

Journal Transition Studies Review

Papers

A.Spangaro; P. Stucchi	A Comparison of Ranking Criteria: an Application to Asset Class Indices of Europe, US, Russia and China	3
S.Bolat , A. K. Tiwari; M. Mutascu	The Behaviour of US and UK Public Debt Further Evidence on Time Varying Parameters Revisiting	11
S. Kurtovic; S. Talovic; B. Halili; N. Maxhuni	Liberalization of Trade with the EFTA Countries Some Evidence from Bosnia and Herzegovina	21
K. Kumo	Research on Poverty in Transition Economies A Meta-analysis on Changes Determinants of Poverty	37
M. Prezioso	Short-Term Territorial Investment Europe's Long-Term Future	61
I. Lengyel; M. Lukovics; S. Imreh	Entrepreneurship challenges in a Less Developed Region of Hungary. ELI-ALPS Laser Research Centre in Szeged	79
S. Abbas	Remittances Flow to Pakistan A Gravity Approach	97
S. KG	“Are Shocks to Real Output Permanent or Transitory?” Evidence from a Panel of Indian States and Union Territories	107

A Comparison of Ranking Criteria: an Application to Asset Class Indices of Europe, US, Russia and China

Alice Spangaro • Patrizia Stucchi

Abstract The main purpose of this work is the *ex post* comparison of the performances of three macro asset class indices for Europe, United States, Russia and China during the period 2003-2015. The analysis is based on six different ranking criteria, starting with the well-known Sharpe index and its *VaR* and *CVaR* modifications, then considering the Omega and Sortino ratios which employ higher partial moments, and at last the Rachev ratio which changes the profitability index. All the previous performance indices give substantially the same ranking; they all show supremacy of Chinese fixed income and both European and American real estate in the years 2003-2008; they indicate US and European stock indices as the worst performers in 2008, and American, Russian and Chinese fixed income indices from 2012 to 2015 again as the worst performers. A visual display of the six different rankings is also provided, highlighting the adequacy of the Sharpe ratio against its more refined alternatives.

Keywords Performance measures - Sharpe ratio - Asset class ranking - Skewness - Kurtosis

JEL Classification G32 - F3

1. Introduction

Usually, portfolio or fund performance evaluation is based on reward to risk ratios. The classical measure is the Sharpe index (1966, 1994), that is the ratio between the excess return of the portfolio (with respect to the riskless asset return) and the return standard deviation. This means that the Sharpe index summarizes the portfolio characteristics in terms of mean and variance, which is only justifiable with normally (or, more in general, elliptically) distributed returns. This obviously represents the weakness of the Sharpe ratio and has led to the development of several new performance ratios, ultimately based on more accurate risk measurement and also on new profitability measures. In this paper we compare the ranking of 12 indices over the period 2003-2015 using 6 different reward to risk ratios.

The rest of the paper is divided into three sections. Section 2 is devoted to the description of the performance ratios used in our analysis. Section 3 describes the data set, the results

Patrizia Stucchi (✉) • Alice Spangaro
Department of Economics and Statistics
University of Udine
e-mail: patrizia.stucchi@uniud.it

obtained in terms of ranking correlation and the comparison of the asset class performances over the time. The last Section contains conclusions and comments.

2. Performance Measure

2.1 The Sharpe Ratio

The classical Sharpe ratio is given by:

$$SR = \frac{E_P - r_f}{\sigma_P} ,$$

where r_f is the observed return on a riskless asset, over a fixed period, while – from an *ex post* perspective – E_P and σ_P represent, respectively, the average of the N historically observed portfolio (or index or asset) returns and their standard deviation:

$$E_P = \frac{1}{N} \sum_{h=1}^N r_h ,$$

$$\sigma_P = \left(\frac{1}{N-1} \sum_{h=1}^N (r_h - E_P)^2 \right)^{1/2} .$$

2.2 The Reward to VaR Ratio

Dowd 2000 and Alexander and Baptista 2003 suggest the adoption of *Value at Risk* (*VaR*) instead of standard deviation as risk measure. We recall that, given a fixed low probability $(1-c)$, the VaR_{1-c} represents the opposite of the level of return such that there is a $(1-c)$ probability the random return realizations will fall under it. This formally gives the following formula for VaR_{1-c} :

$$VaR_{1-c} = -F_R^{\leftarrow}(1-c) ,$$

where F_R^{\leftarrow} is the generalized $(1-c)$ -quantile of the random return R . Starting from N historical data, VaR_{1-c} can be easily found considering the ordered set of realizations and choosing the value corresponding to the $(1-c) \times N$ position.

With the previous notations, the reward to VaR_{1-c} ratio is:

$$VaRR = \frac{E_P - r_f}{VaR_{P,1-c}} .$$

2.3 The Reward to CVaR Ratio

Another improvement is due to Agarwal, Naik (2003) and Rachev *et al* (2009): they introduce the Conditional Sharpe ratio or *STARR* ratio using *Conditional Value at Risk* (*CVaR*). $CVaR_{1-c}$ is the opposite of the expected value of return R_p , conditional to the values of return below $-VaR_{1-c}$ (mean restricted to return worst values), which translates to the following formula:

$$CVaR_{1-c} = -E(R_p / R_p < -VaR_{1-c}) .$$

Starting from historical data, $CVaR_{1-c}$ can be evaluated as the opposite of the arithmetic mean of the observed values smaller than $-VaR_{1-c}$, and the Conditional Sharpe ratio is:

$$CVaRR = \frac{E_P - r_f}{CVaR_{P,1-c}} .$$

2.4 Omega and Sortino Ratio

From the point of view of an investor or a fund manager, realizations above a target level of return τ are good, while those below τ are bad. This leads to considering higher partial moments (HPM) as profitability indicators and, on the contrary, lower partial moments (LPM) as risk indicators, where the higher and lower partial moments of order n are given by:

$$HPM_n(\tau) = \left[\frac{1}{N} \sum_{h=1}^N \max(r_h - \tau, 0)^n \right]^{1/n} ,$$

$$LPM_n(\tau) = \left[\frac{1}{N} \sum_{h=1}^N \max(\tau - r_h, 0)^n \right]^{1/n} .$$

This allows for a wide variety of performance ratios of the kind HPM/LPM, which differ for the degree of the partial moments, that shall be chosen accordingly to the level of investor risk aversion. Here we consider two famous ratios, the Omega (see Shadwick, Keating 2002) and the Sortino ratio 1991, which are as follows:

$$Omega = \frac{HPM_1(\tau)}{LPM_1(\tau)} = \frac{E_P - \tau}{LPM_1(\tau)} + 1 ,$$

$$Sortino = \frac{E_P - \tau}{\sqrt{LPM_2(\tau)}} .$$

2.5 The Rachev Ratio

In order to refine the reward measure, new versions of performance ratios have been proposed (Rachev 2003, Biglova *et al* 2004). Rachev suggests to consider a “good” $CVaR$, that is the expected value of return, conditional to the values of return greater than VaR_{1-c_1} , as profitability index. The Rachev ratio can be expressed in the following way:

$$RR = \frac{E(R_P / R_P > VaR_{P,1-c_1})}{CVaR_{P,1-c}} .$$

3. Empirical Results

3.1 Data and Main Statistics

Monthly data from Bloomberg ¹ database have been used. We have considered three main asset classes, namely equities, fixed income and real estate. The historical quotes are referred to the period 2003 - 2015 and pertain to 12 indices, relative to Europe, US, Russia and China. More in detail, in the numerical application we used:

- STOXX Europe 600 Price Index EUR (Bloomberg ticker: SXXP Index): a derivation of the STOXX Europe Total Market Index that has 600 components and represents large-, mid- and small-capitalization companies across 18 European countries;
- S&P 500 Index (SPX): a capitalization-weighted index of 500 US stocks;
- MSCIRussia Index (MXRU): a float-weighted equity index that captures the performance of the large- and mid-capitalization segments of the Russian market, covering approximately 85% of the float-adjusted market capitalization in Russia;
- Hong Kong Hang Seng Index (HSI): a float-weighted equity index of a selection of companies from the Stock Exchange of Hong Kong;
- EUG5TR Index: a Bloomberg/EFFAS (European Federation of Financial Analysts' Societies) long term European government bond index;
- USG5TR Index: the analogous of the EUG5TR index for US;
- Russian Government Bond Index (RGBI): a weighted index of Russian government bonds;
- FGGYCN1 Index: a FTSE index of medium- and long-term Chinese government bonds;
- Bloomberg Europe 500 Real Estate Index (BEREAL): a capitalization-weighted index of all companies that are in the real estate sector of the Bloomberg Europe 500 Index;
- Bloomberg NA REITs (BBREIT): a weighted index of US Real Investment Trusts with capitalization not less than \$15 millions;
- Russia Housing Prices New Apartments (RUPHNRF): developed by the Russian Federal Service of Statistics, this index summarizes changes in residential property prices;
- Hang Seng Property (HSP): a weighted index of Chinese Real Investment Trusts.

For each of these indices, we evaluated the logarithmic return and computed the estimation of its moments, obtaining for skewness a minimum value equal to -2.59 and a maximum equal to 2.39, while for the excess kurtosis a minimum of 1.13 and a maximum of 10.75 (excluding Russian real estate, since it is quoted quarterly and presents excess kurtosis anomalies). High values in both skewness and kurtosis give evidence of a distribution far from normality for the observed return. In evaluating indices we have used a null risk-free rate r_f and a null target level of return τ . For VaR and $CVaR$ in $VaRR$, $CVaRR$ and Rachev ratio, a value of c equal to 99% has been used, while for the good $CVaR$ in the Rachev ratio c_1 is taken equal to 50%.

3.2 Ranking Correlation

In order to quantify the relation between the performance measures, we have evaluated the Spearman rank correlation coefficients year by year. All performance measures, except for Rachev ratio, display usually good rank correlation with respect to the Sharpe ratio, between 0.028 ($CVaR$ ratio, 2015) and 0.979 (Omega ratio, 2013). Table 1 and 2 report the Spearman rank

¹ Source: Bloomberg Finance L.P. Closing adjusted prices have been considered. The quotes of the Russian real estate index are given only quarterly, all the others are quoted daily, weekly, monthly and so on.

correlation coefficients related to the year with the minimum (2015) and the maximum (2013). It should be noted that the CVaR ratio in 2015 shows a low level of correlation with any of the other performance ratios, which is probably due to the scarce amount of historical data considered in the CVaR evaluation.

On average, the rank correlation of the Sharpe ratio in relation to the other examined performance measures over the years amounts to 0.642.

Table 1

2015	SR	VaRR	CVaRR	Omega	Sortino	Rachev
SR	1	0,811	0,028	0,804	0,741	0,783
VaRR		1	0,056	0,993	0,923	0,958
CVaRR			1	0,077	0,154	0,014
Omega				1	0,951	0,972
Sortino					1	0,951
Rachev						1

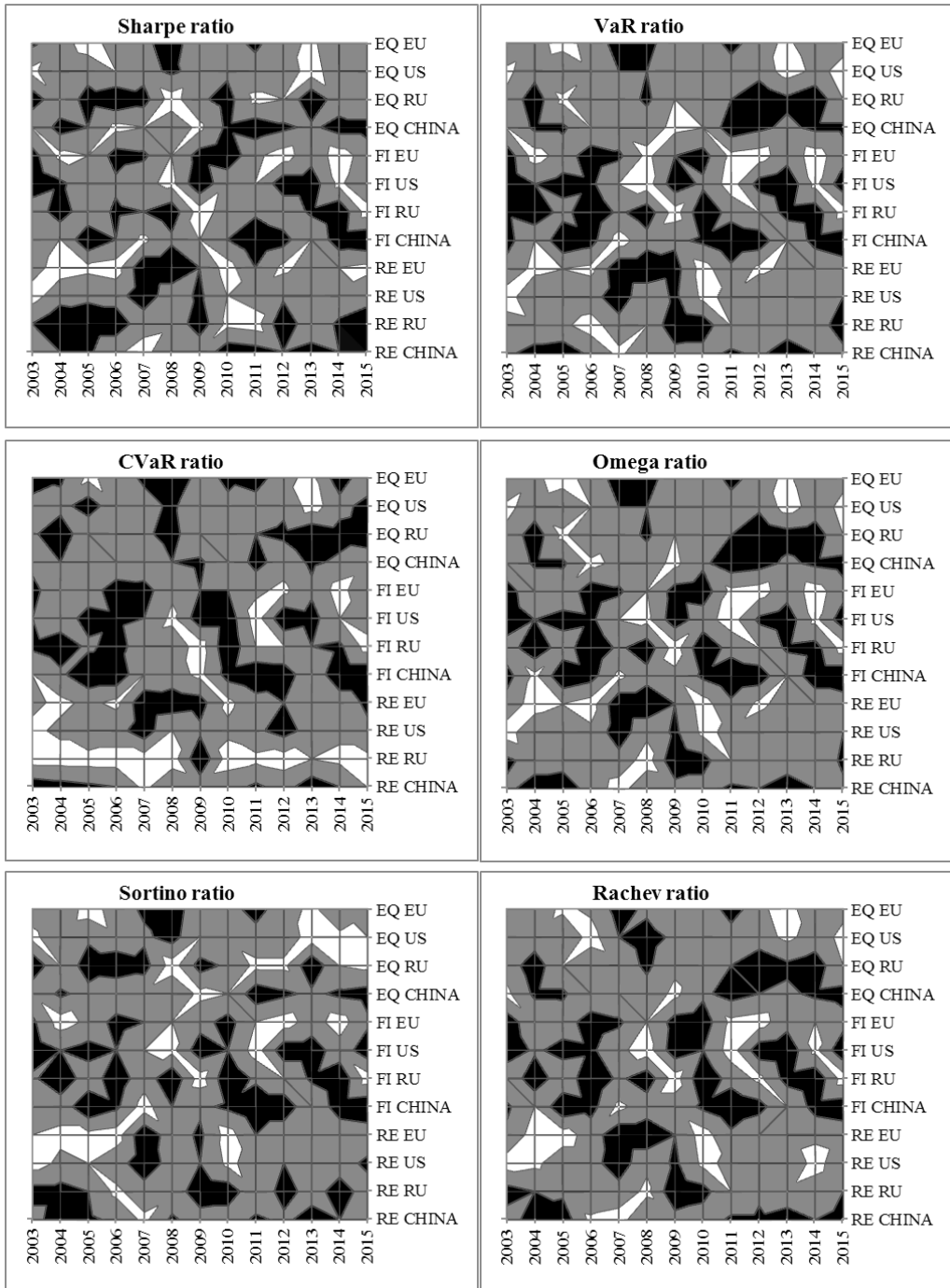
Table 2

2013	SR	VaRR	CVaRR	Omega	Sortino	Rachev
SR	1	0,951	0,951	0,972	0,979	0,951
VaRR		1	0,888	0,979	0,951	0,986
CVaRR			1	0,937	0,909	0,895
Omega				1	0,951	0,979
Sortino					1	0,930
Rachev						1

In general, there is also a good correlation between the other pairs of performance ratios, except sometimes for the Rachev ratio and the VaR ratio. Our analysis partially confirm the results obtained by Eling, Schuhmacher 2007, who find a very high rank correlation of the examined performance measures with respect to the Sharpe ratio and also in relation with each other.

3.3 The Best Asset Classes

In the previous paragraph we have found similarities in all the rankings. A refined analysis, using weekly or daily data will probably give more precise answers and results strictly close to those shown by Eling and Schuhmacher. This means that different performance indices can be considered as thermometers calibrated with different degrees, but they give the same ranking. In order to give a visual representation of this result and a more immediate analysis, we have used Excel contour charts. Year by year, the white areas cover the two best performing asset classes (the top), the grey areas represent the five medium performing asset classes, while the five worst performing asset classes are painted in black. Hereafter we report the graphs for every performance indicator.

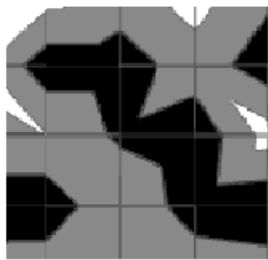


The graphs may seem very different, but there are interesting similarities that are worthy of note. For example, the “black snake” on the right (in Picture 1(a) the detail from the Sortino graph is everywhere evident, even though less so in the *CVaR* ratio). This shows that from 2012 to 2015 American, Russian and Chinese fixed income indices are the worst performers, whatever performance measure we choose.

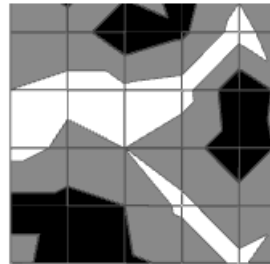
Another shared feature, except for *CVaR* ratio, is the “giraffe” on the bottom left, shown in Picture 1(b). This can be interpreted as the supremacy of Chinese fixed income and European and American real estate in the years 2003-2008.

Lastly, the black trapezoid in the upper part of almost all graphs corresponding to the year 2008 suggest US and European stock indices as the worst performers in that period, which we can easily relate to the financial crisis.

Picture 1 Details from the Sortino graph: (a) the black snake; (b) the white giraffe.



(a)



(b)

4. Conclusions

Performance measures are fundamental in the analysis of the behaviour of a portfolio, an asset or an index. On one hand, they are key to evaluate (*ex post*) whether or not a fund manager has met their purposes or, better, those of the client. On the other hand, performance ratios can find application in optimal portfolio selection: starting from the assumptions on the portfolio return distribution and maximizing *ex ante* the selected performance ratio.

In our paper we analyzed and compared different *ex post* performance ratios of three major asset classes for four areas (Europe, US, Russia and China) over the period 2003-2015.

Our analysis gives evidence of a relationship between the rankings obtained using different performance indices.

This suggest the opportunity to rely on the simplest and widely used Sharpe ratio, despite the criticism vastly evidenced in literature.

We have used a visual representation of the results that allows a more immediate comparison of the adequacy of the performance ratios in evaluating the financial landscape during the period 2003-2015: all the performance indices seem to be able to capture the past decade evolution. This confirms that, given an appropriate stochastic modelling of the return dynamics, they can be usefully applied *ex ante* in portfolio choice.

References

- Agarwal V, Naik NY (2004) Risk and portfolio decisions involving hedge funds. *Review of Financial Studies* 17-1: 63–98
- Alexander GJ, Baptista AM (2003) Portfolio Performance Evaluation Using Value at Risk. *The Journal of Portfolio Management* 29-4 Summer: 93-102
- Biglova A, Ortobelli S, Rachev ST, Stoyanov S (2004) Different approaches to risk estimation in portfolio theory. *The Journal of Portfolio Management* 31-1 Fall: 103-112
- Dowd K (2000) Adjusting for risk: An improved Sharpe ratio. *International Review of Economics and Finance* 9-3: 209–222
- Eling M, Schuhmacher F (2007) Does the choice of performance measure influence the evaluation of hedge funds? *Journal of Banking & Finance* 31: 2632–2647
- Rachev ST Ed (2003) *Handbook of Heavy Tailed Distributions in Finance*. Elsevier
- Rachev ST, Martin D, Racheva-Iotova B, Stoyanov S (2009) Stable ETL optimal portfolios and extreme risk management. In *Risk Assessment* Physika Verlag: 235-262
- Shadwick WF, Keating C (2002) A universal performance measure. *Journal of Performance Measurement* 6 -3: 59–84
- Sharpe WF (1966) Mutual fund performance. *Journal of Business* 39-1: 119–138
- Sharpe WF (1994) The Sharpe Ratio. *The Journal of Portfolio Management* 21-1 Fall: 49-58
- Sortino FA, van der Meer R (1991) Downside risk. *The Journal of Portfolio Management* 17-4 Spring: 27–31

The Behaviour of US and UK Public Debt Further Evidence Based on Time Varying Parameters

Suleyman Bolat • Aviral K. Tiwari • Mihai Mutascu

Abstract The paper investigates whether US and UK have followed sustainable debt policies during the period 1970-2012, by exploring the reaction of the primary surplus as percentage of GDP to variations in the debt to GDP ratio, as a powerful test. The main results reveal that the coefficient for UK is negative and significant, while for the US, we are unable to find a clear-cut evidence of the sustainability of public debt as the coefficient is also negative, but insignificant. In the case of the UK, the outputs reveal that government did not raise the primary surplus as the government debt increased rather reduced it and this reduction has been significant. On the other hand, the significance of the reaction coefficient demonstrates that the reaction of the primary surplus to increases in public debt varies over time. All these evidences allow us to appreciate that the fiscal policy in the UK is not sustainable in the sense of satisfying of intertemporal budgetary constrain.

Keyword Public debt – Budget deficit - Time varying parameter - Intertemporal constraint
Sustainability

JEL Classification: C22 - E62 - H63

1. Introduction

In recent years, the increased budget deficit and public debt experienced by many developed and developing countries have led to the increasing importance of government finance in the long run. Most countries face extensive pressure on their public debts and deficits in the last two decades. Due to the recent financial crisis and the outstanding fiscal stimulus to drive the world economy out of recession, it is important to satisfy the budget plan of government (Fincke and Greiner, 2011a).

Suleyman Bolat¹ • Aviral K. Tiwari² (✉) • Mihai Mutascu³

¹FEAS, Aksaray University, Aksaray, Turkey
e-mail: bolatsuleyman80@gmail.com

²IBS Hyderabad, a Constituent of IFHE
(Deemed to be) University, Hyderabad, India.
e-mail: aviral.eco@gmail.com

³LEO (Laboratoire d'Economie d'Orleans), University of Orleans, France
FEAA and ECREB, West University of Timisoara, Romania
e-mail: mihai.mutascu@gmail.com

Especially European countries and US have suffered from very persistent problem by virtue of high public deficits and increase of the public debt. This situation describes vital problem from economic and political aspects, especially US and European countries both now and in future. Some fiscal rules are applied for European countries, limiting the public debt to GDP is 60% and public deficits to GDP is 3%. These measures have been established by Maastricht Treaty and where accepted for the European countries in 1992. In this context, the question is whether governments are able to respond in a sustainable way for persistent budget deficits and high public debt. Therefore, countries need to satisfy their deficits and debt in the short run, but they require that the present value of debt converges to zero asymptotically (Fincke and Greiner, 2011b). The government's intertemporal budget constraint (IBC), within a dynamically efficient economy, requires fiscal policies to satisfy the present value borrowing constraint i.e., the present value of outlays equals the present value of revenues (Legrenzi and Milas, 2011).

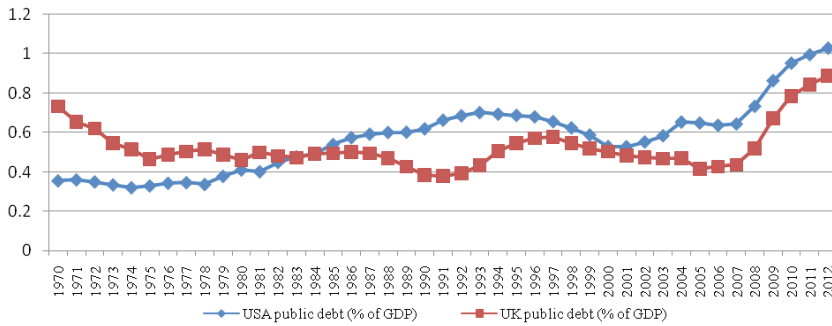
This implies that the expected present value of expenditures (exclusive interest payments) must not exceed the expected present value of revenue, which is known as no-Ponzi game condition. The mean of this condition is that households cannot borrow and pay the interest payments with borrowing more (Greiner, Köller and Semmler, 2007). Sustainable way in the economy is related to the financial solvency of the government and is connected to the current and expected future fiscal and economic policies. If economic and fiscal agents expect the current and future fiscal and economic policies to cause intertemporal budget constraint (IBC), fiscal process is accepted to be sustainable and *vice versa*. The intertemporal budget constraint (IBC) in present value terms is also known as the present value budget constraint (PVBC) in US economics literature and the sustainability of public finance is vital for the long term (Bravo and Silvestre, 2002). If a given fiscal policy is estimated to be unsustainable, it has to transform a position in which the future primary balances are consistent with the budget constraints (Afonso, 2005). We follow the model developed by Bohn (1998) who has introduced an approach to calculate to the public debt for mean reverting process.

This approach is tested how the primary surplus relative to GDP responds to variations in public debt relative to GDP. Given the estimated positive response of primary surpluses to debt to GDP ratio, the government budget identity shows that the debt to GDP ratio must be mean reverting process. If the response of the primary surplus to the public debt is positive and statistically significant, the fiscal policy can be indicated to satisfy the intertemporal budget constraint of these governments.

