51 | 3.37 | 3.37 | -0.14 | -0.11 | -0.11 |
| Mauritius | -0.07 | 0.10 | 0.03 | 3.69 | 3.62 | 3.35 | -0.38 | -0.69 | -0.55 |
| Morocco | -0.40 | -0.25 | -0.27 | 4.22 | 3.77 | 3.77 | 0.35 | 0.42 | 0.46 |
| Nigeria | -0.33 | -0.18 | 0.49 | 7.41 | 7.18 | 6.37 | -0.43 | -0.37 | 0.10 |
| Oman | -0.54 | -0.36 | -0.54 | 4.28 | 4.65 | 4.28 | -0.37 | 0.00 | -0.38 |
| Romania | 0.62 | 0.70 | 0.78 | 7.06 | 5.74 | 5.44 | -0.60 | -0.81 | -0.85 |
| Serbia | -0.06 | 0.02 | 0.11 | 7.19 | 6.07 | 5.69 | -0.33 | 0.01 | 0.33 |

| Market | $\bar{r}_i$ | | | $\sigma(r_i)$ | | | $R_{SKEW}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | **USD** | **EUR** | **Local** | **USD** | **EUR** | **Local** | **USD** | **EUR** | **Local** |
| Slovenia | -0.17 | -0.07 | -0.07 | 5.66 | 4.22 | 4.22 | -0.08 | 0.06 | 0.06 |
| Sri Lanka | -0.46 | -0.28 | 0.04 | 5.70 | 5.83 | 5.34 | 0.17 | 0.04 | 0.20 |
| Trinidad and Tobago | 0.73 | 0.93 | 0.79 | 3.16 | 3.94 | 3.15 | 0.33 | 0.18 | 0.30 |
| Tunisia | -0.23 | -0.07 | 0.52 | 4.57 | 4.47 | 4.13 | 0.47 | 0.22 | 0.46 |
| Ukraine | -1.68 | -1.55 | -0.66 | 9.92 | 9.68 | 9.74 | -0.36 | -0.12 | 0.49 |
| Vietnam | 0.09 | 0.23 | 0.25 | 6.39 | 5.95 | 6.14 | 0.18 | 0.11 | 0.30 |
| Zimbabwe | 2.89 | 3.08 | 2.89 | 14.95 | 15.19 | 14.95 | 2.18 | 2.19 | 2.18 |
| FM | -0.10 | 0.05 | 0.10 | 3.37 | 2.98 | 3.12 | -0.33 | -0.34 | -0.36 |
| Average | -0.10 | 0.05 | 0.11 | 6.21 | 5.92 | 5.70 | 0.17 | 0.23 | 0.28 |

Note: calculated by the authors using MSCI-1 (2019) data.

In order to address the computation results we need some further analytical developments. Particularly we need to fix some relative anchors for skewness ranges, since the figures themselves are difficult to be explained. The ranges fluctuate between -0,74 and 2.18 for USD, between -0.81 and 2.19 for EUR and between -0.85 and 2.18 for local currencies. Though the last range has weak financial contents since the range covers skewnesses in different currencies and can be analyzed only technically, the first two ranges are equal and comparable. Therefore, we take that every range is a 100 % – the whole band of observed skewness values. The respective ranges in absolute figures are 2.91 points for USD, 3.00 points for EUR and 3.03 points for local currencies. As we see the ranges do not differ substantially in absolute values, with the local currencies skewness being slightly higher than for USD and EUR. However, dealing with the first hypothesis we need to decide upon the skewed and unskewed (normal) distributions. Statistically the normal distribution is observed when skewness is zero. It is empirically a very rare case since distributions can be very close to zero being statistically skewed but actually normal considering investment decisions.

Let's consider 10 % from zero for each tail to be the skewness absence. Taking the low skewness being in the 30 % range from zero for each tail, the medium – in the 50 %, the strong in the 75 % and the very strong in the 90 % from zero for each take we finally get five ranks of skewness. Since the right tails of the observed distributions are much heavier than the left ones we take the mentioned percentages as of the right tail absolute length. Absolute skewness values for each rank and respective markets are presented in Table 2.

**Table 2.** Skewness ranks, values and markets ranking

| Rank | Skewness Ranks | Absolute Values | USD | EUR |
|---|---|---|---|---|
| 1 | Very strong (+) | 1.962 – 2.19 | Zimbabwe | Zimbabwe |
| 2 | Strong (+) | 1.635 – 1.962 | – | – |
| 3 | Medium (+) | 1.090 – 1.635 | Bulgaria | Bulgaria, Lebanon |
| 4 | Low (+) | 0.654 – 1.090 | Lebanon, Jordan, Jamaica, Bosnia and Herzegovina | Jordan Bosnia and Herzegovina |
| 5 | Very low (+) | 0.218 – 0.654 | Tunisia, Croatia, Morocco, Trinidad and Tobago, Estonia, Argentina | Jamaica, Estonia, Argentina, Morocco, Croatia, Tunisia, **Average** |
| 6 | Normal and close to normal | -0.218 – 0.218 | Vietnam, Kuwait, Sri Lanka, Slovenia, Kazakstan, Lithuania, **Average** | Trinidad and Tobago, Vietnam, Kazakhstan, Kuwait, Slovenia, Sri Lanka, Bahrain, Serbia, Oman, Lithuania, Ukraine |
| 7 | Very low (-) | -0.654 – -0.218 | Botswana, Kenya, **FM**, Serbia, Ukraine, Bahrain, Oman, Mauritius, Nigeria, Romania, Bangladesh | Botswana, **FM**, Kenya, Nigeria |
| 8 | Low (-) | -1.090 – -0.654 | – | Bangladesh, Mauritius, Romania |
| 9 | Medium (-) | -1.635 – -1.090 | – | – |
| 10 | Strong (-) | -1.962 – -1.635 | – | – |
| 11 | Very strong (-) | -2.19 – -1.962 | – | – |

Notes:
1. Calculated and composed by the authors using MSCI-1 (2019) data.
2. Markets with normal or close to normal distributions as well as respective ranks and absolute values are marked with grey filling.

Our findings confirm the general idea about returns skewness. Most frontier markets returns are skewed for international investors either in terms of USD or EUR. Considering the above defined ranks we conclude that from USD perspective just 6 out of 28 markets have normal or close to normal distributions of returns. Other markets demonstrate skewness with 15 being positively skewed and other 13 – negatively. Most markets have low or very low skewness with two of them standing out: one market has medium positive skewness, and the other has very strong positive one. From EUR investor perspective we observe the similar implications. The main difference is that instead of 6 markets normal

or close to normal distributions can are observed for 11 out of 28 explored markets. This means that skewness-based international investment strategies in frontier markets are more relevant for USD than for EUR investors. Positive skewness is common for 20 markets, while 8 out of 28 markets have negative skewness. Another distinction from the USD skewness is that three markets have low negative skewness.

Special attention should be paid to skewness of frontier markets group as a whole (FM) and the average value (Average). These values differ with the first being negative and the second positive. Our basic argument is that Average ratio is more relevant in terms of potential investing. So actually, we can consider the frontier markets to have positive skewness rather than negative one. The minus sight for FM results from some highly capitalized markets with negative skewness since this ratio is a weighted average of its components. So one relatively large market with negative skewness can bring about negative skewness of the weighted ratio overbalancing several relatively small markets with positive skewness. Nevertheless, an investment strategy implies that an investor considers specific markets meaning their precise investment characteristics rather than a statistical metric that is an FM index. Small markets can have lower impact on an index but attract foreign investors as well as large markets. Thus, the group average ratio is of a higher relevance for the purposes of our research. All in all, frontier markets have very low positive skewness or are close to normal distributions.

### *4.2. Skewness exchange rate impact and preferable distribution moment*

So far, we investigated skewness in terms of foreign currency only and did not deal with local currencies. Nevertheless, an important issue is to compare skewnesses in local currency and in a foreign currency, USD and EUR in our case. Such analysis would allow us to test the second hypothesis on relative importance of skewness in domestic and international investing. Furthermore, we will also estimate the relative relevancy of the first and third moments of returns distribution. They both are to be maximized and can be mutually substituted as shown by Cenela & Collazo (2007). We shall carry out such analysis using the relative foreign exchange percentage differential for returns as well as for skewnesses that are presented in Table 3.

**Table 3.** Relative foreign exchange percentage differential for return and skewness

| Market | USD | | EUR | | Market | USD | | EUR | |
|---|---|---|---|---|---|---|---|---|---|
| | $r_i$ | $R_{SKEW}$ | $r_i$ | $R_{SKEW}$ | | $r_i$ | $R_{SKEW}$ | $r_i$ | $R_{SKEW}$ |
| Argentina | 0.00 | 0.00 | -133.33 | -65.92 | Mauritius | 333.33 | -31.49 | -233.33 | 24.87 |
| Bahrain | 0.00 | -3.16 | -13.45 | -103.55 | Morocco | 48.15 | 24.17 | -7.41 | 8.91 |
| Bangladesh | 200.00 | -6.09 | -37.50 | -13.80 | Nigeria | 167.35 | 513.75 | 136.73 | 461.47 |
| Bosnia and Herzegovina | 18.84 | 9.45 | 0.00 | 0.04 | Oman | 0.00 | -0.98 | -33.33 | -100.69 |
| Botswana | 180.77 | 635.19 | 123.08 | 596.34 | Romania | 20.51 | -28.86 | 10.26 | -4.76 |
| Bulgaria | 56.25 | 20.30 | 0.00 | 0.39 | Serbia | 154.55 | 200.61 | 81.82 | 96.90 |

| Market | USD | | EUR | | Market | USD | | EUR | |
|---|---|---|---|---|---|---|---|---|---|
| | $r_i$ | $R_{SKEW}$ | $r_i$ | $R_{SKEW}$ | | $r_i$ | $R_{SKEW}$ | $r_i$ | $R_{SKEW}$ |
| Croatia | 54.17 | 1.49 | 0.00 | 6.56 | Slovenia | 142.86 | 251.53 | 0.00 | 0.00 |
| Estonia | 37.50 | 56.10 | 0.00 | 0.00 | Sri Lanka | 1250.00 | 16.21 | 800.00 | 79.87 |
| Jamaica | 23.84 | -13.99 | 13.95 | 5.86 | Trinidad and Tobago | 7.59 | -8.50 | -17.72 | 40.93 |
| Jordan | 0.00 | 0.11 | -40.91 | -9.53 | Tunisia | 144.23 | -3.47 | 113.46 | 52.22 |
| Kazakhstan | 0.00 | -0.21 | -66.67 | -206.07 | Ukraine | 154.55 | 174.38 | 134.85 | 125.58 |
| Kenya | 25.30 | 109.66 | 7.23 | 125.58 | Vietnam | 64.00 | 38.99 | 8.00 | 63.33 |
| Kuwait | 44.44 | -9.63 | -44.44 | 51.16 | Zimbabwe | 0.00 | 0.00 | -6.57 | -0.73 |
| Lebanon | 0.00 | 0.02 | -35.19 | -18.27 | FM | 200.00 | -8.22 | 50.00 | -6.00 |
| Lithuania | 100.00 | 33.92 | 0.00 | 0.00 | Average | 190.91 | 39.29 | 54.55 | 17.86 |

Note: calculated and composed by the authors using MSCI-1 (2019) data.

Analysis of computed differentials allows for the following conclusions. The skewness factor of portfolio selection in frontier markets is relatively more favorable for international USD investors rather than for domestic ones in case of 10 out of 28 markets. For EUR investors the respective figure is 9 markets though the differential values are much higher for EUR. However, the total quantity of countries should be reduced from 28 to 26 for USD (with Argentina and Zimbabwe being excluded) and to 25 for EUR (with Estonia, Lithuania and Slovenia being excluded) since the mentioned countries have zero returns and skewnesses that can be explained by their monetary policy and pegging of their currencies to world currencies. The group index speaks for international investing while the average – for domestic with no rigorous conclusion. However, in this case we consider the average to be much more relevant figure that can be explained by the following. Group index is a statistically computed figure which performs informational and analytical function mostly. It is calculated usually as a weighted average and thus more capitalized markets account for higher impact on the final result. Consequently, one large market for example can easily overweight several smaller ones. Such ratios are typically used by investors as indicators. Once they are really ready to invest the figure for certain markets they are going to enter becomes much more important to them. This content is actually demonstrated by the average rather than the index.

As to the preferable moment, we acknowledge that for USD investors there is no case where the average and the skewness appear in international investing at the same time. In seven cases the differentials confirm the advantages either of international or domestic investing with them having opposite signs. Only three markets (Bahrain, Kazakhstan and Oman) have zero values of the differential for the average and the negative values for the skewness. No return figure testifies the benefits of international investing, all having positive signs or equating to zero. We also find that for 17 markets

the return differential exceeds the skewness differential meaning that decisions on international investing on this market would be defined rather by the return than by skewness. This is valid either for cases where skewness is negative (seven markets) or positive (seven markets). For nine markets with either positive or nonnegative differentials skewness differential is higher testifying in favor of skewness rather than return while taking investment decisions. However, such analysis should be carried out for cases where differentials have identical signs, which will be done later. We still keep in mind that Zimbabwe and Argentina are excluded from the analysis since they have zero values for both differentials and we have just 26 markets under question. As to the FM group figure, it speaks for international investing in terms of skewness and for domestic investing in terms of return with the return differential being much higher than that of skewness. The average figure that is regarded to be more meaningful in our case, is strongly for domestic investing by both differentials. The summary of these results is generalized in Table 4.

**Table 4:** Analytical framework of international investing in frontier markets considering first and third moments of returns distributions

| Relation Type | Quantity of Markets | |
|---|---|---|
| | **USD** | **EUR** |
| + / + | 14 & Average | 9 & Average |
| - / - | – | 8 |
| + / - | 7 & FM | 1 & FM |
| - / + | – | 4 |
| 0 / 0 | 2 | 3 |
| 0 / + | 3 | 3 |
| 0 / - | 2 | 0 |
| Total | 28 | 28 |
| **Within Identical Sign** | | |
| > (+) | 7 & Average | 4 & Average |
| < (+) | 7 | 5 |
| > (-) | – | 5 |
| < (-) | – | 3 |
| Total | 14 & Average | 17 & Average |

Notes:
1. Calculated and composed by the authors using data from Table 3.
2. The relation type column in the first part of the table should be read as follows. The first sign (before slash) is the sign of the return differential. The second sign (after slash) is the sign of the skewness differential.
3. The relation type column in the second part of the table should be read as follows. “>” means that return differential exceeds the skewness differential. “<” means that return differential is lower than the skewness differential. The sign in brackets is the sign of both differentials and it is always identical.

Rather different context applies to international investing in EUR. There are eight markets where we observe both negative differentials that is an argument in favor of international investing. Moreover, four markets with positive skewness differential have negative return differentials. There are nine markets with both positive differentials. Three markets having zero differential values are still excluded from the analysis. Different sign is observed for just five markets. Among markets with two positive differentials five have higher skewness differential and four – higher return differentials. Respective figures for cases with both negative signs are three and five. The average figure is for domestic investing as well.

## 5. Conclusions

Using the approach of relative foreign exchange percentage differential, we have tested the two hypotheses concerning skewness and return in international portfolio investing on frontier markets. Computing skewness and average returns for 28 markets in the period between January 2011 and December 2018 we confirm the point that returns distributions in frontier markets are skewed. The developed skewness ranks matrix allows to conclude that only 6 out of 28 markets under question have normal or close to normal distribution of returns with others having either positive or negative skewness from USD perspective with no strict aptitude to either sign. Most markets have low or very low skewness. From EUR perspective 11 markets are not or hardly skewed in terms of their returns distributions while other 20 are positively skewed, and the remaining 8 markets are negatively skewed. This means the higher impact of skewness for EUR than USD international investors, though local currencies skewness is slightly higher than that of the mentioned currencies. The resulting implication is that skewness emerges to be the factor of international portfolio investing in frontier markets but its impact should not be overestimated.

We developed an analytical framework for skewness-based investing in frontier markets that allows comparing relative attractiveness of domestic and international investing considering different currencies. We have not found strong evidence that skewness is a more important portfolio selection factor for international investments than for domestic. Moreover, our study is rather to confirm that skewness is more important for domestic portfolios. Only 10 out of actual 26 cases speak in favor of USD international investors rather than for domestic ones. Respective figure for EUR is 10 out of 25 markets.

The more substantial impact of skewness for EUR than for USD investors is also justified by the fact that for USD there is no market where the returns and skewness differentials are negative at the same time whereas all return differentials are positive or equal to zero that is in favor of domestic investing. From EUR perspective there are eight markets where both differentials are negative that is an incentive for international investing. Four markets with positive skewness differential have negative return differentials in contrast to the case for USD. Among markets with two positive differentials, five have higher skewness differential and four – higher return differential.

Respective figures for cases with both negative signs are three and five. The average figure is for domestic investing as well.

However, the mentioned results should be treated critically and further research is still required. Its three main directions should be stressed. First, specific optimization problems should be solved, tested and compared. Second, comparison with other market groups would be meaningful. This would allow to find the relative location of frontier markets as to other market groups. Third, risk aversion could be a substantial factor of choosing between return and skewness. By this we mean not the traditional risk tolerance but the risk tolerance towards return and skewness.

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PAPER

# The comparative Advantage in the main exporting countries, flower and ornamental plant sector

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**Abstract** The flowers and ornamental plants sector has been playing a remarkable role within the agricultural sector both in productivity and employment terms. The economic importance of ornamental plants has been increasing in many countries, and international demand has rapidly expanded. The Ornamental plants are products that can be produced in most areas of Iran and are even competitive in the global market and have the potential for exchange earnings of export, but it has a little share in export. The aim of the present research is to investigate the comparative advantage of countries which export flowers and ornamental plants. For this purpose, the revealed comparative advantage index, Symmetric revealed comparative advantage and new revealed comparative index have been used during the period of 2007–2015. The main findings revealed that Ecuador, Colombia, Netherlands and Kenya have the highest exporting comparative advantage. Also, the values for the degree of trade specialization indicate that the pattern of trade specialization is gradually decreasing in the most exporting countries.

**Keywords:** comparative advantage; flower and ornamental plants; New revealed comparative; trade specialization; Galtonian regression

**Jel Classification:** F140; Q170

## 1. Introduction

Many advantages of flowers and ornamental plants (FOPs) are not sufficiently recognized, so for most people flowers and other plants are only a part of their subconscious, something that is in the background and that has no significant role in everyday life. The FOP industry is extremely complex and dynamic, and it represents a vital segment in the economies of a large number of countries and the global economy

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(Vukajlovic et al. 2017). In the last decades, the production of FOPs has been changed by factors such as the globalization of markets and the economic development of societies. The globalization has led to an increased competition due to the entry of new competitors into the market of FOPs. This is specially the case in developing countries, where favorable environmental conditions, the abundance of natural resources, and the availability of low-cost labor provide apparent competitive advantages (Schimmenti et al. 2010).

The FOPs sector is very diverse and includes the production of floral crops such as cut flowers and cut foliage, flower bulbs, potted flowering as well as foliage plants and bedding plants.

The floriculture world trade is characterized by a high degree of concentration by product and sources. Developed countries in Europe, America, and Asia account for more than 90% of demand. International trade in floriculture, is organized along the regional lines to a large extent. Asia-Pacific countries are the main suppliers to Japan and Hong Kong. African, Middle Eastern, and other European countries are the principal suppliers to Europe's main markets, Colombia and Ecuador have dominant markets in USA (CBI Ministry of Foreign Affairs, 2016).

The growing trend in FOPs market is indicated in a report. According to statistical data, the global exports of cut flowers, cut foliage, living plants and flower bulbs had grown from US$ 8.5 billion in 2001 to US$ 18 billion in 2010 and US$ 21.5 billion in 2014, this value is decreased to US$ 18.8 billion in 2015, it increased US$ 18.9 billion in 2016, and it reached to US$ 28.4 billion in 2017. Reaching this value has an annual growth rate of 57% from 2010 to 2017 (Unctad, 2016; UN comtrade, 2018)

While worldwide consumption has been on the rise, consumers have also become more refined in demanding new products. To meet this growing and changing demand, production has continued to move from countries that had been traditionally consumers and growers, such as the Netherlands, to other relatively new producing countries such as Colombia, Ecuador, Kenya, and Ethiopia. The Netherlands has long been at the center of cut flower production in the European floral market, this country continues to be the largest exporter of cut flowers in the world market, having a 43% share of the global market, which in turn yielded a revenue approximately equivalent to $12.6 billion USD. Colombia occupies 15% of the global market share in the cut flower export sector, generating a revenue of nearly $3.9 billion dollar for the country annually. 11% of the global market share of cut flowers is held by the Kenyan cut flower industry. The cut flower industry in Ecuador and Ethiopia had grown substantially over the past decade, with the country now occupying a 9% share of the global market in terms of cut flower export values. Today, 1% of the global market share of cut flowers is held by Malaysia, Germany, Belgium, Italy and China. Global floral production value is estimated at US$ 55 billion. Tree nursery—the production of trees, shrubs and other hardy plants—is worth another US$ 35 billion. Although cut flowers, cut foliage and flower bulbs are traded globally, mainly from south to north, more bulky live plants, such as potted plants and nursery products, are mainly traded regionally (UN- Comtrade, 2016).The competitiveness is one of the most used word in economics, containing many kinds

of different interpretations. One strand of the literature combines international trade theories with those of macro level competitiveness and argues that competitiveness of nations can be interpreted and measures via trade based indices. Balassa (1965) was one of the early supporters of this theory, elaborating his famous index of revealed comparative advantages (RCA). Since this seminal work, a vast amount of literature is dedicated to the analyses of revealed comparative advantages of global trade (jambor et al., 2017).

Iran is a large country with climatic diverse that twelve types of which are in different areas of Iran out of fourteen ones as it has been enjoying the natural talent for growing kinds of herbs such as flowers and ornamental plants. Despite these favorable natural conditions, in recent years, the potentials of this sector in the country are not used correctly, and this industry was not able to find properly its true role in non-oil export and creation of the value added. (Mousavi, 2015)

The literature on identifying FOPs market is very poor, the studies have dealt with the economics of different aspects of floriculture. The opportunities for the development of this economic area are in a way that would enable the people engaged in this activity to make a good living for themselves (Khonphian et al., 2009; Adeniyi, 2015; Hussain et al., 2016). The evidence internationally (especially from Chile and Colombia and also from Kenya) suggests that successful integration into global horticultural value chains depends on a handful of 'export superstars' (Moran, 2018). The different facts of trade relations between Brazil and Morocco is analyzed by the RCA index and assesses the potential for deeper trade integration between these two key players in the southern Atlantic. Floriculture is distinguished by its economic and social importance in Brazil (Silva et al., 2015) Floriculture is the latest addition to the commercial economic sector of agriculture and it was developed in all of its potentials. Generally, the business of growing traditional flowers (typical for certain countries), as well as untraditional flowers and dried flowers is referred to as the floriculture industry, which encompasses the production, processing and marketing of all types of flowers (Kadam, 2012). In the context of floriculture, as a branch of agriculture, its difference from traditional husbandry is emphasized, not only due to the increased sales revenue, but also because of the flowers that are more present in daily life, which leads to the opportunities for having floriculture as a source of income (Peter, 2010). Floriculture serves the purpose of raising income and reducing poverty in the developing countries. In certain labor - intensive economies which are not developed, the production of cut flowers is the main source of their comparative advantages (Labaste, 2005). That is further supported by the fact that the demand for flowers is increasing, both in the developed and in the developing countries, so the growing of different types of flowers has the capacity to enhance economic benefits, which include different aspects of floriculture, from production and sales to marketing (Manzoor et al, 2001).

The comparative advantage of flower and plant production (roses, tuberose and Gladiolus) in Isfahan, Tehran and central provinces were studied (Forghani and Kiani abar, 2005). The RCA index of Iran's cut-branch flower and compare with the major exporting countries has been calculated. The results showed that during the study

period, Netherlands, Kenya, Ecuador, and Colombia have comparative advantage in flower export and Italy, Spain, Belgium, Thailand, United States, Germany, Great and Iran have not comparative advantage in flower export (shoukatfadaei et al, 2015).
Despite the flower importance as the valuable products, however, the number of papers dealing with New RCA index are relatively small and this could be an innovation in the results of this article.

Due to the increasing importance of FOPs trade in last decades, the main motivation of the present study is the lack of knowledge on the advantages of FOPs export markets that can be a proper guide for marketers and countries investing on its export.

## 2. Materials and method

### *2.1 Revealed comparative advantage (RCA)*

The relative importance of an industry in the total trade is usually measured by the revealed comparative advantage (RCA) or Balassa index (Ferto and Hubbard, 2003; Latruffe, 2010; Wijnands et al., 2008). The Revealed comparative advantage index was used to determine the most important destinations and product groups for the region's export trade. It is used in international economics to calculate the comparative advantage or disadvantage of a certain country in a certain class of goods or services.

If it is related to the export, it measures the export share of a country in the total world export of a given product relative to the country's total export share in the world export of all products. The most well-known index analyzing export competitiveness of nations is RCA, calculating the proportion of a country's share of exports for a single commodity to the exports of all commodities and the similar share for a group of selected countries, expressed by Balassa (1965) is as follows:

$$RCA = \frac{X_{ij} / X_{it}}{X_{nj} / X_{nt}} \tag{1}$$

Where, X means export, i indicates a given country, j is a given product, t is a group of products and n is the group of selected countries. Hence, a revealed comparative advantage (or disadvantage) index of exports can be calculated by comparing a given country's export share by its total exports, with the export share by total exports of a reference group of countries. If RCA is > 1, a given country has a comparative advantage compared to the reference countries, or in contrast, a revealed comparative disadvantage if RCA < 1.

### *2.2 Symmetric revealed comparative advantage (SRCA)*

The benefit of comparative advantage index is that it takes into consideration the intrinsic advantage of a particular export commodity as well as consistency with changes. However, one of the main disadvantages of RCA index is its wide range in a way that it is too wide to determine the degree of comparative advantage properly. In order to treat the asymmetric value problem of the Balassa-index, Dalum et al. (1998) transformed B index as follows, thereby creating the Symmetric Revealed Comparative Advantage (SRCA) index is:

$$SRCA_{ij} = \frac{RCA_{ij} - 1}{RCA_{ij} + 1} \tag{2}$$

The SRCA takes values between -1 and 1, with values between 0 and 1 indicating a comparative export advantage and values between −1 and 0 a comparative export disadvantage. Since the SRCA distribution is symmetric around zero, potential bias is avoided (Dalum et al, 1998).

Next, we analyze the stability of the SRCA index, from the years 2009 to 2015, inclusive, using a regression analysis of the dependent variable SRCA index at time t (for sector i in country j) against the lagged operator of SRCA at the previous time t−1. The parameters α and β are standard linear regression estimators, and ε is a residual term. The stability analysis is based on Galtonian regression model presented by Hart & Prais (1956) and later developed by Cantwell (1989) in the context of specialization. The equation is the following:

$$SRCA_{ij}^{t} = \alpha_i + \beta_j SRCA_{ij}^{t-1} + \varepsilon_{ij} \tag{3}$$

If β=1, the unchanged pattern of SRCA between periods t−1 and t, indicates no change in the overall degree of specialization in the export of a sector i. If β>1, which is also called β divergence, the existing specialization is strengthened, which means a low level of specialization in the initial period leads to less specialization in the future. If 0<β<1 (convergence) is the case, sectors with initial low SRCAs increase over time on average, while the sectors with initial high SRCAs decrease their values. Moreover, when β=R (The sign R represents the correlation coefficient of the regression) the pattern of a given distribution is unchanged. When β>R, then the degree of specialization grows, leading to divergence. If β<R, the degree of specialization falls, i.e., more convergence develops (Bojnec and Fert, 2008).

### *2.3 New index of revealed comparative advantage (New RCA)*

Costinot et al. (2012) provides a theoretical micro-foundation for the Ricardian model of trade. They build a structural Ricarian model with multiple countries and industries, one factor of production (labor), allowing for intra-industry heterogeneity (Eaton and Kortum 2002). In the process, they also propose a theoretically-consistent empirical measure for comparative advantage which is able to fit the Ricardian ideas of comparative advantage in a proper way. The new theoretically-consistent measure of Ricardian RCA proposed by Costinot et al. (2012) is able to isolate the exporter-specific factors driving trade flows, and thus it fits better the original idea of Ricardian comparative advantage. A measure of revealed comparative advantage, in the spirit of the Ricardian model of trade, points to capture the innate productivity of a country in a given industry or product relatively to the other countries. The idea of Balassa index is to compare the performance of a country in one industry to the performance of a reference group of countries using export flows. In doing so, Balassa Index mixes up comparative advantage driven with other determinants of trade flows in approximating the RCA. Indeed, a proper export performance can be due to several factors that are not

directly linked to comparative advantage (formal or informal trade barriers, historical trade relationships, internal demand shock in a country, difference in preferences, etc.). According to the theoretical framework of (Costinot et al., 2012) we can control the factors causing trade disruption between two countries (such as trade barriers among countries, geographical distance, colonial ties and use of common language) as well as unilateral trade disruption factors (such as changes in political barriers, demand shocks and changes in consumers' tastes) employing a new index of comparative advantage based on an econometric model. In fact, this theoretical framework is Ricardian model with a production factor (labor) and k industries operating in perfect competitive condition. The main assumption is that the essential productivity of country i in an industry k is represented by $z_{ik.}$

The use of the criteria of essential productivity, zik, (the productivity of producing agricultural products which may be estimated by employing different indexes including TFP or producer price index) is a proper method and a path for estimating the comparative advantage of exporting country. Because this index can influence the process of trade and in fact indicates the substantive productivity level of country i (exporter) in the industry k. Also, in order to calculate zik, a new RCA index can be estimated. The new comparative advantage index is computed from the following relationship:

$$RCA_{ik} = \frac{z_{ik} z_{..}}{z_{i.} z_{.k}} \tag{3}$$

Where, z.. is the mean of zik for all industries and countries, z i. is the mean of zik for all of sectors and industries in country i. z. k is the mean of zik in industry (product) k for all of this product's exporters. Based on the relation (3) the country i has comparative advantage in the industry and sector k if RCAik is greater than unit. When the RCAik index is greater than 1 means that the average global productivity level z.. at the productivity level of country i in the industry k is greater than the expected value of zi. z. k. only two data types are required for this index: trade flows (export and import) and the productivity of the studied agricultural products. The productivity which is included into the NEW RCA index as the main variable is calculated through the inverse of producer price for agricultural products. The information related to the price of agricultural products in studied countries is collected from FAO. In the current research the newest data of FAO was applied. Statistical population under study is Asian countries (middle Asia, East Asia and West Asia, as well as neighboring countries) in which there is the possibility of creating mutual relationship.

## 3. Results and discussion

The share of top 11 exporting's countries of FOP sector from the rest of the world market in 2009-2015 is indicated in table 1. Table 1 illustrates that the highest ranking of FOPs export belongs to Netherlands, Colombia, Ecuador, and Kenya. According to data presented, in all periods Netherlands holds the main share (about 50%) of FOP sector.

**Table 1- The share of each country's exports of FOPs world exports (by percentage)**

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| Belgium | 2/273 | 3.238 | 2.847 | 2.870 | 2.929 | 2.930 | 0.979 |
| China | 0.738 | 0.752 | 0.787 | 1.028 | 0.834 | 0.900 | 1.017 |
| Colombia | 14.325 | 16.359 | 13.781 | 14.505 | 13.950 | 14.097 | 15.119 |
| Ecuador | 7.464 | 8.015 | 7.488 | 8.809 | 8.752 | 9.419 | 9.570 |
| Germany | 0.643 | 0.547 | 0.865 | 0.947 | 0.968 | 0.956 | 0.971 |
| Iran | n.a. | n.a. | 0.133 | 0.003 | 0.008 | 0.003 | 0.002 |
| Italy | 1.122 | 1.170 | 0.981 | 0.968 | 0.977 | 0.890 | 0.982 |
| Kenya | 5.754 | 5.226 | 5.004 | 5.175 | 5.017 | 5.678 | 7.636 |
| Malaysia | 0.970 | 1.288 | 1.108 | 1.382 | 1.129 | 1.006 | 1.145 |
| Netherlands | 49.426 | 48.693 | 54.769 | 52.156 | 48.505 | 47.926 | 45.009 |
| Thailand | 1.039 | 1.078 | 0.894 | 0.868 | 0.775 | 0.710 | 0.784 |
| U.S | 1.096 | 1.065 | 0.746 | 0.405 | 0.344 | 0.306 | 0.331 |

n.a.: Data for Iran is just available from 2011
Source: Data from Un Comtrade Database. They are authors' estimates

In the present study, in order to determine the comparative advantage of FOPs exporting countries, two indicators of RCA and SRCA were employed in determining the comparative advantage of commercial and export dimensions in domestic and foreign studies. In order to prioritize the FOPs export markets and analyze its structure, data on the thousand dollar value of FOPs export in all exporting countries in the period of 2009–2015 is used, which is provided by Commodity Trade Statistics Database.

The evolution of RCA index of the various products included in the "cut flower and ornamental flowers" chapter was analyzed, The source of data was Trade MAP product classification which includes five sub-categories within chapter 6 "Living trees and flowers", The categories which will be analyzed in this section are class 0603 "Cut flowers and flower buds of a suitable kind for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared".

The highest export volumes in the 0603 code are for Netherlands, Colombia and Ecuador, however, in calculating the RCA index, it is necessary to point out that the share of flower exports from total exports is for Colombia, Ecuador and Netherlands.
The 25 countries in Table 2 represent the major exporters of FOP from the total of 172 FOPs exporting countries. Of these 25 countries, five exhibit an RCA value equal to or greater than one in the export of FOP. Ecuador has a very high RCA in FOP, with values ranging from 57.8 in 2009 to 49.2 in 2011 and increased to 76.2 in 2015. This reflects the fact that FOP makes up a significant share in Ecuador's total exports and that the majority of Ecuador's FOP production is exported. Colombia, Netherlands and Kenya also have strong RCAs in FOP exports, with values in 2015 of 62, 14 and 2, respectively. The strength of the RCA in FOP has dropped for New Zealand since 2009

while, Netherlands and Kenya remained relatively constant prior to 2015. In the years 2009 to 2011, Egypt had no comparative advantage in FOPs exports. This means that the RCA index for the years was smaller than the unit and its RSCA index was negative, but in 2011, Egypt was able to relocate with a comparative advantage of 1.38% to the group of countries with a comparative advantage and increased level of 2.2 in 2014 and dropped by 1.45 in 2015.

Values for Malaysia and South Africa hover around unity, indicating no comparative advantage or disadvantage. Iran has a very low RCA. The export data of FOP are unavailable for 2009 and 2010. The RCA Index of Iran has decreased from 0.149 in 2011 to 0.009 in 2015; the relative decline in the index over the period under review, especially in recent years expresses the absence of a specific export strategy to improve the export performance.

The investigating contribution of each country to the FOPs global export indicates that the country's changes are proportional to the changes in production, export value, the share of RCA and the global export of FOP, so that each year the country's share of global exports of FOPs have been rising (declining), and the value of these indicators has also increased (decreased).

By increasing the FOPs export, these countries were able to gain a significant growth in export value. For example, the value of Egyptian FOPs exports has increased to ($35936 thousand) in 2014 from ($7098 thousand) in 2009. Therefore, these countries have declared themselves as rivals for other exporting countries of FOPs during these years. In other words, although revealed comparative advantage has not been observed in these countries, their growing trend suggests a comparative advantage in the near future. Therefore, the attribute comparative advantage is not a constant indicator and varies from one year to another.

**Table 2- RCA index of exporting countries of FOPs for 2009-2015**

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Mean |
|---|---|---|---|---|---|---|---|---|
| Austria | 0.096 | 0.098 | 0.063 | 0.083 | 0.077 | 0.057 | 0.044 | 0.074 |
| Canada | 0.105 | 0.154 | 0.151 | 0.163 | 0.164 | 0.162 | 0.206 | 0.158 |
| Colombia | 46.794 | 51.603 | 35.563 | 35.339 | 37.863 | 41.238 | 61.868 | 44.324 |
| Denmark | 0.058 | 0.078 | 0.035 | 0.041 | 0.024 | 0.034 | 0.075 | 0.049 |
| Ecuador | 57.781 | 57.560 | 49.257 | 54.233 | 55.986 | 58.692 | 76.247 | 58.537 |
| Egypt | 0.430 | 0.737 | 0.591 | 1.383 | 1.700 | 2.204 | 1.451 | 1.214 |
| France | 0.060 | 0.073 | 0.056 | 0.046 | 0.043 | 0.051 | 0.060 | 0.056 |
| Germany | 0.061 | 0.054 | 0.086 | 0.099 | 0.107 | 0.102 | 0.107 | 0.088 |
| Hungary | 0.063 | 0.107 | 0.100 | 0.084 | 0.070 | 0.075 | 0.079 | 0.083 |
| Indonesia | 0.054 | 0.055 | 0.076 | 0.140 | 0.075 | 0.090 | 0.206 | 0.099 |
| Iran | n.a, | n.a, | 0.149 | 0.004 | 0.018 | 0.008 | 0.009 | 0.038 |
| Italy | 0.296 | 0.329 | 0.275 | 0.283 | 0.301 | 0.269 | 0.313 | 0.295 |

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Mean |
|---|---|---|---|---|---|---|---|---|
| Japan | 0.003 | 0.003 | 0.002 | 0.003 | 0.004 | 0.008 | 0.012 | 0.005 |
| Kenya | 1.699 | 1.407 | 1.310 | 1.385 | 1.431 | 1.588 | 2.117 | 1.562 |
| Malaysia | 0.659 | 0.811 | 0.718 | 0.892 | 0.789 | 0.689 | 0.836 | 0.771 |
| Netherlands | 12.293 | 12.415 | 15.171 | 13.863 | 13.556 | 13.445 | 13.873 | 13.517 |
| New Zealand | 1.327 | 1.392 | 1.059 | 1.134 | 1.012 | 0.752 | 0.964 | 1.091 |
| Peru | 0.352 | 0.339 | 0.326 | 0.343 | 0.385 | 0.381 | 0.467 | 0.370 |
| South Africa | 0.720 | 0.637 | 0.484 | 0.742 | 0.587 | 0.601 | 0.738 | 0.644 |
| Spain | 0.253 | 0.225 | 0.210 | 0.171 | 0.210 | 0.218 | 0.234 | 0.217 |
| Taipei, Chinese | 0.115 | 0.177 | 0.181 | 0.226 | 0.174 | 0.162 | 0.172 | 0.173 |
| Thailand | 0.731 | 0.693 | 0.574 | 0.555 | 0.541 | 0.500 | 0.543 | 0.591 |
| Turkey | 0.346 | 0.382 | 0.326 | 0.332 | 0.310 | 0.334 | 0.335 | 0.338 |
| United States | 0.111 | 0.105 | 0.074 | 0.039 | 0.035 | 0.030 | 0.032 | 0.061 |

n.a: Data for Iran is just available from 2011
Source: Data from UN Comtrade Database

Mentioning that the RCA is between zero and infinite, it is observed that the range of the modified and superficial index is between -1 and +1, so that the SRCA is closer to number 1, the comparative advantage is greater, and instead of each whether from zero to number -1, the lack of comparative advantage is exacerbated. The incremental trend of this index over a period of time indicates an improvement in the competitive position of a commodity globally or in a particular region in the context of appropriate opportunities or the use of opportunities provided. Among the investigated countries, Ecuador Colombia, Netherlands and Kenya demonstrate a positive value in all periods; Egypt could change its initial comparative disadvantage to a comparative advantage from 2011 to 2012-2015, while New Zealand lost its initial comparative advantage in 2014 year.

**Table 3 - Symmetric Relative comparative advantage Index (SRCA)**

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| Austria | -0.824 | -0.821 | -0.881 | -0.846 | -0.856 | -0.892 | -0.916 |
| Canada | -0.810 | -0.733 | -0.737 | -0.720 | -0.719 | -0.721 | -0.659 |
| Colombia | 0.958 | 0.962 | 0.945 | 0.945 | 0.949 | 0.953 | 0.968 |
| Denmark | -0.890 | -0.855 | -0.933 | -0.921 | -0.953 | -0.934 | -0.860 |
| Ecuador | 0.966 | 0.966 | 0.960 | 0.964 | 0.965 | 0.966 | 0.974 |
| Egypt | -0.399 | -0.151 | -0.257 | 0.161 | 0.259 | 0.376 | 0.184 |
| France | -0.887 | -0.865 | -0.894 | -0.913 | -0.917 | -0.903 | -0.887 |
| Germany | -0.885 | -0.897 | -0.842 | -0.821 | -0.807 | -0.814 | -0.807 |

| Country | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| Hungary | -0.881 | -0.807 | -0.819 | -0.846 | -0.869 | -0.861 | -0.853 |
| Indonesia | -0.897 | -0.896 | -0.859 | -0.754 | -0.861 | -0.835 | -0.658 |
| Iran | n.a. | n.a.[1] | -0.740 | -0.991 | -0.964 | -0.985 | -0.983 |
| Italy | -0.543 | -0.505 | -0.568 | -0.558 | -0.537 | -0.576 | -0.524 |
| Japan | -0.994 | -0.993 | -0.995 | -0.994 | -0.992 | -0.985 | -0.977 |
| Kenya | 0.259 | 0.169 | 0.134 | 0.161 | 0.177 | 0.227 | 0.358 |
| Malaysia | -0.205 | -0.104 | -0.164 | -0.057 | -0.118 | -0.184 | -0.090 |
| Netherlands | 0.850 | 0.851 | 0.876 | 0.865 | 0.863 | 0.862 | 0.866 |
| New Zealand | 0.140 | 0.164 | 0.029 | 0.063 | 0.006 | -0.141 | -0.018 |
| Peru | -0.479 | -0.494 | -0.508 | -0.489 | -0.444 | -0.449 | -0.363 |
| South Africa | -0.163 | -0.222 | -0.348 | -0.148 | -0.260 | -0.249 | -0.151 |
| Spain | -0.596 | -0.632 | -0.653 | -0.708 | -0.653 | -0.642 | -0.620 |
| Taipei,Chinese | -0.794 | -0.699 | -0.693 | -0.631 | -0.704 | -0.722 | -0.706 |
| Thailand | -0.155 | -0.181 | -0.270 | -0.286 | -0.298 | -0.333 | -0.296 |
| Turkey | -0.486 | -0.447 | -0.508 | -0.502 | -0.527 | -0.499 | -0.498 |
| United States | -0.800 | -0.811 | -0.862 | -0.926 | -0.933 | -0.941 | -0.938 |

Source: SRCA values are authors' estimates

Table 4 reports the results of the Galtonian regression analysis of technological specialization for the all countries and the selected countries by applying equation (3). When $0 < \beta < 1$ is the case, the existing pattern of specialization is unchanged, but the gap between competitive and less competitive industries narrows. The variance of the SRCA index measures the degree of specialization, which can also be measured as $\beta / \rho$. If $\beta > \rho$, the degree of specialization increases. If $\beta < \rho$, then it decreases. When $\beta = \rho$, the dispersion of the distribution is unchanged. In the perspective term (2009-2015) the results indicate a general decrease in the dispersion of export specialization, implying a trend towards a decrease in specialization. Therefore, all countries of FOP export won't become more specialized. However, the decrease in dispersion is rather weak. On average there is no strong β/R tendency towards de-specialization (decline in β/R).

**Table 4: The result of the examination of the specialization of the world exporters of FOP (OLS Galtonian regression)**

| | 2009-2012 | | | 2012-2015 | | | 2009-2015 | | |
|---|---|---|---|---|---|---|---|---|---|
| | β | R | β/R | β | R | β/R | β | R | β/R |
| All world | 0.959 | 0.974 | 0.98 | 0.978 | 0.982 | 0.996 | 0.942 | 0.962 | 0.979 |
| 7 country | 0/71 | 0.88 | 0.81 | 0.985 | 0.976 | 1.01 | 0.698 | 0.86 | 0.81 |

Note: 7 countries as follows Colombia, Ecuador, Egypt, Kenya, Netherlands, New Zealand

In this section new RCA for some exporter in FOPs sector the number 38 of trade partners and years is investigated. Given the data limitation in regions under study, only those countries in which the information was existed in FAO website data in the period of 2007–2014 were selected. As Table 5 illustrates the New RCA index in Iran had comparative advantage in 2007-2010 but it didn't have comparative advantage in 2010 up to 2014. It was revealed that in 2007, Cambodia, Canada, Chile, Hong Kong, Colombia, Cuba, Ecuador, Egypt, India, Indonesia, Iran, Kenya, Malaysia, Mexico, New Zealand, Peru, South Africa, Turkey, England, Vietnam had comparative advantage. In 2008, Chile, Hong Kong, Ecuador, Egypt, France, Hungary, India, Indonesia, Iran, japan, Kenya, Malaysia, Mexico, Peru, Poland, South Africa, Thailand, Turkey, England, had comparative advantage.

This is only an example of potential applications for this dataset. The changes that may occur over time in comparative advantage might be analyzed as well and other econometric applications are possible. In these cases the user requires to be informed about the empirical distribution characteristics of the new RCA index.

**Table 5: Results for the estimation of NEW RCA index**

| Country | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Australia | 0.930 | 0.900 | 0.920 | 1.051 | 1.043 | 1.095 | 1.116 | 1.128 |
| Austria | 0.902 | 0.987 | 1.087 | 1.010 | 1.053 | 0.992 | 1.029 | 1.092 |
| Belgium | 0.863 | 0.976 | 1.022 | 1.061 | 1.113 | 1.076 | 1.055 | 1.208 |
| Cambodia | 1.088 | 0.953 | 0.974 | 0.950 | 0.965 | 0.961 | 0.970 | 0.976 |
| Canada | 1.003 | 0.932 | 0.971 | 1.085 | 1.009 | 0.996 | 0.992 | 0.983 |
| Chile | 1.060 | 1.066 | 0.937 | 1.010 | 1.016 | 0.970 | 0.858 | 0.886 |
| Hong Kong | 1.189 | 1.015 | 0.953 | 0.960 | 0.929 | 0.919 | 0.895 | 0.875 |
| Colombia | 1.017 | 0.998 | 0.893 | 0.953 | 0.971 | 1.041 | 1.145 | 1.051 |
| Cuba | 1.110 | 0.933 | 0.926 | 0.922 | 0.899 | 0.929 | 0.930 | 0.925 |
| Denmark | 0.928 | 0.946 | 1.104 | 1.103 | 1.047 | 0.999 | 0.989 | 1.032 |
| Ecuador | 1.076 | 1.035 | 0.887 | 0.921 | 1.003 | 1.010 | 0.994 | 0.930 |
| Egypt | 1.109 | 1.075 | 1.031 | 0.963 | 0.933 | 0.931 | 0.894 | 0.836 |
| France | 0.894 | 1.005 | 1.077 | 1.009 | 1.062 | 1.003 | 1.028 | 1.104 |
| Germany | 0.880 | 0.939 | 1.141 | 1.064 | 0.999 | 1.011 | 1.023 | 1.112 |
| Hungary | 0.890 | 1.059 | 1.128 | 1.033 | 0.960 | 0.863 | 0.958 | 1.027 |
| India | 1.061 | 1.117 | 0.964 | 0.897 | 0.956 | 1.026 | 0.918 | 0.858 |
| Indonesia | 1.273 | 1.124 | 1.054 | 0.996 | 0.765 | 0.764 | 0.761 | 0.705 |
| Iran | 1.443 | 1.200 | 1.029 | 1.008 | 0.954 | 0.679 | 0.444 | 0.386 |
| Italy | 0.912 | 0.991 | 1.028 | 1.068 | 1.110 | 1.068 | 1.042 | 1.025 |
| Japan | 0.902 | 1.002 | 0.974 | 0.993 | 1.124 | 1.127 | 1.125 | 1.116 |

| Country | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Kenya | 1.126 | 1.039 | 0.919 | 1.059 | 0.953 | 0.924 | 0.983 | 0.853 |
| Lithuania | 0.851 | 0.917 | 1.163 | 1.026 | 0.953 | 1.017 | 1.013 | 1.134 |
| Malaysia | 1.080 | 1.082 | 0.971 | 0.847 | 0.792 | 0.971 | 1.102 | 1.081 |
| Mexico | 1.051 | 1.062 | 0.962 | 0.989 | 0.978 | 0.984 | 0.988 | 0.951 |
| Netherlands | 0.862 | 0.973 | 1.053 | 1.024 | 1.144 | 1.107 | 1.040 | 1.117 |
| NewZealand | 1.112 | 0.907 | 0.995 | 1.003 | 0.902 | 1.022 | 1.091 | 0.908 |
| Peru | 1.058 | 1.016 | 0.947 | 0.992 | 0.957 | 1.014 | 1.031 | 0.950 |
| Poland | 0.927 | 1.055 | 1.073 | 1.051 | 0.964 | 0.938 | 0.954 | 1.040 |
| Portugal | 0.925 | 0.948 | 0.981 | 1.010 | 1.128 | 1.061 | 1.050 | 1.094 |
| Singapore | 0.942 | 0.940 | 0.886 | 1.036 | 1.114 | 1.142 | 1.097 | 1.041 |
| South Africa | 1.056 | 1.029 | 0.952 | 1.027 | 0.997 | 0.935 | 0.889 | 0.868 |
| Spain | 0.862 | 0.950 | 1.004 | 0.997 | 1.143 | 1.102 | 1.102 | 1.127 |
| Thailand | 0.948 | 1.015 | 1.025 | 0.922 | 0.875 | 1.023 | 1.105 | 1.127 |
| Turkey | 1.061 | 1.051 | 0.985 | 0.930 | 0.980 | 1.006 | 1.026 | 0.881 |
| England | 1.052 | 0.975 | 0.986 | 1.007 | 0.975 | 0.954 | 0.913 | 1.006 |
| U.S | 0.937 | 1.024 | 1.093 | 0.991 | 0.956 | 0.942 | 1.007 | 0.997 |
| Vietnam | 1.036 | 0.942 | 0.920 | 0.763 | 0.806 | 0.810 | 0.772 | 1.271 |

Source: Research finding

Most of the studies on commercial and industrial policy relied extensively on the concept of revealed comparative advantage, often measured by Balassa Index and employed by cross-country and cross-industry comparison. However the statistical properties of Balassa Index distribution were criticized (Hinloopen and Van Marrewijk 2001) and its power in cross country (industry) comparison was questioned. Hence, the present section describes the statistical distribution properties of the RCA index compared with the traditional Balassa index of revealed comparative advantage. One of the main problems in application of traditional Balassa index for economic analysis is its poor ordinal ranking property (Yeats 1985). Indeed it may be the case that for a given sector, the majority of specific country indexes of comparative advantage (namely Balassa index) are concentrated slightly above (or below) one; in this situation the top-rank country in the sector may have a relatively low comparative advantage index with respect to its own specialization in other sectors. On the other hand, it may also be the case that, in another export sector flows are highly concentrated in few countries; in this case the country with the lowest comparative advantage index may still have a very high Balassa index. As a consequence, the numeric values of Balassa index won't necessarily provide the right ordinal ranking of a country's comparative advantage when the underlying distribution of index values are different across industries (see UNIDO 1982).