The aim of our study is to test the validity of fiscal sustainability for US and UK over the period 1970-2012 through the approach by Bohn (1998) and the way it applied in Fincke and Greiner (2011b). The interest for US and UK is given by the fact that both countries experimented, with similar tendencies (except the period 1970-1982), especially in the last 10 years, an accentuate increase in the level of public debt, as Figure 1 illustrates. The main add of this paper is the estimation of time-varying parameter for US and UK, as very important signal for dynamic reaction of primary surplus to increases in public debt.

Fincke and Greiner (2011b) refer to three main reasons for the allowance of time-varying parameters in the regressions. The first reason shows that the true data generating process is unknown and most likely nonlinear. The nonlinear model is estimated based on time-varying coefficients (Granger, 2008), while the model with time-varying coefficients is more general than OLS estimation. The second reason highlights how react the government under public debt changes (see also Bajo-Rubio et al., 2004; Martin, 2000; Payne et al. 2008; or Westerlund and Prohl, 2010), while the last one reveals that the long-run coefficients are based on short-run coefficients through the level of random coefficients.

Figure 1 The public debt in US and UK, in the period 1970-2012



Source of data: IMF Historical Public Debt Database (September 2012)

We also consider that, according to Fincke and Greiner (2011b), the stock of real public debt is not adjusted through the seignorage or inflation. In this case, the central bank is independent and the government actions for reducing of public debt are not rely on central bank. Studies about these topics have devoted many efforts. In this area, the relationship between primary surplus and borrowing is especially examined in Table 1.

Table 1 Empirical results for public debt - primary surplus in the literature

Author(s)	Country - Period	Data Frequency	Methods	Sustainability
Haug (1991)	US - 1960:1-1987:4	Quarterly	Cointegration	Yes
Smith and Zin (1991)	Canada-1946:1-1984:12	Monthly	Cointegration	No
MacDonald (1992)	US - 1951:1-1984:12	Monthly	Cointegration	No
Bohn (1998)	US - 1916-1995	Annual	OLS	Yes
Melitz (2000)	19 OECD Countries 1976-1995 and 1959-1995	Annual	2SLS, 3SLS	Yes
Canzoneri; Cumby; Diba (2001)	US - 1951-1995	Annual	VAR	Yes
Favero (2002)	France, Germany, Italy, Spain - 1960-2000	Annual	SUR	Yes
Favero and Monacelli (2003)	US - 1960-2000	Quarterly	Markov Switching Model, VAR	Yes
Greiner; Köller; Semmler (2007)	Italy, Germany, France, Portugal, US 1960-2003	Annual	OLS	Yes

Author(s)	Country - Period	Data Frequency	Methods	Sustainability
Ballabriga and Martinez-Mongay (2005)	EU - 14 Countries, US and Japan 1977-2002	Annual	NLLS	Yes
Mendoza and Ostry (2008)	22 developed and 34 developing countries	Annual	Panel Regression	No
Afonso (2008)	EU - 15 Countries - 1970-2003	Annual	Panel 2SLS	Yes
Bajo-Rubio; Diaz-Roldan; Esteve (2009)	11 EU Countries - 1970-2005	Annual	VAR	Yes
Afonso and Jalles (2011)	18 OECD Countries 1970-2010	Annual	Robust Panel Regression, Panel VAR	Yes
Tiwari (2011)	India	Annual	Time Varying Parameter	No

The remainder of this paper is organized as follows. Section 2 lays out the theoretical framework and section 3 presents the empirical evidence and section 4 discusses the conclusion of this study.

2. Theoretical framework

The basic of this study focuses on the systematic relationship between the debt-to-GDP and the primary surplus, being largely based on the work of Fincke and Greiner (2011b). This relationship is examined for the first time by Bohn (1998), but it takes its basis from Barro's (1979) tax-smoothing model that examines an effect of debt on primary surplus. Direct evidence from examining the positive response of the primary surplus to the debt-to-GDP ratio is enough a signal for sustainability. Because of some various shocks, such as fluctuations in income growth, interest rate and government spending, debt-to-GDP, ratio does not turn into the mean-reversion. In order to achieve the fiscal sustainability, it is noteworthy not only the positive response of primary surpluses to the debt-GDP ratio but also the satisfying the intertemporal budget constraint (Bohn, 1998). If government wants to reduce the stock of public debt, it can be appropriate to expect the government to reach the primary surpluses.

The main principle is to meet the debt stabilization and sustainable goals, so a positive response of primary balance to the stock of debt should be foreseen (Afonso, 2008; Bohn, 1998). The public debt has this form:

$$\frac{dB(t)}{dt} = r(t)B(t) + G(t) - T(t) = r(t)B(t) - S(t) \quad (1)$$

where $B(t)$ - the public debt, $r(t)$ - the interest rate, $G(t)$ - the public spending, $T(t)$ - the tax revenues, $S(t)$ - the primary surplus (including public revenues), and t - the time.

The public debt is sustainable only if the intertemporal budget constraint is satisfied:

$$\lim_{t \rightarrow \infty} B(t) e^{-\int_{t_0}^t r(t) dt} = 0 \hat{U} B(t_0) = \int_{t_0}^{\infty} e^{\int_{t_0}^t r(m) dm} S(t) d(t) \quad (2)$$

Considering the primary surplus relative to GDP (S/Y), we can write:

$$\frac{S(t)}{Y(t)} = a + b(t) \left(\frac{B(t)}{Y(t)} \right) \quad (3)$$

where $\alpha \in \mathbb{R}$ - a constant, and $\beta \in \mathbb{R}$ - a time varying reaction coefficient of primary surplus to public debt relative to GDP. On this framework, Fincke and Greiner (2011b) demonstrated that, for some period, the government reaction to the debt ratio may be zero or even negative, while in the average it must be positive. Otherwise, there is not any evidence for sustainable debt policy.

3. Empirical evidence

We apply a test that is based on the theoretical considerations of the last section to data for the US and UK during the period 1970-2012. Then, we analyse the correlation between the primary surplus and public debt all measured as ratios to GDP. Our empirical analysis employs the primary surplus and debt to GDP data provided by the US and UK and data is taken from the AMECO (Annual Macro-economic Database) and IMF Historical Public Debt Database (September 2012) over the period 1970 to 2012. These countries have been selected according to the data available. For the US and UK we estimate the reaction of the primary surplus to public debt, relative to GDP respectively, and present the results. The next step is to check the existence of mean reversion of public debt, testing the positive reaction coefficient.

In this case, we follow this equation (annual data):

$$s(t) = b(t)b(t) + a^T Z(t) + e(t) \quad (4)$$

where $s(t)$ - the primary surplus as percentage of GDP, $b(t)$ - the public debt as percentage of GDP, $Z(t)$ - the vector of variables (which includes 1 in its first element, for the intercept, and additional variables in its other elements, heaving the influence on primary surplus ratio), $\varepsilon(t)$ - the error term (assumed to be i.i.d. $N(0, \sigma^2)$) and, finally, t - the time. $Z(t)$ is entered according to Bohn (1998) and is relied on tax smoothing hypothesis. The hypothesis states that the public deficits should be used keeping the tax rates constant in order to minimize the excess tax burden. The regular inputs will finance the normal expenditures, while any deficits will cover the unexpected outputs. In this case, we will enter a business component - $YVar$, which capture the fluctuation in revenues, by subtracting the long-term trend of GDP, with the Hodrick-Prescott-Filter (HP-Filter) to the real GDP series, from its actual values.

As the deviations of real public expenditures from its long-run trend affect the primary surplus, we inserted a second business cycle variable - $GVar(t)$, by using the same HP-Filter. This component measures the fluctuations of public expenditures around its trend. Further, in order to deal with the endogeneity, we follow the contribution of Fincke and Greiner (2011b), by considering the lagged debt ratio $b(t-1)$:

$$s(t) = a_0 + b(t)b(t-1) + a_1 GVar(t) + e(t) \quad (5)$$

We estimate time-varying coefficients by using the penalized spline estimation (see also Hasti and Tibshirani, 1999, or Ruppert et al., 2003 among others), which is more robust than OLS estimation. Thus, we estimate the reaction coefficient $\beta(t)$ in equation (5) as a function of time. Firstly, we estimate equation (5) for USA and UK, for the data from 1970 until 2012. The result of the estimation is presented in Table 2.

Table 2 Coefficients for equation (5) for with data from 1970-2012

Country	USA			UK		
	Coefficient	Stand. error (t-stat)	Pr(>t)	Coefficient	Stand. error (t-stat)	Pr(>t)
Constant	-1.367e-03	2.371e-02 (-0.058)	0.954	0.0035459	0.0424812 (0.083)	0.9340
$b(t-1)$	-1.743e-04	4.888e-04 (-0.357)	0.724	-0.0030855	0.0013720 (-2.249)	0.0322
$GVar(t)$	5.024e-06	6.345e-06 (0.792)	0.434	0.0001811	0.0001202 (1.507)	0.1426
$YVar(t)$	6.617e-05	7.347e-06 (9.007)	3.33e-10	0.0007540	0.0001211 (6.227)	8.29e-07
sm(t)	edf: 7.176	F: 35.71	p-value: 2e-16	edf: 9.275	F: 33.95	p-value: 2e-16
	$R2(\text{adj})$: 0.918	DW: 1.282404		$R2(\text{adj})$: 0.902	DW: 1.852696	

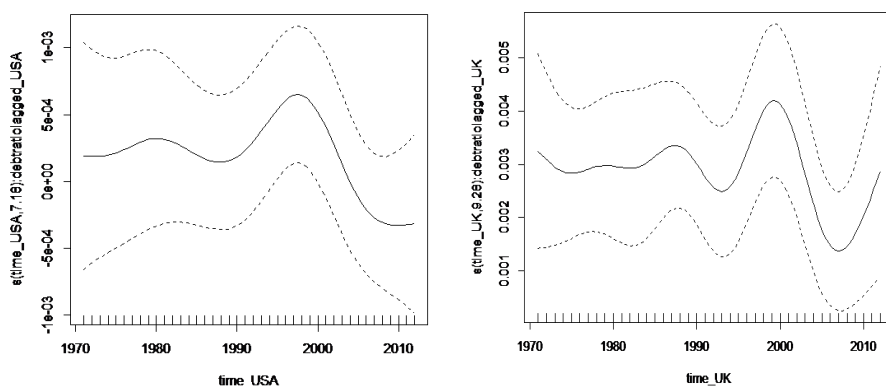
Source: Authors' calculation

The estimation outcome shown in Table 2 demonstrates that for the USA the average reaction coefficient of the primary surplus relative to GDP to variations in the debt to GDP ratio takes a negative value of 1.743e-04 percent and is statistically insignificant even at the 10 percent level. This implies that the USA government did not raise the primary surplus as government debt increased rather reduced it. However, this reduction has been insignificant. It can also be realized that the time-varying component of the reaction coefficient, denoted by sm(t) in the 5th row, is statistically significant, too, and the estimated degrees of freedom (edf) of about 7.176 indicate that the reaction coefficient is not constant but a time-varying function.

However, for the UK the average reaction coefficient of the primary surplus relative to GDP to variations in the debt to GDP ratio takes a negative value of **0.0030855** percent and is statistically significant at the 5 percent level. This implies that the UK government did not raise the primary surplus as government debt increased rather reduced it and this reduction has been significant. It can also be realized that the time-varying component of the reaction coefficient, denoted by sm(t) in the 5th row, is statistically significant, too, and the estimated degrees of freedom (edf) of about 9.275 indicate that the reaction coefficient is not constant but a time-varying function.

In Figure 2 are illustrated the graphics of the smooth term, for both countries. They are drawn such that a value of zero, for the smooth term, implies that the coefficient of reaction just equals its average value. At certain point in time, the actual value of the reaction coefficient equalises the average value plus the level of smooth term.

Figure 2 The following figures present plots of the smooth term $sm(t)$ that gives the deviation of the reaction coefficient from its average value.



The reaction coefficient has a constant tendency until 2000 in both countries, but after that, it dramatically declines. Starting to the year 2009, it registers a steeply increasing trend in UK relative to USA. In this case, the UK government does not put pressure on stabilization of public debt. This also shows there is an almost monotonously rising debt ratio to GDP over the considered period. As the coefficient of $GVar$ is positive, the primary surplus increases when public spending is above its trend. At the same time, primary surplus declines when GDP is below its trend because the coefficient of the variable $YVar$ is also positive. In both cases, the adjusted R^2 is around of 90 percent, indicating a good overall fit of the model. The Durbin-Watson test statistics (DW) does not suggest any issue in respect to the residuals autocorrelated, particularly for UK.

4. Conclusions

The US and UK are two countries, which have experimented in the last years significant budgetary deficits and also high level of public debts. In this context, we analyse whether US and UK have followed sustainable debt policies during the period 1970-2012. In order to test these aspects, we investigate the reaction of the primary surplus as percentage of GDP to variations in the debt to GDP ratio, as a powerful test. The main results reveal that the coefficient for UK is negative and significant. For the case of US, we are unable to find a clear-cut evidence of the sustainability of public debt (i.e. the coefficient is also negative, but insignificant).

In the case of the UK, the outputs reveal that government did not raise the primary surplus as the government debt increased rather reduced it and this reduction has been significant. Moreover, the significance of the reaction coefficient demonstrates that the reaction of the primary surplus to increases in public debt is not constant; instead, it varies over time. All these evidences allow us to appreciate that the fiscal policy in the UK is not sustainable in the sense of satisfying of intertemporal budgetary constrain.

The main policy implications suggest that it is required for the UK government to reduce the public expenditures, without any significant tax augmentation, in order to sustain the rise of public debt. More precisely, the authority should stimulate the primary surplus for covering the public debt in order to ensure the fiscal policy sustainability.

References

- Afonso A (2005) Fiscal Sustainability: The Unpleasant European Case. *FinanzArchiv*, 61: 19-44
- Afonso A (2008) Ricardian Fiscal Regimes in the European Union. *Empirica*, 35: 313-334
- Afonso A, Jalles J (2011) Appraising Fiscal Reaction Functions. *Economics Bulletin*, 31: 3320-3330
- Bajo-Rubio O, Diaz-Roldan C, Esteve V (2004) Searching for Threshold Effects in the Evolution of Budget Deficits: An Application to the Spanish case. *Economic Letters*, 82: 239-243
- Bajo-Rubio O, Diaz-Roldan C, Esteve V (2009) Deficit Sustainability and Inflation in EMU: An Analysis from the Fiscal Theory of the Price Level. *European Journal of Political Economy*, 25: 525-529
- Ballabriga FC, Martinez-Mongay C (2005) Sustainability of EU Public Finances. *European Commission Economic Papers*, 225: 1-30
- Bohn H (1998) The Behaviour of US Public Debt and Deficits. *The Quarterly Journal of Economics*, 113: 949-963
- Canzoneri MB, Cumby RE, Diba BT (2001) Is the Price Level Determined by the Needs of Fiscal Solvency? *The American Economic Review*, 91: 1221-1238
- Favero C (2002) How do European Monetary and Fiscal Authorities Behave? *IGIER - Università Bocconi Working Paper*, 214: 1-34
- Favero C, Monacelli T (2003) Monetary-Fiscal Mix and Inflation Performance: Evidence from the USA. *IGIER - Università Bocconi Working Paper* 234, 1-27
- Fincke B, Greiner A (2011a) Do Large Industrialized Economies Pursue Sustainable Debt Policies? A Comparative Study for Japan, Germany and the United States. *Japan and the World Economy*, 23: 202-213
- Fincke B, Greiner A (2011b) Debt Sustainability in Selected Euro Area Countries: Empirical Evidence Estimating Time-Varying Parameters. *Studies in Nonlinear Dynamics & Econometrics* 15(3) Article 2: 1-21
- Geithner T (2002) Assessing Sustainability. *International Monetary Fund Policy Development and Review Department*, 1-60
- Greiner A, Köller U, Semmler W (2007) Debt Sustainability in the European Monetary Union: Theory and Empirical Evidence for Selected Countries. *Oxford Economic Papers*, 59: 194-218
- Haug AA (1991) Cointegration and Government Borrowing Constraints: Evidence for the United States. *Journal of Business & Economics Statistics*, 9: 97-101
- Legrenzi G, Milas C (2011) Debt Sustainability and Financial Crises: Evidence from the GIIPS. *The Rimini Centre for Economic Analysis*, WP 11-42
- MacDonald R (1992) Some Tests of the Government's Intertemporal Budget Constraint Using US Data. *Applied Economics*, 24: 1287-1292
- Martin GM (2000) US Deficit Sustainability: A New Approach Based on Multiple Endogenous Breaks. *Journal of Applied Econometrics*, 15: 83-105
- Mendoza EG, Ostry JD (2008) "International Evidence on Fiscal Solvency: Is Fiscal Policy 'Responsible'?" *Journal of Monetary Economics*, 55: 1081-1093
- Payne JE, Mohammadi H, Cak M (2008) Turkish Budget Deficit Sustainability and the Revenue-

Expenditure Nexus. *Applied Economics*, 40: 823-830

Smith GW, Zin SE (1991) Persistent Deficits and the Market Value of Government Debt. *Journal of Applied Econometrics*, 6: 31-44

Tiwari AK (2012) Debt Sustainability in India: Empirical Evidence Estimating Time-Varying Parameters. *Economics Letters*, 32(2): 1133-1141

Westerlund J, Prohl S (2010) Panel Cointegration Tests of the Sustainability Hypothesis in Rich OECD Countries. *Applied Economics*, 42: 1355-1364

Liberalization of Trade with the EFTA Countries Some Evidence from Bosnia and Herzegovina

Safet Kurtovic • Sead Talovic • Blerim Halili • Nehat Maxhuni

Abstract This paper's main objective is to study the effect of the liberalization of trade with EFTA countries on trade balance of B&H. It analyzes the time series data for the period 2005 – 2014. Our theoretical framework includes the gravity model and the econometric technique system of simultaneous equations: Three-Stage Least Squares.

The research results show that the liberalization of trade with the EFTA countries has led to an increase of trade flows; however, it has not resulted in a significant convergence in exports and imports i.e. in an equable trade balance. We have concluded that the increase in export from B&H to the EFTA countries is positively affected by the consumer price index, population, signed bilateral agreements and geographical distance between the EFTA countries, while the reduction in import of products to B&H is positively affected by signed bilateral agreements with the EFTA countries. Finally, we have found that the reduction in B&H trade deficit is positively affected by reduced gross domestic product (GDP) of B&H. In the case of other analyzed independent variables affecting trade balance, no positive effects have been registered.

Keywords Trade agreements - Liberalization - Trade - Export - Import - Trade balance

JEL Classification F150 - F110 - F130

Introduction

Reducing trade barriers enables free trade globally and increases the welfare of companies and consumers. Free trade enables end consumers to purchase the same or greater quantity of products for less money. Also, companies get access to cheaper inputs and technologies and

Safet Kurtovic¹ (✉) • Sead Talovic² • Blerim Halili³ • Nehat Maxhuni⁴

¹University of Travnik

e-mail: safet.kurtovic71@yahoo.com

²Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina

e-mail: seat.talovic@bih.net

³College Pjeter Budi, Pristina, Kosovo

e-mail: blerimhalili547@yahoo.com

⁴College "Biznesi", Pristina, Kosovo

e-mail: nehati504@yahoo.com

achieve cost savings (Bhagwati and Panagariya 1996; Srinivasan 1998; Robinson and Thierfelder 1999; EFTA Team 2004).

The establishment of regional trade agreements has been supported by GATT, General Agreement on Trade in Services (GATS) and the Most-Favored-Nation (MFN) principle (Mihashi 2009). In 2015, the World Trade Organization (WTO) reported that there were 619 regional trade agreements, of which 413 were in force. Of the total number of signed agreements, 428 pertained to free trade and customs union, i.e. were regulated by Article XXIV of the GATT 1947 or GATT 1994 (WTO 2015). Preferential trade agreements are the agreements through which the signatory countries remove mutual discriminatory trade barriers and introduce trade barriers towards third countries (Mukunoki 2005). Trade partners can choose between the unilateral and preferential trade liberalization. Both of these trade liberalization options lead to economic welfare. However, preferential trade is more acceptable than the unilateral trade liberalization (EFTA Team 2004). We differentiate between the following forms of preferential trade: customs union, free trade area and common market. Customs union removes internal trade barriers and imposes common external customs tariff toward third countries (e.g. EC, the Central American Common Market (CACM) and MERCOSUR). Free trade area (FTA) eliminates internal trade barriers, but each country retains special customs policy toward third countries. Finally, common market abolishes customs duties between the member countries and introduces a common customs policy toward third countries (e.g. EU) (Baldwin and Venables 2004; Mansfield and Milner 1999; Mihashi 2009).

EFTA (European Free Trade Agreement) was established in 1960 by Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom. It was joined by Finland in 1961, Iceland in 1970 and Liechtenstein in 1991. However, the United Kingdom and Denmark (in 1973), Portugal and Austria (in 1986), Finland and Sweden (in 1995) left EFTA and joined the EU. After the accession to the EU, Iceland, Liechtenstein, Norway and Switzerland remained EFTA members (Ferreira 1990; Avery 1995; Ahearn 2011; Fundira 2007; Schmieding 1989; EFTA Team 2004). Norway, Iceland and Liechtenstein together with the EU make up the European Economic Area (EEA), while they signed a bilateral agreement with Switzerland that entered into force in 2002 (Baldwin 2011; EFTA Team 2004; Trocan 2010). Apart from this, EFTA signed bilateral agreements with over 50 countries including B&H (Van Randwyck 2011; Matta 2014; Baudenbacher 2005; Službeni Glasnik BiH – Međunarodni ugovori 2014). EFTA Agreement mainly covers trade in industrial, agricultural and fish products. This agreement, like the other EU agreements, potentiates asymmetric trade liberalization (Ciešlik and Hagemer 2001; Ahearn 2011).

Preferential agreements lead to trade creation and trade diversion. Trade creation is considered a desirable process, whereas trade diversion is deemed an undesirable process negatively affecting multilateral trade flows (Viner 1950). Trade creation is a more efficient process since it represents the replacement of inefficient domestic production with cheaper imports from trade partner countries (Zahariadis 2007; Robinson and Thierfelder 1999). Trade diversion represents the replacement of cheap imports from the world market with more expensive imports from partners (Lipsey 1957; Park and Park 2008; Stevens et al. 2015; Dee and Gali 2005; Snorrason 2012; Spies and Marques 2006).

Free trade agreements lead to the complementarity effect. Countries that sign free trade agreements increase mutual imports and drastically reduce imports from third countries. This trade diversion leads to a reduction of their influence in the manipulation of terms of trade with third countries, which results in the reduction of their external tariffs. If the production costs increase, signatory countries will see a rise in mutual trade with the countries with which they

signed bilateral free trade agreements, while the exports to third countries will be reduced. This situation results in reduced manipulation of terms of trade by the third countries, which eventually leads to decrease in customs duties towards FTA member countries (Saggi et al. 2015).

This paper's main objective is to find out whether liberalization of trade between B&H and the EFTA countries positively affects levelling off of trade balance. To that effect, we attempted to prove theoretical settings and numerous empirical studies stating that trade liberalization leads to an increase in trade flows between trade partners, but that it results neither in convergence in welfare nor in levelling off of trade balance in less developed industrial countries. Namely, less industrialized countries register higher imports than exports, i.e. they fail to reduce trade deficit as compared to developed industrial countries. Finally, we concluded that the main reason for this is the low competitiveness of the national economy of the less industrialized country, in this case of B&H.

The paper consists of sections as follows: Section 2 provides an overview of literature or research closely related to this paper's research subject; Section 3 describes the economic model; Section 4 describes econometric techniques and databases used in the research; Section 5 provides the empirical results of the research and, finally, Section 6 contains the conclusion.

2. Literature review

Aitken (1973) studied the effect of the European Economic Community (EEC) and EFTA on the increase in European trade. He applied gravity model and concluded that trade integrations positively affected the increase in gross domestic trade, especially in the case of EEC. Apart from this, he studied the positive effect of trade diversion of EFTA as compared to five EEC countries. Finally, EEC achieved the external effect of trade creation with EFTA, but this effect remained in the shadow of the trade diversion effect. Bhagwati (1993) explored the relationship between regional and multilateral trade. Primarily, he emphasized an increasing presence of regional trade agreements compared to multilateral agreements. Regional trade agreements represent a threat to multilateral trade because they give an advantage to member countries in the sense of enhancing their economic welfare, whereas, on the other hand, they block world trade and impoverish non-member countries. Krishna (1998) also studied the relationship between regionalism and multilateralism. To that effect, he applied Brander-Krugman model and concluded that preferential trade agreements lead to reduction in world trade flows and that they had a destimulating effect on multilateral liberalization. Regional preferential agreements cause trade diversion and thus stimulate the trade among the signatory countries, i.e. block the trade with a third party.