Table 6 indicates, by country, mean values of new RCA and RCA indexes. In both

cases, the mean new RCA index is more asymmetric than RCA mean. This may represent a problem in applying RCA Index as explanatory variable in econometric based analysis. The countries with a benchmark RCA>1 are Colombia, Ecuador, Netherlands, Kenya and New Zealand. The relatively high value of exports to Colombia and Ecuador are remarkable. This highlights the importance of flower export share in all export. While New RCA index indicates that countries of Austria, Canada, Cambodia, Denmark, Ecuador, France, Germany, Italy, japan, Netherland, Spain, Thailand have comparative advantage.

**Table 6– Average of new RCA and RCA index based on yearly export flows**

| Country | Mean new RCA | Mean RCA |
|---|---|---|
| Austria | 1.044 | 0.084 |
| Canada | 1.006 | 0.147 |
| Colombia | 1.009 | 41.432 |
| Denmark | 1.045 | 0.047 |
| Ecuador | 1.007 | 54.963 |
| Egypt | 0.931 | 0.968 |
| France | 1.047 | 0.055 |
| Germany | 1.059 | 0.081 |
| Hungary | 0.995 | 0.085 |
| Indonesia | 0.841 | 0.080 |
| Iran | 0.75 | 0.057 |
| Italy | 1.057 | 0.297 |
| Japan | 1.076 | 0.003 |
| Kenya | 0.947 | 1.446 |
| Malaysia | 0.961 | 0.774 |
| Netherlands | 1.081 | 13.459 |
| New Zealand | 0.987 | 1.185 |
| Peru | 0.982 | 0.349 |
| South Africa | 0.945 | 0.634 |
| Spain | 1.079 | 0.213 |
| Thailand | 1.013 | 0.619 |
| Turkey | 0.968 | 0.339 |
| U.S | 0.998 | 0.073 |

## 4. Conclusion

The present study aimed at identification of the world export markets of FOPs by analyzing the comparative advantage of exporting countries. Based on UN Comtrade database, some countries were selected as major FOPs exporters in the study period. Main findings

revealed the comparative advantage of countries according to 3 indices (RCA, SRCA, New RCA). But the RCA index, namely; recommends Ecuador, Colombia, Netherlands and Kenya as markets with the highest exporting comparative advantage. In other words, the market mostly followed the competitive structure. Among 28 importing countries, Netherlands, Colombia, and Kenya have the largest export share and high potential in leading FOPs world export market. As the Galtonian regression for a set of FOP exporting countries indicates that specialization in export is diverted.

The current paper intended to present a new database on new Ricardian comparative advantage measure proposed by Costinot et al. (2012). In this regard, some FOPs exporters of the new index are presented as comparison with the traditional Balassa Index. The new measure proposed by Costinot et al. (2012), conceptually fits 8 country sector of Ricardian comparative advantage better than Balassa Index. In fact, based on the export flows computation, Balassa Index mixes up exporter with importers and sector specific factors driving export flows. The results of new RCA for 38 countries indicate that compared to other countries, Cambodia, Canada, Chile, Hong Kong, Colombia, Cuba, Ecuador, Egypt, India, Indonesia, Iran, Kenya, Malaysia, Mexico, New Zealand, Peru, South Africa, Turkey, England and Viet Nam have the highest value of index. Netherlands was found to have the comparative advantage in the FOP sector.

The Calculations of the RCA index indicate that Iran has no comparative advantage and the volatility is observed over the period of the study. But in the New RCA index, it has a comparative advantage in 2007-2010 periods. Iran could have a high potential for export of FOPs, but the realization of this case depends on greater technical knowledge, proper management and the optimal use of existing capacities.

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PAPER

# Asymmetrical Linkages between Exchange Rate Shocks And Investment in Agriculture

**Ali Akbar Baghestany*** • **Habibeh Sherafatmand****

**Abstract** Issue of administering a currency regulatory system has always been one of the key issues in developing countries. The inharmonic exchange rate fluctuates with economic changes, indicating that the direction of domestic and foreign macroeconomic policies are inappropriate, which in turn create problems in assessment of investment projects efficiency. Yearly time series of 1978–2017 are used and a Non-linear Autoregressive Distributed Lag (NARDL) model checks the asymmetrical relationship between Exchange rate shocks and Investment in agriculture. In this study, the Hodrick Prescott filter is used to derive exchange rate shocks. Results have shown that there are asymmetrical linkages between these two variables and therefor negative exchange rate shocks have positive effect and positive exchange shocks have negative and significant effect on investment in agriculture. The occurrence of any currency shock causes a turbulence in economy and leads to reallocation of resources from investing in productive activities- such as agricultural production- to nonproductive activities such as speculating in foreign exchange market, gold and coins. One way to cope with this situation, could be stabilizing exchange rate market in order to minimize uncertainty at financial markets.

**Key words:** Exchange volatilities; NARDL; Hodrick Prescott; investment; agriculture.

**JEL Classification:** C22; E22.

## Introduction

Developing economies suffer from a high degree of macroeconomic uncertainty. Growth, inflation, real exchange rates and other key macroeconomic variables are much more volatile, and the consequences of this excess volatility for aggregate performance in several dimensions - growth, investment and trade -have attracted some attention in recent empirical literature. In the case of investment, this concern

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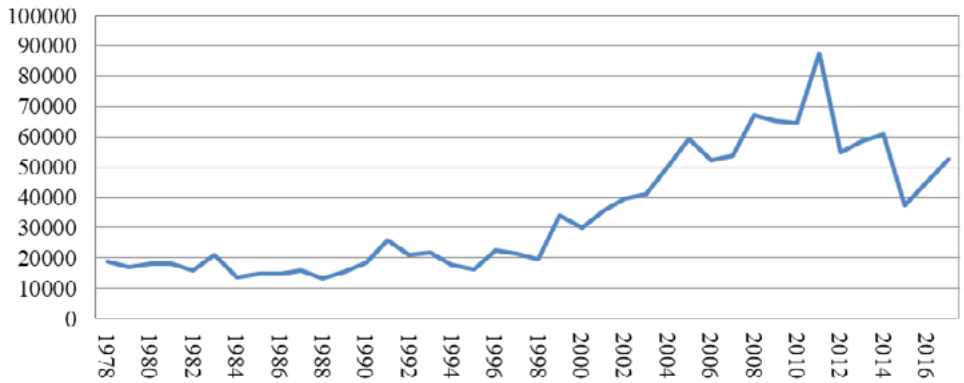
has been renewed by recent theoretical work identifying several channels through which uncertainty can impact on investment, under various assumptions about risk aversion, adjustment costs to investment and other factors. Iran, has a high degree of uncertainty in the macroeconomic variables (Luis Serven 2002). One of the major challenges related to the management of the foreign exchange market in Iran comes back to agricultural investment. Among different investments in economic sectors, investment in agricultural sector possesses a special prominence and position since investment in agricultural sector not only induce the growth of production and employment in this very sector, but also encourages production and employment growth in other economic sectors and henceforth identifying effective factors on investment in agricultural sector and adopting suitable policies for increasing investment, possesses a supreme prominence (Chabokrou and Jokar, 2007). In Iran, the notions of finance and investment have always been facing several difficulties due to deep independence to oil revenues and instability of its price as well as the high risk involves around it; and for this reason, investing in different sectors, including agriculture, has always experienced severe fluctuations (Jalaee and etal, 2014).

**Agricultural investment trend**

Investigating investment trend at 2011constant prices indicates a slowdown in investment. Many of the investments have been depreciated due to inflation and have lost their true value. In spite of the uptrend, with a mild slope, the trend of investment at constant prices, has been fluctuating and decreasing since 2011 then. Hence, inflation seems to have led to a sharp decline in investment in fixed prices.

**Chart 1.** agricultural investment trend during 1978-2016 in constant price (2011=100) billion Rials

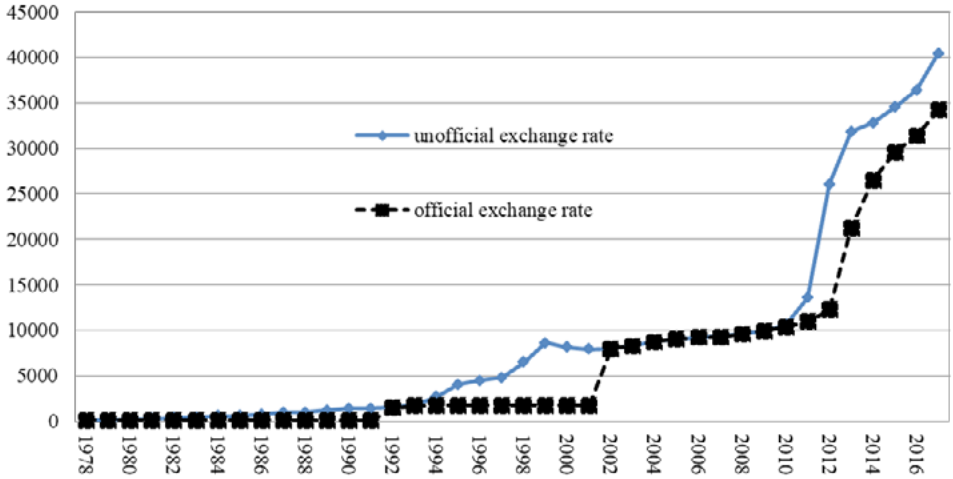



**Real exchange rate trend**

The general trend of exchange rate over 1978-2016 has been incremental. The increment

of the exchange rate, followed by fluctuations in relative prices, with unsustainable economic conditions and rising inflation, can increase uncertainty in foreign trade, the consequences of which include the reduction of trade volumes, foreign direct investment, and slow economic growth. On the other hand, the fluctuation of the exchange rate can remove interest rates from its equilibrium path and cause damage to the real economy. In addition, exchange rate risk can cause fluctuations in foreign exchange earnings, in which case economic development planning will take place in an uncertain environment.

**Chart 2.** (Un)official dollar exchange rate trend during 1978-2016 in Rials




## Literature review

Darby et al. (1999) demonstrate that if a firm's opportunity cost of waiting is lower than its present value or scrapping price, the firm will not invest. However, under lower uncertainty, the same firm will invest. This suggests that uncertainty may promote or hurt investment. By estimating an aggregate investment function for France, Germany, Italy, U.K, and the U.S., Darby et al. (1999) found that investment increases if exchange rate uncertainty is lowered. Similarly, Sarkar (2000), using the real option model of McDonald and Siegel (1986) and Dixit and Pindyck (1994), demonstrate that uncertainty may be negatively or positively associated with investment. Bernard Njindan and Sin-Yu Ho (2017) used annual data for Ghana covering the period 1980–2015, found that exchange rate uncertainty has differential impacts on domestic investment in the short run. That is, while the current level of uncertainty enhances investment, previous levels of uncertainty dampen investment. In the long run, exchange rate uncertainty has a positive impact on domestic investment. Zardashty(2014) determined uncertainty index of the real exchange rate through auto-regressive patterns of conditional variance heterogeneity(EGARCH). His results showed that the index of real exchange rate uncertainty has a significant negative effect on private investment to GDP ratio, and imports of capital commodity and inflation have negative effects on private investment

to GDP ratio. LS. Thabetheand B. Nyhodo (2014), Determined the level of output gap for the South African agricultural sector and its link with food inflation. Three different methods, namely the linear trend, the Hodrick-Prescott filter, and the production function approaches were used. The results are inconsistent, with each one showing a different picture. The linear trend results show that the agricultural sector is under utilising the available resources (factors of production and available technology). Meanwhile, the HP method and production function results outline that the agricultural sector is over utilizing the available resources (hence high inflationary pressure). The South African agriculture GDP is higher than it can be supported by the existing labor and capital resources. Wong (2007) followed Sarkar (2000) by re-examining the effect of uncertainty on investment. However, unlike Sarkar (2000), Wong (2007) used investment timing instead of the probability of investment. He found that higher uncertainty shortens the expected exercise time and thus, enhances investment for relatively safe projects. This positive uncertainty investment nexus is more likely for high growth projects than for low growth projects. Harchaoui, and etal (2005) Using industry-level data for 22 Canadian manufacturing industries, to examine the relationship between exchange rates and investment during the period 1981–97. Their empirical results show that the overall effect of exchange rates on total investment is statistically insignificant. Lafrance and Tessier (2001) also find an insignificant link between the Canadian real exchange rate and aggregate investment. Lee and Shin (2000) emphasize the role of variable inputs - the larger their output share, the stronger the more likely is investment to rise with uncertainty. Campa and Goldberg (1995) attribute this difference in investment response between the 1970s and 1980s to the decline in industry export exposure as U.S. firms progressively increased their reliance on imported inputs. Furthermore, their empirical findings show distinct investment patterns across industries with different price-over-cost markup ratios. They find that investment in high-markup industries with an oligopolistic market structure is less responsive to exchange rates. Abel and Eberly (1994) comes into play that higher degrees of irreversibility and/or uncertainty make it more likely that firms will ex-post find themselves stuck with excessive capital, making the long-run capital stock and investment higher than they would have been otherwise. Goldberg (1993) finds that a real depreciation (appreciation) of the U.S. dollar was likely to generate an expansion (reduction) in investment in the 1970s, but that the opposite pattern prevailed during the 1980s.

## Objective of the Study

The focus of this research is to select the best estimates and explains of agricultural investment. Currency uncertainties with a nonlinear method, are simulated and explained. The validity of this nonlinear ARDL is tested with Wald test.

So, the study:

- Survey the effect of positive and negative shocks of exchange rate on agricultural investment.
- Determine which factor effects more on agricultural investment.

- Use Wald test for asymmetric exchange rate shocks hypothesis.

## Data

Data on agricultural investment in Iran were provided by annual statistics from 1978-2016. All of the following data is from the statistical office of the Central Bank of Iran:

- Investment in agricultural sector in Rials using a constant price of 2011 = 100
- Annual real GDP using a constant price of 2011 = 100
- Short run interest rate on bank facilities and loan
- loans Given to agricultural sector by banks

## Methodology

### *NARDL Method*

When the order of integration is not same of all variables then we use the lagged variables as proposed by Pesaran et al. (2001). Imagine two variables and their relation as follow:

$$y_t = \beta^+ X_t^+ + \beta^- X_t^- + u_t \quad (1)$$

$$X_t = X_0 + X_t^+ + X_t^-$$

To check the asymmetries, we have to make a separate series for appreciation and depreciation as proposed by Bahmani-Oskooee and Soharabian (1992). A series of exchange rate will be divided in its positive movements or appreciation, as indicated by $X_t^+$, and negative movements or depreciation, as indicated by $X_t^-$, and is given as follows:

$$X_t^+ = \sum_{j=1}^{t} \Delta X_j^+ = Max(\Delta X_j, 0), X_t^- = \sum_{j=1}^{t} \Delta X_j^- = Min(\Delta X_j, 0) \quad (2)$$

To check the impact of positive and negative movements of one variable on the other variable, Equation (2) will be transformed as:

$$z_t = \beta_0^+ Y_t^+ + \beta_0^- Y_t^- + \beta_1^+ X_t^+ + \beta_1^- X_t^- \quad (3)$$

The non-linear ARDL model can be described as follows

$$y_t = \sum_{j=1}^{p} \varphi_j Y_{t-j} + \sum_{j=0}^{q} (\theta_j^+ X_{t-j}^+ + \theta_j^- X_{t-j}^-) + \varepsilon_t \quad (4)$$

We can obtain the error correction variable; the slope of the ECM must be negative and significant to confirm that there is short-run relationship between the variables. That also indicates the speed of adjustment towards the long-run relationship of Banerjee et al. (1998).

$$\Delta Y_t = \rho Y_{t-1} + \theta^+ X^+_{t-1} + \theta^- X^-_{t-1} + \sum_{j=1}^{p-1} \gamma_j \Delta Y_{t-j} + \sum_{j=0}^{q-1} (\vartheta^+_j \Delta X^+_{t-j} + \vartheta^-_j \Delta X^-_{t-j}) + \varepsilon_t$$
$$= \rho \xi_{t-1} + \sum_{j=1}^{p-1} \gamma_j \Delta Y_{t-j} + \sum_{j=0}^{q-1} (\vartheta^+_j \Delta X^+_{t-j} + \vartheta^-_j \Delta X^-_{t-j}) + \varepsilon_t \quad (5)$$

In which

$$\rho = \sum_{j=1}^{p} \varphi_j - 1, \quad \gamma_j = -\sum_{i=j+1}^{p} \varphi_i \quad for \ \ j = 1, ...., p-1 \quad (6)$$

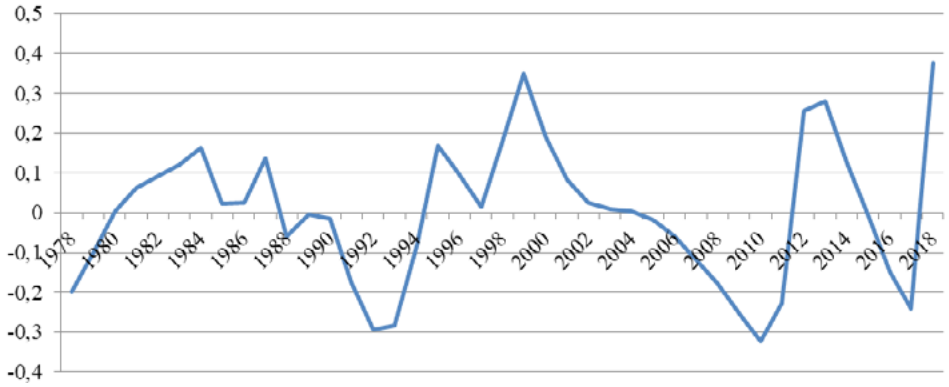
$$\theta^+ = \sum_{j=0}^{q} \theta_j{}^+, \qquad \theta^- = \sum_{j=0}^{q} \theta^-_j, \qquad \vartheta^+_0 = \theta^+_0, \vartheta^+_j = -\sum_{i=j+1}^{q} \theta^+_i \quad for \ \ j = 1, ..., q-1$$

$$\vartheta^-_0 = \theta^-_0, \vartheta^-_j = -\sum_{i=j+1}^{q} \theta^-_i, \quad for \ i = 1, ...., q-1$$

**Calculate exchange shocks with Hodrick Prescott filter (HP)**

The trend of exchange rate changes is one criteria for uncertainty or risk in economic activities. In this study, Hodrick Prescott filter is used to investigate currency shocks. With this filter, you can distinguish between positive and negative shocks of the exchange rate. The chart number 3 shows the trend of currency shocks. Changing the shock sign also indicates uncertainty and exchange rate risk. In this study, with the help of the Hodrick-Prescott filter (HP), currency shock has been extracted.

**Chart 3.** Exchange Shock using the HP filter




**Results**

Econometric modeling using time series in usual and traditional manner is based upon the assumption of fixed variables of time series. Investigating the state of fixed data prevents the estimation of false regressions. Hence, in the first stage the structure of the

utilized data should be evaluated regarding their fixed state. In order to test for the fixed variables, the Augmented Dickey – Fuller test (ADF) is used. The results for Dickey – Fuller test (in table 1) shows that logarithm of GDP (LGDP) and logarithm of currency shocks (shockLNOR) are stationary I(0), but logarithm of agricultural investment (LI), logarithm of given loan to agricultural sector (Lloan) and logarithm of interest rate of given loan to agricultural sector (LR) are non-stationary at level but stationary at 1st difference I(1).

**Table 1.** The Results for Variable Stability

| Variables | AIC | ADF in level | ADF with one difference |
|---|---|---|---|
| LI | 2 | -0.94 | -4.87*** |
| SHOCKLNOR | 1 | -3.96** | |
| LGDP | 1 | -4.74*** | |
| LLOAN | 1 | -3 | -4.61*** |
| LNOR | 0 | -2.39 | -3.56** |
| LR | 0 | -2.15 | -5.74*** |
| Critical value | | | |
| 1% | | -4.22 | -3.61 |
| 5% | | -3.53 | -2.93 |
| 10% | | -3.2 | -2.6 |

Ref: finding research

In order to investigate the nonlinear and asymmetric linkage between exchange rate and its shock on investment in agriculture, a Non ARDL model estimated. The optimal lag has been selected through Akaic criterion. The results of the NARDL model are presented in table 2. Ramsey Reset Test has been used for validation test. The results of this test show that the model is well-specified. LM test has been used to investigate auto correlation. The results of this test also show that the zero hypothesis is not rejected, and the final model does not have the problem of a consistent correlation. The Bryus-Pagan-Gadfree test (BPG) has been used to investigate the phenomenon of heteroskedasticity. The results of this test also show that for the final model, the zero hypothesis is not rejected, and therefore the pattern do not have the problem of variance Heteroskedasticity. Results of NARDL show Positive shocks of exchange rate (SHOCKLNOR_POS) has had a negative effect on investment in agriculture in the current and previous two period (which shocks are derived by Hodrick Prescott Filter). While negative shocks of exchange rate have had a positive effect on current investment.

**Table 2.** Results of initial pattern

| **Selected Model: NARDL(1, 2, 0, 0, 0)** | | | | |
|---|---|---|---|---|
| **Variable** | **coefficient** | **Standard error** | **T statistic** | **Prob.** |
| LI(-1) | 0.37 | 0.10 | 3.57 | 0.002 |
| SHOCKLNOR_POS | -0.667 | 0.252 | -2.646 | 0.014 |
| SHOCKLNOR_POS(-1) | -0.801 | 0.238 | -3.361 | 0.003 |
| SHOCKLNOR_POS(-2) | -0.765 | 0.298 | -2.564 | 0.017 |
| SHOCKLNOR_NEG | 0.699 | 0.334 | 2.094 | 0.047 |
| LGDP | 0.203 | 0.608 | 3.625 | 0.001 |
| LR | 0.329 | 0.145 | 2.261 | 0.033 |
| LLOAN | 0.951 | 0.246 | 3.862 | 0.001 |
| LNOR | -0.7 | 0.167 | -4.2 | 0 |
| C | -45.224 | 9.73 | -4.647 | 0 |
| adj $R^2$ | F-statistics | RESET | LM | BPG |
| 0.99 | 881.08 | 2.9 (0.17) | 0.217 (0.806) | 0.908 (0.504) |

The numbers in parentheses are minus one representing a significant level.
Ref: research Findings

Then this paper use Wald test to check (A)symmetric linkage between positive and negative shocks. The results of the F test in table 3 shows that the hypothesis of symmetry between positive and negative shocks is rejected and hence the effect of currency shocks are asymmetric.

**Table 3.** Results of Wald test

| **Null hypothesis: symmetric ( there is no difference between positive and negative shocks)** | | | |
|---|---|---|---|
| **Test statistic** | **value** | **Degree of freedom** | **prob** |
| t-statistic | -2.99 | 25 | 0.0062 |
| F-statistic | 8.95 | (1.25) | 0.0062 |
| Chi-square | 8.94 | 1 | 0.0028 |

Ref: finding research

**Estimating the Long-Run Pattern**

NARDL pattern is a method which considers the short-run dynamics among the variables and estimates the long-run relationships as well. In this pattern first the dynamic model, then the long-run relation and error correcting pattern are fitted. The results for estimating the dynamic pattern of private investment model in agricultural

sector are in tables 4 and 6. Among the advantages of estimating the dynamic pattern is that we can test for the presence of a long-run equilibrium relation. In the long run, changes in positive currency shocks have had a negative effect on investment.

**Table 4.** The results of long-run relationship between Asymmetric shocks of foreign exchange and investment inagriculture

| **Variable** | **Coefficient** | **Standard error** | **T statistic** | **Prob.** |
|---|---|---|---|---|
| C | -45.22 | 7.884 | -5.73 | 0.000 |
| LI(-1) | -0.629 | 0.111 | -5.64 | 0.000 |
| SHOCKLNOR_POS(-1) | **-0.56** | **0.401** | **-1.41** | **0.169** |
| SHOCKLNOR_NEG | **0.699** | **0.340** | **2.05** | **0.051** |
| LGDP | 2.203 | 0.515 | 4.27 | 0.000 |
| LR | 0.329 | 0.193 | 1.699 | 0.102 |
| LLOAN | -0.95 | 0.270 | -3.52 | 0.002 |
| LNOR | **-0.7** | **0.205** | **-3.41** | **0.002** |

Ref: finding research

Results of F test also accept the long run relation. H0 in table 5 is rejected and the presence of long-run relation is confirmed.

**Table 5.** Results of F test that show nonlinear long run relation between Currency shocks and agricultural investment

| **F-Bounds Test** | | Null hypothesis: no long run relation | | |
|---|---|---|---|---|
| **Test Statistic** | Value | Significant. | I(0) | I(1) |
| | | | Asymptotic: n=1000 | |
| **F-statistic** | **8.0284** | 10% | 2.2 | 3.09 |
| **k** | 4 | 5% | 2.56 | 3.49 |
| | | 2.50% | 2.88 | 3.87 |
| | | 1% | 3.29 | 4.37 |
| **Actual Sample Size** | 36 | | Finite Sample: n=40 | |
| | | 10% | 2.427 | 3.395 |

| | | | | |
|---|---|---|---|---|
| **Actual Sample Size** | 36 | | Finite Sample: n=40 | |
| | | 5% | 2.893 | 4 |
| | | 1% | 3.967 | 5.455 |
| | | | | |
| | | | Finite Sample: n=35 | |
| | | 10% | 2.46 | 3.46 |
| | | 5% | 2.947 | 4.088 |
| | | 1% | 4.093 | 5.532 |

Ref: finding research

**Estimating the Error Correction pattern**

The presence of co-integration among a set of economic variables provides a statistical base for using the error correction pattern. The main reason behind the popularity of these patterns is that they connect the short-run fluctuations of variables with the long-run equilibrium values. In the short term, current currency shocks and the two past period currency shocks have had a negative and significant impact on investment in agriculture. In Short term changes in negative shock had no effect on investment. Results of ETC (-0.629) show that the short-term imbalances and inequalities will adjusted in the long run and it lasts about 1.6 period (a year and 6 months) till all these imbalances would adjusted.