Carrere (2003) used the sample of 130 countries to study the effect of trade agreements on trade flows enhancement. She applied gravity model to explain the effects of trade diversion and trade creation using the example of seven regional trade agreements. The study results showed that regional agreements had a significant effect on the increase in trade flows between the member countries, whereas they contributed to a reduction in trade flows in the rest of the world – thus proving trade diversion. Furusawa and Konishi (2003) studied the factors affecting the establishment of free trade agreements. In the case when an agreement consists of symmetrical countries and when products and services cannot be substituted, then the integration structure and global trade network are stable. Baldwin and Venables (2004) studied the effect of regional economic integrations using the example of EC92 and NAFTA. Their research covered three effects of regional economic integrations: allocation, accumulation and location effect. In the case of EC92 all three effects have been observed, whereas these same effects were less present in NAFTA.

Spies and Marques (2006) researched the effect of the European free trade agreements on the Central and Eastern European countries. They applied the gravity model in order to study the effect of agreements with respect to exports and imports within the established trade bloc. They concluded that the trade exchange within the group had grown, while Slovakia and Czech Republic achieved increase in trade at the expense of import from third countries. Magee (2007) studied the effect of all regional agreements on trade flows in member countries. He applied the fixed effect technique and the gravity model. The study has shown that regional trade agreements lead to an increase in trade by 26 percent in the first four years, while in the long run or after more than 11 years there is an 89 percent increase in trade. Free trade agreements cause slower growth in intra-bloc trade compared to the customs union. Caporale et al. (2008) studied the effect of the Free Trade Agreement between the EU-15 countries and four Central and Eastern European countries. For the purpose of measurement, they used a control variable i.e. three countries such as the Russian Federation, Ukraine and Belarus, which had not signed trade agreements with the EU. They applied FEVD econometric technique, which showed that there was a positive growth trend in the trade between the countries under analysis. Trade between EU-15 and CEEC-4 countries increased by 37 percent in 1990, by 60 percent in 2000 and by 74 percent in 2005. On the other hand, Belarus, the Russian Federation and Ukraine registered a growth of 33 percent in 1992 and 38 percent in 2005. Coulibaly (2009) studied the effect of NAFTA on trade flows between member countries and with third countries. He concluded that NAFTA increased imports from non-member countries, while, in turn, exports decreased. Cieřlik and Hagemeyer (2011) studied trade liberalization of the Central and Eastern European countries in the time period from 1993 to 2004. Having applied the gravity model, they concluded that the variables had a positive effect on the increase in trade flows with the EU. This effect varied among the countries because they differ in economic strength and competitiveness. Cipollina and Salvatici (2012) researched the effect of regional free trade agreements on the increase in bilateral trade flows. They applied meta-analysis as well as random and fixed effect method and statistically presented 1827 estimates collected from the sample of 85 studies.

The research results showed that regional free trade agreements positively affected the increase in trade by 11 percent. Barbalet et al. (2015) studied the effect of 27 regional and bilateral trade agreements on Australian economy. They applied the gravity model and Poisson regression and concluded that preferential trade agreements lead to an increase in trade between trade partners, but cause negative trade balance with third countries. On the other hand, non-preferential trade agreements lead to an increase in trade both between the members and with third countries.

3. The Economic Model

The gravity model of trade bears a strong similarity to Newton's formula of gravitation. In this model, the two trading areas could be viewed as celestial objects and the value of trade could be viewed as the gravitational pull. Gravity models utilize the gravitational force concept as an analogy to explain the volume of trade, capital flows, and migration among the countries of the world. Jan Tinbergen used an analogy with Newton's universal law of gravitation to describe the patterns of bilateral aggregate trade flows between two countries A and B as "proportional to the gross national products of those countries and inversely proportional to the distance between them," (Chaney 2011). The trade (~gravitational pull) is dependent on the GDPs (~mass) of the two trading areas, and their physical distance. The bigger the GDP (~mass) between the two trading areas (~celestial objects) the greater is the trade (~gravitational pull). The trade between

the two areas decays exponentially as distance increases (\sim decrease in gravitational pull by the square of distance).

The similarities end there as GMT can take other variables like infrastructure (\sim sources of friction) (Beronilla et al. n.d.). Thus a mass of goods or labor or other factors of production supplied at origin i , Y_i , is attracted to a mass of demand for goods or labor at destination j , E_j , but the potential flow is reduced by the distance between them, d_{ij} . Strictly applying the analogy

$$X_{ij} = Y_i E_j / d_{ij}^2 \quad (1)$$

gives the predicted movement of goods or labor between i and j , X_{ij} (Anderson 2010).

The gravity model is based on the assumption that trade between countries depends positively on their size and inversely on distance. Economically rich and geographically close countries trade more together than with third countries. In its simplest form, the gravity equation states that the bilateral trade between two countries is directly proportional to the product of the countries' GDPs. Thus, larger countries will tend to trade more with each other, and countries that are more even in their relative sizes will also trade more (Braha et al. 2014). The basic form of the gravity equation is as follows (Batra 2004)

$$Trade_{ij} = A \frac{(GDP_i GDP_j)^{b_1}}{(Distance_{ij})^{b_2}} \quad (2)$$

where $Trade_{ij}$ is the bilateral trade between country i and j ; A is a constant; GDP_i and GDP_j are the respective real domestic products of the countries; $Distance_{ij}$ is the distance in kilometers between country i and j (Gjipali et al. 2012).

In trade-theory, the gravity equation in its most basic and frequently used form is specified as (Gao 2009)

$$\ln X_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln D_{ij} + \beta_4 \ln F_{ij} + \mu_{ij}. \quad (3)$$

where X_{ij} is the amount of trade between country i (host) and country j (home), Y is the nominal GDP of each country, D_{ij} is the distance between the two countries, and F_{ij} represents any other factors that might affect the amount of trade conducted between country i and j . Miscellaneous F_{ij} factors are frequently represented by dummy variables. This is because more often than not, these factors tend to remain constant for each individual country. In conjunction with the economic size N_i of a country is its market size, meaning larger countries have greater potential markets which would attract more firms to export to that country. To account for this possibility, some theories have suggested an extension of the gravity model to include the population size of each country into the equation

$$\ln X_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln N_i + \beta_4 \ln N_j + \beta_5 \ln D_{ij} + \beta_6 \ln F_{ij} + \mu_{ij}. \quad (4)$$

4. Econometric issues

Our sample contains data relating to B&H and the EFTA countries (Iceland, Norway, Liechtenstein and Switzerland). The data used in the study are considered at annual level and pertain to the time period 2005 - 2014. They have been taken from the data bases of the Agency for Statistics

of B&H, the Central Bank of B&H, EFTA, Statistics Iceland, Amt für Statistik Liechtenstein, Statistics Norway, Swiss Statistics, Eurostat, World Bank (World Data Indicators). Amounts relating to variables are expressed in thousands of dollars.

In order to measure the effect of export and import from the EFTA countries on B&H trade balance, we applied the gravity model and the econometric technique system of simultaneous equations: Three-Stage Least Squares. We introduced three regression equations based on gravity model equation. These pertain to imports, exports and trade balance of B&H:

$$Export_{ijt} = \beta_0 + \beta_1 GDP_{jt} + \beta_2 REER_{jt} + \beta_3 CPI_{jt} + Dis_{ij} + Acc_{ijt} + Pop_{jt} + \varepsilon_{ijt} \quad (5)$$

$$Import_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 REER_{it} + \beta_3 CPI_{it} + Dis_{ij} + Acc_{ijt} + Pop_{it} + \varepsilon_{ijt} \quad (6)$$

$$Trade\ Balance_{ijt} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP_{jt} + \beta_3 REER_{it} + \beta_3 REER_{jt} + \varepsilon_{ijt} \quad (7)$$

$Export_{ijt}$ - denotes exports respectively between countries i and j at time t with $i \neq j$ (thousands of dollars) – independent variable;

$Imports_{ijt}$ - denotes exports respectively between countries i and j at time t with $i \neq j$ (thousands of dollars) – independent variable;

$Trade\ Balance_{ijt}$ - stands for the trade balance as a proportion of GDP – independent variable;

GDP_{it} , GDP_{jt} - represents the gross domestic product of country i and country j at time t – dependent variable;

$REER_{it}$, $REER_{jt}$ - represents the real effective exchange rate between i and j at time t – dependent variable;

CPI_{it} , CPI_{jt} – represents Consumer Price Index of country i and country j at time t – dependent variable;

Dis_{ij} - represents distance between the two largest or capital cities of countries i and j – dummy variable;

Acc_{ijt} - represents a dummy variable that equals 1 if country i and country j have signed a regional agreement, and zero otherwise – dummy variable;

x – represents the population of country i and country j at time t – dummy variable;

ε_{ijt} - is an error term.

The 2SLS method does not exploit the correlation of the disturbances across equations. You saw in the case of systems of regression equations that using FGLS to account for such correlations improved efficiency. This will also be true here (McFadden 1999). If the disturbances are contemporaneously correlated, a feasible generalized least squares (FGLS) version of the two-stage least squares estimation leads to consistent and asymptotically more efficient estimates (Henningsen and Hamann 2007). If the entire simultaneous equations model is to be estimated, then one should consider system estimators rather than single equation estimators. System estimators take into account the zero restrictions in every equation as well as the variance-covariance matrix of the disturbances of the whole system (Baltagi 2008). We turn to consider a system of g equations (Arellano 2003).

$$\begin{aligned} y_{1i} &= x'_{1i} \theta_1 + u_{1i} \\ &\vdots \\ y_{1i} &= x'_{1i} \theta_1 + u_{1i} \end{aligned} \quad (8)$$

whose errors are orthogonal to a common $\times 1$ vector of instruments . Thus, in this example there are moment conditions given by

$$\begin{aligned} E(z_i u_{1i}) &= 0 \\ &\vdots \\ E(z_i u_{gi}) &= 0 \end{aligned} \quad (9)$$

Convenient compact notations for these moments are (Arellano 2003)

$$E(u_i \otimes z_i) \equiv E(Z_i' u_i) \equiv E(Z_i'(y_i - X_i \theta)) = 0 \quad (10)$$

where $u_i = (u_1, \dots, u_{g_i})'$, $Z_i = I_g \otimes z_i' y_i = (y_{1i}, \dots, y_{gi})'$, $\theta = (\theta_1', \dots, \theta_g')'$, and

$$X_i = \begin{pmatrix} x_{1i}' \\ \vdots \\ 0 \end{pmatrix} x_{g_i}'$$

Accordingly, the sample orthogonality conditions are

$$\begin{aligned} b_N(c) &= \frac{1}{N} \sum_{i=1}^N Z_i' (y_i - X_i c) = \frac{1}{N} \sum_{i=1}^N \begin{pmatrix} z_i(y_{1i} - x_{1i}' c_1) \\ \vdots \\ z_i(y_{gi} - x_{gi}' c_g) \end{pmatrix} \\ &= \frac{1}{N} \begin{pmatrix} z'(y_1 - X_1 c_1) \\ \vdots \\ z'(y_g - X_g c_g) \end{pmatrix} = \frac{1}{N} (I_g \otimes Z') (y - X_C) \end{aligned} \quad (12)$$

where $Z = (z_1, \dots, z_N)'$ is an $N \times r_0$ matrix similar to that used in the 2SLS example, and we analogously define y_1, \dots, y_g and X_1, \dots, X_g . Moreover, $y = (y_1', \dots, y_g')$ and X is a block diagonal matrix with blocks X_1, \dots, X_g . The 3SLS estimator of θ minimizes the GMM criterion

$$b_N(c)' A_N b_N(c) \quad (13)$$

with weight matrix given by

$$A_N = \left(\frac{1}{N} \sum_{i=1}^N Z_i' \hat{\Omega} Z_i \right)^{-1} = \left(\frac{1}{N} \sum_{i=1}^N \hat{\Omega} \otimes Z_i Z_i' \right)^{-1} = N(\hat{\Omega} \otimes Z'Z)^{-1} \quad (14)$$

where $\hat{\Omega}$ is the residual covariance matrix (Arellano 2003)

$$\hat{\Omega} = \frac{1}{N} \sum_{i=1}^N \hat{u}_i \hat{u}_i' \quad (15)$$

and $\hat{u}_j = y_j - X_j \hat{\theta}_{3SLS}$.

Therefore:

$$\hat{\theta}_{3SLS} = [(\sum_i X_i' Z_i) A_N (\sum_i X_i' Z_i)]^{-1} (\sum_i X_i' Z_i) A_N (\sum_i X_i' Z_i) \quad (16)$$

or

$$\hat{\theta}_{3SLS} = [(\sum_i X_i' Z_i) A_N (\sum_i X_i' Z_i)]^{-1} X' (\hat{\Omega}^{-1} \otimes Z(Z'Z)^{-1} Z') y. \quad (17)$$

Moreover, in parallel with the earlier development for , the formula can be written as

$$\hat{\theta}_{3SLS} = (\sum_i \hat{X}_i \hat{\Omega}^{-1} \hat{X}_i)^{-1} \sum_i \hat{X}_i \hat{\Omega}^{-1} y_i \tag{18}$$

where is a block diagonal matrix with blocks .

$$\hat{x}_i = \hat{\Pi}_j Z_i (j = 1, \dots, g) \tag{19}$$

with $\hat{\Pi}_j = \sum_i x_j z_i z_i' (\sum_i z_i z_i')^{-1}$.

Expression 18 corresponds to the interpretation of 3SLS on which its name is based. Namely, the first two stages coincide with those of 2SLS for each of the g equations, whereas in the third stage we obtain as $\hat{\theta}_{3SLS}$ as GLS of y_i on x_i weighted by the inverse of $\hat{\Omega}$. Note that replacing by an identity matrix in 18 we obtain a compact expression for the 2SLS estimators of all the θ . Finally, we also have

$$\hat{\theta}_{3SLS} = (\sum_i \hat{X}_i \hat{\Omega}^{-1} x_i)^{-1} \sum_i \hat{X}_i \hat{\Omega}^{-1} y_i \tag{20}$$

so that $\hat{\theta}_{3SLS}$ can also be interpreted as a simple IV estimator of the full system that uses $\hat{\Omega}^{-1} \hat{X}_i$ as instrument and solves the moment conditions

$$\sum_{i=1}^N \hat{X}_i \hat{\Omega}^{-1} (y_i - X_i \hat{\theta}_{3SLS}) = 0 \tag{21}$$

The main advantage of 3SLS over 2SLS is a gain in asymptotic efficiency. The main disadvantage is that the estimators for a single equation are potentially less robust, since they will be inconsistent if the IV assumptions that Z is predetermined fail in any equation, not just a particular one of interest (McFadden 1999).

5. Estimation results

Applying the gravity model and simultaneous equations: Three-Stage Least Squares, we studied the effect of trade liberalization with the EFTA countries on B&H trade balance. In Table 1 we presented the descriptive statistics for variables affecting the trade balance of B&H, while simultaneously leaving out dummy variables. Based on the mean value and statistical deviation, we observe that import ($Import_{ijt}$) to B&H from the EFTA countries is very high. Gross domestic product (GDP_{ijt}) of EFTA countries significantly exceeds the gross domestic product (GDP_{it}) of B&H. Trade balance ($Trade\ Balance_{ijt}$) of B&H has negative value. Consumer Price Index (CPI_{ijt}) and real effective exchange rate ($REER_{ijt}$) of EFTA countries have greater main value and statistical deviation compared to B&H.

Table 1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Export _{ijt}	40	23478.33	39714.46	2	135878
Import _{ijt}	40	27703.4	52253.74	106	213899
Trade Balance _{ijt}	40	-4225.075	34868.53	-133631	49328

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP _{it}	40	16285.5	2542.935	10909	18692
GDP _{jt}	40	257752.1	263267.1	3659	703852
REER _{it}	40	99.525	1.154423	98	101
REER _{jt}	40	103.4	14.69659	87	153
CPI _{jt}	40	74.6775	43.53706	-.7	106.3
CPI _{it}	40	102.4	2.137816	98.8	104.9

Source: Author's

Table 2 shows the results of the effect of trade liberalization on export, import and trade balance of B&H. We concluded that the export of products from B&H to the EFTA countries is positively affected by independent variables such as Consumer Price Index, geographical distance, signed bilateral trade agreements and population of the EFTA countries. The EFTA countries have low inflation, which positively affected the import of cheap raw materials, semi-products and products from B&H.

With respect to transportation costs, geographical distance of the EFTA countries' markets does not represent a great obstacle for export of products from B&H. Additionally, signed bilateral agreements with the EFTA countries contributed to a reduction in customs duties and non-customs barriers, which boosted exports from B&H to a certain extent. Finally, EFTA market has a population of 13 million, which represents a significant potential for an increase in exports from B&H. However, in regard to gross domestic product and real effective exchange rate of the EFTA countries, we concluded that they negatively affected the increase in export from B&H.

Despite the growing GDP of the EFTA countries, export of goods from B&H did not reach the desired level, in the sense of a significant reduction in trade, because B&H exports raw materials, semi-products and products of low competitiveness for which there is low demand within the EFTA countries as a result of low global demand. Real effective exchange rates of the EFTA countries, apart from the Icelandic Krona, have appreciated compared to the real exchange rate of BAM, which was supposed to lead to an increase in exports to the aforementioned countries; however, that did not happen. Namely, this has to do with the high elasticity of demand of the EFTA countries for B&H products.

Table 2 Trade balance of B&H with the EFTA countries

Equation	Obs	Parms	RMSE	«R-sq»	chi2	P
Export _{ijt}	40	6	11298.47	0.9170	461.73	0.0000
Import _{ijt}	40	6	27977.04	0.7060	150.34	0.0000
Trade Balance _{ijt}	40	6	31317.55	0.1726	6.78	0.1481

	Coef.	Std. Err.	z	P> z 	[95% Conf.	Interval]
Export_{ijt}						
GDP _{jt}	.0571114	.0398854	1.43	0.152	-.0210626	.1352854
REER _{jt}	-117.5664	168.2399	-0.70	0.485	-447.3106	212.1778
Dis _{ij}	33.34812	12.21473	2.73	0.006	9.407687	57.28856
Acc _{ij}	91918.23	9687.8	9.49	0.000	72930.49	110906
Pop _{jt}	.0058325	.0018497	3.15	0.002	.0022071	.0094579
CPI _{jt}	-853.6563	296.9202	-2.88	0.004	-1435.609	-271.7034
_cons	-14068.78	14134.57	-1.00	0.320	-41772.02	13634.46
Import_{ijt}						
GDP _{it}	-.7754184	2.122093	-0.37	0.715	-4.934644	3.383808
REER _{it}	-3008.552	3752.583	-0.80	0.423	-10363.48	4346.375
CIP _{it}	639.2831	1789.383	0.36	0.721	-2867.843	4146.409
Dis _{ij}	-1.327231	3.030465	-0.44	0.661	-7.266833	4.612371
Acc _{ij}	84448.04	7755.467	10.89	0.000	69247.6	99648.47
Pop _{it}	.2784923	.3049471	0.91	0.361	-.319193	.8761775
_cons	-817444.5	1130758	-0.72	0.470	-3033689	1398800
Trade Balance_{ijt}						
GDP _{jt}	.0108039	.0139588	0.77	0.439	-.0165549	.0381627
GDP _{it}	4.380431	1.893555	2.31	0.021	.6691309	8.091731
REER _{it}	2934.012	4155.648	0.71	0.480	-5210.908	11078.93
REER _{jt}	210.7882	228.9957	0.92	0.357	-238.0351	659.6115
_cons	-392150.4	420480	-0.93	0.351	-1216276	431975.2

Note: *- significance at 10 percent level, **- significance at 5 percent level, ***- significance at 1 percent level. Source: Author's

The research results are in accordance with the current theoretical views and the empirical research carried out to date stating that, compared to the more industrially developed countries, less industrially developed countries, within trade liberalization, register a negative trade balance i.e. import considerably more products than they export. Less industrially developed countries import technology and sophisticated products, while they export labor-intensive products. Observed by country, B&H mostly exports footwear, clothes and furniture to Iceland; furniture, steel, steel products and footwear to Norway; and footwear and furniture to Switzerland. There are no data available on export from B&H to Liechtenstein (EFTA, 2015). Hence, we note that B&H industry has low competitiveness when compared to the EFTA countries. On the other hand, import from the EFTA countries exceeds export considerably, which causes the trade balance deficit. It was only in the case of independent variable bilateral trade agreements that

we observed a positive effect on the reduction of import from the EFTA countries, whereas other independent variables exhibited a negative effect. Observed by country, B&H mostly imports livestock and manufacturing machines from Norway and pharmaceutical products, machines for machinery industry and electrical machines from Switzerland (EFTA, 2015). There are no data available on import from Iceland and Liechtenstein.

Finally, we have concluded that B&H registered a deficit in trade balance with the EFTA countries. This is mostly ascribed to the fact that imports exceed exports and particularly to the negative effect of variables such as gross domestic product and real effective exchange rates of the EFTA countries. On the other hand, decrease in gross domestic product of B&H positively affected the reduction in B&H trade balance deficit. In the period 2005-2014, GDP of B&H fell considerably, resulting in a decrease in domestic demand, which indirectly led to a decrease in import of products from the EFTA countries and a relative decrease in trade deficit.

6. Conclusion

This paper studies the effect of the liberalization of trade with the EFTA countries on B&H trade balance. It analyzes the time series data for the period 2005 – 2014. We applied the gravity model and simultaneous equations: Three-Stage Least Squares. According to theoretical views, trade liberalization aims to enhance economic welfare and improve trade flows between partners. The research results confirm the current theoretical views and the previously carried out empirical research pertaining to trade liberalization and signing of trade agreements. Liberalization of trade between B&H and the EFTA countries enhanced the trade exchange; however, it did not lead to a significant reduction in trade balance deficit, i.e. imports continued to exceed the exports considerably. Liberalization of trade between the industrially developed countries and the less industrially developed countries in most cases does not positively affect the latter countries. Generally, less industrially developed countries register a negative trade balance and there is no convergence in trade exchange.

We have concluded that export of products from B&H to the EFTA countries is positively affected by the factors such as Consumer Price Index, signed bilateral trade agreements, population and geographical distance of the EFTA countries, whereas it is negatively affected by gross domestic product and real effective exchange rates. Namely, we found that of all the analyzed factors affecting the reduction in import of products from EFTA to B&H, only bilateral agreements exhibited a positive effect, while the other variables had a negative impact. The fact that imports exceed exports is explained by the increase in import of sophisticated technology and pharmaceutical products from the EFTA countries, while B&H exports labor-intensive products such as footwear, furniture and steel. Apart from this, one of the main reasons for low export to the EFTA countries lies in the fact that the consumers and economies of the given countries exhibit more elasticity with respect to B&H products, i.e. these products are less competitive. On the other hand, consumers and economies in B&H show non-elasticity with respect to products imported from the EFTA countries.

Finally, the result where we have imports exceeding exports leads to a balance of trade deficit in B&H. Trade balance deficit of B&H has decreased in the last couple of years due to a fall in GDP of B&H, which reflected itself on the reduction in domestic demand and import of products from the EFTA countries. However, the main reasons for B&H deficit pertain to exports of products, raw materials and semi-products of low competitiveness. In order to achieve convergence in trade balance between B&H and EFTA in the long run, B&H needs to implement the necessary economic reforms and change the product export structure, i.e. to improve its competitive position in relation to the EFTA countries.

References

- Ahearn JR (2011) Europe's Preferential Trade Agreements: Status, Content, and Implications, CRS Report for Congress, Congressional Research Service. Available at: <https://www.fas.org/sgp/crs/row/R41143.pdf>.
- Aitken DN (1973) The Effect of the EEC and EFTA on European Trade: A Temporal Cross-Section Analysis, *The American Economic Review*, Vol. 63, No. 5. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.472.1572&rep=rep1&type=pdf>.
- Anderson JE (2010) The Gravity Model, Working Paper No. 16576, December, National Bureau of Economic Research, Cambridge, MA. Available at: <http://www.nber.org/papers/w16576.pdf>
- Arellano M (2003) *Panel Data Econometrics*, Oxford U. Press. Available at: <http://dx.doi.org/10.1093/0199245282.001.0001>.
- Avery G (1995) The Commission's Perspective on the EFTA Accession Negotiations, SEI Working Paper No. 12, Sussex European Institute. Available at: <https://www.sussex.ac.uk/webteam/gateway/file.php?name=sei-working-paper-no-12.pdf&site=266>.
- Baldwin R, Venables JA (2004) *Regional Economic Integration*. Available at: http://graduateinstitute.ch/files/live/sites/iheid/files/sites/ctei/shared/CTEI/Baldwin/Publications/Chapters/Trade%20Theory/Baldwin_Venables_Handbook.pdf.
- Baldwin R (2011) Sequencing Regionalism: Theory, European Practice, and Lessons for Asia, ADB Working Paper Series on Regional Economic Integration, No. 80, Asian Development Bank. Available at: https://aric.adb.org/pdf/workingpaper/WP80_Baldwin_Sequencing_Regionalism.pdf.
- Baltagi HB (2008) *Econometrics*, Fourth Edition, Heidelberg: Springer-Verlag Berlin.
- Barbalet F, Greenville J, Crook W, Gretton P, Breunig R (2015) Exploring the Links between Bilateral and Regional Trade Agreements and Merchandise Trade, *Asia & The Pacific Policy Studies*, Vol. 2, No. 3. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/app5.101/pdf>.
- Batra A (2004) India's Global Trade Potential: The Gravity Model Approach, ICRIER Working paper No. 151. Available at: <http://www.icrier.org/pdf/wp151.pdf>.
- Baudenbacher C. (2005) The Implementation of Decisions of the ECJ and of the EFTA Court in Member States Domestic Legal Orders, *Texas International Law Journal*, Vol. 40. Available at: <http://www.tilj.org/content/journal/40/num3/Baudenbacher383.pdf>.
- Beronilla NL, Esguerra PJH, Ocampo J (n.d.) The economic potential via the gravity model of trade. Available at: http://nap.psa.gov.ph/ncs/12thncs/papers/CONTRIBUTED/CPS-2%20Socio%20Economic%20Statistics%20II/CPS-2_4_The%20Economic%20Potential%20via%20the%20Gravity%20Model%20of%20Trade.pdf.
- Bhagwati J, Panagariya A (1996) The Theory of Preferential Trade Agreements: Historical Evolution and Current Trends, *The American Economic Review*, Vol. 86, No. 2, In: Proceedings of the Hundred and Eighth Annual Meeting of the American Economic Association San Francisco, CA, 5-7 January. Available at: http://www.jstor.org/stable/2118101?seq=1#page_scan_tab_contents.
- Bhagwati J (1993) Regionalism versus Multilateralism, In: De Melo J, Panagariya A (eds) *New dimensions in regional integration*, 22-46, Cambridge University Press.
- Braha K, Qineti A, Smutka L, Matejková E, Pietriková M (2014) EU accession and trade integration: the gravity model of trade in the case of the EU candidate countries, In: 142nd EAAE Seminar Growing Success? Agriculture and rural development in an enlarged EU, 29-30 May, Corvinus University of Budapest, Hungary. Available at: http://ageconsearch.umn.edu/bitstream/168926/2/paper_Braha_Qineti_Smutka_Matejkova_Pietrikova.pdf.

- Caporale MG, Rault C, Sova MA (2008) On the Trade Balance Effects of Free Trade Agreements Between the EU-15 and the CEEC-4 Countries, Working Paper No. 912, William Davidson Institute. Available at: <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/64367/wp912.pdf?sequence=1>.
- Carrere C (2003) Revisiting the Effects of Regional Trading Agreements on with Proper Specification of the Gravity Model, CERDI, Etudes et Documents, E 10. Available at: <http://publi.cerdi.org/ed/2003/2003.10.pdf>.
- Chaney T (2011) The Gravity Equation in International Trade: An Explanation. Available at: <http://www.tse-fr.eu/sites/default/files/medias/doc/by/chaney/distance.pdf>.
- Cieřlik A, Hagemeyer A (2011) The Effectiveness of Preferential Trade Liberalization in Central and Eastern Europe, Working Papers No. 21, (61), Faculty of Economic Sciences University of Warsaw. Available at: http://www.wne.uw.edu.pl/files/7813/9628/4103/WNE_WP61_2011.pdf.
- Cipollina M, Salvatici L (2012) Reciprocal trade agreements in gravity models: a meta-analysis, Working Paper 06, Tradeag is a Specific Targeted Research Project financed by the European Commission within its VI Research Framework. Available at: <https://www.gtap.agecon.purdue.edu/resources/download/3689.pdf>.
- Coulibaly S (2009) Evaluating the Trade Effect of Developing Regional Trade Agreements: A Semi-Parametric Approach, WPS 4220. Available at: <http://dx.doi.org/10.11130/jei.2009.24.4.709>
- Dee P, Gali J (2005) The Trade and Investment Effects of Preferential Trading Arrangements, In: Ito T, Rose KA (eds) *International Trade in East Asia*, NBER-East, Asia Seminar on Economics, Vol. 14, August, University of Chicago Press. Available at: <http://www.nber.org/chapters/c0193.pdf>.
- EFTA Team. (2004) Study of Consequences from Entering into an FTA with EFTA, Part IV: Advice on Trade and Investment Opportunities, Revised Draft Report. Available at: <http://www.thaifta.com/thaifta/portals/0/file/efta123004.pdf>.
- European Free Trade Association (2015) Trade Statistics – EFTA - Bosna-Herzegovina Merchandise Trade – Overview. Available at: <http://www.efta.int/free-trade/trade-statistics>.
- Ferreira PM (1990) Effects of European Integration on Nordic, Working Papers No. 279, In: IUIjNEF Workshop on The EC Internal Market and the Nordic Countries, at Lidingö, 11-13 June. Available at: <http://www.ifn.se/wfiles/wp/wp279.pdf>.
- Fundira T (2007) The SACU-EFTA Agreement: current trading relationship and implications, Tralac Trade Brief, No. 11. Available at: <http://paulroos.co.za/wp-content/blogs.dir/12/files/2011/uploads/TB11%20FUNDIRA%20SACU%20EFTA%20Agr%2018122007.pdf>.
- Furusawa T, Konishi H (2003) Free Trade Networks. Available at: <http://fmwww.bc.edu/ec-p/wp548.pdf>.
- Gao S (2009) The Predictive Capacity of the Gravity Model of Trade on Foreign Direct Investment, National ekonomiska Institutionen, Uppsala Universitet. Available at: <http://www.diva-portal.org/smash/get/diva2:216318/FULLTEXT01.pdf>.
- Gjipali A, Jorgji E, Liko E (2012) Intra-Regional Trade in Transitional Economy: Prospects from South-Eastern Europe European Perspectives, *Journal on European Perspective of the Western Balkans*, Vol. 4, No 4, 2 (77) Available at: <http://www.cep.si/dokumenti/Arsena%20Gjipali,%20Etis%20Jorgji,%20Elida%20Liko.pdf>.
- Henningesen A, Hamann, DJ (2007) Systemfit: A Package for Estimating Systems of Simultaneous Equations in R, *Journal of Statistical Software*, Vol. 23, Issue 4. Available at: <http://www.jstatsoft.org/article/view/v023i04>.
- Krishna P (1998) Regionalism and Multilateralism, *The Quarterly Journal of Economics*. [Available at: <http://dx.doi.org/10.1162/00335539851144162>].

- Lipsey GR (1957) *The Theory of Customs Unions: Trade Diversion and Welfare*, *Economica*, New Series, Vol. 24, No. 93. Available at: <http://dx.doi.org/10.2307/2551626>
- Magee SPC (2007) *New Measures of Trade Creation and Trade Diversion*. Available at: <http://www.facstaff.bucknell.edu/cmagee/trade%20creation%20and%20diversion,%20magee,%20august%202007.pdf>.
- Mansfield DE, Helen V, Milner, VH (1999) *The New Wave of Regionalism*, *International Organization* 53, 3, The IO Foundation and the Massachusetts Institute of Technology. Available at: <http://dx.doi.org/10.1162/002081899551002>.
- Matta A (2014) *EU differentiated integration frameworks – has the EU learnt its lesson in the Eastern Neighborhood?*, In *UACES 44th Annual Conference*, Cork, September. Available at: <http://www.uaces.org/documents/papers/1401/matta.pdf>.
- McFadden D (1999) *Economics* 240, *Simultaneous Equations*. Available at: https://eml.berkeley.edu/~mcfadden/e240b_f01/ch6.pdf.
- Mihashi K (2009) *The Effect of Regional Trade Agreements on the Global Economy and Society*, Master of Thesis, The Graduate School of Arts and Sciences at Georgetown University. Available at: <https://repository.library.georgetown.edu/bitstream/handle/10822/553179/mihashiKohichi.pdf?sequence=1>.
- Mukunoki H (2005) *Understanding the Effects of Preferential Trade Agreements: A Theoretical Overview*, *Bulletin of Gakushuin University* No.19, Research Institute of Economics and Management. Available at: <http://www-cc.gakushuin.ac.jp/~20030012/paper/GEM19-mukunoki.pdf>.
- Park I, Park S (2008) *Free Trade Agreements versus Customs Unions: An Examination of East Asia*, MPRA paper No. 11301, Munich Personal RePEc Archive. Available at: https://mpra.ub.uni-muenchen.de/11301/1/MPRA_paper_11301.pdf.
- Robinson S, Thierfelder K (1999) *Trade Liberalization and Regional Integration: The Search for Large Numbers*, TMD Discussion Paper No. 34, In: presented to the meetings of the International Agricultural Trade Research Consortium (IATRC), Research Institute Washington, Florida, December. Available at: <http://ageconsearch.umn.edu/bitstream/97554/2/tmdp34.pdf>.
- Saggi K, Stoyanov A, Yildiz MH (2015) *Do free trade agreements affect tariffs of non-member countries? A theoretical and empirical investigation*, Vanderbilt University Department of Economics. Available at: <http://economics.ryerson.ca/workingpapers/wp051.pdf>.
- Schmieding H (1989) *Between Perestroika and Internal Market 1992: A new role for EFTA*, Kiel Working Papers No. 370, Kiel Institute for the World Economy (IfW), Leibniz Information Centre for Economics. Available at: <http://econstor.eu/bitstream/10419/47051/1/042029694.pdf>.
- Službeni glasnik BiH – Međunarodni ugovori (2014) *Sporazum o slobodnoj trgovini između država Evropskog udruženja slobodne trgovine i BiH*, Službeni Glasnik BiH – Međunarodni ugovori, Br. 18, Oktobar. Available at: <http://www.uino.gov.ba/download/2015/18.02.2015.%20Ugovor%20EFTA%20BS.pdf>.
- Snorrason ST (2012) *Asymmetric Economic Integration*, *Contributions to Economics*, Springer-Verlag Berlin, Heidelberg. Available at: http://dx.doi.org/10.1007/978-3-7908-2861-0_1.
- Spies J, Marques H (2006) *Trade Effects of the Europe Agreements*, Nr. 274, Institut für Volkswirtschaftslehre (520), Universität Hohenheim. Available at: <https://www.uni-hohenheim.de/RePEc/hoh/papers/274.pdf>.
- Srinivasan TN (2002) *Developing Countries and the Multilateral Trading System After Doha*, Center Discussion Paper No. 842, Economic Growth Center, In: *International Symposium on The WTO: Present and Future Challenges*, Aoyama Gakuin University, 8 December 2002, Tokyo. Available at: http://aida.wss.yale.edu/growth_pdf/cdp842.pdf.

Stevens C, Irfan I, Massa I, Kennan J (2015) The Impact of Free Trade Agreements between Developed and Developing Countries on Economic Development in Developing Countries: A Rapid Evidence Assessment, Overseas Development Institute, London. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/448862/REA_FreeTradeAgreements.pdf.

Trocen ML (2010) The European Free Trade Association – 50 years of existence, Seria Științe Juridice, Nr. 1, Analele Universității Constantin Brâncuși din Târgu Jiu. Available at: http://www.utgjiu.ro/revista/jur/pdf/2010-01/9_LAURA_MAGDALENA_TROCEN.pdf.

Van Randwyck H (2011) FTA or the EU, The Bruges Group, London. Available at: <http://www.brugesgroup.com/EFTAorTheEU.pdf>.

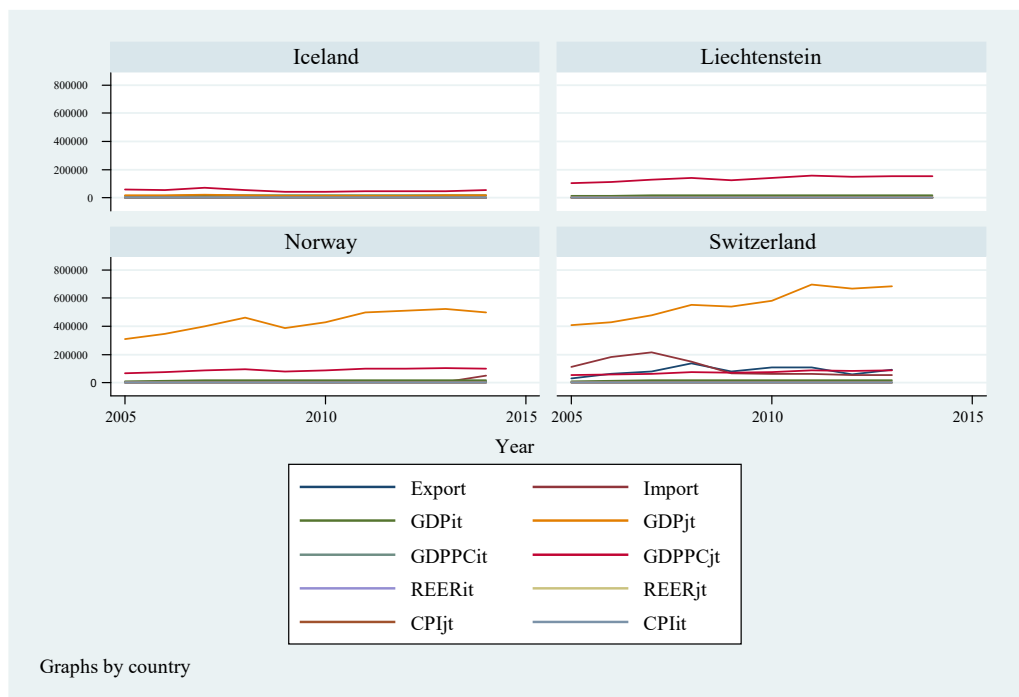
Viner J (1950) The Customs Unions Issue, New York: Carnegie Endowment for International Peace.

World Trade Organization. (2015) Regional trade agreements, Facts and figures, In WTO Homepage. World Trade Organization. Available at: https://www.wto.org/english/tratop_e/region_e/region_e.htm.

Zahariadis Y (2007) The Effects of the Albania-EU Stabilization and Association Agreement: Economic Impact and Social Implications, ESAU Working Paper 17, Overseas Development Institute, London. Available at: <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2527.pdf>.

Appendix 1

Figure A1 Independent variables affecting the B&H trade balance with the EFTA countries



Source: Author's

Research on Poverty in Transition Economies

A Meta-analysis on Changes in the Determinants of Poverty

Kazuhiro Kumo

Abstract Research on the increase in poverty in the transitional economies affected by the collapse of socialism began soon after the economic transition began. However, the nature of poverty in the former Soviet Union and Central and Eastern Europe differs, and two phases have been observed: a phase of increasing and stabilising poverty in the 1990s and a phase of declining poverty in the 2000s. Taking into account the possibility that the impact of household size, education level, and urban domicile, which are factors employed in traditional poverty research, may differ depending on the year or the region, this paper attempted a meta-analysis. The results generally supported the hypothesis. In the 1990s, there was no difference between urban and rural populations in the probability of falling into poverty. After 2000, however, urban domicile became a significant factor in reducing the probability of falling into poverty. In addition, differences were observed between the former Soviet Union and Central and Eastern Europe in the factors affecting the poverty situation. This phenomenon is considered to indicate one of the directions for research in comparative transitional economics in the future. Furthermore, the trend in poverty dynamics seen here can probably also be regarded as indicating steady progress in “transition”.

Keywords Poverty - Transition Economies - Meta-Analysis - Systematic Survey

JEL Classification I32 - I39 - P36 - P46

1. Introduction

The purpose of this paper is to describe, through previous research, how the factors causing households to fall into poverty in former socialist countries have been explored in the more 20 years since the beginning of the economic transition.

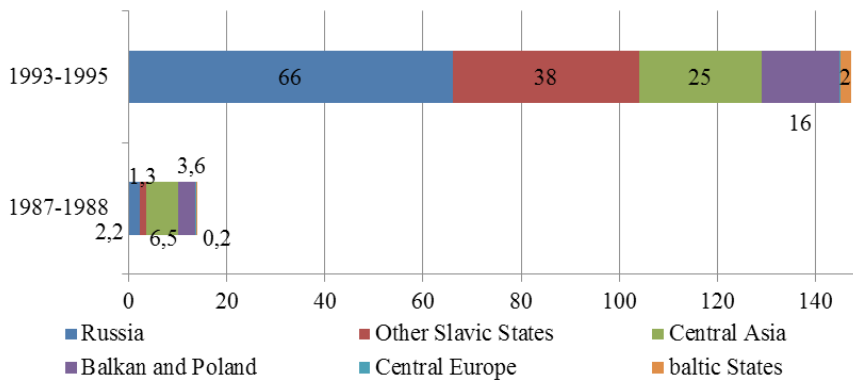
It has been widely acknowledged that economic disparities were small and levels of poverty were low in socialist countries (McAuley, 1979). Although it was impossible to make detailed studies because hardly any data was made publicly available, it can be said that it was commonly acknowledged that income redistribution, government-set wage rates,

Kazuhiro Kumo (✉)

Institute of Economic Research, Hitotsubashi University, Japan
e-mail: kumo@ier.hit-u.ac.jp

and generous social security kept poverty at low levels in the socialist countries (McAuley, 1979). However, it is known that as the economic transition began, this situation changed. The well-known Milanovic (1997) employed various types of household survey data to estimate the total number of people with incomes below the poverty line. Based on his calculations, in 18 countries located in the former Soviet Union and Southern/Eastern Europe, the number of people in poverty increased by ten times (from 14 million to 147 million people) in 1993–1995, the period following the beginning of the economic transition, compared with 1987–1988, which was before the economic transition. However, this was based on a poverty line of income of 4 U.S. dollars per person per day at 1993 purchasing power parity, so it can be said to be a fairly high estimate. Nevertheless, this does probably not affect the overall trend. In addition, the increase in the number of people in poverty in Russia was striking. In 1987–1988, just 2.2 million (1.5%) of the total population of 146 million people (1987) was in poverty, but after the economic transition began, the number of the poor in Russia increased by 30 times to 66 million people, 44% of the total population of 148.5 million people (1993) (Milanovic, 1997, Figure 1).

Figure 1 The Number of Population with Income below the Poverty Line (million)



Source: Prepared by the author by Milanovic (1997).

Even under socialism, it was not the case that poverty did not exist at all. It needs to be pointed out that it was merely impossible to investigate it due to the inaccessibility of data. At the same time, however, poverty in regions that had been in the socialist bloc increased due to the economic transition, and it can be said that it became widespread than before.

What is interesting here is the impact that “poverty” had as a problem associated with economic transition, and the extent to which the problem is unique to transition economies. Poverty itself is a widely observed phenomenon, so it can be said that the most important task is to determine whether it is actually a problem of “transition economies”. Therefore this paper will carefully examine research on poverty in transition economies conducted over the past 20 years or so, and with regard to poverty in transition economies, by exploring trends such as which factors have been studied, how they are different or similar to such factors in other countries, and whether differences are observed among transition economies, aims to take into account the nature and achievements of poverty research in transitional countries during the 20 years since the economic transition began.

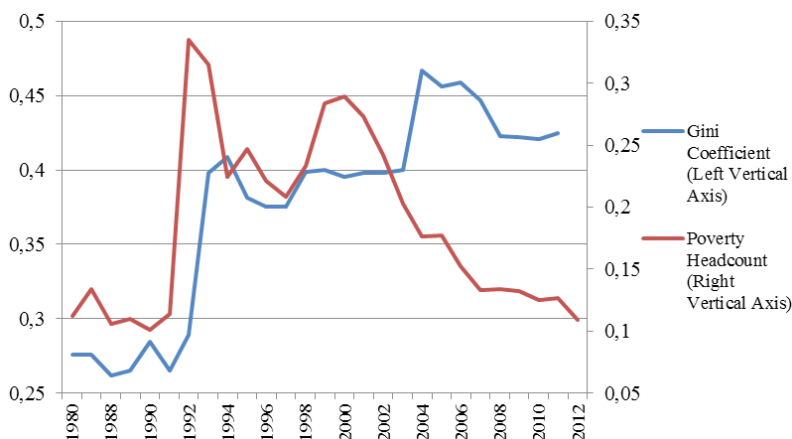
2. Poverty in Transition Economies

The increase in poverty in transition economies described by Milanovic (1997), which mentioned in the introduction, has been described as “sudden poverty” in previous research (Ruminska-Zimny, 1997). This expression sees the rapid increase in poverty in former socialist countries that had established generous systems of social security. Certainly, a big change occurred in the poverty headcount between the socialist era and the after the beginning of the economic transition. Nevertheless, as it was mentioned in the introduction, there is hardly any data for the socialist era. What can be used are various estimated series, such as the one illustrated in Figure 2, which shows the poverty headcount (the percentage of the population with incomes below the “cost of maintaining a minimum standard of living”) and the Gini coefficients for per-capita income in Russia from 1980, before the collapse of the Soviet Union, to 2010s.

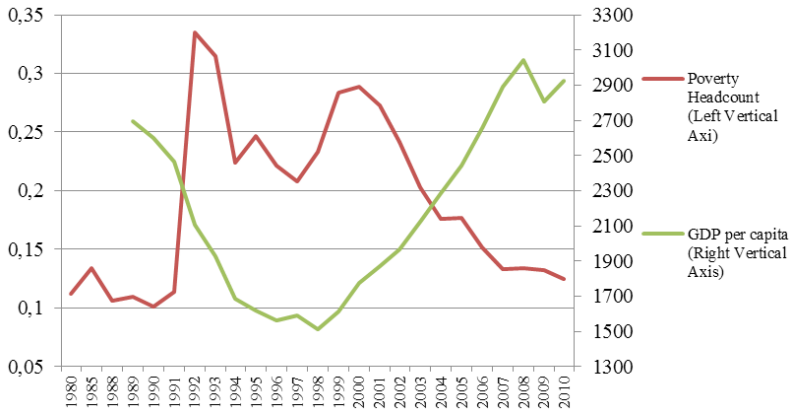
The poverty headcount, which was 11.4% in 1991, began rising as the economic transition began at the end of 1991, reaching 31.5% in 1993. Similarly, the Gini coefficient, which indicates the level of income disparity, jumped from 0.265 in 1991 to 0.398 in 1993. This can be said to illustrate the occurrence of the “sudden poverty” in the transition economies described by Ruminska-Zimny (1997).

However, it is easy to see two contrasting periods, a sudden increase during the 1990s and a decline during the 2000s. It can be pointed out that these trends were closely related to the economic situation. Figure 3 shows the poverty headcount in Russia alongside gross domestic product (GDP) per capita. At the beginning of the 1990s, when the economy shrank in conjunction with the economic transition, the poverty headcount increased sharply. From 1999, however, when the economy began growing on a sustained basis, the poverty headcount trended downwards. The correlation between the poverty headcount and per-capita GDP in Figure 3 is -0.76, illustrating that the poverty headcount declines as per-capita GDP increases.

Figure 2 Poverty Headcount and Gini Coefficients of Income in Russia, 1980-2011



Source: Prepared by the author by Braithwaite (1995); Rosstat, *Sotsial'noe polozhenie Iurovenzhisni naseleniya Rossii*, 1998, 2001, 2004, 2010, 2011, 2013.

Figure 3 Poverty Headcount and GDP per capita in Russia, 1989-2010

Source: Prepared by the author by Rosstat, *Sotsial'noe polozhenie Iurovenzhisni naseleniya Rossii*, 1998, 2001, 2004, 2010, 2011, 2013; World Bank, *World Development Indicators 2005*, CD-ROM and World Bank, *World Development Indicators 2012*, CD-ROM.

Needless to say, this is not something that is limited to Russia. The other socialist countries in Eastern Europe also had various systems, such as social security systems providing pensions, healthcare, systems for ensuring employment, and so on (McAuley, 1979; Braithwaite, Grootaert and Milanovic, 2000). As a result, it can be said that the transition to market economies that took place in these countries exhibited a similar phenomenon in that it made poverty more apparent. However, it must also be pointed out that the situation was not exactly the same in every region.

Table 1. Poverty Headcount. Poverty lines were defined by each country.