**Table 6.** The results of short-term imbalances adjustment in the ECM model with regard to the exchange rate asymmetry

| Name | Variable | coefficient | Standard error | T statistic |
|---|---|---|---|---|
| D(SHOCKLNOR_POS) | **-0.667** | **0.255** | **-2.613** | **0.015** |
| D(SHOCKLNOR_POS(-1)) | **-0.702** | **0.252** | **-2.782** | **0.010** |
| D(SHOCKLNOR_POS(-2)) | **-0.765** | **0.269** | **-2.845** | **0.009** |
| LLOAN | 0.951 | 0.122 | 7.802 | 0.000 |
| LNOR | **-0.700** | **0.098** | **-7.151** | **0.000** |
| CointEq(-1)* | **-0.629** | 0.083 | -7.603 | 0.000 |

Ref: finding research

In order to eliminate the effects of the scale, standardized coefficients are estimated. Comparing the standardized coefficients of currency shock with other variables, while

showing negative effects, shows that the effect of GDP and loan and free market exchange rate are stronger than the effect of currency shock. In all three dynamic model, long run and standardized model, LGDP had positive effect on investment in agriculture which is in accordance to theory. Economic production and growth, what GDP represents, has a large impact on nearly everyone within [the] economy. When GDP growth is strong, firms hire more workers and can afford to pay higher salaries and wages, which leads to more spending by consumers on goods and services. Firms also have the confidence to invest more when economic growth is strong, and investment lays the foundation for economic growth in the future. When GDP growth is very low or the economy goes into a recession, the opposite applies (workers may be retrenched and/or paid lower wages, and firms are reluctant to invest). In all four estimated model, logarithm of exchange rate (LNOR) had negative effect on investment. The exchange rate can play a crucial role in investment decisions. Investment reacts differently to exchange rate shocks in low- and high-volatility. When the exchange rate variability is very high (shock LNOR_pos) firms may be uncertain about the persistence of exchange rate movements. As a result, the corresponding changes in the output demand and the price of imported investments are treated as transitory. Firms delay their adjustment process. This, in turn, weakens the link between investment and exchange rates.

**Table 7.** Standardized Final Results of the NARDL Model for the Study of the Nonlinear Effects of Currency Shocks and Exchange Rate on Investments in Agriculture

| **Variables** | **Coefficient** | **Standard coefficient** |
|---|---|---|
| LI(-1)*** | 0.37 | 0.374 |
| ***SHOCKLNOR_POS | **-0.667** | **-0.147** |
| SHOCKLNOR_POS(-1)*** | **-0.801** | **-0.176** |
| SHOCKLNOR_POS(-2)*** | **-0.765** | **-0.165** |
| SHOCKLNOR_NEG** | **0.699** | **0.160** |
| LGDP*** | 2.203 | 0.309 |
| LR*** | 0.329 | 0.053 |
| LLOAN** | 0.951 | 0.183 |
| LNOR*** | -0.7 | -0.392 |
| C | -45.2244 | - |

Represents a significant at 10%*
Ref: finding research

**Consequence**

This study, used time series data from 1978–2017 and a non-linear autoregressive distributed lag (NARDL) model to check the asymmetrical relationship between Exchange volatilities and agricultural Investment. This study used Hodrick Prescott filter to derive exchange rate volatilities. Results have shown that:

- in accordance to Wald test There is a negative and significant relationship between exchange rate shocks and investment in the agricultural sector in the short and long term.
- There are asymmetrical linkages between these two variable and therefor negative exchange volatilities have positive effect and positive exchange volatilities have negative and significant effect on agricultural investment.
- The effect of negative shocks were less than positive shocks.
- With respect to negative impact of exchange rate on investing in agricultural sector, if this exchange rate increases remain stable, investment in the agricultural sector is declining very severe. Given the direct and historical impact of investing in the current period, investment will also be a problem for future years. Since given loan have had a positive impact on the investment, it is suggested that government increases these loans and facilities. The purpose of this policy is to prevent the current investments decreases.
- With respect to negative reaction of investment to dollar-denominated shocks, the decline in dollar dependency and the use of other high-yielding currencies such as the euro are appropriate.

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PAPER

# Western Balkans countries income convergence in the context of EU membership – dynamics and determinants

**Gjorgji Gockov*** • **Angela Antovska****

**Abstract** The Western Balkan countries face relatively low levels of income over a longer period of time, indicating insufficient dynamics and intensity of income convergence, compared to the developed EU economies. The issue of income convergence of Western Balkan countries is particularly important in the context of their EU membership. The paper tests the existence and dynamics of income convergence of the Western Balkan Economies using both sigma (σ) and the beta (β) measures of real convergence. The evaluation of the appropriateness of the income convergence dynamics of the Western Balkan Economies is derived on the basis of a comparative analysis with the achievements of the New Member States, Baltic countries and EU - 14 in the last 20 years. The results outline that Western Balkan countries are stagnating, and they have the slowest convergence. In addition, this paper makes an overview by fixed effects panel data model of the determinants of the convergence process in the Western Balkan countries to the EU-14, taking them as complementary part of this process. The results show that Western Balkan countries should focus mainly on agriculture and banking sector reforms in order to speed-up the convergence process.

**Keywords:** Income convergence; GDP per capita; Western Balkans countries; Dispersion; Panel regression.

**JEL Classification:** O47; O11; F43; F15

## Introduction

In the 1990s, as other small countries of Eastern Europe implemented reforms progressively and began a rise toward prosperity, parts of the Western Balkans have spent those years in armed conflict and lagged in making structural changes to their

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legacy socialist systems. In the past two decades all the economies in the Western Balkan countries[1] have made strides in transformation to market economy, reform their public finances and banking systems and rekinded economic growth. Besides these developments, the region is still far behind EU economies. The countries are held back by weak institutions, corruption and government dominance in some industries. Western Balkans countries need to tackle their low productivity and speed up reforms in all fundamental areas such as increasing exports, investments, and employment.

The issue of convergence is very important from an economic point of view because it describes the progress of a country towards elimination of disparities in the levels of outputs and income. European developing economies lay their hopes on the expectation that the process of European integration will lead to a significant increase in living standard and thus to approach the level of income in developed European countries. The key issue in this paper is weather the process of EU membership of Western Balkan countries will accelerate the pace of growth and income convergence and catch up to the living standard of developed European economies?

Even though there are many papers that cover the convergence path of New member states and Baltic states compared to the EU core countries, still not so many papers examine the convergence process between EU countries and the Western Balkan. This paper will try to enrich the literature on WB convergence path towards EU complementing the existing papers by confirming that like in Stanisic (2016) and Meksi and Xahja (2017) the speed of income convergence is slowest in WB and the global crises had a negative influence and had interrupted this process. Apart from this in the paper is added simple convergence analysis on WB and BC as a separate group to prove that the BC have the fastest convergence and that we have convergence path similar of the New Member States. In addition, the paper is focusing on the level of income convergence of the selected countries before and after their EU accession, supporting the premise of the positive effects of the EU membership on the dynamics of real convergence, as an important acquirement for the candidate countries.

Income convergence can be proved in two ways and the paper tests the existence and dynamics of income convergence of the Western Balkan Economies using both sigma (σ) and beta (β) measures of real convergence. In evaluating the performance of Western Balkan countries (WBC), the so-called New Member States[2] and Baltic countries[3] are taken in account. Therefore, an additional objective is to analyse the income convergence not only of WBC in the context of the old EU core, but also to have a clear picture of the income convergence process of NMS and BC compared with EU-14[4]. The discussion will be based on the classical approach of economic convergence for developing countries. The data source is the database of the IMF Outlook and Eurostat. The paper is structured in five sections. After the Introduction, the first section presents

[1] Western Balkan countries – Eurostat classification- http://ec.europa.eu/trade/policy/countries-and-regions/regions/western-balkans/)

[2] New Member States further in paper are analyzed in two groups: Czech Republic, Hungary, Poland, Slovak Republic and Slovenia as NMS2004, and Romania and Bulgaria NMS2007.

[3] Baltic countries (Estonia, Lithuania, Latvia)

[4] EU-14 includes EU-15 without Greece

the theoretical basis of income convergence. The second part outlines the facts and trends in the real convergence of the Western Balkans countries (WBC), measured according: GDP per capita (PPP) and catching up rate. The research methodology is explained in the third section, while the results of the research are presented in the fourth section of the paper. In the next section an additional panel data analysis of determinates of the convergence process are presented. Finally, the conclusions of the research are summarized.

## Theoretical framework and literature review

The convergence concept is at the core of growth theories and has been a subject of great importance since the eighteenth century. Convergence is a process describing the progress of a country towards elimination of disparities in the levels of outputs and income. The convergence occurs if relatively poorer countries (or regions) grow faster than relatively richer ones, thereby allowing the former to catch up with the latter ones. As a result, all economies should over time eventually converge in terms of level of income per capita.

The discussion of convergence cannot take place without an outline of the basic theory. The convergence concept has evolved from neoclassical growth theory to the new growth theory. The theoretical insights of the neoclassical growth theory are provided in Solow model (1956) and predict income convergence in the long run. In the transition to steady state, economies far "below" steady state will grow faster. Absolute convergence assumes that if the economies share the same steady state, implying having similar technology and features, the economies with low per capita incomes will grow faster. In the long run, the less developed economies will converge to the same income level and grow at the same rate as the developed one. On the other hand, if economies have different structural variables (population growth, investment in capital and the depreciation rate of capital), less developed economies, with lower initial per capita income and capital level, will grow faster than developed economies after controlling for differences in steady state. In this case, conditional convergence contends and even though their growth rates will eventually converge over time the level of development between these economies will never equalize.

Mankiw, Romer & Weil, (1992) in their paper also examine the implications of the Solow model for convergence in standards of living. The conclusion is that, if population growth and capital accumulation remain constant, then countries converge at about the rate the augmented Solow model predicts. As opposed to the neoclassical model, endogenous growth theories stress the importance of additional variables, besides investments, population growth and depreciation of capital for determining income level and growth and therefore support the hypothesis of conditional convergence rather than absolute.

These theories wish to explain how technology grows within the model by including various processes. Lucas (1988) stress the importance of human capital and R&D for long-run economic growth and conclude that differences in these factors across

economies can explain why some regions experience high growth and others do not. Regions that invest more in human capital and in innovation activities will experience higher growth than regions that do not.

In the first decade of the 21 century with the enlargement wave of EU with the Central and Eastern European countries there is increase in the number of relevant papers dedicated to income convergence of the GDP per capita, that estimate the presence of β- and σ-convergence and confirm the existence of income convergence theorem. In what follows we list only a selected papers in this field. In the work of Matkowski and Próchniak (2004) is empirically tested the income convergence between the transition countries of Central and Eastern Europe (CEE8), as well as between the groups of CEE8 and the EU-15 during the period between 1993 and 2003. The conclusion was that the large gap in development between the countries and the groups of the CEE8 and the EU-15 decreases over time. In the study (Matkowski and Próchniak, 2007), conducted on the same sample, but over a longer period, the authors provide evidence for both types of convergence between the the „old" EU and the eight CEE countries that joined in 2004, whereby the catching up appears to have been more intense in the late 1990s and early 2000s. Later studies (Próchniak, 2008; Vojinovic and Oplotnik, 2008; Vojinovic, Acharya and Próchniak 2009, Vojinovic, Oplotnik, and Prochniak 2010) confirm that the patterns of the economic growth of the new member states CEE8 and EU-15 in the 1990s and the first decade of the 21st century were in accordance with the income convergence theory and the results only differ in the estimated speed of this convergence. After adding Bulgaria and Romania to the sample there is significant evidence of absolute convergence of the region and additionally strengths the conditional convergence of the entire CEE, shows the paper of Szeles and Marinescu (2010).

The work of Rapacki and Prochniak (2009) is the most comprehensive in terms of its sample of 27 transition economies and extended time frame (1990-2005). However, the authors find evidence of strong and significant β- and σ-convergence only for subsamples (e.g., the eight Central European countries) in certain subperiods 2000-2005. Vamvakidis (2009) and Cavenaile and Dubois (2011) in their works examined the process of income convergence and results showed large differences in the speed of catching up with the average income of the EU developed countries. Stanisic (2016) confirms the existence of the income convergence of the CEE10 and the EU-15 countries in the pre-crises period, but emphasizes that the global economic crisis has negative impact and interrupted this process. An undeniable reduction in the gap at the level of development between the „new" and the „old" member states was confirmed in a study by Gligorić (2014). Mexi and Xahja (2017) after calculating the sigma and beta in their paper point out that WB have higher growth, but the New member states have higher convergence. Also, they have broadened their analysis with close up examination of the sectoral convergence and conclude that there is productivity lag behind EU in agricultural sector. Krstevska (2018) concludes that the convergence of WB is still rather slow relative to the EU, emphasizing that WB convergence is mostly comparable to the latest, less developed New Member States. The author gives an overview of the nominal and real convergence processes complemented by the convergence of the main

macroeconomic indicators in the WB countries. Regardless of the numerous studies on the income convergence in the case of the Baltic countries and New Member States, researches on this topic for the Balkan countries' economies are rare. In particular the majority of the research do not include all of the Western Balkan countries and the authors used samples as a represents from the full Balkan group (Bjorksten (2000), Sarajevs (2001), Amplatz C. (2004), Fidrmuc and Korhonen (2006), Kutan and Yigit (2004,2005 & 2009), El Ouardighi and Somun-Kapetanovic (2007 and 2009), Bonetto et al.(2009), Del Bo et al. (2010), Sideris (2010), Tsanana et al. (2013), Nenovsky and Tochkov (2014). Ancona (2007) in her study included Mediterranean countries in an attempt to estimate the convergence of income per capita and concluded that the Balkan countries aspiring EU accession have higher growth rate than the EU average during 2000-2004.

**Real convergence or divergence of the Western Balkans – stylized fact**

In this section, a brief analysis of the trends in the real convergence of the Western Balkans countries (WBC) is made, measured according to the two most used indicators of real convergence: annual changes of GDP per capita calculated according to the purchasing power parity (PPP) (1) and catching up rate (2).

$$\triangle GDP_{i,t}^{pc} = \frac{y_{i,t}}{y_t^*} - \frac{y_{i,t-1}}{y_{t-1}^*} \quad (1)$$

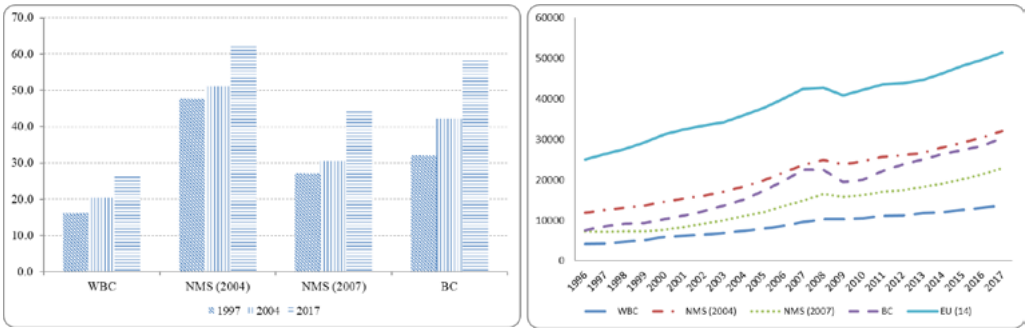
where is GDP *per capita* measured by purchasing power standard of a country *i* in year *t*, and  is the average of EU-14 in year *t*.

$$R_{catch-up} = 100 * \frac{y_{it} - y_t^*}{(y_{it-1} - y_{t-1}^*)} \quad (2)$$

where  is GDP *per capita* by PPS of a country *i* in year *t*; $y^*_t$ – is the average GDP *per capita* by PPS of EU-28 in year *t*; Δ- is difference between *t* и *t-1*.

**Figure 1.** GDP per capita (in current prices, PPP)

(EU-14=100, in s%) (GDP per capita PPP in international l dollars)




Source: IMF, EUROSTAT, authors' calculation

The values and trends of these indicators for the WBC are compared with those of the two groups of new EU Member States (NMS2004, NMS2007) and the Baltics countries (BC), in order to see if the process of joining to EU contributed to accelerating the real convergence.

From Figure 1 one can conclude that the WBC in the past 20 years did not realize significant rate of real convergence. Namely, GDP per capita registered a modest increase from 16% in 1997 to 26% in 2017 of the average EU-14 GDP per capita. This increase of 10 percentage points is significantly lower compared to the other groups of countries NMS2004, NMS2007 and BC, with the dynamics of real convergence being the highest in the BC (increase of 27 percentage points). In this comparison, the initial level of convergence should be taken into account: in 1997 the GDP per capita in NMS2004 was 48%, in NMS2007 was 27%, and in BC was 32% of the average in the EU-14, that is a higher starting base than WBC 16%. This is important because according to the neoclassical growth theory, economies with lower initial level of income tend to grow faster in comparison with economies with higher initial level of income. However, this obviously cannot be confirmed by this analysis.

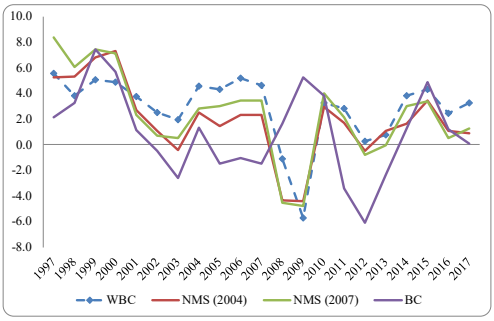
Analyzing the individual periods, the most significant dynamics of real convergence in NMS2004, NMS2007 and BC was achieved in the period before and after the EU membership, (the difference in dynamics in relation to the WBC was particularly increased in the period after 2004). In the case of WBC, in the last 5 years, the dynamics of real convergence has stagnated which is not the case with other groups of countries that are subject to this analysis. This clearly indicates the positive effects of the EU membership process on the dynamics of real convergence.

The calculation and analysis of catching up rates gives similar conclusions. This rate basically confirms (1) the existence of differences in GDP per capita growth (which is a necessary but not sufficient condition for convergence); and (2) the need for less developed economies to realize positive differences in growth over a long period of time. Such movements are sustainable in the long run only if less developed countries realize not only higher economic growth rates but also rapid rates of improvement of productivity factors and production efficiency. Given that the rate is generally calculated on the basis of historical growth rates, it serves as a framework for ex-post analysis of convergence dynamics. In case of negative catch-up rates, disparity between countries concerned and the EU-14 is decreased and vice versa.

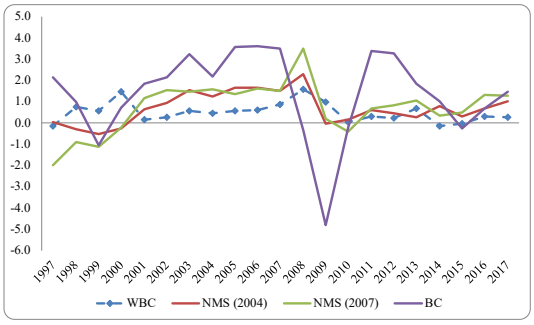
As it is shown on Figure 2 WBC realized positive catch up rates almost in the whole period, which means that the disparity between WBC and EU-14 has permanently increased. Compared with the other groups of countries, the WBC realized the highest positive rate on average, i.e. the divergence is greatest in this group of countries. This is particularly noticeable in the period after 2000, when NMS2004, NMS2007 and BC have significantly reduced the dynamics of divergence in relation to EU-14. It corresponds with the period before and after the EU membership. Only in the years during the crisis (2008 and 2009) WBC, as well as NMS2004 and NMS2007, realized negative rates, i.e. there was a tendency of decreasing the disparity with respect to EU-14. This is due to the fact that these countries were less affected by the crisis than the more developed EU countries.

**Figure 2.** Convergence rates to EU-14 (GDP per capita, PPP, current prices)

Catch up rates




Annual changes




Source: IMF, EUROSTAT, Author's calculation

Still, it has to be noted that catch-up rate observes absolute rather than relative disparity. Positive catch-up rates mean that the disparity between all groups of countries and the EU-14 increases on average, although the difference of GDP per capita with regard to the EU-14 actually decreases. In order to explain the relative disparity the best solution is to observe the difference of GDP per capita in two subsequent years (right Figure 2). Opposite to catch-up rate, the disparity between the observed groups and the EU-14 is diminished in case of positive difference of GDP per capita.

As shown on Figure 2 (right), average annual changes of GDP per capita of all groups of countries show the decrease of disparity in relative amounts with regard to the EU-14 average almost in the whole period. In general, WBC recorded relatively lower positive rates, indicating a lag in real convergence compared to NMS2004, NMS2007 and BC. This is particularly pronounced in the period 2001-2008, i.e. in the pre-accession period and in the years of formal membership, which points to the positive effects of the EU membership.

## Methodology and Results

In the literature, there are two basic concepts to approach the process of real convergence, known as σ–convergence and β-convergence (Barro and Sala-i-Martin, 1992). The paper will empirically test the existence of both types of income convergence from 1996 to 2017. As the measure of income *per capita*, the GDP *per capita* was used, adjusted by the purchasing power parity of the currency.

The sigma indicator shows the tendency of reducing the differences in the level of income per capita between different countries over time (Barro and Sala-i-Martin 2003, Barro et al. 1991). The two most common methods for calculating sigma are the standard deviation and the coefficient of variation of per capita income. If the dispersion, or spread, of per capita incomes among countries is decreasing, the countries incomes level is converging. The following equation is used to calculate the coefficient of variation of the real GDP *per capita* (PPP):

$$CV\ (GDPpc) = the\ standard\ deviation\ (GDPpc)\ /\ the\ arithmetic\ mean\ (GDPpc) \qquad (3)$$

The beta income convergence shows the tendency of poorer countries to approach the level of development of richer countries (the usual tendency of poorer countries to grow faster than more developed countries), i.e. when there is a negative correlation between the initial level of income *per capita* and the rates of economic growth in a period of time. The realization of this convergence depends on internal economic policies and other country specific factors, and fundamentally shows how long the convergence process will last. In order to prove the *beta* convergence, the following panel regression equation was tested on a sample of the Western Balkan countries, the New Member States and on the sample of the Baltic countries:

$$growth_{i,t} = \beta_0 + \beta_1 dist_{i\,t-1} + \beta_2 dist_{i,t-1} \times WBC + \beta_3 WBC + u_{it} \qquad (4)$$

In the equation *growthi,t* represents the growth rate of the real GDP *per capita* (PPP) of a country in the period *t*; *disti,t*-1 the gap in the real GDP *per capita* between a country and the EU-14 average in the previous period, and the WBC is a dummy variable taking the value of 1 for the countries belonging to the Western Balkans region, and 0 for the countries belonging to the NMS or BC. New independent variable presenting the product of $disti_{,t-1}$ and the dummy variable *WBC* – is included in this model. This additional variable examines whether and to what extent the eventual convergence of the WBC group is different in the speed compared to the convergence of the NMS and BC group, i.e. whether belonging to the WBC group modifies the impact the income gap has on the rate of the economic growth of the GDP *per capita*.

The descriptive statistics of the *growth* and the *distance* variables for WBC and NMS are presented in Table 1. All of the observed variables have a normal distribution (tested with the Shapiro-Wilk test). The post-estimation testing showed that there were no problems of multicollinearity (VIF < 10) and autocorrelation (Durbin-Watson test).

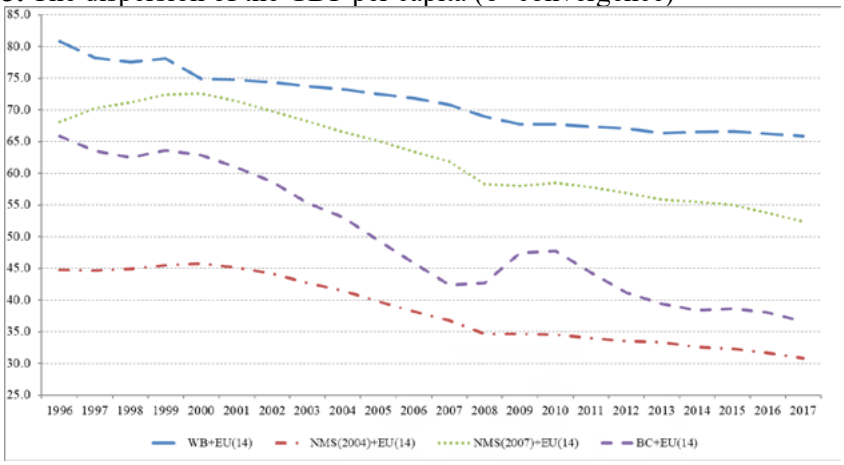
**Table 1.** Descriptive statistics of variables for WBC

| | Descriptive statistics | | | | |
|---|---|---|---|---|---|
| | **Num observations** | **Mean** | **Standard Deviation** | **Minimum** | **Maximum** |
| **Growth** | 273 | 0.053 | 0.038 | -0.088 | 0.213 |
| **Dist** | 273 | -0.638 | 0.162 | -0.888 | -0.299 |

Source: IMF, Author's calculation

In the Figure 3 are shown the results using the σ–convergence approach measured by the coefficient of variation. The first thing to be pointed out is that the group of Baltic countries noted biggest decrease in the differences in the level of income per capita relative to EU-14, in their pre-accessioned period, and this process was interrupted with the beginning of the crisis.

**Figure 3.** The dispersion of the GDP per capita (σ -convergence)




Source: IMF, Author's calculation

If analyzed the overall results Figure 3 shows that there is moderate decrease in the differences in the level of income per capita between the chosen groups and this decrease is the smallest in the WBC + EU-14. Even though Western Balkans were almost on the same level as the NMS2007 their income growth is the slowest, in particular in the period before and in the first period after the accession of NMS2007 in EU. It is evident in case of NMS that the dispersion was mainly decreased also during the period between 2000-2008, which corresponds with the period of pre and post - accession in the EU. The overall results of σ - convergence once again lead us to the conclusion that the EU membership process has positive effect on the dynamics of real convergence.

The testing of the β-convergence was concluded with panel regression equation with fixed effects and it was tested out for the three sub-periods: 1997-2000 (Model 1), 2001-2008 (Model 2) and 2009-2017 (Model 3), as well as for the entire observed period (Model 4). The results of the tested regression for WBC and NMS and WBC and BC are shown in Table 2.

**Table 2.** Results of regression analysis (β-convergence)

| | Results of regression WBC and NMS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1997-2000 | | 2001-2008 | | 2009-2017 | | 1997-2017 | |
| | Coef | P value | Coef | P value | Coef | P value | Coef | P value |
| Dist | 0.055 | 0.431 | -0.078 | 0.013 | -0.051 | 0.136 | -0.081 | 0.001 |
| Dummy | -0.494 | 0.003 | 0.110 | 0.171 | -0.027 | 0.658 | -0.166 | 0.001 |
| Dumm*dist | -0.659 | 0.002 | 0.171 | 0.099 | -0.018 | 0.829 | -0.192 | 0.003 |
| N | 52 | | 104 | | 117 | | 273 | |
| $R^2$ | 0.262 | | 0.081 | | 0.027 | | 0.108 | |
| Probability | 0.001 | | 0.024 | | 0.390 | | 3.47E-08 | |

| | Results of regression WBC and BC | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1997-2000 | | 2001-2008 | | 2009-2017 | | 1997-2017 | |
| | Coef | P value | Coef | P value | Coef | P value | Coef | P value |
| Dist | -0.199 | 0.549 | -0.189 | 0.044 | -0.054 | 0.721 | -0.237 | 0.000 |
| Dummy | -0.366 | 0.212 | 0.151 | 0.197 | -0.029 | 0.797 | -0.096 | 0.144 |
| Dumm*dist | -0.406 | 0.311 | 0.283 | 0.077 | -0.016 | 0.933 | -0.035 | 0.706 |
| N | 36 | | 72 | | 81 | | 189 | |
| $R^2$ | 0.203 | | 0.215 | | 0.007 | | 0.168 | |
| Probability | 0.05 | | 0.000 | | 0.949 | | 0.000 | |

Source: IMF, Author's calculation

When using the F-test for the overall significance if the value of $R^2$, as a measure of the proportion of variance of a predicted outcome, has value p<0.05 the coefficient of determination is statistically significant. From the observed data, the existence of beta convergence in this sub-period cannot be confirmed in Model 3 (2009-2017), due to the outbreak of the global economic crisis in both cases. One can find this conclusion in the paper of Stanisic (2016), who also concludes that the global crises outbreak interrupted the convergence process of WB. In the case of WBC and NMS the value of the coefficient for *disti, t*-1 is positive only in Model 1, however the value of this coefficient is statistically insignificant. The value is statistically significant ($p < 0.05$) only in Model 2 and Model 4 and in both models' coefficient value has negative sign i.e. the smaller gap in development between the countries (WBC and NMS) and the EU-14 average is associated with higher growth rates of the GDP *per capita.* This is important because according to the neoclassical growth theory the convergence would be proven if $\beta 1$ has positive value. These results obviously do not confirm this theory. Analyzing the case of WBC and BC the coefficient for *disti, t*-1 shows similar results and leads us to same conclusions.

The coefficient for the variable determining a country's belonging to the WBC region is statistically significant in the Model 1 and Model 4 in the case of WBC and NMS and it has negative value which indicates that at the same income gap level, the growth rate of the GDP *per capita* (PPP) was higher for the countries of the NMS group than for the Western Balkan countries. In other words, catching up with the average GDP *per capita* achieved in the EU-14 was faster in the case of the NMS than in the case of Western Balkan. On the other hand, this variable is not statistically significant in any period in the case of WBC and BC.

The third coefficient for the variable $disti_{,t-1} \times WBC$ shows the extent to which a country's belonging to the WBC region moderates, i.e. changes the strength of the relationship existing between the income gap and the achieved growth rates of the GDP *per capita*. In the case of WBC and NMS this variable is statistically significant in Model 1, Model 4 (with significance level of $p < 0.05$) and in Model 2 (with significance level of $p < 0.1$). The coefficient has positive value only in Model 2, which indicates that the growth of the countries of the WBC, at the same income gap level, was faster than in the NMS group only in the period before the global crises. In Model 1 and Model 4 the coefficient has negative value which means that growth was faster in the NMS countries. In the case of WBC and BC this variable is not statistically significant.

**Determinants of the Income gap between Western Balkans to EU-14 Level**

In addition to the analysed and σ convergence this paper includes assessment of the possible factors contributing to the income distance of the Western Balkan countries relative to the average level of EU-14. To do this the following regression equation is used:

$$Y_{i,t} = \alpha_i + \beta' X_{i,t} + \varepsilon \quad (5)$$

Where: Y is the dependent variable, X is a k-dimensional vector of independent variables,

*i* and *t* are the country and time subscripts, α and β′ are the constant and the vector of parameters of the explanatory variables, respectively, ε are the residuals.

The dependent variable in the equation is the percentage gap in the real convergence measured through GDP per capita relative to EU-14 average, while the chosen explanatory variables are: trade openness, unemployment, capital formation, loans, and agriculture. These are common variables which are used in most of the publications analyzing this topic.

In the panel data model six Western Balkan countries are included and the data in this paper is acquired from the World Bank and IMF databases for the period 2000-2017. The analysed period was chosen due to the available and consistent data series. In the model the observed variables have normal distribution (Jarque-Bera test), there is not autocorrelation (Durbin-Watson test) and there were no problems with determining presence of multicollinearity (VIF < 5).

**Table 3.** Descriptive statistics of variables in the panel data model

| | Num observation | Mean | Standard deviation | Maximum | Minimum |
|---|---|---|---|---|---|
| **Trade openness** | 108 | 85,402 | 18,681 | 132,340 | 24,170 |
| **Unemployment** | 108 | 3,183 | 0,383 | 4,045 | 2,534 |
| **Gross Fixed capital formation** | 108 | 25,465 | 6,372 | 41,450 | 10,548 |
| **Loans** | 108 | 35,383 | 17,102 | 86,448 | 0,900 |
| **Agriculture** | 108 | 2,378 | 0,390 | 3,199 | 1,725 |

Source: World Bank, IMF, Author's calculation in E views 10

We analysed the data by means of fixed effects model, especially when the cross sections are not sampled randomly. This is proved after the implemented Hausman-test, which rejects the null hypothesis and the premise that the regressors and disturbances are not correlated. In order to differentiate between OLS and fixed effects model in panel data Wald test was applied. This test also point out that the fixed effects model is suitable for this analysis. Due to heteroscedasticity and evidence of separate factors being important, the countries had diversified performance of their economies and made different progress towards the EU convergence. The preference of the fixed effects model is supported by the results obtained from F- statistics in the fixed effects model, which are highly statistically significant.

**Table 4.** Result of the fixed effects model on the possible Explanatory Factors for the Period 2000–2017

| Variable | Beta-coefficient (fixed effects) |
|---|---|
| Trade openness | 0.04** |
| Unemployment | 0.74 |

| Variable | Beta-coefficient (fixed effects) |
|---|---|
| Fixed Capital formation | -0.14*** |
| Loans | 0.12*** |
| Agriculture | -3.82*** |
| number of observations | 108 |
| $R^2$ | 0.917 |
| Probability | 0.0000 |

Note: *** denotes significance at the level of 1 percent; ** at the level of 5 percent

Source: Authors' estimations in E views 10

Greater trade openness of a country is associated with higher economic growth. Various studies that focus specifically on the transition process concludes that institutional quality and market liberalization policies to promote private sector growth have a positive impact on economic growth, despite their initially disruptive effect (Campos and Coricelli 2002). The regression analysis confirmed that the trade openness of a country is significant and contributes to lowering the gap, but the coefficient is small. The region has gradually moved toward greater openness and the main export market of WB economies has traditionally been the EU.

In the fixed model, regression unemployment is statistically insignificant variable. There are many reasons to be counted, such as that, the WB region was unable to generate significant employment numbers during the good years and registered large job losses during the transition period and global crisis. Also, low labour productivity, low flexibility and efficiency of the labour market, high youth unemployment and the brain drain situation that WB confronts are contributing to the insignificance of the variable for the convergence process. This issue requires a comprehensive set of reforms to address the region's persistently high unemployment.

Empirical evidence suggests that in lower-middle-income countries, priorities should be reforming banking and agricultural sectors (Dabla-Norris at al 2015). These two variables are most significant in the fixed effects model. In the advanced economies agriculture has already reached the low levels. The result in the regression strongly supports this premise. The regression coefficient has a negative sign and its magnitude is -3.8, implying a very strong effect on the convergence process. This implies that the convergence process is reducing the significance of the agriculture for the account of the service sector. Additionally, income convergence is strongly associated with the transformation and development of the economic structure of the Western Balkan countries. The banking sector determinate turns out to be highly statistically significant, and the regression coefficient has a positive sign. This means that convergence process of the WB countries goes hand in hand with increased financial intermediation and credit support for the economic entities.

High investment rates appear to be essential to foster convergence of WB countries towards the higher-income EU economies. In the presented results from the regression, there is only one odd result – the negative sign of the coefficient in the fixed capital

formation, which is statistically significant variable. This is a complex issue calling for further comprehensive analysis, but one of the possible explanations is that parts of the investments made in these countries are unproductive.

## Conclusion

Having the same level of income standard of the developed EU economies is the main aim and expectation of 18 million people living in Western Balkans. The experience of the Baltic countries has confirmed that best route to prosperity for small countries is to integrate within the global economy. The results of this study outline that Western Balkan countries have the slowest convergence. The second conclusion is that the EU membership process has the biggest positive effect on the dynamics of real convergence in the analyzed countries.

The testing of the sigma concept of income convergence points to the slowest existence of income convergence in the WBC compared to NMS2004, NMS2007 and BC with the EU-14. In addition, it is evident that the dispersion was decreased in Baltic countries and New Member States and in both cases it was mostly achieved in the period before and after their EU membership. Even though Western Balkans were almost on the same level as the NMS2007 their income growth is the slowest and lagging behind NMS2007 especially in the period before and in the first period after the accession of NMS2007 in EU. It should be expected that the membership of the Western Balkans in EU would contribute to faster growth and income convergence of this region.

The results of the conducted regression analysis or the beta income convergence approach shows that the neoclassical growth theory cannot be confirmed. In contrary, in the case of WBC and NMS the smaller gap in development between the countries and the EU-14 average is associated with higher GDP growth rates. In addition, the regression results confirm that catching up with the average GDP *per capita* achieved in the EU-14 was faster in the case of the NMS than in the case of WBC.

Regarding the determinants of the real convergence process, based on panel data for six WB countries during 200-2017, estimated by the fixed-effects model, we find that agriculture is strongly negatively associated with real convergence, which means the need of reducing the importance of agriculture in the future. In addition, the banking loans are highly positively associated with real convergence, implying that financial intermediation and credit support have significant effect on the convergence process of the WB countries. The only one odd result of the regression is the negative association between real convergence and the fixed capital formation, which calls for further research.

With these finding the paper suggests inevitable reform process for deeper structural transformation of less developed countries in order to speed the catch-up, improve productivity factors, private enterprise climate and production efficiency. This is the only path to restart and accelerate the income convergence between Western Balkans and most developed EU countries.

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PAPER

# Time banking concepts as an effective tool for healthcare access in UK

**Bibhu Dash*** **• Namrata Sandhu****

**Abstract** This study encompasses an analysis of an unique volunteerism initiative named 'Talking Together' organized by TimeBank (UK) between 2013-15 under partial funding of Department for Communities and Local Government of The United Kingdom. The study begins with identification of a social issue in the form of a lack of particular skillset and how it can affect both individuals as well as the society. The delivery model is largely based on a model where the receiver and giver of skills interact informally within a formal setting of imparting spoken English lessons. While the program itself does not rely or link itself to time banking, the conceptual framework clearly draws a similarity line. This article explores a three-fold finding by analyzing the working of time banking concepts effectively within both formal and informal volunteerism settings, how projects as Talking Together are based upon a concept of time banking albeit avoiding being perceived as a time bank and whether the concept helps in facilitating better healthcare access in UK.

**Keywords:** TimeBank; time banking; talking together; social-exclusion; ESOL

**JEL Classification:** D80

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Other than conflict of individual views (including with www.timebank.org.uk amongst others) no conflict of interest exists. The work was not funded or supported by any external source.Time banking concepts as an effective tool for healthcare access in UK 1.

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## Introduction

*"I wanted to learn English. It is essential to learn English to have a conversation with someone, anywhere that we go. It is very much necessary in this country. I didn't know any English. No I didn't know any, I couldn't even write my own name in English. It is almost 30 years now since we came here (to UK). I did not get to learn English before this. Nowadays it is important, even kids say I must learn."* Zoya *(name changed)* wanted to improve her conversational English skills and above was her statement given to TimeBank (TimeBank , 2013a).

Zoya is not a singular example of migrants lacking the knowledge of the lingua franca. About 1.8% of the population of England (i.e. more than 7,60,000) people as per the census 2011, could not speak English well or at all (Casey, 2016). Since a pre-requisite knowledge of English by passing ESOL (English for Speakers of Other Languages) Level 3 was a pre-requisite for gaining a British citizenship (Cheary, 2017), it can be inferred that majority of these residents comprise almost entirely of non-citizens (refugees) which further meant that most of whom would have been dependent on social benefits to survive. While the UK government had continuously supported the funding for ESOL, it fell by 56% in real terms between 2009-10 and 2016-17 (Bolton, 2018). This meant a need existed for self-funded initiatives or those which would charge no fees to participants since participating in private classes would be practically unaffordable for those dependent on social benefits.

From the survey, it was also noted that 8% of the UK residents who did not use English as the main language for communication had a lower proportion of residents with good general-health compared to those using English as the prime language for communication. As of 2018, the web-sites of the Department of Health and Social Care of the Government of UK, National Health Service and General Practitioner (GP) online services for patients continue to have an English-only version of their offerings and services (DHS, 2018 and NHS, 2018). This makes it a difficult proposition to access emergency services like healthcare in a country where key medical and patient-care service providers use English as the sole language for communication. A survey was conducted by the Census UK (ONS, 2011) trying to understand the link between non-understanding of English to general health of UK residents not having English as their main language. It was noted that about 138,000 people of UK (0.3% of population) reported their inability to speak English at all while the most vulnerable gender affected was of women. 3 in 5 of those who reported their inability to speak English at all were females (with highest concentration from

Pakistani and Bangladeshi origin where females were 5 times more likely not to speak English at all as compared to men from the same region). With the highest number of religious followers from Pakistan and Bangladesh following Islamic traditions, it could be conferred that majority of residents within the segment identified could be from Islamic ethnic belief. Interestingly the highest number of non-English speaking residents of UK were females who would also comprise a large seeker base of health services:


Credit:*http://www.ons.gov.uk/ons/about-ons/get-involved/consultations/archived-consultations/2005/2011-census---content/index.html*

## Need for a Hybrid-Solution

While the problem identified above rang an alarm-bell, it also hinted an urgent requirement for achieving inclusive growth of fragmented population. The issue could be tagged as beyond a mere linguistic problem and instead could be referred as a gap in bringing isolated groups to mainstream development. The solution to this problem could

eventually provide a future asset group by presenting a potential base of people who could serve as assets to society by becoming indirect long-term contributors to future sustainable development by way of entrepreneurial efforts, better trained work-force and act as better learned supporters to family as well as neighbors which is meaningful when over 10,000 children from asylum seeking families in UK alone live in extreme poverty levels (Pinter, 2012). However only 0.25% residents officially were within refugee, stateless or pending asylum status (UNHCR, 2017) leaving the rest dependant on other support schemes often amounting to a maximum of £57.90 per week (UK Benefits, 2018) which could make participation is a paid ESOL program beyond affordability of these individuals. It could however be stated that such skill enhacement could be done without any external funding. While such skill enhancement initiatives could be done free of cost, without funding it could lack infrastructure and ICT aspects which have been observed to influence diffusion and impact innovation adoption (Rogers, 2003), neccesiting external support in terms of funding for adequate ICT and infrastructure.

Further, if the potential base of affected people identified above, were to become the tools for making a sustainable society it would firstly mean the removal of barriers like external resources who could devote time, funding for infrastructure, ICT and overheads. It would also necessitate the skill exchange via leaders and not mere volunteers requiring an overall change of mentality for the initiative from mere charity or volunteerism to a concept of social reciprocity and money-less trading of skills and services which could lead to possible mutual gain in level of confidence, social connections, self-worth, sense of belongingness and gaining a chance to contribute skills for community development (Rooks and McCarthy, 2015). Thus delivery of the initiative through leaders was a must, especially as leadership in itself was essential to promote collaborative student-centered learning (Wong and Li, 2008). Here, volunteers could serve as optimum leaders, since leadership ability in itself was an embedded aspect of all major volunteer inititiaves (Lockkett and Boyd, 2012) more so within an advocacy or educational delivery theme as people automatically tend to show leadership abilities when they are involved in "common-good" (Komives et al., 1998).

## Time Banking as a possible solution

While much has been said about Time Banking as a tool for alleviating social exclusion, it can be safely inferred that time banking is a way of rewarding active citizenship and community engagement Seyfang (2003a:699). The aforementioned issue includes skill development, community development in a socially inclusive development environment which could be well addressed by a solution like time banking. Time banking is regarded as a powerful tool for social inclusion and community building, especially among excluded populations Seyfang (2003b:702). It is widely believed that time banking has the potential to generate positive outcomes for individuals and communities alike (Bretherton and Pleace, 2014; Ozanne, 2010). Time banks have the potential to bolster the local economy; help develop new social ties and strengthen existing social ties; facilitate access to health services; enhance social integration and

community self-efficacy; and to enable participants to gain experience and improve their skill set (Collom, 2011) and most importantly time banks can be used to bridge the gap between providers and seekers of
healthcare while also rewarding those who support the healthcare seekers voluntarily (Boyle and Bird, 2014).

Time Banks are believed to be based on the following core values (Cahn, 2004; Reily and Cassidy, 2008):

- We can all be valued contributors with everyone having the potential to contribute;
- Honoring real work whereby instituting a social currency which transforms lives and living places positively based on real work done;
- Helping works better as a two-way street where core human need of receiving and giving leads to creation of better social relationships and mutual trust;
- Networks and community make individuals stronger and adds more meaning to life and
- Respect for all means accountability to all so that everyone is cautious, concerned and respectful to each other.

Out of the multiple time banking projects running across UK, is TimeBank (www.timebank.org.uk) setup in 2000 with funding support of the UK Government and the BBC. While it does receive monetary funding from various sources including the UK Government, the key idea is to impart mutually beneficial volunteerism by way of trading of skills within a money-less environment, either partnering with local volunteer centers or delivering our own mentoring projects (TimeBank, 2018).

Much like the core values defined above, the values and beliefs of TimeBank are (TimeBank, 2018):

- *The purpose being to enable outstanding volunteering experiences by utilising people's skills to tackle social problems*
- *Believing that great volunteering can transform the lives of both volunteers and beneficiaries by building stronger, happier and more inclusive communities*
- *Putting people at the heart of everything we do*
- *Doing what we say we will*
- *Thinking big and transformational*
- *Having great experiences*

While the core values of time banks and the beliefs of TimeBank matched conveniently, there were both similarities and dis-similarities with the characteristics of a time bank. It lacked the traditional requirements of a time bank - like employing a time broker, having one hour of time equal one time-credit or one time-dollar, time-credits or time-dollars being 'banked' in the time bank and the ability to be 'withdrawn' when needed and counting each transaction and issuing regular statements to the participants (Seyfang, 2003 and Timebanking UK, 2011) or even paying rewards to users on most of its projects. However, it also had ample similarities like being mapped on the core concept of time banking, operating with similarities which could be said as matching that to traditional time banks was the maintenance of a time-banking list with the participants' skills, availability, likes, dislikes and needs followed by the maintenance of a weekly register

noting the details of sessions (hours etc. of skills-exchanged). In a way it could be tagged as a new paradigm whereby a hybrid model was developed using the concept of time banking functioning within the overall framework of inclusive volunteerism. The model is one where the users comprised of volunteers and participants who exchanged skills within an environment of reciprocity without the use of time-credits or time-dollars. The only money traded was the initial investment provided as fuds by the Government for running of the initiative and later the indirect contributions which each participant would be giving back to the society. What remained to be observed was whether such a hybrid model would prove successful in meeting the core values of a time bank and at the same achieving the target goals? Whether it would help in exchange of skills needed by the receiver (participant) and giver (volunteer)? Whether such a program would be beneficial to the society? and Whether immediate skills needed by both, the receiver and giver are obtained?

**Limitations**

Being a pilot project, multiple limitations existed like having an uneven cluster size since no exact data of residents living and moving out of the target zone was not available, reaching out to each and every individual having no or poor skillset of spoken-English was not possible hence only specific communities were targeted, the skill exchange was limited while each individual could have more skills needed and the mass interview of all participants was not possible due to willingness issues. The sample size has not been fixed since the Talking Together program itself being of voluntary nature does not report a fixed beneficiary size while the number of volunteer tutors is also not fixed as availability of volunteers is a limitation of the program. The scope of discussion has been limited to the relevance and pertinence of the program to the concept of time banking only.

**Talking together: about (Introduction)**

In 2013 TimeBank received a £1.12 million contract towards infrastructure, ICT and overhead costs from the Department for Communities and Local Government to set up and run volunteer-led, basic, functional English Language classes for Muslim women predominantly from Pakistani, Bangladeshi and Somali backgrounds (TimeBank, 2018). As per the aforementioned findings it is clear that these communities were amongst the most vulnerable. With the funding TimeBank initiated a program called Talking Together as a possible solution for providing English speaking skills to target participants while giving a skill-sharing opportunity to volunteers. The target was primarily to achieve maximum program-outreach at wards having the highest Multiple Deprivation Index scores matching with highest percentage of residents with no or poor English speaking-skills. Two such locations identified were Birmingham with 4.6% of residents with no or poor English speaking-skills and Leicester with 7.5% residents with no or poor English speaking-skills (TimeBank, 2013b). The demographic profile identified were mostly females from the aforementioned communities with no or poor English speaking-skills

aged between 18 and 40 years. A minimum target was set to train 1320 participants through the imparting of twelve classroom sessions of two hour each per participant within a two-year period. Neither the volunteers nor participants needed to have any formal training except the willingness to act responsibly with concern towards each other and learn in a diverse grouping. Each volunteer was required to be over 18 years of age and interact with a typical group of 15 participants. The program at the onset identified the following five different target groupings which could become largely inter-dependent in the long-run by reciprocally supporting each other which would lead to inclusive growth of isolated communities:

Group 1 consisted of identified beneficiaries who belonged to female participants predominantly from Pakistani, Bangladeshi and Somali backgrounds mostly comprising refugees. This group would benefit by gaining core competence in English speaking which could help them access better employment, national facilities, educational and entrepreneurial avenues. An added prospect was a possibility to apply for citizenship by passing the ESOL certifications which places the Talking Together program in the pre-ESOL training category.

Group 2 consisted of volunteers who were keen to develop their sense of confidence, gain practical mentoring and teaching experience and gain expertise in imparting English language education to speakers of other languages.

Group 3 consisted of local communities which could act as a base for inclusive growth of beneficiaries by including them in various programs and providing them the opportunity to contribute or themselves become volunteers in local communities.

Group 4 consisted of local authorities and public service agencies as the program would help them achieve larger access to their service offerings by residents, reducing translation and interpretation costs and enabling beneficiaries to be a part of public policy making or vice-versa allowing the program to become an outreach platform for local authorities to interact with beneficiaries.

Group 5 consisted of private sector businesses which could offer direct employment opportunities to beneficiaries and develop unique skills within beneficiaries or support them to harness such skills towards an entrepreneurial outcome.