Top Half: Former Soviet States; Bottom Half: European and Asian Transitional Economies.

Year	Armenia	Azerbaijan	Georgia	Kazakhstan	Tajikistan	Turkmenistan	Kyrgyz	Belorus	Moldova	Ukraine	Russia
1993											
1994											30.9
1995		68.1									
1996				34.6				38.6			
1997								32.1			
1998								33			
1999	55.5				96			46.7			
2000								41.9		31.5	
2001	48.3	49.6		46.7				28.9			
2002			52.1	44.5				30.5		28.1	19.6
2003			54.5	37.5	72.4			27.1	29	19.3	17.4
2004				33.9				17.8	26.5	14.7	14.1

Year	Armenia	Azerbaijan	Georgia	Kazakhstan	Tajikistan	Turkmenistan	Kyrgyz	Belorus	Moldova	Ukraine	Russia
2005				31.6				12.7	29	8.4	11.9
2006				18.2			61	11.1	30.2	6.8	11.1
2007			23.4	12.7	53.5		54.6	7.7	25.8	4.6	
2008	27.6	15.8	22.7	12.1			31.7	6.1	26.4	2.9	
2009	34.1		24.7	8.2	46.7		31.7	5.4	26.3		
2010	35.8						33.7		21.9		

Year	Hungary	Poland	Croatia	Latvia	Romania	Serbia	Macedonia	Bosnia	Kosovo	Albania	China	Vietnam
1993	14.5	23.8										58.1
1994					21.5							
1995					25.4							
1996		14.6									6	
1997	17.3											
1998											4.6	37.4
1999		14.3										
2000		14.8			35.9							
2001		15.6			30.6							
2002		16.6	11.2	7.5	28.9	14	19.1			25.4		28.9
2003					25.1		19.2		37.7			
2004		19	11.1	5.9	18.8	14.6	18.5	17.7	43.7		2.8	19.5
2005		18			15.1		20.4		34.8	18.5		
2006		15.1			13.8	9	19		45.1			16
2007		14.6				6.6		14				
2008		10.6				6.1				12.4		14.5
2009						6.9			34.5			
2010						9.2						

Prepared by the author by World Bank, *World Development Indicators 2005*, CD-ROM, and World Bank, *World Development Indicators 2012*, CD-ROM.

Table 1 shows poverty headcounts in the countries that comprised the Soviet Union, the transition economies of Central and Eastern Europe, as well as China and Vietnam. A look at this table enables a number of facts to be confirmed. The top half shows figures for the countries that comprised the Soviet Union, while the bottom half does the same for the transition economies of

Central and Eastern Europe and the Asian countries. The figures obtained have been presented, generally and on the whole, poverty headcounts are clearly lower in the bottom half. The average for the top half is 30.1%, and that for the bottom half is 19.2%, and if China and Vietnam are omitted, the latter is 18.9%. Furthermore, a comparison of the 1990s and 2000s reveals that the poverty headcount trended downwards. The averages for the top half were 46.7% in the 1990s and 27.4% in the 2000s, while those for the bottom half were 21.6% in the 1990s and 18.6% in the 2000s. It can be seen that the decline in poverty headcount during the 2000s was most conspicuous in the countries that comprised the Soviet Union. That has actually been pointed out by researchers such as Razumov and Yagodkina (2007) and Bobkov (2007).

The collapse of socialism delivered a transitional shock to the regions, and the number of people in poverty increased sharply. The increase was particularly conspicuous in the 1990s, and the situation was especially severe in the countries that formerly comprised the Soviet Union. However, the situation changed in the 2000s, and it can be pointed out that the poverty headcount in each country exhibited a clear downward trend.

So how was poverty in the transition economies described? During the socialist era, or the Soviet era, the risk of falling into poverty was regarded as high for households in rural areas and households with children (McAuley, 1979; Braithwaite, 1995). This view would be in line with the insights provided by general research on poverty. With the appearance of “sudden poverty” (Ruminska-Zimny, 1997) during the beginning of the economic transition in 1989–1991, poverty also became more widespread in urban areas during the 1990s (Gerry, Nivorozhkin and Rigg, 2008). Later, urban poverty was seen to increase in developing countries worldwide, particularly in Latin America (Ravallion, Chen and Sangraula, 2007). However, the transition economies in Europe did not exhibit such a trend. On the contrary, the number of people in poverty in urban areas there can actually be said to have declined. Furthermore, in the transition economies the relative difference in the poverty headcount in urban areas in comparison with that in rural areas can be said to have decreased. Given the above, the 1990s can be perceived as a period in which the poverty headcount increased and stabilized at a high level, while the 2000s can be perceived as a period in which the poverty headcount trended downwards.

3. Determination of the Literature to be Surveyed: Literature Search Procedures

Before performing the meta-analysis for this paper and surveying literature to form the basis for that, it was first necessary to identify and list the literatures to be surveyed with avoiding subjective selection biases. This paper used Econlit, a well-known electronic database of academic literature, to search for literatures published in the 25-year period between January 1989 and October 2013¹. To limit the subjects covered, the author searched for words directly related to the topic, such as “poverty” and “poor”. This paper also used words that could be related such as “disparity (differential), and used the “and/or” combination function to extract a wide range of literature. In addition, to search for empirical research on the regions this research should cover, the author used “and/or” to search for keywords such as “transition economies”, “Eastern Europe”, and “Central Europe”. At this stage, the author had identified 338 pieces of literature, of which the author was able to actually obtain 318.

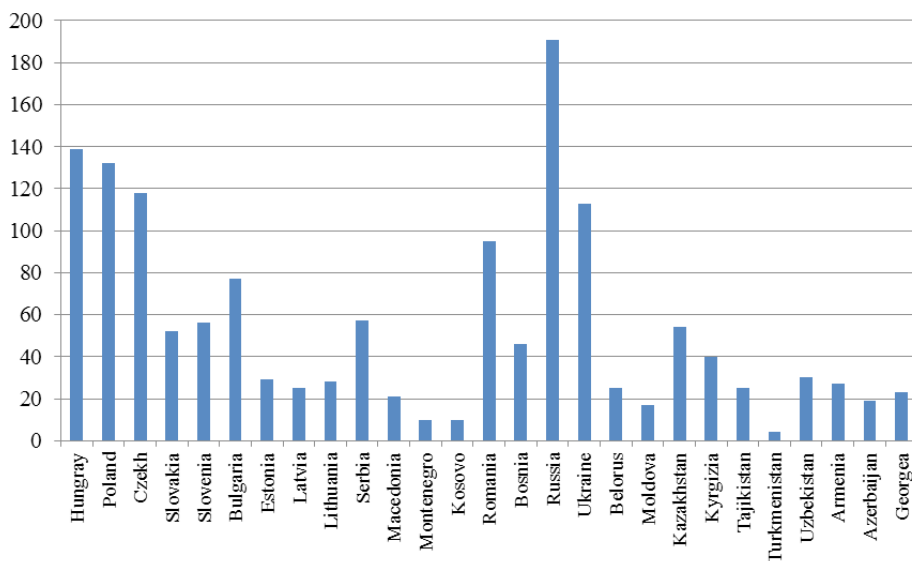
Actually, however, it was impossible to track down a sufficient number of papers. A serious problem was the frequent absence of research on specific countries. Furthermore, although

¹ Information from books and journals are not included in the Econlit database as soon as they are published. Taking into account the time lag between the publication of information and its inclusion in the database, and the reproducibility of the analysis performed in this paper, literature published up to approximately one year before this paper was written is covered.

predictable given the size of the country, the usability of data, and so on, the search results were incredibly skewed toward Russia. Therefore, in addition to the above, the author performed keyword searches (Econlit Subject searches) using “poverty + (specific country name)”, which produced a total of 1,463 (though some were duplicated) papers and academic writings. This enabled one to gather a reasonably wide range of literature on the transition economies of Central and Eastern Europe (Figure 4).

Here, this paper eliminated one-page news articles, comments concerning already-published papers, correspondence among their writers, reviews, and so on from this investigation. The author also decided to exclude papers included in books and discussion papers from international organizations and research organizations such as universities. This reduced the number of papers surveyed, and there is a risk that important papers have been omitted. However, one also should take account of the fact that many papers contained in books have previously been published in academic journals, with the books containing revised versions of them, and that while academic journals can be expected to maintain certain standards through processes such as peer review, the same level of quality may not be ensured for papers included in books and discussion papers published by research organizations. Another reason for this decision was that the number of book papers involving quantitative investigations, at least ones covering the regions this paper was investigating, is limited.

Figure 4 The Number of Papers by Target Country by Keyword Searches Using “Poverty + <Specific Country Name>” (1,463 in total, though some were overlapped. 1,320 if without overlapping)

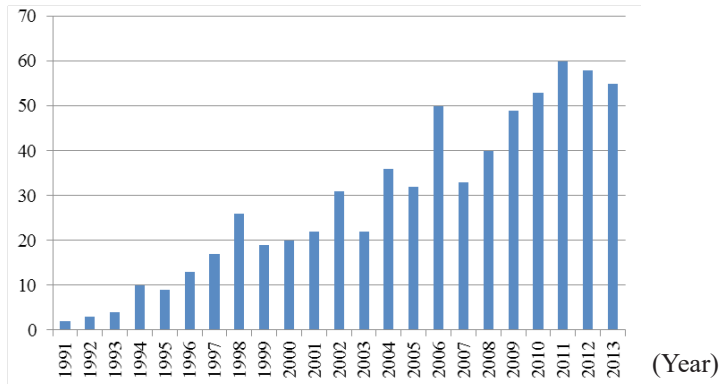


Source: Prepared by the author by the search results by Econlit.

The author also restricted the investigation to literature written in English, ignoring research conducted in Japanese, Russian, or other languages. In that sense, this paper follows the conventional approach of systematic review (Borenstein *et al.*, 2009). This decision was also aimed at ensuring a certain level of quality for research results. Over half the literature for some of the countries of the former Soviet Union comprised discussion papers from international organisations, particularly the World Bank, papers from books, and so on. Although these could

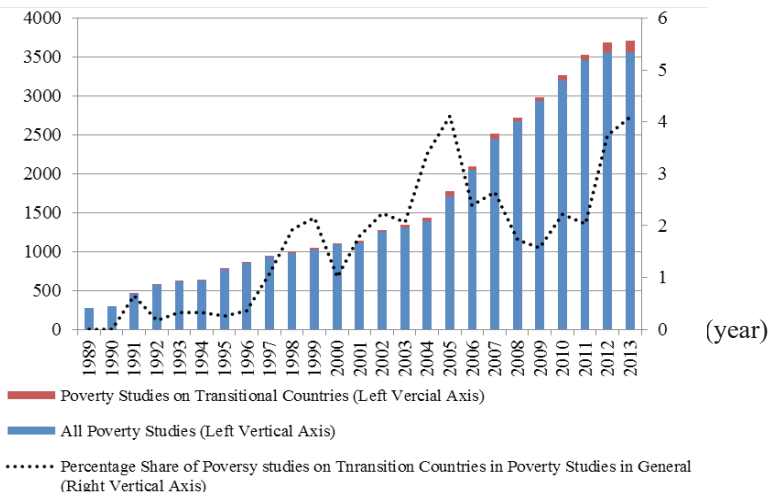
not be included in the author’s investigation, the author collected as many of the 892 papers from academic journals as he could (Figure 5a, Figure 5b)². The number of studies extracted from the database is shown in Figure 5a, but of the total of 892, the author was only able to obtain 547. However, several hundred of the papers published in the countries of Central and Eastern Europe were written in the local language, and although it must be noted that they could not be included in this paper’s investigation, by performing searches using country names, the author was able to significantly increase the amount of literature for the meta-analysis.

Figure 5a The Number of Research Article on Poverty, targeting Transition Countries and Published in Academic Journals, January 1998-October 2013.



Source: Prepared by the author by the search results by Econlit.

Figure 5b The Number of (1) Poverty Studies in General in Academic Journals, (2) Poverty Studies on Transitional Countries in Journals, and (3) The Ratio of Poverty Studies in Transitional Countries to Poverty Studies in General, January 1989 – October 2013. (The Number of Articles) (%)

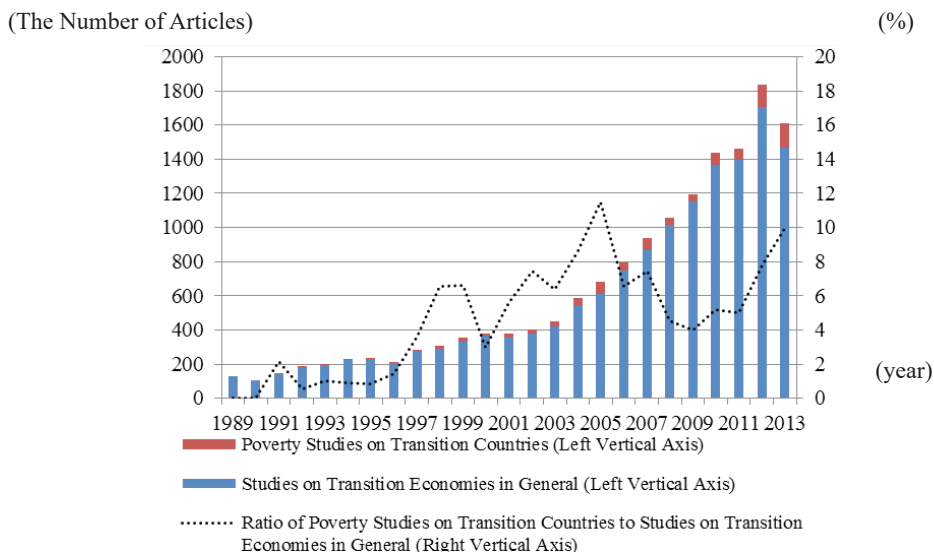


Source: Prepared by the author by the search results by Econlit.

² This will be discussed later, but the literature subject to be used for the meta-analysis was not selected arbitrarily. Instead, all the analytical results that could be obtained were collected.

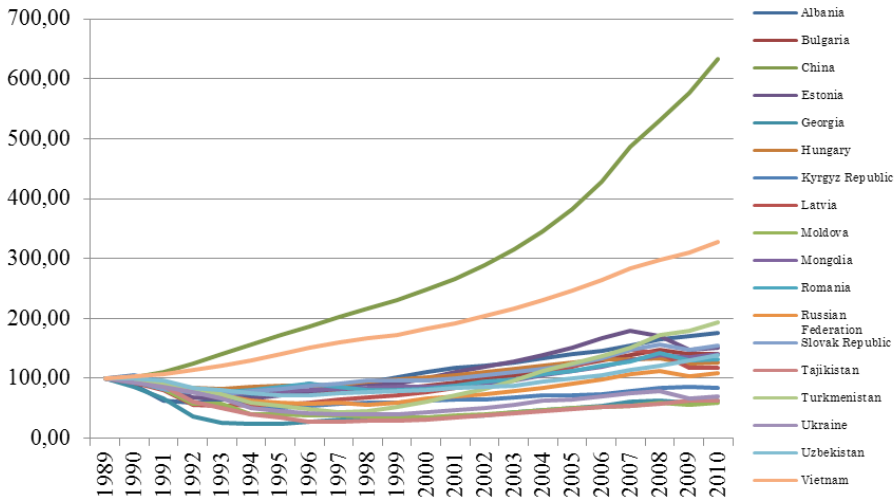
Figure 5a suggests that there was a steady increase in the amount of poverty research in transition economies after the beginning of the economic transition in 1989. However, the database did not yield even one paper published in an academic journal for 1989 and 1990. This may mean that data that had been kept confidential during the socialist era was increasingly made public, and that a certain accumulation of data such as household survey data was needed before research could begin. In fact, the increase in research from 2000 may only have been possible once household survey data was accumulated. However, it may also be necessary to take into account the increase in the number of journals. A comparison with Figure 5b, which shows the results of a search performed using “poverty” as the keyword with no other restrictions (i.e. no specification of the region etc.), shows that poverty research as a whole increased sharply from the beginning of the 2000s. It can therefore be said that poverty research on transition economies followed the overall trend for poverty research in general. Nevertheless, it cannot be denied that the accumulation of research progressed steadily. And at the same time, as Figure 5b shows, research on poverty in transition economies as a proportion of total, non-region-specific poverty research, increased from less than 1% in the mid-1990s (1996) to 1.5–4%+ by 2013 (Figure 5b), which probably indicates that the increase in the number of journals was not the only contributor to the increase in poverty research on transition economies.

Figure 5c The Number of (1) Studies on Transition Economies in General in Academic Journals, (2) Poverty Studies on Transitional Countries in Journals, and (3) The Ratio of Poverty Studies in Transitional Countries to Studies on Transition Economies in General, January 1989 – October 2013.



Source: Prepared by the author by the search results by Econlit.

Looking at the position of poverty research in the field of transition economy research in general (Figure 5c), it can be seen that not only has transition economy research itself been increasing in quantitative terms, research dealing with the problem of poverty as a proportion of all transition economy research has increased since the end of the 1990s compared with the beginning of the economic transition. It can therefore be said that “poverty” is gathering interest as a research topic in this field.

Figure 6 GDP per capita in Transitional Economies. (1989=100)

Source: Prepared by the Author by World Bank, *World Development Indicators 2012*, CD-ROM.

Next, the author read the titles and abstracts of all the papers he had been able to collect, eliminating those on topics that were obviously different. The author limited the literature to be collected here to that dealing with European transition economies. In other words, this research did not include Asian transition countries, i.e. China and Vietnam, in the subject of the investigation. There were clear reasons for this. First, China and Vietnam did not experience transitional shock and a subsequent recession, something that all the former socialist countries of Eastern Europe and the Soviet Union faced with. Figure 6 shows an index of per-capita GDP in transition economies with 1989 as the base year, and these two countries were the only ones that did not see their per-capita GDP drop after 1989 to below the level they were in that year. It is also difficult to imagine that the factors behind the poverty that occurred in those two countries had the same characteristics as those behind the “sudden poverty” that arose in the transition economies of Europe. Furthermore, a search using the keywords “China /and/ poverty” turned up 1993 pieces of literature. This figure is far higher than the 1,320 pieces from keyword searches specifying the names of all the European transition economies as regions, which the author mentioned earlier, so there is a lack of balance. In other words, “knowledge from poverty research on China” might be over-representative when investigating “knowledge from poverty research in transition economies as a whole”. For the above reasons, the author deemed that it would be inappropriate to deal simultaneously with research covering China and Vietnam in addition to the European transitional economies. Of all the 547 academic-journal papers that the author was able to obtain, 15 included results of analysis that could be used to perform a meta-analysis of differences over time and between regions in the determinants of poverty, and these are listed in Table 2. So the author was actually only able to extract results of analysis from fewer than 3% (2.74%) of all the pieces of literature. Not all the 547 academic-journal papers described empirical research. Some of them explained policy trends, and many did not actually constitute poverty research³. There are reasons that the number of studies from which results of analysis can be extracted is

³ The searches were keyword searches, with JEL (Journal of Economic Literature) codes also added. The applicable codes were I300/I320/I390, P360, and P460, which cover subjects such as welfare and consumer economics. The 892 papers retrieved included a lot of papers focused mainly on analysis of education, pensions, and medical care.

so small, and they will be discussed these here. No systematic review of all the poverty research conducted in transition economies exists. However, it is necessary to mention Lokshin (2009) as a previous review of poverty research, albeit one limited to Russia. Lokshin (2009) adopted the unusual approach of studying only literature written in the Russian language, and investigated the methods used for analysing poverty in Russia as seen through 250 papers published between 1992 and 2006. He found that whereas 48% of 145 empirical studies published in the top nine American economic journals in 1965 carried out some kind of regression analysis and performed statistical testing by providing standard errors, only 12% of 250 empirical studies in economics published in Russian journals between 1992 and 2006 carried out a regression analysis, and only 8% of them provided standard errors and performed testing (Table 3).

Table 2 Papers, the Results of which would be Utilized in Meta-Analysis (1):
Explained Variable - Poverty Risk/Poverty Ratio

Published Year	Author	Target Areas	Estimated Period	Methods	The Number of Estimation Results to be Utilized	Explained Variables	Explaining Variables	Significance	The Numer of Samples
2010	Brück, Danzer, Muravyev and	Ukraine	1996	Probit	4	Risk of Poverty	Household Size + Unemployment + Urban Residence +		22990
2009	Mills and Mykerei	Russia	1994-98 2000-03	Tobit	6	Poverty Ratio	Numbe rof + Urban Residence - Higher Education -		1288
				Tobit		Poverty Ratio	Numbe rof + Children Urban Residence - Higher Education -		2146
				Tobit		Poverty Ratio	Numbe rof + Children Urban Residence - Higher Education -		2156
2008	Szulc	Poland	2000	Probit	3	Risk of Poverty	Numbe rof + Children Urban Residence - Higher Education -		35952
2008	Dimova and Wolff	Bulgaria	1995, 97, 2001	Probit	3	Risk of Poverty	Numbe rof + Urban Residence no Higher Education -		2319-2633
2008	Rhoc, Babu and Reidhead	Kazakhstan	1996	Logit	2	Risk of Poverty	Numbe rof + Urban Residence - Higher Education -		1996
2008	Gerry, Nivorozhkin and Rigg	Russia	2004	Logit	7	Risk of Poverty	Rural Residence + Numbe rof + Children Household Size - Higher Education -		53970
2007	Robinson and Guenther	Tajikistan	2003	Logit	6	Risk of Poverty	Dependency + Ratio		665-992
2007	Kristic and Sanfey	Bosnia and Herzegovina	2001-04	Probit	1	Risk of Poverty	Household Size + Urban Residence - Higher Education -		915
2006	Bhaumik, Gang and Yun	Russia	2000	Probit	2	Risk of Poverty	Urban Residence no Higher Education - Numbe rof + Children		416-2101

Published Year	Author	Target Areas	Estimated Period	Methods	The Number of Estimation Results to be Utilized	Explained Variables	Explaining Variables	Significance	The Number of Samples
2006	Alexandrova, Hamilton and Kuznetsova	Russia	2002	Probit	1	Risk of Poverty	Urban Residence Higher Education Number of Children	- - +	3905
2006	Szulc	Poland	1993, 99	Probit	12	Risk of Poverty	Urban Residence Higher Education Number of Children	- - +	32000
2005	Kolev	Bulgaria	2001	Probit	4	Risk of Poverty	Existence of Children	+	2411
						Risk of Poverty	Existence of Children	+	1225
2004	Bezemer and Lerman	Armenia	1998	Logistic Regression	1	Risk of Poverty	Household Size	+	1458
2004	Gustafsson and Nivorozhkina	Russia	1989, 2000	Logit	3	Risk of Poverty	Higher Dependency Ratio	- +	1187
						Risk of Poverty	Higher Education Dependency Ratio	- +	1131
1999	Commander, Tolstopyatenko and Yemtsov	Russia	1992-93	Probit	2	Permanent Poverty	Dependency Ratio Higher Education	+	4700
				Probit		Permanent non-Poverty	Dependency Ratio Higher Education	- +	4700

Source: Prepared by the Author.

Table 3 Reporting Style of Empirical Studies: Journal Articles in the US in 1965 vs. Russian Journal Articles in Russia, 1992-2006

	US, 1965	Russia, 1992-2006
Parameter Estimation	100%	75%
Report of Standard Errors	53%	8%
Regression Analysis	48%	12%

Source: Lokshin (2009), Table 3.

The conclusion of Lokshin (2009) was that given external criteria such as whether a paper features regression analysis or reports standard errors, it was difficult to say that the poverty studies in Russia met the normal standards for poverty research. Limiting the investigation to literature in the English language means that the final research results tend to also appear as literature in English, which reaches a wider number of readers, so it can be said to be the normal method for meta-analysis (Borenstein, Hedges, Higgins and Rothstein, 2009). Additionally, Lokshin's view can be said to support the approach of this paper, which is to conduct a review focusing on literature in English only. It is also understood that it is quite possible, as was the case with this paper, that only 3% of studies retrieved using the keyword "poverty" include content that can be used for meta-analysis⁴.

4 To give another example, if papers published between January 1989 and October 2013 are searched for using the keywords "Poverty /and/ Russia", it was shown that 191 papers were retrieved (Figure 3). However, of these 37 were in the Russian language, 32 were published in the journal *Problems of Economic*

4. Meta-analysis of Poverty Research in Transition Countries

The meta-analysis this paper will perform here will be to combine partial correlation coefficients and t-values. This paper will combine partial correlation coefficients using the fixed-effect model and random-effects model and determine combined values to be referred by testing for homogeneity (Borenstein, Hedges, Higgins and Rothstein, 2009). Regarding t-values, the author will determine the weights using rankings, impact factors, and so on⁵, and present them as integrated t-values with or without weighting. Furthermore, by calculating fail-safe N (Mullen, 1989) at the significant level of 5%, the author will confirm the confidence for the integrated t-values calculated here.

What needs to be taken into account when performing a meta-analysis is investigation relating to publication bias (Mullen, 1989). In this paper the author produce a funnel plot and check publication bias. Then the author performs the analysis by estimating a meta-regression model to confirm the existence of real effect⁶.

What one must mention first is the difficulty of grasping poverty dynamics using “transition factors”. In the case of macro-level themes such as the study of economic policy or path dependence, variables such as the degree of progress with privatization or the European Bank for Reconstruction and Development’s progress in transition indicators can also be regarded as explanatory variables. However, to understand the phenomenon of poverty at the individual or household level, such factors cannot be used in an approach that measures progress in the economic transition. Having said that, phenomena such as the privatization (shift to private ownership) of housing, at least in the case of Russia, occurred throughout the country at more or less the same time. Basically what happened was that ownership of the apartments that people lived in at the time was just handed over to their owners almost free of charge. Factors that occur for all agents simultaneously cannot be explanatory variables for phenomena that occur subsequently at the individual level. On the other hand, if one traces individual studies, the variables employed in them are the main variables that are widely used in poverty research (including in research on developing countries). In other words, the variables are the education level of wage earners, the genders of the highest wage earners, whether the household is located in a rural or an urban area, the number of children, the number of pensioners, the industries in which the wage earners work, ethnicity, and so on. Household surveys such as the Russia Longitudinal Monitoring Survey (RLMS) allow ownership (nationalized, privately owned, foreign owned, etc.) of companies at which household members work to be observed, but no papers employing such attributes as explanatory variables could be found.

So here the author will instead investigate how the phenomena changed during the economic transition, and whether different phenomena appeared depending on the specific region. This will be based on the examination of the poverty level in transition economies that this paper looked at in Section 1. This is the recognition that first, the poverty problems in the 1990s and those from 2000 onwards may have been of a different nature (Figure 1). Furthermore, the nature of poverty

Transition, and 20 were discussion papers. The papers in Russian and the discussion papers were excluded from the study, but 32 (23.9%) of the remaining 134 papers were published in the journal *Problems of Economic Transition*. This journal is not a typical scientific journal. Instead, its stated role is to describe the current state of economic research within Russia by carrying English translations of papers published in Russian-language journals. Poverty research in Russia itself is as described by Lokshin (2009), so it is extremely rare for analytical papers to be featured in *Problems of Economic Transition*.

5 This follows the Borenstein et al. (2009) methods for assessing the standard of research.

6 These methods are as defined by Borenstein et al. (2013, 2014).

in regions that belonged to the former Soviet Union and the nature of poverty in other regions, i.e. Central and Eastern European countries may have differed (Table 1).

The above determines a direction for classifying previous research. In addition to combining the results of all the studies, the author will focus on the differences of whether the studies concerned former Soviet republics or Central and Eastern European countries and whether they covered the 1990s or the 2000s by combining the data for each separately⁷. Furthermore, regarding the explained variable, the author focuses on studies that determine a fixed poverty line and use the qualitative variable of regarding households below that line as having fallen into poverty as the explained variable. The results are shown in Table 4.

Table 4 Meta-Analysis of Estimation Results: Explained Variables – Risk of Poverty/Poverty Ratio

	The Number of Estimation Results to be Utilized in Meta-Analysis	Combined Partial Correlation			Integrated T-value		Failsafe Number (Rosental's Method)	
		Fixed Effect	Random Effect	Test for Homogeneity	Weighted T	Unweighted T		
All the Studies								
Household Size	56	0.11*** (105.70)	0.067** (2.46)	809.57***	30.17***	4.63***	1.98	19455
Higher Education	46	-0.05*** (49.31)	-0.069*** (8.38)	2152.08***	-42.48***	-6.21***	-3.37	30623
Rural Residence	43	0.044*** (44.63)	0.025*** (3.15)	1924.09***	28.33***	4.17***	1.98	17702
Soviet Union vs. Central and East Europe.								
Soviet Union								
Household Size	31	0.073*** (42.54)	0.069*** (14.49)	131.53***	58.18***	8.98***	2.85	9621
Higher Education	25	-0.063*** (35.97)	-0.078*** (12.88)	183.19***	-29.6***	-4.36***	-4.03	8070
Rural Residence	22	0.063*** (40.56)	0.035*** (3.08)	790.30***	23.60***	3.53***	1.75	4505
Central and East Europe								
Household Size	25	0.020*** (14.47)	0.03*** (6.14)	202.07***	15.44**	2.36**	1.98	2177
Higher Education	21	-0.050*** (34.15)	-0.059*** (3.94)	1898.29***	-30.57***	-4.43***	-1.98	7158
Rural Residence	21	0.03*** (23.31)	0.015 (1.43)	909.20***	5.94***	0.86	1.98	252
1900s vs. 2000s								
1990s								
Household Size	26	0.017*** (10.72)	0.036*** (6.82)	211.96***	14.69***	2.05*	1.98	2204
Higher Education	26	-0.018*** (11.45)	-0.051*** (7.38)	297.92***	-16.9***	-2.36**	-1.98	2705
Rural Residence	24	0.011** (6.34)	0.01 (0.013)	57.93***	5.79***	0.8	1.98	695
2000s								
Household Size	30	0.06*** (42.60)	0.064*** (11.98)	217.94***	59.56***	10.16***	2.85	9398
Higher Education	20	-0.088*** (56.64)	-0.093*** (7.55)	934.11***	-45.11***	-7.06***	-5.64	15021
Rural Residence	19	0.076*** (53.62)	0.043*** (3.77)	1044.69***	36.1***	5.79**	4.28	9133

Note: Asymptotic Z-values are in the parenthesis. Significant at ***: 1% level; **: 5% level.

Source: Estimated by the Author.

⁷ As can be seen from the “estimate period” in Table 2, though this was completely unintentional, the period of analysis of all the studies can be classified as either 1990s or 2000s onwards, as none of them covered both periods.

For almost all the analyses, the null hypothesis relating to the assumption of homogeneity is rejected, so this paper will look at the results of the random-effects model.

Here the author will discuss Table 5. When all the studies are combined, increases in the education level of wage earners reduce the probability of falling into poverty, increases in household size raise the poverty risk, and households located in rural areas are more likely to fall into poverty. These results are fairly typical. The analytical results extracted here are all based on micro data, and simply confirm the understanding obtained not just from studies on transition economies, but from a wide range of other studies.

What the author wants to focus on, however, is the differences when data for the 1990s and the 2000s, and data for the Soviet Union and Central and Eastern Europe, are combined separately. In the 1990s, households in rural areas were no more likely to fall into poverty than those in urban areas. In the 2000s, however, a rural location increased the probability of households falling into poverty.

Differences could also be seen when data was combined separately for countries that comprised the Soviet Union and countries in Central and Eastern Europe. The above findings applied to Central and Eastern Europe. In other words, in Central and Eastern Europe rural location did not raise the probability of poverty. What needs to be pointed out here is that this result is not due to extreme bias in the sample. When the author checked the effect of the rural domicile variable on poverty probability in the 1990s, the author combined the results of 24 analyses, and 10 of these were for countries that comprised the former Soviet Union.

Whichever the case, the same can be said concerning the integrated t-values. When combining data without weighting them by taking into account third-party evaluations of the academic journals in which papers were published, all variables were significant for all combinations. However, integrated t-values that had been unweighted were always smaller than those that had been weighted, and were no longer significant in the above two cases. Fail-safe N was fairly large in every case, which can be said to indicate a high level of confidence in the estimated results for the combined t-values.

The above results indicate that in the 1990s households in urban areas and rural areas had an equal likelihood of falling into poverty, and this situation was due to the transition economies being hit with a recession that occurred in conjunction with the change in the economic system. Compared with that of those in urban areas, the probability of households in rural areas falling into poverty was relatively higher in the countries that comprised the Soviet Union than those in Central and Eastern Europe. However, this situation changed in the 2000s, a phenomenon described by Gerry, Nivorozhkin and Rigg (2008) as a “ruralisation of poverty”. It may be said that this, in a sense, describes the process through which the economic turmoil that accompanied transition came to an end.

5. Detection of Publication Bias and Presence or Absence of Real Effect

Finally, to check for the existence of publication bias, the author will confirm the funnel plots. Additionally, meta regression analysis will be performed in order to check the presence of real effect. Figures 7a–c show funnel plots of the results of estimating the impact of each factor on poverty probability. It is difficult to determine whether the plots are horizontally symmetrical or triangular. Therefore, to verify whether publication bias exists or not the author will make estimates using a meta regression model concerning the existence of publication bias and the existence of real effect. The method follows that of Stanley and Doucouliagos (2012).

Regarding the detection of publication bias that can arise from assuming a specific sign relationship (positive/negative) (Publication Bias Type I. See Stanley and Doucouliagos, 2012), the author will regress the t -values of the k th estimate results to the reciprocal of the standard error

$$t_k = \beta_0 + \beta_1 (1/SE_k) + v_k \quad (1)$$

Estimating this, this paper will test the null hypothesis that the intercept β_0 in equation (1) is zero. Unless the intercept β_0 is significantly zero, the distribution of the effect size is not be horizontally symmetrical, and publication bias is deemed to exist. This is known as the funnel-asymmetry test (FAT) (Stanley and Doucouliagos, 2012).

Furthermore, regarding publication bias that can arise from the fact that significant results are published more frequently, (Publication Bias Type II. See Stanley and Doucouliagos, 2012), this paper will test whether the intercept β_0 of the estimate expression in equation (1), where the left side is the absolute value, is zero (equation 2).

$$|t_k| = \beta_0 + \beta_1 (1/SE_k) + v_k \quad (2)$$

Regardless of whether publication bias exists, it is possible that the variable has a significant effect. This can be confirmed by testing the null hypothesis that the coefficient β_1 in equation (1) is zero. Because this expresses the precision of the estimated effect, it is referred to as the precision-effect test (PET) (Stanley and Doucouliagos, 2012). Furthermore, by estimating equation (3), which does not have a constant term,

$$t_k = \beta_0 SE_k + \beta_1 (1/SE_k) + v_k \quad (3)$$

an effect size that corrects publication bias can be obtained. If the null hypothesis that the coefficient β_1 is zero is rejected, a real effect exists and the estimate will be this β_1 value. This is referred to as the precision-effect estimate with standard error (PEESE) (Stanley and Doucouliagos, 2012).

Figure 7a Funnel Plot for Estimation Results of the Effect of Household Size/Dependency Ratio on the Risk of Poverty/Poverty Ratio

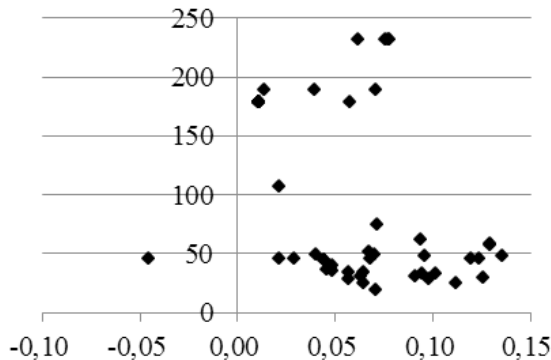


Table 5a Meta-Regression Analysis on Publication Biases and the Existence of Real Effects of Household Size on Poverty Risks (Comparable with Figure 7a).

(a) FAT (Publication Bias Type I)- PET (Specification: $t = \beta_0 + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(1)	(2)	(3)
Inrercept (FAT : $H_0 : \beta_0 = 0$)	2.43 ** (0.29)	2.43 ** (0.47)	2.74 ** (0.52)
1/SE (PET: $H_0 : \beta_1 = 0$)	0.046 ** (0.009)	0.046 ** (0.015)	0.043 ** (0.019)
# Observation	56	56	56
R-sqr.	0.5	0.5	0.5
Breusch-PeganTest: $\chi^2 = 11.13$, P = 0.000; Hausman Test: $\chi^2 = 2.13$, P= 0.14			
(b) Publication Bias Type II (Specification: $ t = \beta_0 + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(4)	(5)	(6)
Intercept ($H_0 : \beta_0 = 0$)	2.44 ** (0.29)	2.44 ** (0.46)	2.69 ** (0.49)
1/SE	0.047 ** (0.0087)	0.047 ** (0.013)	0.045 ** (0.016)
# Observation	56	56	56
R-sqr.	0.56	0.56	0.56
Breusch-Pegan Test: $\chi^2 = 9.28$, P = 0.001; Hausman Test: $\chi^2 = 1.20$, P= 0.27			
(c) PEESE (Specification: $t = \beta_0SE + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel ML
Model	(7)	(8)	(9)
SE	0.17 ** (0.038)	0.17 ** (0.041)	0.103 (0.18)
1/SE ($H_0 : \beta_1 = 0$)	0.061 ** (0.008)	0.061 ** (0.012)	0.05 ** (0.011)
# Observation	56	56	56
R-sqr.	0.63	0.63	-
Note: Standard Errors are in the Parenthesis. Significant at ***: 1% level; **: 5% level.			

Source: Estimated by the Author.

[Intercept=0] was rejected by (a) and (b): Publication Bias exists;
1/SE is significant in (a), (b) and (c): Real Effects exist.

Figure 7b Funnel Plot for Estimation Results of the Effect of Higher Educational Attainment on the Risk of Poverty/Poverty Ratio

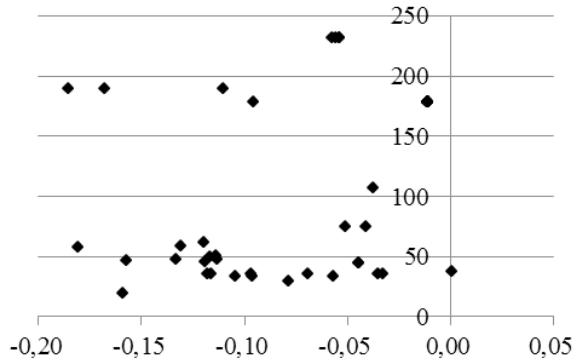


Table 5b Meta-Regression Analysis on Publication Biases and the Existence of Real Effects of Educational Attainment on Poverty Risks (Comparable with Figure 7b).

(a) FAT (Publication Bias Type I)- PET (Specification: $t = \beta_0 + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(1)	(2)	(3)
Intercept (FAT : $H_0 : \beta_0 = 0$)	-2.62 ** (0.44)	-2.62 * (0.72)	-6.84 * (2.97)
1/SE (PET: $H_0 : \beta_1 = 0$)	-0.046 ** (0.011)	-0.046 * (0.019)	0.0057 ** (0.0097)
# Observation	46	46	46
R-sqr.	0.37	0.37	0.37
Breusch-PeganTest: $\chi^2 = 11.13$, P = 0.000; Hausman Test: $\chi^2 = 2.13$, P= 0.14			
(b) Publication Bias Type II (Specification: $ t = \beta_0 + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(4)	(5)	(6)
Intercept ($H_0 : \beta_0 = 0$)	2.62 ** (0.44)	2.62 ** (0.72)	6.84 * (2.97)
1/SE	0.046 ** (0.011)	0.046 (0.019) *	-0.0057 (0.0097)
# Observation	46	46	46
R-sqr.	0.06	0.37	0.37
Breusch-Pegan Test: $\chi^2 = 9.28$, P = 0.001; Hausman Test: $\chi^2 = 1.20$, P= 0.27			
(c) PEESE (Specification: $t = \beta_0SE + \beta_1(1/SE) + v$)			
Estimation	OLS	Cluster-robust OLS	Random-effects Panel ML
Model	(7)	(8)	(9)
SE	-4.82 ** (1.12)	-4.82 ** (0.89)	1.33 (2.82)
1/SE ($H_0 : \beta_1 = 0$)	-0.059 ** (0.011)	-0.059 ** (0.018)	0.019 (0.012)
# Observation	46	46	46
R-sqr.	0.61	0.61	-

Note: Standard Errors are in the Parenthesis. Significant at ***: 1% level; **: 5% level.

Source: Estimated by the Author.

[Intercept=0] was rejected by (a) and (b): Publication Bias exists;
1/SE is significant in two of (a)-(c): Real Effects exist.

Figure 7c Funnel Plot for Estimation Results of the Effect of Rural Residence on the Risk of Poverty/Poverty Ratio

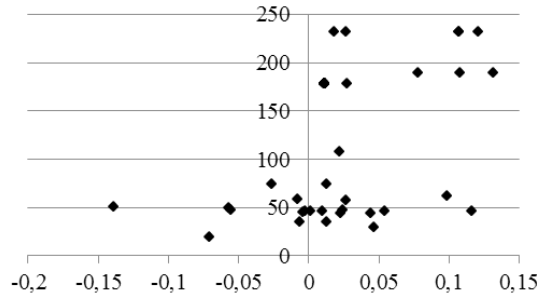


Table 5c Meta-Regression Analysis on Publication Biases and the Existence of Real Effects of Rural Residence on Poverty Risks (Comparable with Figure 7c).

(a) FAT (Publication Bias Type I)- PET (Specification: $t = \beta_0 + \beta_1(1/SE) + v$)

Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(1)	(2)	(3)
Intercept (FAT : $H_0 : \beta_0 = 0$)	-0.73 (0.60)	-0.73 (1.23)	-0.9 (1.2)
1/SE (PET: $H_0 : \beta_1 = 0$)	0.093 ** (0.016)	0.93 ** (0.021)	0.094 ** (0.024)
# Observation	43	43	43
R-sqr.	0.59	0.59	0.59

Breusch-PaganTest: $\chi^2 = 11.13$, P = 0.000; Hausman Test: $\chi^2 = 2.13$, P = 0.14

(b) Publication Bias Type II (Specification: $|t| = \beta_0 + \beta_1(1/SE) + v$)

Estimation	OLS	Cluster-robust OLS	Random-effects Panel GLS
Model	(4)	(5)	(6)
Intercept ($H_0 : \beta_0 = 0$)	0.41 (.046)	0.41 (0.85)	0.395 (0.87)
1/SE	0.087 ** (0.016)	0.087 (0.02) **	0.087 (0.021) **
# Observation	43	43	43
R-sqr.	0.58	0.58	0.58

Breusch-Pagan Test: $\chi^2 = 9.28$, P = 0.001; Hausman Test: $\chi^2 = 1.20$, P = 0.27

(c) PEESE (Specification: $t = \beta_0SE + \beta_1(1/SE) + v$)

Estimation	OLS	Cluster-robust OLS	Random-effects Panel ML
Model	(7)	(8)	(9)
SE	2.35 (1.7)	2.35 (3.12)	2 (6.86)
1/SE ($H_0 : \beta_1 = 0$)	0.087 ** (0.015)	0.087 ** (0.019)	0.088 ** (0.011)
# Observation	43	43	43
R-sqr.	0.68	0.68	-

Note: Standard Errors are in the Parenthesis. Significant at ***: 1% level; **: 5% level.

Source: Estimated by the Author.

[Intercept=0] was rejected by (a) and (b): Publication Bias exists;

1/SE is significant in (a), (b) and (c): Real Effects exist.

For the above estimates, the author will also use the least-squares method, cluster-robust OLS estimation, and unbalanced-panel estimation to confirm the robustness of the results. The results are shown in Table 5a-c. Here, the explained variables of poverty probability, the author produced funnel plots concerning three variables (number of family members, education level, and urban domicile), and also made estimates for all of them using a meta-regression model for publication bias and real effect.

According to these results, as is shown in (a) and (b) of Tables 5a–c except in the case of Table 5c (whether rural domicile affects the probability of poverty), the null hypothesis that the intercept β_0 in equations (1) and (2) is zero is rejected, indicating that publication bias exists. Regarding the real effect, however, in (a) of Tables 5a–c the null hypothesis that the coefficient β_i in equation (1), the reciprocal of the standard error, is zero is rejected, and as shown in (c) of each table, the coefficient β_i in equation (3), the reciprocal of the standard error, is estimated significantly in at least two of the three models. Therefore, regarding the probability of a household falling into poverty, it can be said that household size and education level have a real effect, the former positive and the latter negative. Where poverty “probability” (a two-value variable relating to whether income lies below a fixed poverty line), which attempts to grasp poverty directly, is the explained variable, a real effect can be detected with all three models. There is also the problem that publication bias has not been eliminated. However, it can probably be said that the results strongly suggest that the factors of household size, education level, and urban domicile, which have been dealt with in this paper and also investigated in numerous other studies of poverty in transition economies, certainly have an effect on the probability of individual households falling into poverty.

6. Conclusion

Taking into account the relationship with macro-indicators and research trends in the more than 20 years since transition began, with regard to poverty research in the countries that formerly comprised the Soviet Union and countries in Central and Eastern Europe, this paper has verified the results of empirical research on the factors that determine the poverty situation of households by combining them using a basic meta-analytical approach.

Research on poverty in this region, which increased as the socialist system collapsed, began shortly after the economic transition began. However, the nature of poverty in the former Soviet Union and Central and Eastern Europe differed, and two phases were observed: a phase of increasing and stabilising poverty in the 1990s and a phase of declining poverty in the 2000s. Unfortunately, it was impossible to locate any previous research employing transition factors as explanatory variables, so the author attempted a meta-analysis of the impact of household size, education level, and urban domicile, which are factors employed in traditional poverty research, taking into account the possibility that their impact may differ depending on the period or the region.

The results generally supported the hypothesis. In the 1990s, there was no difference between urban and rural populations in the probability of falling into poverty. After 2000, however, urban domicile became a significant factor in reducing the probability of falling into poverty. In addition, differences were observed between the former Soviet Union and Central and Eastern Europe in the factors affecting the poverty situation. Identification of causes of these differences was beyond the scope of this paper, but this phenomenon is considered to indicate one of the directions for research in comparative transitional economics in the future.

At the same time, however, one must also mention the problem that publication bias was detected in all the cases the author put together in section 5 to verify its presence. This may suggest

that advances in poverty research in transition economies remains not enough. On the other hand, it was shown that household attribute factors exert a real effect on the poverty situation. Although it must be recognized that poverty research in the countries that went through the economic transition has not investigated the effects of transition factors directly, the trend with the previous research examined here, which has been to expand the applicability of poverty-level determinants that are employed in stylized household analysis, can probably also be regarded as indicating steady progress in “transition”.

Acknowledgement

This paper forms part of the results of Grants-in-Aid for Scientific Research (A) “The Establishment of a Theory of Comparative Transition Economics” (Project number: 23243032, principal investigator: Ichiro Iwasaki) and Grants-in-Aid for Scientific Research (A) “Research on Population Dynamics in Russia: An Overview Based on Micro-quantitative Analysis” (Project number: 26245034, principal investigator: Kazuhiro Kumo).

The author wishes to extend my deepest gratitude to Eriko Yoshida, a research assistant at the Institute of Economic Research, Hitotsubashi University, and the archive staff for all their help in searching for and collecting literature.