Amongst the possible hurdles and solutions mapped against the core-values of time banking show a fundamental outline of how the program would eventualize in the long-run.

| | **Core time banking Values** | **Talking Together features** |
|---|---|---|
| Strenght | We can all be valued contributors with everyone having the potential to contribute | i. A mix of provision in the programme including women-only classes, use of mentoring, and facilitating involvement of parents of young children through crèches in the programme;<br>ii. There are tutor volunteers willing to provide the required support; |

| | | |
|---|---|---|
| Weakness | Honoring real work whereby instituting a social currency which transforms lives and living places positively based on real work done; | i. Beneficiaries who are recruited might not be representative of needs within specific communities for the Talking Together programme<br>ii. Warm words from external stakeholders but lack of real support in practice. No real method to keep a track of further progress after completion of program<br>iii. The programme is short term and could have insufficient time to pilot and improve |
| Opportunity | Networks and community make individuals stronger and adds more meaning to life | The value of English for Speakers of Other Languages teaching is widely established throughout the UK, helping learners develop their opportunities in education, training and employment, and achieve greater independence and self-reliance;<br>i. The value of learning English for Speakers of Other Languages is widely recognized through Somali, Pakistani and Bangladeshi communities in Birmingham, Sandwell and Leicester and beyond;<br>ii. Public agencies are supportive of initiatives, such as the Talking Together programme, and the Government has publicly endorsed the programme, which is also understood to enjoy cross party support; |
| Threat | *Helping works better as a two-way street where core human need of receiving and giving leads to creation of better social relationships and mutual trust;* | *i. Inability to recruit sufficient or right partners for the programme (e.g. inadequate funding, social franchising model not working well)*<br>*ii. Beneficiaries are not motivated to take advantage*<br>*iii. Beneficiaries who are recruited might not be representative of needs within specific communities for the Talking Together programme* |

**Talking together: Analysis**

To better understand the hybrid model presented by Talking Together, it has been matched against the aforementioned values and characteristics of traditional time-banks.

| **Core Value Systems of a Time-Bank** | **Whether Found in Talking Together program of TimeBank.org.uk** |
|---|---|
| *We can all be valued contributors with everyone having the potential to contribute;* | *Yes.*<br>*Volunteers contributed spoken-English skills while Participants presented an opportunity for self-development of volunteers.* |
| *Honoring real work whereby instituting a social currency which transforms lives and living places positively based on real work done;* | *Yes*.*<br>*Although a direct social currency was not used, the program was run based on a funding and reciprocal contribution has been calculated from Participants by way of their contribution to the social framework.* |
| *Helping works better as a two-way street where core human need of receiving and giving leads to creation of better social relationships and mutual trust;* | *Yes.*<br>*Each Volunteer and Participant interviewed agreed to have gained both of these factors.* |
| *Networks and community make individuals stronger and adds more meaning to life;* | *Yes.*<br>*Each Volunteer and Participant interviewed agreed to have gained a superior community interaction experience and that the program had helped them in their day-to-day life.* |
| *Respect for all means accountability to all so that everyone is cautious, concerned and respectful to each other;* | *Yes.*<br>*It can be safely gauged from the interviews that both the volunteers and participants were respectful, concerned and cared for each other while keeping an overall accountability by providing feedback for improvement and frank feedback about the program.* |

| Common Characteristics of a Time-Bank | Whether Found in Talking Together program of TimeBank.org.uk |
|---|---|
| *- Employing a time broker or a service broker (who is often a paid worker), who recruits participants, maintains a database of services, arranges transactions and balances the accounts. In some (reasonably rare) instances a member or members take on this responsibility on a volunteer basis.* | *Yes.*<br>*Staff (paid) of TimeBank.org.uk managed the database of exchanged hours between participants and volunteers.* |
| *- Details of the participants' skills, availability, likes, dislikes and needs are stored confidentially in the time bank computer.* | *Yes.*<br>*Profiling was done and confidentially maintained. Further, volunteers maintained a weekly register of participants and details of sessions (hours of skills-exchanged etc.)* |
| *- One hour of time always equals one time credit / time dollar.* | *Yes*.*<br>*Arguably if 1 hour of time is considered as £1, its exchange value in the long-run has been calculated to be worth £9.31, receivable by the society.* |
| *- Time credits / time dollars are 'banked' in the time bank and can be 'withdrawn' when needed, or donated to someone else.* | *No.*<br>*This is the only characteristic not present within the Talking Together model.* |
| *- Computer software counts each transaction and issues regular statements to the participants.* | *Yes.*<br>*Weekly reports were gathered and reports shared between stakeholders (organizers, participants and volunteers)* |

** Social Currency*

*Social Return on Investment (SROI) has been calculated by the program wherein it was found that for each GBP 1 spent on the program would have a secured return on GBP 9. Most common contribution by the participants would be their passing of the skills exchanged, to others within their vicinity including neighbors, family and friends. Using the reciprocal skills gained, both, volunteers and participants would reach out for better career prospects which in turn would benefit the local society. Hence the SROI itself could be counted as the social currency exchanged in this case.*

## Talking together: Observation

One of the key findings from the beginning was that neither did the participants nor the volunteers require to have a formal training or qualification except that they could provide an opportunity to learn something new for each other, which in this case was the providence of interaction with a diverse multi-ethnic background for the volunteers and learning English for the participants. This corresponds to foundational structure of time banks which in themselves have been observed to be constituted of formal and informal volunteering at the elemental level (Collins et. all, 2007 and Timebanking UK, 2011).
By the time of completion of the Talking Together program, 1707 learners had been enrolled and 1571 learners had successfully completed the program against an initial target pf 1320 participants. While, retention rate of participants was of 91%, as per TimeBank, none of the volunteers went without a feeling of having gained new skills. To understand better, participants and volunteers were requested randomly to provide their views. Views recorded from four participants and four volunteers has been provided below *(Participant Observations Post Completion Of Training Program)**

***PARTICIPANT OBSERVATIONS***

| Participant | Motivation | Gain | Gaps Identified |
|---|---|---|---|
| **No. 1** | "I wanted to learn English. It is essential to learn English to have a conversation with someone, anywhere that we go. It is very much necessary in this country. I didn't know any English. No I didn't know any, I couldn't even write my own name in English. It is almost 30 years now since we came here. I did not get to learn English before this. Nowadays it is important, even kids say I must learn. You know earlier I would have to go very far to learn English." | "Earlier I used to hesitate to speak English when if I went outside to buy something. I couldn't understand then but now after classes I can go around by myself and buy things and attend to other matters at my own so it has helped me. In the future there will be no problem as such with going around. It is already easy to talk with people now and I can understand them too. There is no hesitation left there." | "You know government give us very calculated money to live and that money hardly meets our requirement so we can't pay any money." |
| *Influencer: "Neighbours and friends they all told me to go and join this course and learn English language."* | | | |
| **No. 2** | "I can speak English but felt the course would further help my spoken English and also improve my understanding of the language, its words and use." | "My tutor is why I am doing further studies. He made time to help me in many ways. He raised my confidence and knowledge of how to have a conversation with people and understand what people are saying from 90% to 95%. He showed me the difference between speaking and writing in English which was also very helpful. I feel my speaking ability has improved greatly from his help." I have got admission at Solihull College. He provided information and encouraged me to apply. He also helped me to secure a job as a volunteer with the British Heart Foundation. This is important in helping me put into practice what I learnt on the in-class course." | |
| *Influencer: Participant was referred to the program by a friend.* | | | |

| | | | |
|---|---|---|---|
| **No. 3** | "If I had to make an appointment with hospital then it was a problem. And, if I had to go to hospital they would only speak English there. Even if I have to go to shops then it is problem too. I would like to learn to speak, write and read properly. I first want to improve my English and then look for a job that is after I have improved my English. I want to clear driving licence test too. I want to learn to drive as it is very much required for life. I want to learn to speak English; it's necessary to live in this country." | "Before classes I couldn't speak English and nor could I understand it. Now after taking classes I can make my appointments and go and visit doctor by myself. I can even speak little English with my friends and family and my kids." | "... I can't study if I have to pay for it because what money I get hardly meets my budget for food and other necessities. So I cannot continue to study if I have to pay. Now, because these classes were free I attended them and am thankful for that." |

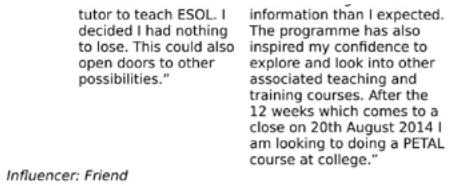
*Influencer: My family always said to me that I must go and learn English.*

| | | | |
|---|---|---|---|
| **No. 4** | "I am living in this country and recognize the value of English language here. Even children at home, today, speak English instead of their mother tongue. That is why I considered it essential to join English learning classes. I want to learn to write too. I have problem with writing English." | "I could understand English to some extent but speaking was a problem, writing then was also an issue, my spellings were very poor. Now I can not only understand English better but can also write it better... If the phone rings and the call has to be taken and in English language, for example it could be from the job centre or somewhere like that then I can answer easily. Earlier, I could not even answer calls. Now I can talk with them. Before I could understand what they are saying but it was hard to reply but now it is all very easy for me. Specially, kind of teachers we had they taught us very well. Now if I go shopping or go to one of many other places then English helps there. If it is some appointment, say about Parents Evening at kid's school, they will tell you all in English language. It has helped me with that too. Now I can question them (teachers). Previously, I couldn't even speak with them. Though, even then I could understand them. If it was some complaint from my side or theirs I could understand it but then couldn't reply to them. Now things have improved a lot. To some extent now I can communicate with them and ask things that I have to.<br>Well you know previously, when I had to make an appointment with doctor or for anywhere else, I would need someone else to do that for me. Now if you call me, from what I have learned, I can make my own appointment, be it with doctor or anyone else, I make it myself. Outside if have to converse with anyone then I can speak English and communicate with them. I don't hesitate and can explain myself." | "I think free is better for us. If we have to pay then it will become hard for us to continue. I live separate from my husband and have kids too so it will become hard for me to pay money. Then if the fee is less, still learning English is so important that I will pay for it. Condition is that fee may not be very high." |

*Influencer: "Job centre instructed me that unless I learn English I won't be able to find any job."*

***VOLUNTEER OBSERVATIONS***

| Volunteer | Motivation | Gain | Gaps Identified |
|---|---|---|---|
| **No. 1** | "I looked for volunteer work, particularly teaching ESOL, where I could engage with people from different cultures." | "Having led the class at the Golden Hillock Centre in Small Heath I have been amazed at the bond I have formed with my students. I am now going to two interviews for teaching assistant work in London and taking my certificate of completion as a volunteer tutor on Talking Together. I'm sure this will help my chances. Another unseen delight has been the chance for me to connect with a community I have never been involved with. Even with our limited English we have really got to know each other and we have had so much fun. It is a shining example of how different people and communities can integrate and have the same laughs and feelings." | "I feel Schools, Doctors and Public Services could have been better integrated by looking at making contact with and accessing local services." |
| *Influencer: NA* | | | |
| **No. 2** | Wanted to apply for teaching related assignments. | "Having done CELTA an English Certificate for teaching adults in September 2013, the opportunity provided by TimeBank was a good way to put these newly learnt skills into practice, whilst also being able to engage in community-based voluntary work. I enjoyed the overall experience and found my time teaching students highly rewarding. It has encouraged me to engage in other areas of voluntary work." | "A member of the community police sat in class and distributed their pamphlets on domestic violence. She had a nice way with Participants. Her presence worked well to build a level of trust and respect between the local community and the police ." |
| *Influencer: NA* | | | |
| **No. 3** | "I wanted to get back into the classroom in order to regain my confidence and motivation again. I really wanted to see if I could do it, and also gain a different experience from my time teaching in China, where the approach to teaching and learning is over structured, rigid and regimented, and where students are not taught to work in teams or groups." | Volunteer felt that the course had been very positive for him personally, and helpful to him in considering doing languages at Open University ("UK"). | "More could be done to assess students coming into class, finding the levels of students possibly by a short exercise as part of their application onto course where materials from Solihull College are available and can be easily adapted for such purpose. |
| *Influencer: NA* | | | |
| **No. 4** | "The first was as a result of having two young children. My motivation was to search out part-time work. I was made redundant due to lack of funding for my post, and a friend at work sent me information about this ESOL training and the Talking Together programme to become a volunteer | "I personally learnt more about myself in the course of the programme. It enhanced my confidence to gain new skills and carry out associated tasks around e.g. managing admin and also planning things including being assertive with authority, as well as enhancing and strengthening my existing skills around pastoral care. I needed to do a lot more research and gather more | Participants could be encouraged to let the tutor know what else they would like covered in terms of content or do with them (e.g. tenancy issues, household problems). |




* Interview Credit: www.timebank.org.uk

**Talking together: Findings**

- All 4 interviewed participants came from 18 – 40 age group with 3 being female participants and 1 male participant. All 4 interviewed participants came from highest Multiple Deprivation Index scores matching with highest percentage of residents with no or poor English speaking-skills with 2 interviewed participants noted to be on Government support programs.
- While 2 participants reported neighbors and friends to have influenced them to join, 1 participant reported family members and 1 participant reported a job center to have influenced their decision.
- Learning of Spoken-English as a core skill was the motivation which was common to all interviewed participants while atleast 1 participant mentioned the need to take doctor appointment as a motivating factor.
- Time banking concepts as an effective tool for healthcare access in UK 18
- All 4 interviewed participants found the skills gained as immediately useful. 1 participant mentioned career progression as a gain, 1 mentioned the newly acquired skill to be helpful to take medical appointments while all 4 said that they gained better conversational abilities in day-to-day life.
- The 1 common gap noted by all participants is high fees for other such programs.
- All volunteers were aged above 18 years and came with an existing skillset of fluency in spoken-English. 3 amongst the 4 interviewed volunteers had some form of prior teaching experience.
- At least 1 volunteer mentioned influencer details and the same was noted to be a friend of the volunteer.
- 3 volunteers chose to participate with the objective of gaining skills that would enhance their career progression. Amongst the 3, 1 volunteer was also motivated by the opportunity to interact with diverse cultures and 1 volunteer wanted to improve self-confidence. The 4th volunteer interviewed, had the objective to explore and evaluate diverse educational curriculum.
- All 4 interviewed volunteers found the skills gained as helpful towards their career progression either by way of using the skills gained in other future voluntary or educational initiatives. Out of the 4 interviewed volunteers, 3 reported an immediate increase in their skillset of social bonding while 1 reported an increase in self-confidence.
- 2 volunteers mentioned a more interactive role by local authorities was needed, 1 participant mentioned further assessment of participants was required and 1

volunteer focused the need for participants to describe learning expectations further prior to the beginning of the program.

## Conclusion

While, retention rate of participants was of 91%, none of the volunteers went without a feeling of having gained new skills. All volunteers felt local authorities could play a wider proactive role in the designing, functioning and running of time banks and/ or using them as a platform for disseminating information. While the above project was not a time bank and might have only followed the conceptual framework of a time bank, it's success proves the utility of time bank concepts to be effective within both informal and formal setting with a potential not just to alleviate marginalized, isolated communities bringing them to the mainstream, but also facilitating access to vital utilities like healthcare and education. Such programs could in the short-run ensure personal gain like positive increase in self-development, learning of new skills and enhanced social-bonding while in the long-run lead to benefit to the society and neighbourhood as potential entreprenaurs (Basu, 2004), skilled-workforce and educated supporters to the family.

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PAPER

# Youth transition from school-to-work: Empirical evidence from five transition countries

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**Abstract** The purpose of this paper is to analyze the impact of different factors in the transition of young people aged 15 to 29 years from the school to work in five transition countries from the region of South East and Eastern Europe, with similar institutional and economic framework. Through the use of probit model, authors analyze the importance of each of the factors and what is their influence in the transition of young man and women and what determines the probability of being employed or unemployed after finishing the school. The authors found that that factors such as age, sex, financial situation of household, mother's education and having working experience while studying have significance on the probability of a person being employed whereas other factors such as field of education, living area and marital status does not influence.

**Keywords:** school-to-work transition; youth unemployment; education level; transition countries.

**JEL Classification:** J64; E24.

## 1. Introduction

The issue of youth unemployment has gained a lot of attention by researchers **(**Barone and Schizzerotto, 2011; Schmelzer, 2011; Wolbers, 2007**).** Most of the young people, whether in developed or developing countries, go through a difficult transition period from school to entering in the labor market. Different factors and forces influence the process of finding a job. For example, the transition period from school to work has extended and has become more uncertain (Cuervo and Wyn, 2011). Thus, the aim of this study is twofold: to analyze one of the biggest challenges that these countries face, that is unemployment among youth and their transition process from school

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to work. Secondly, to add on the scarce literature that exists on the issues of youth transition from school to work in the transition countries. The primary objective of this paper, consequently, is to analyze the problems that youth (aged 15-29) face in their transition from their education to the labor market in some selected transition countries known for a relatively high level of unemployment of youth. Hence, the authors aim at answering these research question: (i) Which factors influence most the youth transition from school to work; (ii) Does having prior work experience (while studying) help young people find a job easier? To address these questions, we employ probit model with its marginal effect. Moreover, we use data from the School-to-work Transition Survey (SWTS) administered by the ILO, for five countries from the region of South East and Eastern Europe (Macedonia, Serbia, Montenegro, Armenia, and Moldova), for a single year (2015). The main reason why these countries are chosen is the fact that they have similar institutional framework and similar characteristics of the economy.

The contribution of this paper is to fulfill the gap in the existing literature that deals with the issue of youth transition from school to work. The relevance of this research stands in the treatment of the transition to work of youth in countries known for their long transition period. Another contribution of this study is that it takes into consideration some additional factors that other papers have not mentioned, such as work experience during school years, the financial situation of household, mother education.

To summarize, the results of our analysis through the use of probit regression analysis indicate that factors such as age, gender, household financial situation, working experience prior to completing the education have a significant impact on whether a young person will be employed or not. Interestingly though, education as a factor resulted not to have an impact on the probability of a young person being employed which is contrary to other research done in this field.

The rest of paper is organized as follows: Section II reviews the existing contemporary literature on the transition of youth from the education system to the labor market, Section III describes the data used for preparing this paper, Section IV presents the econometric model and gained results, and Section V gives the conclusions of the paper.

## 2. Literature Review

The unemployment among youth and their transition from the education process to labor market has been a topic of interest for different authors (Audas et. al, 2005;Lassibille et al, 2001; Ryan, 2001). It is an issue that concerns both developed and developing countries. The unemployment of young men and women is a worrying factor. Over the past decades, the process of transition from school to work has become longer and riskier even though the level of education of young men and women has increased significantly. The study by Kolev and Saget (2005) provide evidence from countries in South East Europe (SEE) that even after a decade from the start of the transition period and the economic recovery, in most countries in the region the employment prospects for young workers still remains dismal. Authors like O'Higgins (2004) notice that the rate of long-term unemployment among youth in Poland, Hungary, Czech Republic and Slovakia is higher, but not as

much as the long-term rate of unemployment among adults. The youth labor market is characterized by high transition rates between jobs as individuals engage in 'job-shopping' (Miller, 1984) and movements into and out of employment are also common. According to Fares and Tiongson (2007), young men and women encounter different barriers to work in Bosnia and Herzegovina. Some of them include the high rate of unemployment and long duration of the transition from school to finding a job**.** In addition, they conclude that the initial period of unemployment has some adverse effects such as reducing the ability of young women and man to integrate into the labor market.

Interestingly, Audas, Berde and Dolton (2005) in their paper that deals with the issue of youth transition from school to work in Hungary conclude that those who do the best in school are more likely to be unemployed, which is contrary to the beliefs that higher level of education can guaranty a better probability of finding a job. The same authors find that females are more likely to be unemployed than males do, although this effect reverses over time and that those who attend vocational/technical schools and have some informal job experience are less likely to be unemployed.

Lassibille et al. (2001) argue that the level of education has a strong impact on the length of unemployment of young people in Spain. They conclude that individuals who leave the school system with upper secondary education have a harder time finding a job at the beginning of their working life than others. However, it is pointed out that participating in non-formal programs can reduce remarkably the time being unemployed of the category of individuals in question.

Another study made by Rosso et al. (2012) concludes that different factors affect the entry to labor market of youth such as territorial disparities and weak geographical mobility; lack of relevant work experience; lack of soft skills and skills mismatch; low level of qualifications; and enrolment in technical and vocational education and training.

Ryan (2001) in his analysis of youth unemployment in seven developed countries (United States of America, United Kingdom, France, Japan, Germany, The Netherland, Sweden) points out that the criticism about school-to-work transitions contain inadequate educational, attainments, high joblessness, excessive job turnover, and weak links between schooling and employment. He also concludes that the countries should develop appropriate institutions that will improve this transition among young people.

Quintini et al. (2007) measured the duration of the transition from school to the first job and concluded that for young people in Austria, Belgium, Denmark and Germany it takes 1 to 2 years to get the first job. However, in other countries such as Finland, Italy, and Spain it takes more than 2 years. A number of studies have indicated that the smoother the transition from school to work is, the more likely young men and women will minimize their experience of unemployment and inactivity (Korpi et al., 2003; Eckstein and Wolpin, 1995). Therefore, this study is yet another attempt to answer the question of which factors influence most the youth transition from school to work and does having prior work experience (while studying) help youth find a job easier.

Authors Dolado, Jansen, Felgueroso, Andrés, &Wölfl (2013), in their research of youth transition in Spain and EU countries, highlight that having a higher level of education in closely related to the length of transition, where individuals that have higher level of

education completed (in this case university education), in average face shorter length of transition in comparison with individual with lower level of education. On the other hand Wolbers(2007), aslo investigated the lenght of transition of youth but his focus was on those individuals that have finished their education. He concluded that in countries such as Austria, Belgium, Sweden, Luxemburg, and Finland, young people find work quicker. In contrary in countries such as Spain, Italy and Greece, youth faces difficult challenge in finding a job. Even after a year of finishing the education, only a quarter of them managed to find a job place. This partly is due to the fact that these Southern Europe countries were hit very hard by the recent financial crisis.

Bergin, Kelly and McGuiness (2015), in their study of the transition of youth in Ireland point out that the transition rate from unemployment to employment has fallen over time and the rate of transition from employment to unemployment has increased. According to them education has become a new important factor in getting out from unemployment and preventing the transition to unemployment. But beside education, the gender also determines the transition and that the females are in disadvantage against men. In the analysis that included the 27 EU countries,Hadjivassiliou, Kirchner Sala&Speckesser (2015), managed to identify the factors and barriers that affect youth transition. According to them factors such as young age, gender (being a women), education (having lower level of education), are the main barriers that hinder youth transition toward labor market. But the authors found that youth that have higher level of education and have parents with higher level of education improves the transition and helps youth find job quicker than those whose parents have lower level of education.Riphahn(2002) conclusions are in line with Hadjivassiliou et. al. According to her, youth transition towards labor market is influenced by both the level of education of youth and their parents. Youth people, whose parents have better education, have better probability of having a shorter length of transition and finding a job quicker. The research done by Bartlett el. al (2016), point out also that that individuals with higher levels of education have a lower probability of being unemployed or have an easier transition.

On the other hand, Pastore (2009), concludes although in other countries having better education (including professional education) gives you better changes of having smother transition, that in not the case in Mongolia, where youth people that have professional education face difficulties in finding a job.

In another research done by Kelly et. al(2014), where they analyse the youth transition in and out of unemployment in Ireland, highlight that different factors impact the youth transition and these factor are such as: gender, age, nationality, the level of education, geographic location and previous unemployment. According to them education level is one of the most important factors that influence in finding a job by youth. That is, having higher level of education increases the possibility of transition towards employment and reduces the waiting time.Berloffa, Modena & Villa (2015), also highlight that different factor influence the transition of youth and those factors are: gender, enticity, disability, regional inequality and family financial situation, initial disparities in skills and education, the rigidity of institutions such as schools, universities, training systems, employment agencies and labor market legislation, that do not provide the skills needed for the young

in facing the labor market.The research done by Marelli & Vakulenko (2016), where they study youth unemployment in Italy and Russia, it focuses on individual and family determinants. According to them factors that impact youth unemployment in Italy are as such: age (the probability of being unemployed decreases with age), gender (women are more likely to be unemployed), marital status (singles are more likely to be unemployed), region (living in rural area, youth are likely to be unemployed), household income (higher income is related to a better probability of being employed). Regarding the education variable it is concluded that having only secondary education increases the likelihood of being unemployed whereas the tertiary education was insignificant. On the other hand in Russia these factors influence on youth unemployment: age (same as Italy's case the probability of being unemployed decreases with age), marital status (same as in the case of Italy singles are more likely to be unemployed) and household income (same as Italy higher income is related to a better probability of being employed). However, other factors differ. Education level contrary to Italy is insignificant and region (rural/urban) where the probability of being unemployed is higher in urban areas.

According to Quintini & Manfredi (2009), young people in USA have a shorter transition that their peers in Europe. The period of transition in USA is less than 6 months, whereas in Europe, only in Austria, Germany, Denmark, Ireland and UK, the length is less than a year. In other countries in can go up to 2 years or more. They highlight that in those countries where the apprenticeship programme is well managed, helps youth have a shorter transition period. It is also concluded that individual factors such as qualifications, gender, nationality and maternity, affect the probability of labor market detachment and transition period.

The study of Chung, Bekker & Houwing (2012), which analyzes the impact of the recent crisis, highlights that the recent financial crisis has hit the youth more than anybody else. Even after finishing the education and/or training, youth population faces bigger risk of being unemployed. But the education can have a positive impact, especially those that have lower level of education or qualifications. But in this regard there should have in mind the so called 'educational inflation', which can have negative impact and can result in increased unemployment. Bruno et. al (2016), point out that the recent financial crises has had a huge impact on the unemployment rate of young people. According to them factors such as GDP growth and active labor market policies are significant in dealing with unemployment and have impact on youth unemployment rate, and incite employment. Boot et al. (2016) claim that the financial crisis has hit more the category of young people that are not in education, employment or training (NEET) and that this group has seen a sharp rise. But beside this a lot of countries have faced with increased rate of youth unemployment, which can impact significantly the productivity and potential growth.

Caroleo & Pastore (2007), in their study conclude that the experience gap effect impacts the process of getting employed of youth. According to them, there are two factors that minimize the impact of youth experience gap, labor market flexibility and low entry wages. Their conclusion about the approach of the problem of school to work transition is different European countries that were study, is that countries that have dual educational systems, active labor market policies target the groups that are in need, the combination of

labor market flexibility with high education attainment, and the spread of the cost of youth unemployment, face lower level of youth unemployment.

## 3. Data description

The data used in this paper are from the School-to-work Transition Survey (SWTS) administered by the ILO, for the following countries: Armenia, Macedonia, Montenegro, Serbia, and Moldova. Data used are in this paper are cross-sectional (surveys conducted in 2014), obtained from School-to-work Transition Survey (SWTS), administered by ILO. The survey included 11.313 persons, aged 15-29 years. Given that our interest is more towards the youth that has already finished their studies and analyzing their transition, we removed the youth that is still studying and those that are not participating in the labor force (not employed and not seeking for a job). Consequently, our total sample number went down to 2610 persons.

The dependent variable is if a person is employed or unemployed. The independent variables are as follow age, gender, area of living, marital status, father's and mother's level of education, highest level of education completed, the financial situation of household, field of education, working experience while studying. To estimate the probability of a person that would be employed, we employ the Probit Regression analysis and its marginal effect. The dependent variable takes value 1 for being employed and 0 otherwise (unemployed). We define each variable as follow:

**Figure 1.** Definition of variables

| Variable | Description |
|---|---|
| **Dependent variable** | |
| **Yemp=1** | Youth employment includes all person aged 15-29 during the mention period, without work but ready to work |
| **Yemp=0** | Otherwise (unemployed) |
| **Explanatory variables** | |
| Age | Age of the youth between 15-29 years |
| Sex | Female =1, male = 0 |
| Maritial_status | Not married =1, married = 0 |
| Household financial situation | Good = 1, bad = 0 |
| Father's education | University degree=1, High school or less = 0 |
| Mother's education | University degree=1, High school or less = 0 |
| Education level completed | University degree=1, High school or less = 0 |
| Field of education | Social science = 1, Natural/Technical science = 0 |
| Working while studying | Yes =1, No = 0 |
| Unemployment Spell (transition) | A week to year=0, 1-2 years=1, More than 2 year =2 |

In the table below we present the descriptive statistics of the variables applied in the econometric model.

**Table 2.** Descriptive statistics

| Variable | Obs | Std. Dev. |
|---|---|---|
| Emp_unemployed | 2610 | .4844375 |
| Area | 2610 | .4959841 |
| Age | 2610 | 3.104311 |
| Sex | 2610 | .4926736 |
| Maritial_status | 2610 | .4538667 |
| Household financial situation | 2610 | .90914 |
| Father's education | 2610 | .6454263 |
| Mother's education | 2610 | .715908 |
| Education level completed | 2610 | .6038758 |
| Field of education | 2610 | 2.646757 |
| Working while studying | 2610 | .3561983 |
| Unemployment Spell | 2610 | .5248631 |

Source: Authors calculation

## 4. Econometric model and results

As we mentioned above, in this paper we apply the Probit Regression in order to measure the phenomena of youth transition from school to work. The dependent variable is the probability of being employed or unemployed after you finish your studies. The independent variables are area, age, sex, marital status, household financial situation, father's education level, mother's education level, education level of the person, the field of education, work experience while studying.

The specification of the model is as follows:

$$Y(Empl)=B_0+B_1area+B_2(age)+B_3(sex)+B_4(hhsitu)+B_5(fatheredu)+B_6(matheredu)+B_7(edulev)+B_8(fieldedu)+B_9(workstudy)+B_{10}(UnempSpell)$$

The results of the computed model are presented in table 3.

Table 3 - Probit model results of transition from school to work

| Variable | Coefficient | Marginal Effect |
|---|---|---|
| Area | -.0382843 | -.0134848 |
| Age | .0471368** | .0166029 |
| Sex | -.2584263* | -.0910251 |
| Marital_status | -.0110142 | -.0038795 |
| Household financial situation | .1938952* | .0682954 |

| Variable | | Coefficient | Marginal Effect |
|---|---|---|---|
| Father's education | | .0492024 | .0173305 |
| Mother's education | | .2074117* | .0730563 |
| Education level completed | | -.0263642** | -.0092862 |
| Field of education | | -.0045952 | -.0016186 |
| Working while studying | | .7163987*** | .2523361 |
| Unemployment spell | A week to a year | .0499121*** | -.3114785 |
| | A year to two | .0468478*** | -.4980253 |
| | More than two years | .0385714*** | -.6358414 |

Source: Authors calculation
Note: The symbols ***, **, * denote that the coefficient is statistically different from zero at 1, 5 and 10 percent, respectively

After generating the probit model for the dependent variable (being employed or unemployed), we find that coefficients for age, sex, household financial situation, mother education level, working experience while studying have significance. After generating the probit model we also calculated the marginal effects so that we can have a better picture of the effects that above mentioned independent variables have on the dependent variable. Table 3 shows the marginal effects analysis of probit model.

The coefficient of age is positive and statistically significant. This indicates that a change in the age by one year (being one year older) is more likely to increase the probability of a person being employed by 1.6%, which is in line with the conclusions of Kelly et. al(2014).

A statistically significant but negative correlation is found between employment and sex, i.e. females are less likely to be employed in comparison to man by 9.1%, and mainlyfemales' experience a harder transition from school to finding a job than man do. This is in line with the conclusions of other authors (Hadjivassiliou, Kirchner Sala&Speckesser, 2015; Quintini&Manfredi, 2009; Bergin, Kelly and McGuiness, 2015), but in opposite to the findings of Audas et al. (2005), who in their analysis of the youth transition to the labor market in Hungary found that females are less likely than males to be unemployed.

Young women and man that have better "household financial situation" are more likely to get employed than those that have average or bad financial situation. This coefficient is statistically significant. That means that moving from one category of the household financial situation (e.g. from a bad situation to country average) increases the probability of being employed by 6.8%. Another variable that has significance in this model is mother's level of education. If the mother of a young person has a higher level of education, it increases the probability of being employed by 7.3%. This is in line with the conclusion of Hadjivassiliou, Kirchner Sala & Speckesser (2015) and Riphahn (2002), who as mentioned above, conclude that having parents with higher level of

education improves the transition and helps young people find job quicker than the rest. A positive and statistically significant coefficient is "having working experience while studying". The results show that a person that has had a working experience while studying has 25.2% probability of being employed than a person that doesn't have working experience. This is an interesting indicator that should be taken into consideration. The result is consistent with the findings of Rosso et al. (2012). They claim that lack of work experience is one of the factors that impact negatively in the transition process of youth.

Even though we expected that education as a variable to have an impact on the probability of being employed or not, in our case it proved that education doesn't have significance. This is contrary to the findings of Fares & Tiongson (2007) and Riphahn (2002), who conclude that education is more likely to have a positive impact on the possibility of being employed and ease the transition period.

About the unemployment spell or the duration of transition, the result the higher the period of transition to the labor market, the higher is the probability of a young person to stay unemployed. A person with transition period of a week to a year, has a lower probability of 31.1% getting employed than the person with a period less than a week. The same applies to the other two categories of transition period. If a young person stays in transition for a year to two years, her or his probability of employment is lower for 49.8%, and if the young person is in transition for more than 2 years the probability will be lower for 63.5%. It be concluded that the scarring effect has a tendency to grow with the increase of the period of transition to the job place (i.e. the unemployment period), which has a significant effect of youth opportunities for future employment.

## Conclusions

The main purpose of this paper was to give an empirical analysis of the factors that have an impact on the process of transition of youth from school to work in transition countries. Applying probit model and their marginal effecton a sample of 2610 individuals, we estimated the factors that influence the probability of a person being employed or unemployed. The data was taken from the survey of ILO (International Labor Organization) for 5 countries in transition. In short, our empirical analysis suggests that males are more likely to be employed than females, which in fact shows that in these transition countries females are not much integrated into the labor market. The probability of being employed increases by the age. The person with a better household financial situation is more likely to be employed. Interestingly, mother's level of education has an impact on the probability of a person being employed. Having a prior working experience (while studying) increases the probability of being employed. We conclude that the level of education and field of education doesn't have significant contribution in the transition process of a young person to be employed although a lot of studies point out the opposite. This might be due to the fact of mismatch between educational institutions (labor market offer) and demand by the labor market, as we witness an increase number of highly educated people, whereas the labor market

demands are toward less skilled and educated persons. The policy recommendation in this regard are that these countries should and must give priority and high importance of vocational/technical education and training, to strength the apprenticeship programmes and the dual (work-study programme) according to some proven models, which were successful for many years. These countries must work on narrowing the mismatch gap between education institutions and the industry.

Unfortunately, this research does not include the time a young person needs to find her/his first job and the length of the process of transition from school to the labor market in transition countries. Future studies should also focus on the importance of vocational/technical studies in the transition of youth.

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PAPER

# Investor Confidence and Asymmetric Effects of Terrorism - A case of Pakistan

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**Abstract** Foreign Direct Investment plugs the investment saving gap and a source for transfer of technology and productivity. The major reason for the flow of investment across borders is the difference in the rate of return. But the catch is that foreign investors are more risk averse as compared to the local investors. Investor confidence is sensitive to economic conditions especially like terrorist events which cause capital flight. This study tests the asymmetry in effects of terrorism on FDI, showing that in short run terrorism leads to increase in FDI, later on, it decreases the FDI and it is the time period where asymmetry between the effects of increasing and decreasing FDI occurs. While in long run, the effect of an increase and decrease in terrorism tend to become almost equal and opposite. This indicates that Pakistan needs to be patient as it will take more time to regain investor confidence.

**Keywords:** Asymmetric effects ARDL; Investor Confidence; risk premium; political instability

**JEL Classification:** F21; E22; C22; G18

## 1. Introduction

Foreign Direct Investment (FDI) is the best sort of investment in an economy which enables the diffusion of technology. The transfer of technology through inflow of FDI leads to initiation of new processes in the businesses which become basis of productivity and efficiency. For every unit inflow of resources leads to expansion in the employment capacity of businesses, managerial skills and competitiveness. Increase in FDI can also help the economies to avoid resorting to the loans (Atique, et al., 2004). FDI is crucial as it fills the gap between domestic investment requirement

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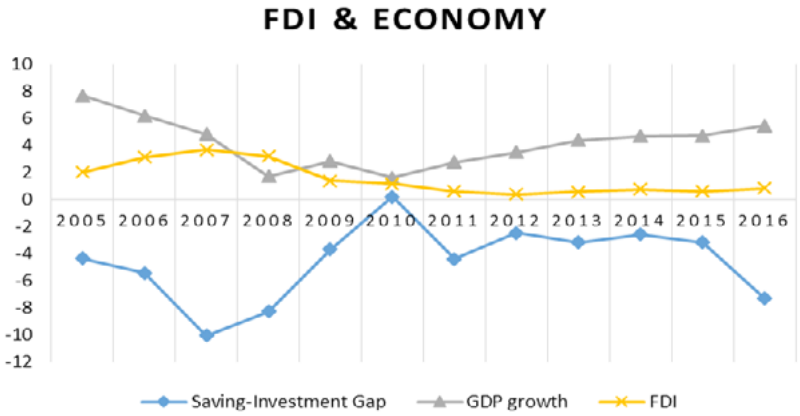
and the country's ability to generate capital resources in the form of saving, for which country might have to resort to domestic or foreign debt (Shahbaz, Nasreen & Afza, 2014; Hunjra, Raza & Asif, 2013).

Developing countries experience a rapid rise in the FDI between 1985 and 2000 where the share of developing country's foreign inflow increased from 16% in 1986 to 45% in 1997 (Perkins et al., 2001). Furthermore, developing countries received 36% of total FDI inflows in 1997 (Asiedu, 2002). Though, FDI of Pakistan hovers around less than 5% of GDP on average, the indirect benefits that it may bring make it a subject of interest for the researchers. It is a consensus among the researchers that the relative conditions of the host country as compared to the world determine how much benefits from FDI can be extracted. These conditions include education and health, tax structure, competitiveness, terrorism and political instability (Krutishi-Kastrati, 2013). Secondly Two – Gap model and Solow growth model predict that to sustain a 6% of GDP growth developing countries must focus on attaining 18% to 20% of foreign capital inflow (Mohey ud Din, 2004).

For the case of Pakistan, the widening of the gap between the domestic saving and investment leads to a slowing of economic growth, while very low levels of FDI is not enough to compensate for the gap. Increasing FDI can tap to the higher returns for the investors, as Pakistan has initiated game changer agreements of worth $45 billion under CPEC with the help of China. Currently, the major inflow of FDI are from China, US, UAE, UK, Switzerland, Italy, Austria, Norway, Luxembourg, Saudi Arabia and Japan.

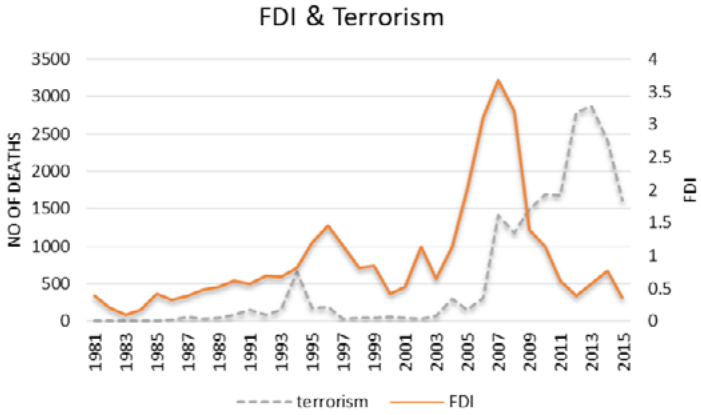
**Figure 1.** FDI and other indicators of Pakistan




According to Farooq and Khan (2014), literature exists for the significant negative and insufficient effects of terrorism on FDI. But the majority of the studies are of the view that terrorism does have negative effect of FDI. For example, a study by Gassebner et al. (2005) highlights that it is the behavior of people which is firstly affected by the terrorist events. The few have the notion that there is no effect of terrorism on FDI as firms invest because of profit rather than terror. The analysis of effects of terrorism on FDI in Spain shows a permanent decrease in Spain's output during with resources shifted from the

terrorism prone region to a secure region (Almfraji et al., 2014; Khakan & Rabia, 2016). It is for sure that terrorism affects developing country more severely as compared to developed countries, this is because developed countries are big enough to absorb the shock while investors move out of the developing economies when they are affected by terrorism (Hyder et al., 2015).

**Figure 2.** Empirical patterns of FDI and Terrorism events in Pakistan




While analyzing the Global Terrorism Database (GTD) which reports event wise data of terrorist activities, Pakistan has witnessed the highest number of victims because of terrorism during last decade. This death toll outnumbers Europe and North America combined. This places emphasis on the need to study the causes and consequences of terrorism in Pakistan. (Global Terrorism Database). Figure 2 also depicts that with the increase in number of terrorism evens from 2005-06, FDI witnessed a sharp decline.

Building to the relationship between terrorism events and FDI, Mendel Fleming model indicates that economic conditions work as indicator for risk premium which foreign investors look for while deciding for investment (Obstfeld, Rogoff & Wren-Lewis, 1996). But the effects are not symmetric as all other indicators of FDI; this study proposes that the effect of increased terrorism is not equal and opposite to the effect of decreasing terrorism. Such that, it will take more time and effort for the government to restore the investor confidence which was distorted because of increasing terrorism events. This study is designed to find the asymmetric effects of terrorism incidence on FDI by applying non-linear ARDL cointegrating approach controlling for interests rate and political stability. The estimates of asymmetric effects / non-linear ARDL will help to explore the differences in the convergence speed between increasing and decreasing terrorism.

## 2. Literature Review

Awan, Khan and Zaman (2011) identified FDI as an essential component of efficient international economy which contributes to economic growth and development. However, it takes time for the benefits from FDI to arrive as they depend on the economic conditions

and policies. Firstly, foreign investment mobilizes the capital from surplus capital countries, to scarce capital countries, where investor enjoys higher returns while receiver enjoys higher capital. Secondly, FDI allows the investor to maintain the managerial and ownership control over the investment. It has been iterated in literature several times as Pakistan has an attractive climate for foreign investment, especially in agriculture, IT and telecommunication, power and services sectors and most importantly Pakistan is initiated projected under CPEC on a large scale to create profitable avenues for FDI.

Bandyopadhyay and Younas (2014) report the association between FDI and terrorism events, for 78 underdeveloped economies between 1984 - 2008. While Alam, Akram and Iqbal (2017) worked on Pakistan. Their major findings were that there is a significant negative association between terrorism events and foreign investments for the case of underdeveloped countries.

Hyder et al. (2015) has empirically tested the impact of terrorism using 177 countries along the time period of 1968-2000. The main finding shows that increase in terrorism events results in shifting of resources from investment spending to government spending. And it is found that the terrorism is negatively related with FDI and economic growth.

Khakan and Rabia (2016) tested negative terrorism impact on the FDI and stock exchange of Pakistan with the help of GARCH model on data taken from 1998 to 2004. He suggested that there is a need for suitable anti-terrorism strategies to increase the investment level.

Bandyopadhyay, Sandler and Younas (2011) have examined the economic consequences of terrorism. It is observable that terrorism has adverse effects like reluctant behavior by foreign investors, costs incurred in the provision of security, losses in trade agreements, imbalance of payments, increased insurance premiums, travel delays creating problems for local as well as foreign passengers and a fall in tourist arrivals. Following this, terrorism also depreciates the infrastructure and capital and discourages domestic investment too (Anwar, Arshed & Anwar, 2017). Based on these issues this study focusing on the relationship between terrorism and foreign direct investment for the case of Pakistan. Mirza and Verdier (2007) described in their study that terrorism incidence directly creates risk and anxiety enforcing individuals to become conscious about their expected returns. This makes expected return on investment higher than that actual interest rate, and it is denoted as a risk premium. This terrorism based increased in ambiguity distorts the demand patterns and shifts the investments to low risk premium markets. Lastly, the efforts of the government to reduce terrorism increase the cost and disturb the planned budgetary expenditures of the country (Rasheed & Tahir, 2012).

The objective of the study by Khalid, Ullah and Shah (2012) was to determine the main factors, i.e. terrorism, political instability, energy crisis and declining GDP which are responsible for the recent decline in the Foreign Direct Investment inflows in Pakistan. The sharp decrease in the last 3 years is an alarming signal for the economy. The benefits are not always perceivable as there can be many ways FDI can transform the economy. Recently, Pakistan has designed its investment policy to attract the foreign investor; this includes opening up the economy and marketing the potential lucrative avenues for investment.

Several studies like Singhania and Gupta (2011), Chingarande et al. (2012) advocated that interest rate leads to increase in FDI for the case of Pakistan while studies like Iabal, Azim and Irshaad (2013) and Mehmood and Hassan (2015) tried to find factors affecting FDI inflows in Pakistan. Using Autoregressive and Distributed Lag (ARDL) model, these studies concluded that interest rate in the economy and political instability discourage the FDI in long run.

Similar to terrorism, political instability also creates a risky situation for the investors. Political instability changes the behavior of the buyers and sellers and fears spread all over. This slows down the economic process of a country and investors face risk to invest in this situation. The whole of the economy is in a risk situation which can appear in times of wars, economic turmoil, unplanned elections, or other events that can derail the planned growth process. These periods are characterized by non-convenience situation and hurt the economic stability in the country as discussed by some researchers (Olwan, 2011; Khalid et al., 2012; Ullah et al., 2016).

On the note of prolonged efforts by the Pakistani government and military leadership, Pakistan is still struggling to regain the heights of FDI which were lost because of uprising of terrorism events. Exploration of empirical studies failed to find any study which has investigated the asymmetric effects of terrorism on FDI for the case of Pakistan.

## 3. Methodology and Results

### *3.1 Variables*

Table 1 below shows the names and symbols of the variables used in this study with its units, transformation and sources. The sample is ranging from 1981 to 2016. Before estimation, the terrorism variable will be split into two portions where TERR_POS shows the increasing portion of terrorism events while TERR_NEG shows the decreasing portion of the terrorist events.

**Table 1.** Variables and sources

| Variable (Symbol) | Units (Transformation) | Source |
|---|---|---|
| Foreign Direct Investment (FDI) | % of GDP (Natural Log) | WDI |
| Terrorism victims (TERR) | Number of people (Natural Log) | GTD |
| Interest Rate (IRT) | % per annum | IFS |
| Political Instability (POL) | % change in Index | Polity 4 |

### *3.2 Descriptive Statistics*

While comparing the FDI with increasing and decreasing portion of terrorism, table 3 provides the correlations and covariance. It can be seen that the correlation of FDI with both directions of terrorism is not exactly equal and opposite. The association of FDI is stronger with the increasing portion of terrorism. From covariance table, it is observable that the change in the variance of FDI is more responsive to decreasing in the terrorism

which is not equal and opposite to covariance of increasing terrorism.

**Table 3.** Association with FDI

| | Correlation | Covariance |
|---|---|---|
| TERR_POS | 0.49 (0.00) | 0.95 (0.00) |
| TERR_NEG | -0.45 (0.00) | -1.51 (0.00) |

### *3.3 Unit root tests*

Below Table 4 shows the results of unit root tests, each variable is checked for stationarity at level and 1st difference using Augmented Dickey-Fuller (Dickey & Fuller, 1979, 1981), Philips Perron (Phillips & Perron, 1988) tests. It can be seen here that other than political instability (POL) and decreasing component of Terrorism, all variable are non-stationary at level. Since there is mixed order of integration, this study will proceed to the utilization of ARDL cointegration approach.

**Table 4.** Unit Root Tests

| | **ADF Test** | | **PP Test** | |
|---|---|---|---|---|
| **Variable** | **Level** | **1st Diff.** | **Level** | **1st Diff.** |
| FDI | -0.270 (0.08) | -3.79 (0.00)* | -1.70 (0.42) | -3.75 (0.00)* |
| TERR_NEG | -2.58 (0.11) | -5.36 (0.00)* | -4.00 (0.00)* | -5.35 (0.00)* |
| TERR_POS | -0.46 (0.88) | -3.51 (0.01)* | -0.37 (0.90) | -3.51 (0.01)* |
| INT | -2.48 (0.13) | -4.75 (0.00)* | -2.53 (0.12) | -5.67 (0.00)* |
| POL | -5.35 (0.00)* | -9.40 (0.00)* | -5.35 (0.00)* | -26.0 (0.00)* |

* significant at 5%

### *3.4 Cointegration test*

Asymmetric effects / non-linear ARDL model is a variant of ARDL cointegrating bounds model (Pesaran, Shin & Smith, 2001) where the assumption of linearity in the coefficient is questionable. In this case the effect of increasing and decreasing of the independent variable is expected to be not equal and opposite (Shin, Yu & Greenwood-Nimmo, 2014).

The optimal lag order selected by the ARDL cointegration model. Based on minimum AIC value, the optimal lag order is (1, 3, 2, 3, 1). Bound cointegration test shown in table 5 on this lag order came out to be 8.10 which is greater than I1 bound critical values, confirming that these mixed order variables are cointegrated in long run.

**Table 5.** ARDL Cointegration Test

| Cointegration Test | |
|---|---|
| Null Hypothesis: No Long Run Relationships exist | |
| F Statistic | 8.10 |

After the confirmation of the presence of long run results in the cointegration test, there is a need to ensure that these results are reliable and valid. Regression diagnostics are done in table 6 to ensure this, using insignificant probability values, they indicate that there is no hint of non-normality, serial correlation, heteroskedasticity, mis-specification and instability in the estimates.

**Table 6.** Post regression diagnostics

| | |
|---|---|
| Jarque Bera Normality Test | 1.90 (0.38) |
| B-G Serial Correlation LM Test | 2.17 (0.15) |
| B-P-G Heteroskedasticity Test | 0.74 (0.71) |
| RESET Test | 1.88 (0.19) |
| CUSUM | Stable |
| CUSUM sq | Stable |

### *3.5 Short run and Long run estimates*

In the short run table 7, changes in increasing portion of terrorism in present value, 1st and 2nd lag lead to a positive change in the FDI while changes in the decreasing portion of terrorism in present value and 1st lag leads to negative changes in the FDI. While changes in the interest rate two time periods ago leads to positive change in the FDI and there is no effect of changes in political instability on changes in FDI.

The negative coefficient of ECM-1 is between -1 and 0 indicates that there is convergence in the model making it suitable for policy makers for possible intervention for FDI (Banerjee, Dolado & Mestre, 1998). While R squared shows that the proposed independent variables are explaining 91% of the variation in the dependent variable and significant value of F statistic shows that the unrestricted ECM is fit.

**Table 7.** Short run estimates of ECM model

| Short Run Coefficients (Dep. Var. ΔFDI) | | |
|---|---|---|
| Lag order: (1, 3, 2, 3, 1)<br>Observations 31 | | |
| Variable | Coefficient | Prob. |
| ΔTERR_POS | 0.82 | 0.00 |
| $\Delta TERR\_POS_{-1}$ | 1.23 | 0.00 |
| $\Delta TERR\_POS_{-2}$ | 0.71 | 0.05 |
| ΔTERR_NEG | -0.50 | 0.02 |
| $\Delta TERR\_NEG_{-1}$ | -0.28 | 0.05 |
| ΔINT | 0.03 | 0.51 |
| $\Delta INT_{-1}$ | 0.01 | 0.82 |

| Short Run Coefficients (Dep. Var. ΔFDI) | | | |
|---|---|---|---|
| Lag order: (1, 3, 2, 3, 1)<br>Observations 31 | | | |
| Variable | Coefficient | | Prob. |
| $\Delta INT_{-2}$ | 0.20 | | 0.00 |
| ΔPOL | 0.01 | | 0.64 |
| $ECM_{-1}$ | -0.56 | | 0.00 |
| R squared | 0.91 | Adjusted R sq. | 0.82 |
| F Stat | 11.09 | Prob. | 0.00 |

Table 8 provides the estimates of restricted / cointegrated ECM model after the confirmation of presence of cointegration and convergence. Here increase in the interest rate by 1% leads to decrease in the FDI by 0.75%. This unexpected sign is because existing multinational firms which are already in Pakistan do not find fit for debt financing at high market lending rate. These results are similar to (Iqbal et al., 2013; Mehmood & Hassan, 2015). Here the convergence speed of interest rate shows that if government of Pakistan decreases 1% interest rate to attract 0.75% higher FDI, it will take 2.4 years to achieve this target, such high convergence speed indicates that interest rate it solely the important determinant of FDI.