References

- Akhmedjonov A. (2011) Do Higher Levels of Education Raise Earnings in Post-Reform Russia? *Eastern European Economics*, vol.49 (4): 47–60
- Alexandrova A, Hamilton E, Kuznetsova P (2006) What Can Be Learned from Introducing Settlement Typology into Urban Poverty Analysis: The Case of the Tomsk Region, Russia, *Urban Studies*, vol.43 (7): 1177–1189
- Bellaka C, Liebrecht M, Liebenstein M (2013) Short-term Labour Migration from the Republic of Armenia to the Russian Federation, *Journal of Development Studies*, vol.50 (3): 349–367
- Bezemer D, Lerman Z (2004) Rural Livelihoods in Armenia, *Post-Communist Economies*, vol.16 (3): 333–348
- Bhaumik S, Gang I, Yun M (2006) Ethnic Conflict and Economic Disparity: Serbians and Albanians in Kosovo, *Journal of Comparative Economics*, vol.34, pp.754–773
- Bhaumik S, Gang I, Yun M (2006) A Note on Poverty in Kosovo, *Journal of International Development*, vol.18, pp.1177–1187
- Bisogno M, Chong A (2001) Foreign Aid and Poverty in Bosnia and Herzegovina: Targeting Simulations and Policy Implications, *European Economic Review*, vol.45, pp.1020–1030
- Bobkov V (2007) ed, *Kachestvo i uroven zhizni naseleniya v novoi Rossii, Vserossiiskii tsentr urovnya zhizni*, Moscow. (in Russian)
- Borenstein M, Hedges L, Higgins J, Rothstein H (2009) *Introduction to Meta-Analysis*, Wiley
- Bradford M, Mykerezib E (2009) Chronic and transient poverty in the Russian Federation, *Post-Communist Economies*, vol.21 (3): 283–306
- Braithwaite J (1995) *The Old and New Poor in Russia: Trends in Poverty*, ESP Discussion Paper Series 21227, World Bank

- Braithwaite J, Grootaert C, Milanovic B (2000) *Poverty and Social Assistance in Transition Countries*, Macmillan, London
- Brück T, Danzer A, uravyev A, Weisshaar N (2011) Poverty During Transition: Household Survey Evidence from Ukraine, *Journal of Comparative Economics*, vol. 38, pp.123–145
- Commander S, Tolstopiatenko A, Yemtsov R (1999) Channels of Redistribution: Inequality and Poverty in the Russian Transition, *Economics of Transition*, vol.7 (2): 411–447
- Dimova R, Wolff F (2008) Are Private Transfers Poverty and Inequality Reducing? Household Level Evidence from Bulgaria, *Journal of Comparative Economics*, vol.36, pp.584–598
- Fialova K, Mysikova M (2009) Labour Market Participation: The Impact of Social Benefits in the Czech Republic and Selected European Countries, *Prague Economic Papers*, no.3, pp.235–250
- Gerry C, Nivorozhkin E, Rigg J (2008) The Great Divide: ‘Ruralisation’ of Poverty in Russia, *Cambridge Journal of Economics*, vol.32 (4): 593–607
- Gerry C, Carmen L (2010) Consumption Smoothing and Vulnerability in Russia, *Applied Economics*, vol.42, pp.1995–2007
- Giddings L (2003) Continued Decline for Ethnic Minorities in the Transition? Changes in Ethnic Earnings Differentials in Bulgaria, 1986, 1993 and 1997, *Economics of Transition*, vol.11 (4): 621–648
- Gustafsson B, Nivorozhkina L (2004) Changes in Russian Poverty during Transition as Assessed from Microdata from the City of Taganrog, *Economics of Transition*, vol.12 (4): 747–776
- Habibov N (2011) Public Beliefs Regarding the Causes of Poverty during Transition: Evidence from the Caucasus, Central Asia, Russia, and Ukraine, *International Journal of Sociology & Social Policy*, vol.31 (1/2): 53–74
- Habibov N (2012) How and Why Determinants of Household Welfare Changed in Azerbaijan During the Transition, *Problems of Economic Transition*, vol.54 (11): 3–52
- Hoti A (2011) Returns for Education in Kosovo: Estimates of Wage and Employment Premia, *South East European Journal of Economics and Business*, vol.6 (1): 71–84
- Iwasaki I, Tokunaga M (2013) Gaikoku Shihon to Taisei Tenkan: Shijou Keizai-ka 20 Nen Shi no Meta-bunseki [Foreign Capital and Transition: A Meta-analysis of the 20 Years Since the Beginning of the Transition to a Market Economy], *Economic Review*, vol.64 (4):353–378
- Iwasaki I, Tokunaga M (2014) Gaikoku Chokusetsu Tousei to Seisansei Hakyuu Kouka: Ikou Keizai Kenkyuu no Meta-bunseki [Foreign Direct Investment and the Ripple Effect on Productivity: A Meta-analysis of Studies in Transition Economics], *Comparative Economic Research*, vol.51, no.2, pp.1–29.
- Jha R, Dang T (2009) Vulnerability to Poverty in Select Central Asian Countries, *European Journal of Comparative Economics*, vol.6 (1): 17–50.
- Jha R, Tu D, Tashrifov Y (2010) Economic Vulnerability and Poverty in Tajikistan, *Economic Change and Restructuring*, vol.43 (2): 95–112
- Kecmanovic M (2012) Men’s Wage Inequality in Serbia’s Transition, *Economic Systems*, vol.36, pp.65–86
- Kolev A (2005) Unemployment, Job Quality and Poverty: A Case Study of Bulgaria, *International Labour Review*, vol.144 (1): 85–114
- Kristic G, Sanfey P (2007) Mobility, Poverty and Well-being Among the Informally Employed in Bosnia and Herzegovina, *Economic Systems*, vol.31, pp.311–335
- Lacroix,G, Radtchenko N (2011) The Changing Intra-household Resource Allocation in Russia, *Journal of Population Economics*, vol.24 (1): 85–106

- Lokshin M, Ravallion M (2004) Household Income Dynamics in Two Transition Economies, *Studies in Nonlinear Dynamics and Econometrics*, vol.8 (3), article 4
- Lokshin M (2009) A Survey of Poverty Research in Russia: Does It Follow the Scientific Method? *Economic Systems*, vol.33 (3): 191–212
- McAuley A (1979) *Economic Welfare in the Soviet Union: Poverty, Living Standards, and Equality*, University of Wisconsin Press, George Allen & Unwin.
- Milanovic B (1997) *Income, Inequality, and Poverty during the Transition from Planned to Market Economy*, World Bank.
- Milcher S, Zigova K (2005) Evidence of Returns to Education: Among Roma in Central and Eastern Europe and Their Policy Implications, *Managing Global Transitions*, vol.3 (1): 51–69
- Mills B, Mykerezzi E (2009) Chronic and Transient Poverty in the Russian Federation, *Post-Communist Economies*, vol.21 (3): 283–306
- Mullen B (1989) *Advanced Basic Meta-Analysis*, Lawrence Erlbaum Associates, Inc.
- Nivorozhkin E, Nivorozhkin A, Nivorozhkina L, Ovcharova L (2010) The Urban-Rural Divide in the Perception of the Poverty Line: the Case of Russia, *Applied Economics Letters*, vol.17 (16): 1543–1546
- Pastore F, Verashchagina A (2006) The Distribution of Wages in Belarus, *Comparative Economic Studies*, vol.48, pp.351–376
- Ravallion M, Chen S, Sangraula P (2007) *New Evidence on the Urbanization of Global Poverty*, World Bank Policy Research Working Paper No. 4199
- Razumov A, Yagodkina M (2007) *Bednost v sovremennoi Rossii*, Formula prava, Moscow. (in Russian).
- Rhoe V, Babu S, Reidhead W (2008) An Analysis of Food Security and Poverty in Central Asia: Case Study from Kazakhstan, *Journal of International Development*, vol.20, pp.452–465
- Robinson S, Guenther T (2007) Rural Livelihoods in Three Mountainous Regions of Tajikistan, *Post-Communist Economies*, vol.19 (3) 359–378
- Ruminska-Zimny E (1997) *Human Poverty in Transition Economies: Regional Overview for HDR 1997*, Human Development Report Office, United Nations Development Programme.
- Szulc A (2006) Poverty in Poland during the 1990s: Are the Results Robust? *Review of Income and Wealth*, vol.52 (3): 423–448
- Szulc A (2008) Checking the Consistency of Poverty in Poland: 1997-2003 Evidence, *Post-Communist Economies*, vol.20 (1) 33–55
- Verme P (2011) The Poverty Reduction Capacity of Public and Private Transfers in Transition, *Journal of Development Studies*, vol.47 (6): 870–893

Short-Term Territorial Investment Europe's Long-Term Future

Maria Prezioso

Abstract Starting from a critical review of the literature, this paper discusses what the models the European policy actions should adopt in order not to compromise the results that the implemented austerity measures have so far obtained. Multilevel experiences (at different geographical scales) from several 2013 programs (mainly ESPON and URBACT) are summarised below to support this thesis, orienting towards the cities' role within the cohesive developing policy. In order to assess this stance, territorial cohesive capability is used as it has proved to be the most effective way to transform European challenges into common geopolitical goals, partly devoting the discussion to the effective compliance with Structural Funds objectives, declared priorities of investment and territorial regional capability.

Examples of place evidence and socio-economic trends from countries, regions and cities are mentioned and compared so as to establish the potential distance between symbolic anticipated priorities and real potentials in the short term. To this scope, the 2020 political addresses to attract capital public and private investments towards cities will be illustrated by considering in particular Italy's future role within Southern Europe.

Detailed attention will also be devoted to the significance of European territorial evidence in relation to the European Union funding policy. This allows us to understand better the different impacts and effects produced by such European directives taking in account the relationship between territorial evidence and programming obligations aiming at increasing employment and income.

A set of feasible recommendations provide viable, flexible, and effective answers to the existing needs for territorial investment in the short term.

Keywords European Regional Development 2020 - Territorial Cohesion - Post-crisis perspective - Sustainable development - Integrated Territorial Investment

JEL Classification C8 - O2 - Q5 - R1

Maria Prezioso (✉)
Dept. of Management and Law
Economics Faculty, University of Rome "Tor Vergata", Rome
e-mail: maria.prezioso@uniroma2.it

1. Territorial Investment

The European Financial Policy has recently launched significant anti-austerity measures (i.e. the 2014 Juncker Investment Plan and 2015-2016 Mario Draghi's Quantitative Easing policy). In this light, territorial investments are able to play a major role in combating the economic crisis and, at the same time, paving the way for a stable and balanced development.

Territorial Studies (M.G. Lucia, L.S. Rizzo, 2014) have as yet been unable to fully analyse and understand the implications and risks that such complex actions really entail. Consequently, scholars in this field have left major questions unanswered. For instance:

- Is a multiplying investment the sole tool for boosting growth and employment in the short term?
- Are there any territorial dimensions that can activate an investment process that is likely to yield stable and long-lasting effects?
- Can we detect any shared and useful start-up features from the analysis of a diverse territorial landscape?
- What are the driving forces in short-term territorial investment that can help long-term development?

This is because territorial investment is vital and long-awaited by a large number of European citizens who are coping with today's economic stagnation. Theoretically speaking, strategic investments should help territories (mainly cities) to achieve territorial regeneration by accessing mainstreaming financing linked to the new Structural Funds, which define the prospective horizon of long-term European challenges.

These funds also imply joint capitalization, which does not mean proposing a (or another) *prêt-à-porter* concept, but a multifaceted approach ("quick & dirty" ideas/solutions) instead. Yet, one should also consider the challenges that such an approach faces. For instance, both the fragmented territorial intelligence and the need for a certain critical mass willing to get involved has to be accounted for. Nonetheless, it is possible to create models for strategic integrated sustainable planning by evaluating the efficiency of technology across various sectors (e.g. energy, climate change, public services, accessibility and transport, etc.) in territories of different types and dimensions. These models can support territories in their development of ambitious and innovative projects that can become part of a comprehensive territorial and urban agenda.

1.1 A critical review of the dominant thinking

A large number of geographical and economic theories, along with relevant empirical research have supported the adoption of common (semi-standardized) processes that could enhance long-term territorial development (e.g. employment, inclusion, GDP growth). These much needed processes may lead the European Union to make appropriate integrated strategic investments in its territory, which can offset ad hoc and sectorial austerity measures (cf. the Juncker Investment Plan). Furthermore, this seems to be the only way to respond to the pseudo-global financial and economic war currently under way (geo-economic and geopolitical play at no summa zero), focusing resources on maintaining the status quo.

An overview of the relevant literature makes it clear that the notion of territorial investment, and particularly the notion of strategic territorial investment, is still mainly bound to the sectorial approaches deriving from Macroeconomics and Business Economics schools. In addition, it is linked to structural and functional planning. The places and the territories that are supposed to be the recipients of such investments are instead likely to become a mere vessel or backdrop. As a matter of fact, many seem to forget that a specific place, particularly a city, is the first and

most visible part of a territory that any investor is likely to come across. Moreover, practitioners and stakeholders seem to forget, or ignore, the role that planning plays in territorial investments, ensuring as it does that the latter comply with the well-known three E's of planning (Effectiveness, Efficiency, Ethics) in the long run (S. Hendler's, 1993). These three E's have been also applied to the economy, which fosters investments but overlooks their long-term results. Conversely, the EU has recently been discussing possible future scenarios and visions (ESPON ET 2050, 2015). Not surprisingly, economic theories are based on a thorough understanding of world markets and their trends. Yet markets are inherently unstable due to their intrinsic uncertainties, which increase according to the time needed to calculate their Return on Investment (RoI). In contrast, theories of planning are based on medium and long-term approaches that can help predict the potential success (in terms of investment) of any planning projects. These approaches are especially welcome as they aim to provide sustainable results.

A critical analysis of both theoretical stances has revealed how the economic models based on long-term approaches prove to be more place-neutral, while the geographical-economic models tend to be place-based (F. Barca, P. McCann, A. Rodríguez-Pose, 2012). Academic schools of the geography of localization had earlier debated such matters and pointed out that "spatial" approaches are incompatible with "territorial" ones. Moreover, they stressed the role that the environment and the territory have had in making production choices (G. Ottaviano, J.F. Thisse, 2004; D. Puga, 2012). In particular, they have highlighted the fact that the theories of settlement planning and localisation of production have to integrate empirical evidence of territorial diversity. Systemic analysis usually supports such integrated approaches by making use of investigation methodologies that lead to integrated and multidisciplinary growth (R. Compañó, et al, 2006). Had the objectives set by the Lisbon Strategy (2001, 2009) been taken into account, this approach would have resulted in a more stable relationship between economic and financial investments and territorial planning. Moreover, it would have been less dependent on other factors such as political reliability, the regulation process currently underway in different contexts, and the tendency to withhold capitals rather than exploiting debt capital.

By means of the *Quantitative Easing* (QE) policy, integrated and strategic territorial investment has relied on debt capital and low pay to demonstrate that QE could well be a useful tool for enhancing European urban growth and fighting stagnation during the current economic crisis. Like the Keynesian multiplier, QE becomes a key instrument within the European macroeconomic approach, which has been designed according to the *Juncker Investment Plan*¹.

Investments are therefore the only way consumption can be fostered, thus in turn activating a growth process. Hence, the multiplier underlying the European QE can help us predict the effect that the level in consumption deriving from supported investments will have within the European economic system. In addition, it allows us to predict the effects on growth in relation to the added value of an internal market and its system. According to the Juncker Investment Plan, the effects of QE will be first and foremost visible in cities. As suggested by the Keynesian theory, the multiplier effect can measure the incremental percentage of the Gross National Income (GNI). By the same token, the QE can be applied at the regional level and, to some extent, at the local level for the same purpose (although more empirical evidence is needed to confirm this). The ratio has been usually calculated in relation to the incremental value of one or more macroeconomic variables (i.e. consumption, investments and public spending), which are part of the aggregated demand. However, it is now possible to include regional (meso) and local (micro) variables in this calculation. These variables have been based on European data on territorial, economic and financial planning (ESPON INTERSTRAT, 2012). This means that they have been devised

¹ see the Scenario 'A' in the ESPON ET2050 Project 2014.

according to a place-based evidence approach on investments (A. Haughwout, 2002). It should be borne in mind, however, that QE is an instrument that supports the EU monetary policy. It has been conceived to enhance public spending and private investments, thus complying with the objectives set by EU 2020 and beyond. Public or private spending can be stimulated so as to transform it into investments; in turn, this can increase income, employment, profit, consumption and returns for those who invested, be they private companies or the government itself. The BCE and the EU employ this instrument in order to increase total expenditure, which should be higher than public expenditure, the latter having been previously funded by the EU via the Juncker Investment Plan. The increased total expenditure can be achieved through the involvement of individuals and private enterprise in the investment process. This in turn can raise the incomes of those who work to offer products and services. In other words, those who decide to invest in an economy that is currently facing underemployment (as is the case in many EU countries) may obtain an increased purchasing power based on debt capital that banks have made available through the BCE's *Quantitative Easing*. All this can be made possible if the following three conditions are fulfilled: i) that private companies are willing to make long-term investments; ii) that the government does not impose further taxation on financial deposits; lastly, iii) that the marginal spending trend remains constant (at least in the short term).

In general, business management tends to overlook the needs of the territory in which it operates. Hence, including diversified parameters at the regional and local levels brings about a diversified range of territorial capital needed for each investment. Consequently, risk management becomes more difficult to calculate². In this light, scientists have to adopt additional tools, methodologies and cognitive processes to evaluate the ex-ante strategic and integrated territorial RoI. Far from being simple to achieve, this process needs to be based on at least three criteria: 1) relying on venture or equity capital, not only on debt capital; 2) having access to contextual analysis (i.e. exogenous factors) that allow for adequate decision-making; and 3) the political stability of the country in which the company operates.

For instance, scholars and researchers have carried out thorough investigations into Italy's financial market. Moreover, a number of researchers in the social sciences (geography, economics and regional planning studies) have organised policy workshops³ to investigate this issue. In general, they all agree on the results obtained by previous economic investigations of those sectors that are deemed relevant to short-term territorial investment. These segments are:

- 1) housing, which in Southern Europe includes both construction land and buildings. This approach clashes with the Northern European countries' promotion and investment in social housing;
- 2) transport and logistics, which are of little interest to the private building sector. However, it appeals to public and semi-public companies;
- 3) energy, environment, territory and water supplies, of interest to both private and public companies;

² *Risk management* is applied to the territory so as to measure and manage risk (i.e. vulnerability and sensitivity of the territorial system) in an integrated way. Understanding risk can prevent the inefficient allocation of investments.

³ During the past year, several events were organised by academics and practitioners in order to define some guidelines and action proposals to central government that could help enhance fixed gross investments of public and private companies in Italy. Such investments are becoming extremely important to this country's economy; they are more important than the 8% reduction of its GDP in the period 2008-2014 and the more recent 2.2% decrease in industrial production from January 2014 to January 2015. The proceedings of this event are available at: www.economia.uniroma2.it/dedi/ebook-politiche-industriali/

- 4) health, education and training, social services, of interest to mostly public but also private companies;
- 5) leisure, culture, tourism, communications, media and the Internet, of interest to citizens, non-profit organizations and communications enterprises;
- 6) urban and territorial production processes, of interest to sector stakeholders and enterprises insofar as they can boost private and public investments.

The BCE's debt policy (i.e. purchasing approximately €60 billion bonds, mainly government bonds, every month until 2016) is primarily based on the guarantees that the acting body (i.e. the BCE) can offer. It relies less on the financial guarantees offered by the beneficiaries (e.g. states, regions and local institutions) that are backed by each countries' central bank. However, some European countries have low debt (e.g. Estonia) while others very high public debt (e.g. Italy, Spain, Greece). Hence, the neutrality of the markets is unlikely to be sustained. In considering the 2050 horizon, these issues have to be taken into even greater consideration. The following sections will be devoted to the analysis of the relationship that these sectors may develop, by referring in particular to exogenous variables (i.e. the territorial factors and the revised cohesion policy).

1.2 The importance of the urban and territorial dimension

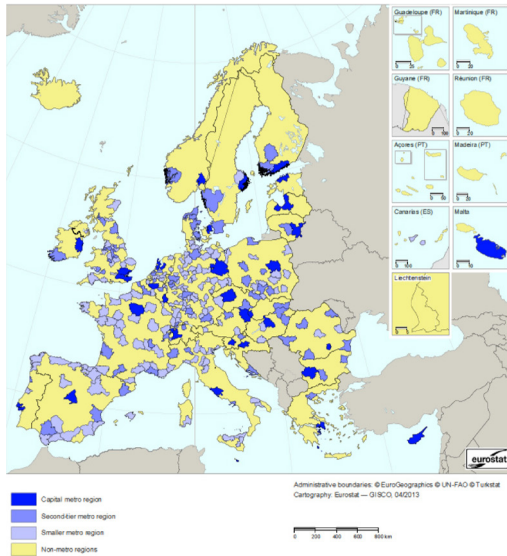
The conditions described above are likely to take place in a discontinuous way in those countries that have been heavily hit by the economic crisis. Matter-of-factly, such countries appear far from achieving the EU 2020 targets (P. Monfort, 2011; M. Prezioso, 2013; ESPON Siesta, 2013, ESPON ECR2, 2014). It is important to note that the EU is not a "closed market" (although sometimes it behaves as such) and: "In this context, the re-concentration of activities and strategic functions does not only occur on a global scale, but also at the national level, especially within the integrated European market. The hypothesis is that Europe's wealth now depends especially on the connective capacity and economic wealth of the major European cities. The research has proven the important role of cities that contribute to the welfare of Europe and to the strengthening of the access gateways to the global dimension." (A. Montanari, B. Staniscia, 2014, p. 72).

Large metropolitan areas in Europe (Fig. 1) have proved to be more resilient in the face of the economic crisis. However, their distribution across Europe does not appear to be relevant to their resilience (Fig. 1a). Hence, the program connected to the Cohesion Policy (VI Cohesion Report, 2014) suggests that each region or city should:

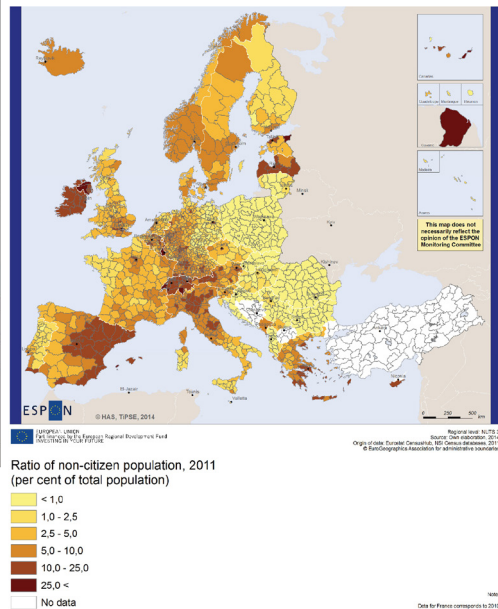
- select investment opportunities that comply with their established priorities. In particular, they should do so in relation to their national 2020 targets and consider how far they are from reaching them;
- identify how to best meet the regional/local development needs and, at the same time, contribute to the 2020 growth strategy and its objectives;
- monitor the declared regional spending power until 2020 in relation to investments based on realistic supply/demand data

Figure 1 Type of Metropolitan regions in EU **Figure 1a** Ratio non-citizen population 2011 (% of total population)

Typology of metro regions, 2012 (*)



(*) Based on population grid from 2006 and NUTS 2010.
Source: Eurostat, Directorate-General for Regional and Urban Policy



Source: DG Regio, 2009; ESPON TiPSE project 2014, p.36

Substantial literature has been produced within the ESPON 2013 applied research (e.g. FOCI 2010 e SGPTD 2012 Projects). Researchers highlighted the fact that, when considering the period from the start of the 20th century to 2006, large cities tended to dominate over and sometimes clash with second-tier cities (ESPON ET 2050, 2015). Only recently have academics started to believe that both types of cities can integrate to become polycentric drivers of the European economy.

It is therefore not surprising that territorial planning and metropolitan and urban management have been continuously advocated. Similarly, many openly suggest that there should be an increased interest in strategic planning and governance that can propose alternative territorial solutions, especially in peripheral regional contexts that need to clearly state their political stance on territorial management.

By examining the regional data, it is possible to understand the reasons for the conflicts that often spread across urban contexts, along with their possible solutions. Interestingly, the peripheral/inner parts of the metropolitan areas are the places where the highest levels of territorial inequality can be detected. The Eastern and Southern parts of Europe have proved to be even more seriously affected by such inequality, which ultimately leads to further stagnation and economic decline, in addition to low polarisation and the paucity of Foreign Direct Investment (FDI).

Investments in innovative technology (cf. ESPON KIT, 2012) have been strongly advocated within the Europe 2020 Program and supported via the 7th Framework Program and Horizon 2020. They have yielded varying results, which have so far praised applied R&D regions and

cities (e.g. Paris and, more recently, Bucharest) for their ability to invest in non-general purpose technology. Also, they have financed intelligent technology (in highly urbanised regions located in Northern Spain and Madrid, Northern Italy and the French Alps) rather than supporting imitative innovation (as has occurred in the rest of Romania, Southern Italy and Greece).

Other factors contribute to uncertainty and pose further challenges: climate change, energy dependence and risk due to the EU's heavy reliance on external suppliers (65% by 2025), which may reach 80% for gas. Moreover, the production of nuclear energy (mostly in France) and oil in the North Sea (which is depleted and is therefore being replaced by offshore production) seems incapable of meeting the EU's energy needs in the short term, especially when taking into account the 20-20-20 strategy and its targets, which promote the production of renewable energy, the reduction of CO₂ emissions and improved energy efficiency. The situation is further complicated by the lack of long-term strategic agreements between the Member States and their neighbouring suppliers (Russia and the Middle East, which possess oil and gas reserves while Turkey is a transit country). The results produced thanks to those programs specifically devoted to urban systems (e.g. URBAC II 2013) have clearly shown that cities and capital regions have a great potential to reach these targets. Yet, these results have also demonstrated that these programs are unable to tackle the issues relating to the layering of power that influences the political actors involved in the governance of the territory. A good deal of the literature analyses this specific aspect that aims to identify what type of regional organisation should be used to support cities' or territories' ability to invest⁴ (level and functions). Germans call such an approach *Wirkungsgefüge*, which implies a "humanised" territorial whole that can be investigated according to geographical and economic parameters that can provide guidelines and proposals for development.