The coefficient of political instability is insignificant showing that based on this specification, in the long run there is no effect of political instability on FDI of Pakistan. Because of being insignificant its convergence speed is about 50 years which is very high.

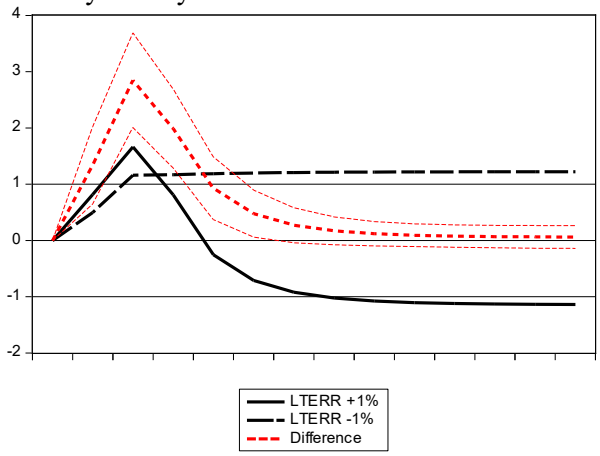
**Table 8.** Long run estimates from Cointegrated ECM model

| Long Run Coefficients (Dep. var. FDI) | | | |
|---|---|---|---|
| Variable | Coefficient | Prob. | Convergence Speed |
| TERR_POS | -1.11 | 0.01 | 1.6 Years |
| TERR_NEG | -1.17 | 0.00 | 1.5 Years |
| INT | -0.75 | 0.00 | 2.4 Years |
| POL | -0.03 | 0.67 | 50 years |
| Constant | 1.68 | 0.13 | |

While studying the asymmetry of terrorism, it can be seen that a 1% increase in terrorism will lead to 1.11% decrease in FDI while a 1% decrease in terrorism will lead to 1.17% increase in FDI on average. Comparing the convergence speeds, we can see that it takes 1.6 years to experience the negative shock of increasing terrorist activities while it takes 1.5 years to experience the positive shock of decreasing terrorism activities.

So though there was asymmetry in the short run, but figure 4 indicates that in the long run positive effects from the efforts of reducing terrorism in Pakistan can be higher than before. In Figure 4 the narrow dotted dashes also confirm that in short run there is a difference between the increasing terrorism and decreasing terrorism while in the long run, this line hovers just above the zero line indicating that benefits of decreasing terrorism will be slightly higher than the costs of increasing terrorism in Pakistan.

**Figure 4.** Degree of Asymmetry




## 4. Conclusion and Discussions

It is no doubt that even at low levels of FDI, it is still beneficial for the economy. FDI does not only bring capital, but it also brings managerial skills, technology and innovation to the economy whose intangible returns are far reaching. FDI yields higher employment, research and development and competition among local businesses. Pakistan is in dire need of FDI as it has to plug the gap between the domestic saving and domestic investment. Without FDI, Pakistan might have to resort to domestic or foreign debt.

Unfortunately setting aside the benefits of FDI, it has one demerit too that it is highly risk averse and prone to capital flight whenever it sees uncertain conditions. Pakistan was on the verge of permanently boosting FDI to a higher level in late 2010s when a sudden increase in the terrorism events postponed the takeoff stage. Pakistan is still struggling to attract and regain the confidence of the foreign investors.

Several empirical studies have indicated the harmful effects of increasing terrorism as investors reallocate their financing to less risky avenues. This study intended to explore for the case of Pakistan whether there is difference in time taken by the capital flight because of increase in terrorism and capital inflow because of national efforts to reduce terrorism.

Hence this phenomenon can be explored by testing the degree of asymmetry between increasing terrorist activities and decreasing terrorism activities under a framework

which can handle I(0) and I(1) variables, non-linear ARDL is known to be used under certain conditions.

The results of non-linear ARDL shows that in short run there is an asymmetry between increasing and decreasing terrorism effects on FDI, but as we move into long run the asymmetry dissipates to a situation where the benefit of decreasing terrorism is slightly higher than the costs of increasing terrorism. This is very hopeful situation for Pakistan that it can recover the lost investor confidence and build on it in future if it pushes its efforts to counter terrorism. This study also motivates the policymakers to keep activating the National Action Plan with the collaboration with Pakistan Armed Forces to root out all the remains of terrorism from Pakistan.

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OPINION

# Samarkand, on the Silk Road[1]

## The former Soviet republic returns to its origins at the hand of China

**Fernando Ayala***

In Uzbekistan, in the heart of central Asia, is the mythical Samarkand, whose name is associated with a beautiful love story and is one of the oldest inhabited cities in the world.

### From Alexander the Great to Josef Stalin

The origins of Samarkand date back to the 5th century BC. Its splendor stems from the ancient Silk Road and the Turkish-Mongolian conqueror, Tamerlane, national hero whose tomb is venerated in Samarkand and who consolidated an empire even larger than the Roman. In the beautiful square of Registan - which today we would call a university campus - with its three imposing madrasahs or Koranic schools where one studied from religion to astronomy, I had the opportunity to observe the fine work of architects and artists of the 14th, 15th and 16th centuries. In the city, I walked across its markets full of scents and colors, visited the building that contained the sextant to measure the positions of the stars created by the astronomer and King Ulugh Beg in the 16th century, and sat in the place where the caravans from China arrived with their precious silk, whose secret of manufacture was kept for all the centuries in which the merchants were responsible for bringing it to the West.

Through Samarkand and the Uzbek lands crossed, among many others, Alexander the Great, Genghis Khan and Marco Polo. Alexander settled in this city where he married his first wife, Roxana, who accompanied him to India.

The legend credited him with the Uzbek national dish called plov, born from Alexander's instruction given to his cook to prepare something "nutritious and tasty" for his soldiers and to be served in the mornings, before each battle. Today it is eaten all over Uzbekistan and it became a tradition that the groom, on the day he celebrates his wedding, eats it at dawn only accompanied by men. A macho tradition, by the way, since it is cooked, of course, by women.

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The history of the 20th century was harsh with this country of 447,900 km2 and about 30 million inhabitants. The Russian Revolution and the subsequent creation of the Soviet Union incorporated the territories of Central Asia that were mainly Muslim and that today make up five countries, as socialist republics, despite their ethnic and cultural differences1. In the vast majority of them, the population declares itself Sunni Muslim, but there are also Orthodox Christians and other minority religions.

Islam settled and thrived from the 8th century until its incorporation into the Soviet Union in 1924, which quickly closed mosques and churches officially proclaiming atheism, which generated the protest of some Uzbek sectors2. This became even more evident when German troops invaded the USSR and part of the Muslim population showed enthusiasm for the occupiers.

While many fought against the Nazis in the Red Army, Stalin was later charged with deporting entire populations to Central Asia in retaliation for their collaboration. This is how today an Uzbek majority coexists with Russians, Koreans, Tajiks, Kazakhs, Karakalpaks and Tatars.

**The Soviet era**

When talking to older Uzbeks whom I had the opportunity to meet in squares and cafes, I consulted many times what they remembered of the Soviet era – for good and for bad. Invariably the positive responses were education, work, social security, housing, the cost of living. Likewise, they remembered negatively the action of the police, the KGB and the lack of spaces of freedom to criticize.

Twenty-eight years after the disappearance of the USSR, today young people refer to it as something alien, far from their lives. A girl from the Tatar minority, whose grandparents were deported to Uzbekistan, told me that the closure of the mosques had been very hard for them because it was part of their cultural identity. However, she added, it had been positive for later generations who grew up in the Muslim culture of their homes, but without religion classes at schools, without veils or mosques. Today, the official religion is Muslim, mosques are open, but few women are seen with veils. There is a soft Islam, something the girl appreciated. Another positive aspect would be the widespread use of the Russian language that allows communication between ethnic groups and countries across the region.

Tashkent, the Uzbek capital, has the imprint of Soviet architecture: wide avenues with massive concrete blocks that revive at night, thanks to modern and colorful lighting systems copied from modern Muscovite buildings. The Government committed in 2017 to a strategy of economic reforms - following the tradition of the five-year plans - that must culminate in 2021 with the economic, social and political opening. It seeks to deepen the market economy with greater competition together with maintaining macroeconomic stability, strengthening social protection and the development of environmental sustainability.

In 2017, the Per Capita Income (PCI) of Uzbekistan reached US $ 6,253, the Central Asian countries show a great disparity of income. In that same year they had

a PCI of: Kazakhstan US$24.055, Kyrgyzstan US $ 3,620, Tajikistan US $ 2,896 and Turkmenistan US $ 16,389), public debt stood at 23.5% of GDP, education expenditure was 19.2% of GDP, literacy rate reached 99.98% and life expectancy was 71.3 years.

Among the strengths of the country, like the others that make up Central Asia, is its geographical location that will be boosted with the Silk Road and shall compensate for the lack of access to the sea. The five countries of Central Asia border on Russia, China, Iran and Afghanistan in an area of geopolitical interest both for their natural resources as for the strategic position in which they find themselves.

**A Chinese Marco Polo**

The beginnings of the Silk Road date back to the 2nd century BC. C. when Emperor Wudi, of the Han Dynasty, sent Zhang Qian - his Marco Polo - to explore the regions of Central Asia. It took him 13 years to return to China and he left testimony of it in his writings after touring what is now Uzbekistan, Afghanistan and Turkestan - a coherent account of what he had seen - and bringing to the empire, among other things, a new breed of horses, and unknown unknown unknown plants such as grapes and alfalfa.

Chinese President Xi Jinping announced on September 7, 2013 at the University of Nazarbayev, in Kazakhstan, the initiative of the "Economic Strip of the Silk Road and the Maritime Route of the 21st Century" or New Silk Road (NSR). On that occasion he pointed out:

*More than two millennia ago, the diligent and courageous people of Eurasia explored and opened up trade and cultural exchanges linking the main civilizations of Asia, Europe and Africa, collectively called the Silk Road for later generations.*

This was the beginning of the connection that ended up linking China with the Mediterranean and that today also aims to reach Africa and Latin America. The NSR already covers 126 countries, including a dozen from Europe, with a market close to two thirds of humanity. It is undoubtedly the most ambitious development project of the 21st century and will benefit everyone, especially China that assumes the political and financial risk by creating a fund of 40,000 million dollars with the Asian Investment and Infrastructure Bank with a capital of 100 billion dollars.

The development of infrastructure projects at a planetary level with the construction of highways, high-speed lines for trains, ports, canals and other investments, will have multiplier effects that will favor economic growth and especially the development of the western part of China, where cities and industries are expected to flourish.

The expansion of China's global power raises the natural concern of the United States, Russia and other powers. In a world where the Cold War for some has not ended, every move on the global geopolitical board represents a potential threat of interest. The Trump Administration does not want to allow, for example, the Chinese expansion to what it has historically considered its "backyard", i.e. Latin America.

Using rude language in diplomatic terms, Secretary of State Mike Pompeo3 recently traveled to South America to warn, without shame, about the dangers posed by the Chinese presence in the region. As if the Latin Americans did not remember the brutal usufruct of

the transnationals in the past, the coups d'état and military invasions of the United States.

## Tourism, the new silk

The NSR represents an opportunity for the countries of Central Asia to make a leap to development. Uzbek President Shavkat Mirziyoyev seems to be fully aware of the strategic value of his country. In 2017 he made state visits to Russia and China where he signed numerous agreements for 16,000 and 20,000 million dollars respectively. In May 2018 he met in Washington with President Trump and spoke of "a new era of strategic cooperation" by signing agreements with 20 US companies for 5 billion dollars. General Motors produces 250,000 cars a year in its factories in Uzbekistan employing more than eight thousand workers.

The powers know about the strategic value and resources that Central Asia represents, so the interest in strengthening relations with these countries and increasing the presence of their companies is no coincidence. The Chinese initiative offers resources, job creation and reciprocal benefits. China has known what it wants for a long time and is now implementing it. These are the advantages of a centralized system which looks at the very long term and is deploying its global presence based on its vision of the principles of realism in international politics adapted in its own way and that includes four elements: political leadership and economic, military and cultural power, in which the first is the independent variable that can condition the others4.

As for the global cultural deployment, China started it in 2004 with the opening of the first Confucius Institutes for the teaching and dissemination of their language and culture. Today it has 548 institutes spread around the world, of which 126 are in Asia (Hanban, the headquarters of the institutes, indicates that there are 54 centers in Africa, 173 in Europe, 21 in Oceania, 160 in the Americas and 126 in Asia ).

Uzbekistan can take advantage of the opportunities that the NSR will bring to enhance its comparative advantages since, in addition to its geographical location and natural resources, it has a young, educated population eager to progress. In addition, the country has great potential in terms of tourism with the historical wealth offered by cities such as Samarkand, Bukhara and Khiva especially, which will benefit from regional economic growth and are virtually unknown to Western tourists.

Tourism can be the new silk that will bring riches and progress to Central Asia. Merchants will no longer arrive in caravans and tents as in the past, but rather as modern travelers on high-speed trains to settle in comfortable hotels that will facilitate tourism, integration and interculturality. It is an opportunity that opens the country for numerous companies around the world that seek stability and economic growth to invest, stimulate integration, generate jobs and contribute to peace and development.

## References

1 Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan together amount to 4 million km2 and almost 70 million inhabitants.

2 After the triumph of the Russian Revolution, Lenin appointed Stalin People's Commissar for

Nationalities, a position which he held until 1923.

3 Between April 11 and 15, Pompeo visited Chile, Peru, Colombia and Paraguay to warn of the dangers of the Chinese and Russian presence in the region.

4 Yar Xuetong, Leadership and the rise of great powers. Princeton University Press, 2019.

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OPINION

# Ethiopia, Where Humanity Began Its Long March[1]

## And where millions will keep walking... until a new Berlin Conference

**Fernando Ayala***

It all started in Africa. It all started in Ethiopia. It all started with Lucy.

### At the dawn of humanity

3.2 million years ago Lucy, our first known ancestor, was born of a simian mother differentiating herself from her thanks to the evolution of her genes that allowed her to stand on two feet and start walking. This happened in Africa, in Hadar in the Awash Valley, 159 kms from Addis Ababa, in today's Ethiopia. We all descend from Lucy, including the slavers, colonialists and white supremacists of yesterday and today.

Her remains, excavated in 1974 by the American paleoanthropologist Donald Johansson, are preserved in the museum of Addis Ababa, where I had the opportunity to meet the relatives of this Australopithecus afarensis. The descendants of Lucy continued to walk, crossed continents and their genes evolved to what is today our species, the homo sapiens or "wise man"; so "wise" that we even have the ability to eliminate the entire human species, and we seem to be in a frantic struggle to destroy the planet. This evolutionary history of the human being could be much more beautiful if only the differences between the descendants of Lucy were minor. While today in the developed world, few are still obliged to walk, in most of Africa human beings continue to walk great distances; carrying water and grain on their backs due mainly to poverty, which has its explanation in the history of this continent subjected and exploited by colonial powers, along with wars, ethnic conflicts, religious struggles, lack of institutional presence, weakness of the political systems and last but not least, climate change.

Ethiopia, with an area of 1,104,300 km2, equivalent to 36 times the area of Belgium, concentrates just over 100 million inhabitants. According to demographic projections, they will reach 188.5 million in 2050. The majority of its population, 41%, is under 14 years old - a percentage that in Germany only reaches 13%. The 4

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main ethnic groups (Oromos, Amharas, Somalis and Tigray) make up just over 70% of its population which in total houses 140 different groups where 83 languages and about 200 dialects are spoken.

**Faith is the only future**

Christians, Muslims and Animists live together with other minor creeds. In fact, the vast majority practices atavistic animism in addition to their religion, the belief in the soul or spirits. The Ethiopian Orthodox Tewahedo (word that means "unit") Church is the official religion since the year 330 approximately under the kingdom of Aksum (4th century BC until 7th century AD), and therefore the second oldest of the world after the Armenian. It is practiced fervently by 61.56% of the population –a figure that includes both Protestants and Catholics, that is, more than 60 million people.

In Rome, this Christian variation is qualified as "primitive Christianity" or Paleo-Christianity, probably because its rites are closer to the origin itself or because they practice an effective Lent with fasting from the time of dinner until 3 pm each day, with abstention absolute of products of animal origin and alcohol. Actually, the question arises whether there is a religion that is not primitive. What explanation would our grandmother Lucy have every time she woke up from a dream? I believe that animism was born there, the good and bad spirits that helped or harmed us in the daily struggle for survival, along with the belief of another life after death. In fact, animism is still present through the tradition and superstitions that accompany people every day.

Sunni Muslims are the second most followed religion by Ethiopians with 34.4%. Then come the Animists with 3.7%, and other minors. It is interesting to note that 99.8% of the population declares themselves as believers. In Germany that percentage reaches only 67.1%. Until now in Ethiopia there has been a wonderful tolerance and religious coexistence for centuries; there are no ghettos, no neighborhoods, no cities that identify a religion. The problems in Ethiopia are born of belonging to a certain ethnic group, and that is where things get complicated. The rivalries between Oromo, majority, and Amharas, minority, are perceived cyclically, causing clashes and deaths.

The tensions between Ethiopia and Eritrea began a few years after the latter country reached independence in 1993. Between 1998-2000 a war broke out – with continued belligerence until the signing of a peace treaty and the recognition of the borders in 2018. The victims are calculated in around 100,000 deaths and more than 600,000 refugees.

Unlike the other African countries, Ethiopia has never been a colony. In the division of the continent, at the Berlin Conference1 in 1884-85, the territory which was known as Abyssinia was assigned as a Protectorate to Italy, a country that maintained an active presence in Eritrea. However, the Italian forces were defeated by the Ethiopians in 1896 in the Battle of Adwa - celebrated every year as a great military victory, and which laid the foundations of their independence.

Mussolini managed to occupy Ethiopia for his ephemeral personal glory between 1935 and 1941, creating the province of Eastern Italian Africa that included Ethiopia, Eritrea and Somalia. He moved the symbolic fourth century-obelisk of Aksum to Rome

to be installed as a war trophy at the entrance of the Ministry of the Colonies (current FAO headquarters), until it was returned to Ethiopia in 2008. Emperor Haile Selassie is recognized and revered with such respect that the main university of Addis Ababa bears his name and houses a museum in his honor.

**The odious but necessary comparisons**

The economic and social reality of Ethiopia is dramatic even though people say they are better off and have confidence in the future. For the first time there is a woman President and a pacifist Prime Minister, who enjoy broad support and are committed to creating better living conditions for people. However, in every corner of Addis Ababa, cars are surrounded by women with babies in their arms, old people and children begging. At night you can see groups of people sleeping in the streets. In 2017, 27.3% of the population lived with 1.9 dollars per day, 23.5% were below the poverty line, and corrected GDP per capita (PPP) reached US $ 1,890 – whereas in Germany, the GDP reached US $ 51,680. According to the World Bank, 80% of the Ethiopian population lives in the countryside, but young people begin to migrate to cities attracted by cell phones and the opportunities to start a new life. In 2017, around 900 thousand Ethiopians lived outside their country, mainly in the United States and Saudi Arabia - an important source of remittances.

Like in most African countries, the estimated infant mortality rate reached 49.6 out of every thousand children born alive in 2016. In Germany and other developed countries, the same rate reached 3.4 per thousand. The life expectancy of an Ethiopian newborn is 65.4 years, while that of a German reached 81 in 2017.

Just as we recognize that the differences between rich and poor have increased within each country, it is worth remembering that the gap between developed and developing countries also continues to increase. The dramatic comparisons between income and quality of life should make us reflect on what we are doing to reduce them effectively.

**A new Berlin Conference**

The fate of the Africans was sealed by the powers in the nineteenth century Berlin Conference. The borders were created according to the strength of each empire. There was no free will for their people or a divine hand to protect them. Projections of United Nations population growth for the world show that while in Europe in the year 2050 the population will decrease by 4.3%, that of Africa will increase by 1.300 million - that is, it will double its current population.

What future awaits those generations to be born? One thing is sure: they'll keep walking, same as all subsequent generations to our grandmother Lucy. Most likely, many will try to emigrate, to Europe or the United States, to seek a better future if the current conditions of countries like Ethiopia do not improve substantially. Neither the independence achieved in the 60s nor the fact of never having been a colony, make the difference in real terms, despite the good intentions of many leaders. It is time for a "new Berlin Conference" even with the same powers that enslaved, looted and divided the

continent. When reviewing the Minutes of said Conference, dated February 26, 1885, once can read: ... to regulate the most favorable conditions for the development of trade and civilization in certain regions of Africa and to assure all nations the advantages of the free navigation of the two main rivers of Africa that flow in the Atlantic Ocean.

After 135 years we know the civilizatory results very well. Therefore, a sense of realism should summon these same countries to seek global solutions that go beyond the demographic threat and develop a large investment plan with shared responsibility to avoid the misuse of resources and strengthen multilateral organizations so that they can accompany a process that will be long-standing. It is time to invest in earnest to protect the future, and therefore the participants of the Berlin Conference should once again meet to seek to realize the dream of generations of Africans who hope for a better life in their countries, without having to go and look for it in the countries of their ancient colonizers.

## References

1 The Berlin Conference, led by the great empires, changed the destiny of Africa forever. Summoned by England, France and Germany, Holland, Portugal, Austria, Italy, Russia, Belgium, Spain, Sweden, Norway, Turkey and the United States also participated. The greed was reflected in the attitude of King Leopold of Belgium who personally claimed the Congo, to carry out a genocide in an estimated at least 10 million Africans.

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Journal
Transition Studies Review

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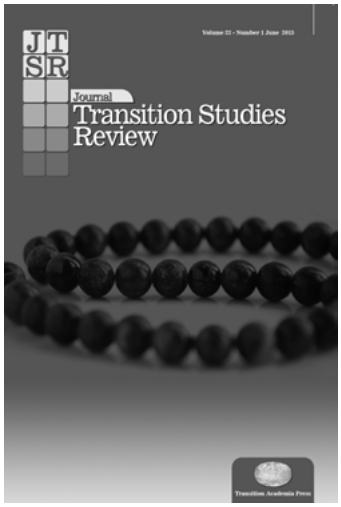


# Journal Transition Studies Review
## Aims and scope

Transition Studies Research Network was founded in 2002 as CEEUN-Central Eastern European University Cooperation, with the aim to connect a group of experts and university faculty in a program of cooperation devoted to research programs and specialized international postgraduate and doctoral courses. The Network has grown fast and soon after the scientific "voice" was established with the Journal Transition Studies Review, published initially by the CEEUN, then by Egea - Bocconi University Press, and finally by Springer Wien-New York.

At the beginning, JTSR was focusing on transition in Central and Southeast Europe, interpreting CEEUN purely as a European network. Soon afterwards, the EU enlargement was achieved extending the aims and scope to differentiated forms of partnership with Russia, Ukraine, Caucasus, the Black Sea and Caspian Seas, Mediterranean regions and Near East. Today this approach has dramatically changed following a serious violation of the international laws and agreements by the Russian backed insurgency and later invasion of Crimea and Eastern Ukraine. Today we are facing the most severe crisis of security and confidence between European Union countries and Russia since the Second World War and the reunification of Germany. The future is unpredictable and certainly nothing will return to be as before in the relations with Russia.

CEEUN was launched in Vienna and its first meeting took place at the Institution that was founded by Friedrich August von Hayek and Ludwig von Mises, two great thinkers and economists: the Austrian Institute for Economic Research. Now the scenario is completely different. From 2005 on, a worldwide regional approach looking to Asia, Latin America, Eurasia and Great Middle East has been implemented. TSN-Transition

Studies Research Network has inherited from the previous CEEUN the "aims and scope" which were recently integrated. In the last ten years Transition Studies Research Network has progressively involved more than 400 internationally well known members and 95 university departments, institutes and research centers and is engaged in many areas and programs.

The scientific interests and fields covered are: Europe and the World, future approach to EU enlargement, global governance economic, financial and policy framework and impact, where the focus would be mainly on growth theories, innovation and human capital, cultural and intellectual heritage, main advanced industrial sectors technologies, investments, international affairs, foreign policy choices and security, monetary policy and main currency areas, banking and insurance, development and area studies, social policies, environment and climate, culture and society, juridical and law studies, regional approach to global governance, peculiarities and critical challenges.

The future transition to an open economy and institutional reforms, political and strategic issues and challenges, governance, European, Mediterranean, Asia-Pacific, Middle Eastern, Latin America and Africa perspectives are key topics of this high ranking journal.

Transatlantic and Asia-Pacific relations, security and international order represent, together with applied regional studies, another cornerstone of the Network's activity and of Transition Studies Review's contents as well as of three other Journals covering specific aspects and regions: the Journal of Global Policy and Governance; the Journal of East Asia in World Affairs, in cooperation with Asian universities and the Journal of Welfare Policy and Management at Udine University. The Network is deeply committed to a wide range of transition issues related to quantitative modeling and tools to analyzing and researching economic, financial, strategic studies, social, cultural, environmental, juridical main issues.

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## *Publications*

**JTSR** - *Journal Transition Studies Review - Transition Studies Research Network, Venice, Italy*

**JGPG** - *Journal Global Policy and Governance - Transition Studies Research Network, Venice, Italy*

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**Papers**



**Opinion**