Scholars of economic and political geography have often pointed out that (especially in Italy) in quali-quantitative studies a multidisciplinary approach is better suited to investigate the regionalization and territorial organization of cities and the large metropolitan areas (LUA o LUZ). They have furthermore stressed the need to analytically and empirically assess the reality so as to transform macro-economic and regulation hypothesis into plans and projects.

Most approaches have favoured proposals that aim to boost growth in terms of regionalization and investments, thus often proposing original and innovative solutions for the diversified management of spending power. This can be done in relation to the available resources and the development demand. Therefore, it is important to clarify that in Europe regionalised investment in cities and territories – regardless of their size and role within the country – is mainly based on the legitimization of power, which allows for place-based evidence actions (cf. for instance the cases of Lazio in Italy and the Ile de France in France, Prezioso and D'Orazio, 2015). Geographical data help regional analysis and planning define the territorial areas that can best respond to a given type of investment. Such data mainly focus on dimensions and socio-cultural and environmental characteristics (while at times blurring the lines in their terminological definitions).

Extremely good reasons to embrace the territorial approach can be put forward to support the separation between short and balanced long-term development, which can be achieved through EU's Integrate Territorial Investments (ITI). Some may like to refer to quali-quantitative estimations that have been carried out via a wide range of methods, which can further be integrated. This can

⁴ Economists explain that this is necessary because central governments are not successful in dealing with change and offering adequate responses to socio-cultural change; having political actors who are close to the local community is surely an advantage, as local organizations are bound by budget constraints that limit the amount of public services they can offer, despite the growing demand for such services; moreover, this approach can help governments to manage resources since it delegates this task to the local authorities.

help to show the (ex-ante territorial framework of) the initial state of territorial capital to assess the (potential) growth demand/need level along with the financial governmental support.

To this end, we should not overlook those trends already present in Europe that support the adherence to a supra-regional or even transnational type of governance (i.e. shared planning). Some examples can be found in the Baltic and Danube regions, where the management of resources for sustainable development is shared. Hence, the discussion of territorialisation of investments regarding the peripheries of urban (inner) and internal areas has to take into account certain basic factors:

- 1) the structural and territorial relation of the areas under scrutiny with their own regions;
- 2) what areas have to be included in the new (Strategic) Integrated Territorial Investment
- 3) the ex-ante and ex-post system of territorial organisation (i.e. scenarios)

2. Ambitions Inspiring Change

During 2014-2015, the so-called TRIO (including Italy, Latvia and Luxembourg European Presidencies) have proposed a policy program that places great importance on “investments and integrated developing strategies for cities and inner areas” in a context, such as that of Europe, characterised by an extremely non-homogeneous territory from the geographical, economic and social point of view. This proposal has been put forward while policymakers remain well aware of the fact that, in order to create a more balanced territorial structure, the 2014-2020 Cohesion Policy have to concentrate its growth and employment investments on a limited number of thematic objectives and priorities. In this light, distinguishing ‘inner areas’ from ‘internal’ ones becomes pivotal as it forces us to reconsider the definition of the European territorial typologies, as reported in the literature. During the Italy’s Presidency of the EU, such typologies have emerged as possible areas of investment, especially when considering the EU 2014-2020 planning program.

The EuroCities document entitled *An EU urban agenda. Engaging cities for a smart, sustainable and inclusive Europe* (2014), and its further revision by the Council of European Municipalities and Regions entitled *European Section of United Cities and Local Governments*, indirectly show the differences already stated in the geographical literature. They provide the following definitions:

- Inner area, which is an area located or occurring within or closer to a center. In particular, this term has been used since 1990s to refer to the urban peripheries, or to define those urban contexts whose activities are strictly linked to the city itself (P. Harrison, 1985; M. Porter, 1995; T.D. Boston, C.L. Ross, 1995);
- Internal area, which is an area or geographical region that faces extremely challenging situations, which ultimately make it more resilient to development inputs. This is often due to its peculiar geographical position making it a difficult place to reach (G. Myrdal, 1957; R. Martin, P. Krugman, P. Sunley, 1996).

Being places that may offer interesting relocation and investment opportunities does not mean that both opportunities actually take place. As a matter of fact, each type requires different interventions and actors to carry them out.

In the case of the internal areas (small and medium-sized towns lacking basic services), some solutions can be implemented so as to allow them to be more productive in a broader European perspective and more harmonious in their relation with the countryside. This can be done by adopting approaches that foster both the development and the protection of the territory. Moreover, the natural and cultural heritage can be supported to help cities grow and become more modern while still preserving their traditions and identity.

However, the development perspective on internal areas cannot overlook the broad and long-term scenarios that have been thus far put forward. These scenarios propose a “managed” evolution of the Europe 2020 policy that takes into account the urban-rural relationship, which is, however, included within the 2020 EU Territorial Agenda. This approach has to consider: 1) the size (small and medium-sized towns with a population between 5,000 and 50,000 inhabitants that are managed by local authorities in internal areas of Europe); 2) the geographical and economic level of marginalisation and peripherality of the area under scrutiny.

In the case of inner areas, investments should mainly be carried out in real estate and dwellings through urban regeneration, re-functionalisation interventions and inclusion. In this sense, some pilot projects have been supported through the Leipzig Charter (2007, 2010) and the Urban Agenda (2013), as well as now the Pact of Amsterdam (2016). These experiments are extremely useful as they allow for integrated urban developments, thus opening new and important paths to supply and demand intervention. Co-housing, social housing, energy efficiency of low emission buildings, fixed-term employment of working stations for creative start-ups, place-making activities via public services, employment of zero-km materials are some examples of activities that Europe's peripheral urban areas should include in their future planning of affordable housing. At the moment, it seems that urban residents are likely to benefit mostly from this approach, especially in Italy. However, investors and entrepreneurs are also considering London and its real estate market as a possible place for investment. Its new buildings harmoniously fit with the so-called “second-hand to buy” variety, the private rentals segment (“Buy to Let”), the intermediate housing (below 80% market rents) and social rent (below 40% market rents).

3. What Timeframe and Regulation for central and inner territories?

Among the great principles that inspired urban planning in the past, functionality was set as priority to try and satisfy the community's needs.

The revolution brought about by the systemic approach applied to governance and spatial planning has changed those long-lasting designing principles in Europe, thus leading to a profound theoretical assessment of the general schemes and hypotheses underlying any project. This assessment has to be done carefully before considering its potential to attract investments. In order to offer adequate planning and designing, the geographical peculiarities of each individual region (*Landschaft*) should be considered so as to ensure systemic and functional investments that can continue in the future. However, an approach that selects territorial dimensions and variables to be applied to the analytical process of regionalization of investments is not neutral. This is even more relevant if such an approach aims to achieve given European targets. For example, using the funds of the 2013 JESSICA Program has been shown to be an effective way to support sustainable interventions in urban centres. Nonetheless, one may wonder why this program has not resulted in innovative processes and reforms⁵, especially considering the long-term advantages that the Integrated Funds can offer, along with their ability to attract a recyclable fund by which (private) investments are refundable. This process can consequently create a deposit of funds to be made available for reinvestment on new projects.

Many cities (e.g. Lille) and regions (e.g. North Rhine-Westphalia) have opted to choose those models that could be realistically applied to investments, thus demonstrating how Europe can take advantage of these funds (especially in terms of job opportunities). They are aimed to support Local Action Plans that can be carried out with the help of private building societies that are deeply rooted in the region. It goes without saying that a Local Action Plan is specifically

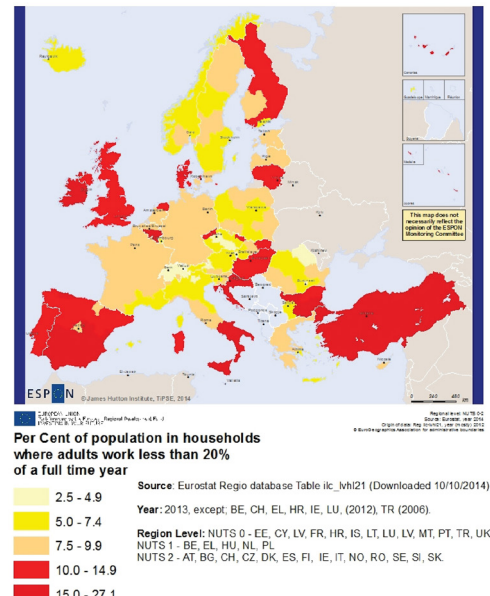
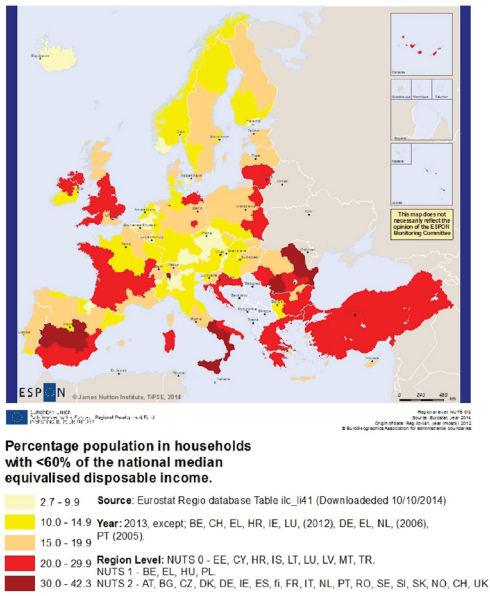
⁵ See: Proceedings of the *CSI Final Conference in the European Métropole of Lille on 5th February 2015* entitled ‘Making Financial Instruments Work for Cities’.

based on the geographical peculiarities of the region it applies to. It can therefore receive the residents’ participation during the planning process as it has a key role in guaranteeing or thwarting the application of ITIs at urban level. At this stage, a central or regional government can support the municipalities in dealing with the financial management and payroll activities. For instance, in Austria city councils and districts have been helped to smoothly deal with the management and spending of EU’s structural ESF and ERDF funds. Hence, in the case of urban “rehabilitation” (in inner areas), the city councils are the main local authorities that can make investments. They have the institutional responsibility to use funds to implement “bottom-up” strategies and, at the same time, they have to represent the EU institutions that made those funds available by making sure that the investments are correctly implemented.

Within this framework, the issues regarding investments (especially in the housing sector) become even more complex and multifaceted. Also, in the case of cities they may not always be completely transparent. This is due to the fact the proposed options are experimental, innovative or sustainable, yet doubts may arise as to the real use and implementation of the results that the project should yield in terms of employment, production, technology and environment (Fig. 2 and Fig. 2a). As for Italy, inner periphery projects have demonstrated that good practice such as urban regeneration involving affordable housing and social inclusion may not be matched by government support. At the moment, the UK context seems to be the most dynamic one. Not only traditional stakeholders in the private sector but also many non-profit companies have invested in the housing sector. The latter have become ‘Registered providers’ that operate side by side with the “housing associations” (which are slightly different from the Italian residents’ committees).

Figure 2 Regions at Risk of Poverty Rates (Eurostat) 2013

Figure 2a Regional Low Work Intensity (Eurostat) 2013



Source: ESPON TiPSE project, Final report 2014, pp.10-11

Spain has also started pursuing this path, whereas in Italy only a few Northern regions have shown an interest in it⁶. A number of other European countries (e.g. Germany, Hungary, Sweden, Ireland) also seem interested in implementing these solutions. Thus far, the case studies discussed in the literature display quite different characteristics. Some institutions have created new primary infrastructures and services based on six-year investment plans while others have supported mid-to-long-term urban regeneration projects. However, they all share a decrease in the debt costs, which is the result of long-term investments. The Juncker Plan has been used to this end.

In Italy, such a urban reform has not been implemented. Moreover, little has been done to adopt those complex financial tools the EU has offered to its Member States. Interestingly enough, though, most Italian cities (drawing on the example of Barcelona in the 1980s) have adopted strategic management plans since the 1990s, but have never implemented them. Consequently, only recently has such a large-scale process started to appear in Italy. In 2015, Svimez (a private association for the industrial development of Southern Italy) has estimated that public works in Italy that are financed via the Cohesion Policy programs usually take on average four to five years to complete (C. Carlucci, F. De Angelis, M.A. Guerrizio M.A. and DPS-UVER, 2015). During the period 1999-2013, EU and national cohesion policies financed 35,000 public works (for a total value of over 100 billion euros). Delays were mainly due to administrative issues (i.e. two-thirds – 61% and even 65% in the South of Italy – of the total completion period for the public work). Also, the preliminary assessment period was normally rather long (one-third – at times reaching 75% of the total completion time). Only a handful of regions can complete their public works in less than five years: Emilia Romagna in 3.8 years (2.2 years are spent on planning), Piedmont, Valle d'Aosta e Tuscany (4.1 years), Lombardy (4.3 years), Trentino Alto Adige and Marche (4.4 years). At the national level, completion time can take 2.9 to 14.6 years, especially in those cases where the project implies an investment that is over 100 million euros. The timing in completing public works is a difficult aspect to measure for all the European regions. In any case, the data collected via the EPSON TerrEvi project 2013 has helped us to shed light on some specific issues regarding the 2013 planning cycle. This has also allowed us to put forward a proposal to translate the 11 thematic objectives relating to the 2014-2020 European Structural and Investments Funds (ESIF) into projects, on the basis of five criteria: needs analysis, thematic concentration, program monitoring, project selection, and stakeholder dialogue. Matching this approach to the investigation of the urban development scheme (ESPON CityBench project, 2014) can greatly improve our understanding of how reliable cities are when selecting the projects they intend to invest in.

4. Political Reliability and Social Trust

Comparing the determinants that make a city or territory attractive (Fig. 3) with the impact that EU directives have (Fig. 3a) will suffice to underline the lack of appeal that Italy has for investors. This is due to the fact that this country has this far not complied with EU standards.

6 See: the URBACT – USEAct Project (2014) Real Estate Investment Trust for Housing, First Trilateral Meeting Report, London, 3rd , 4th April; and KPMG (2014) Competitive Alternatives Guide to International Business Location Costs, http://www.competitivealternatives.com/reports/2014_compalt_report_voll_en.pdf. Accessed 14/3/2016

“What European territory do we want?”⁷. In particular, they ask what exactly we want to invest in. This confirms that the polycentric territorial development (i.e. including large, medium and small cities that can contribute, each according to their own territorial capital) becomes essential to maintain European integrity and identity. It should however be borne in mind that, in many European cities, despite many attempts, the attempt to stimulate confidence in investors and citizens seems to have failed. Consequently, it is now fairly clear that each context requires specific and relevant policies.

As for Italy, this can be achieved by considering two important factors: 1) lack of transparent evaluation and information about the needs (i.e. place-evidence) that can support the public sector's implementation of a program. In other words, government institutions have to activate and manage the participation and sharing process that needs to precede any investment; 2) the lack of (long-term) strategic visions and scenarios that could contribute to the coherent implementation of short- and medium-term projects.

The Urban Agenda has been proposed as a minor type of intervention within the Territorial Agenda 2020, whose themes reflect the diverse set of political views that can be found in Italy. According to the EU, the Urban Agenda (as it is conceived in Italy and in relation to city planning) should support the political ambitions of policy decision makers in defining their governance strategy. However, it is worth noting that the concept of *governance* requires that a public authority to be knowledgeable, coordinated, aware and responsible (*governance* is considered as a set of regulations that support the completion of a project, and the investment it requires; others shrewdly see it as the regulatory tool that supports the investment needed to complete a project according to the reference framework put forward by means of territorial planning). When considering the impact that the current financial crisis has had on Italian cities (e.g. in its social, fiscal and economic aspects), the lack in coordination among macro, meso and micro policies becomes evident. This can be clearly observed when examining several projects that have attempted to enhance the growing Internal Added Value that each city claims to be willing to accept (especially considering that it has been estimated that by 2030, 26-29% of the European population will be aged 64 and over). The aging of the population and unemployment trends that are affecting particularly Italy, Spain, Greece, the UK and Finland need to be inverted by introducing a new idea of cohesion and a new political perception of growth. This can be linked more effectively to the demand for development by local communities and the EU's offer of strategic Integrated Territorial Investments (ITI).

The Juncker Plan and the Quantitative Easing policy had been conceived to prevent the global market from establishing the investment costs which each local community has to pay to encourage growth. To this end, these policies have delegated the European financial and banking system to promote new investments among those local communities that see these banking institutions as the main culprit behind the current economic crisis. Considering that Europeans are increasingly negative towards such a policy, little can be gained from promoting the good practice implemented through cross-border cooperation (e.g. in the Baltic Sea). By contrast, a project underlying a polycentric development seems to be more effective in this sense as it proposes that small and medium-sized cities (in internal areas) can be included in a process of technological innovation. With the help of local enterprises, this approach could facilitate the redistribution of the regional GDP (by boosting it to at least 0.4%) and progressively reducing the gap between the regions, if not initiating fast growth processes. In this view, the application

7 See: Ministère du Développement durable et des Infrastructures (2015) What European territory do we want?, Workshop organised by the incoming Luxembourg Council Presidency in the framework of the IT-LV-LU Trio Presidency Program, 23 April, Luxembourg.

of endogenous development models will require a medium-term time frame if they are to yield more stable results.

The European Commission's initiatives on territorial scenarios and long term estimations (in 2060), which are based on ECFIN and EUROSTAT data to manage occupation, demographic dynamics, GDP growth (DG Regio 2015), have demonstrated that an NUTS3 (provinces) and a LAU (Large Urban Areas) is possible if employment is related to the Gross Added Value (GAV) growth in a converging scenario of Regional Breakdown. To this end, the Impact Assessment (IA) and Territorial Impact Assessment (TIA) are essential tools, as well as the relationship between sustainable territorial planning and programming based on the policy makers' awareness of scenarios that can increase the level of welfare. This can help them face common macro issues such as climate change in order to support endogenous regional policies that can boost investments and global policies that can attract private interventions.

This new awareness calls for a change that may lead to taking on those challenges that the new approaches to general and sector investment planning may pose. At the urban intervention level, scientists can agree on emerging planning and design models. They will look to the peculiarity of the development process as the main criterion to:

- adopt both qualitative and quantitative methods (rather than quantitative only), e.g. while designing new infrastructures for sustainable transportation;
- use open data to increase the stakeholders and investors' involvement;
- take into account the complexity of urbanization and post-metropolisation processes, as well as their effects in terms of land consumption, etc.;
- within the planning process, adopt predictive instruments such as TIA in order to bridge the knowledge gap on the basis of place evidence, geo-referential and statistical data;
- coordinate programming, planning and design actions with the relevant EU funding program, which may also imply reconsidering sector political choices and the Committee of Region's regional agendas;
- by means of specific educational processes, increase the administrative ability to conceive new policies that have to be adapted to the peculiarities of each territory. This should be done by also taking into account the impact that such policies may have on the current institutional model to change its behaviour.

Working in polycentric terms to boost investments is an effective way to overcome the challenges set by the Europe 2020 strategy. It means that new long-term and coherent scenarios will have to be designed so as to establish which targets can be achieved in the short term. However, at the moment policy making does not seem to offer much choice. Options seem limited to:

- 1) involving the stakeholders in the decision-making process;
- 2) drawing on place-based evidence to set medium-term targets for a long-term scenario, thus involving in this vision both regions and cities (especially small and medium-sized cities that could help to increase the GDP and reach the European average, as well as improve the potential of the territorial capital).

How to combine the political visions and strategies and citizens'/communities' needs is still an unresolved issue. Economists also feel the need to further investigate such a problem. As for Italy, the strategy supported through the Regional Operational Programs (ROPs) should be consistent with the national strategy, which has been previously agreed with the EU. This facilitates the distribution of the funds to the central government, which has become more centralised due to the crisis, rather than taking into account the highly diversified context that can be found on the provincial and municipality scale. This has also led to a gradually diminished central and metropolitan focus on the regional authorities' part. Consequently, new polarising trends

are emerging, which have normally been found in medium-sized regional capital cities (and sometimes even outside a given region) willing to pursue individual development paths.

This does not mean that the centrality of the main city has disappeared. They have used the TIA process to become even more dominant, at least as far as systems determinants and types of functions are concerned. Examples of these are: the implementation of infrastructures and potential for research and development, the quality of life, the use of funds to attract large movements of tourists, training and employment and fund and investments. However, the willingness to attract investments can be assessed by taking into account some specific variables such as, among others: the identity of the production system, the banking and insurance system, the density of enterprises, the efficient implementation of the Lisbon Strategy, and the quality of the government, which can be enhanced through the urban residents' involvement, the management of general services, including water consumption and waste recycling.

5. Some short remarks

In conclusion, when taking into account all the experience reported via empirical research, planning practice has to be reconsidered according to the above-mentioned approach⁸. Although re-launching the European economy can be done via new city dynamics, using socially innovative and participative processes is the only way to design diversified strategic plans that may become a real benchmark for decision-making. It will also prevent the investment in urban transformation from becoming an "ex-post hypothesis".

The Community-Led Local Development has proved to be a useful tool for reaching these objectives in the short term in places with a population of 10,000 to 150,000 inhabitants, and as far as climate change is concerned. They have created energy infrastructures, reduced the CO2 emissions and implemented measures to encourage training and employment at the local level by using the ITIs. Words such as "megaphone", "antenna" and "arena" are now part of the engaging with and connecting between those players who are involved in the decision-making process that is managed by the Urban Centres.

As for the case study of the metropolitan periphery, the lesson that has been learnt is that, when implementing a participatory process, the following should be borne in mind: To encourage a dialogue between main stakeholders and all level of institutions to discuss local planning. This can be done by using an area-based approach, which is inspired by a problem-solving logic.

- 1) To help those experienced stakeholders identify the existing problems so as to adopt an inclusive approach towards the different capabilities included in the LSG.
- 2) To provide institutions and politicians with continuous feedback about every action taken on the neighbourhood scale.
- 3) To cooperate closely and constantly with the selected working groups and assist them in drafting sound and feasible projects (e.g. by using the right scale of action). This helps to avoid presenting projects that are not in line with local forces and potential available funds.
- 4) To help stakeholders to think "outside of the box" and be open to new forms of economies connected to ecological solutions and new smart technologies (e.g. energy, IT). This will encourage planners to be extremely creative in order to think about new ways to enhance the local economy, which can be based on social interactions (real/virtual), innovative uses of public spaces, green areas and all available facilities (public/private, private in public use, etc.).

⁸ See the Pact of Amsterdam for the EU Urban Agenda 2016, approved on 30 of May

Acknowledgements

The Author wishes to thank Mr Peter Mehlbye, ESPON Programme, Prof. Eduarda Marques da Costa, University of Lisbon and Prof. Guy Baudelle, Université Rennes 2 for their suggestions and comments during the RSA 2015 workshop discussion in Piacenza (IT).

References

- Barca F, McCann P, Rodríguez-Pose A (2012) The case for regional development intervention: place-based versus place neutral approaches. *J Regional Sciences* 52-1:134-152.
- Boston TD and Ross CL (eds) (1995) *The Inner City: Urban Poverty and Economic Development in the Next Century*, Transaction Publishers, London.
- Buseti S, Pacchi C (2015) Institutional Capacity for EU Cohesion Policy: Concept, Evidence and Tools that Matter. *The Planning Review* 50-4:16-28.
- Camagni R, Capello R (2015) Rationale and design of EU cohesion policies in a period of crisis. *Regional Science Policy & Practice* 7-1:25-47.
- Capello R, Caragliu A, Fratesi U (2015) Spatial heterogeneity in the costs of the economic crisis in Europe: are cities sources of regional resilience? *J Economic Geography* 15-3:1-22. <http://joeg.oxfordjournals.org/content/early/2015/01/20/jeg.lbu053>. Accessed 14/5/2015
- Carlucci C, De Angelis F, Guerrizio M A and DPS-UVER (2015) I tempi di attuazione e di spesa degli interventi infrastrutturali delle politiche di coesione. *Rivista economica del Mezzogiorno*, special issue, SVIMEZ-II Mulino, Bologna.
- Compañó R, Pascu C, Bianchi A et al (eds) (2006) *The Future of the Information Society in Europe: Contributions to the Debate*. Technical Report EU 22353, Ipts-DG JRC:22, Luxembourg.
- Corrado G, Corrado L (2015) The geography of financial inclusion across Europe during the global crisis. *J Economic Geography* 15-3:1-9. <http://joeg.oxfordjournals.org/content/early/2015/01/20/jeg.lbu054>. Accessed 14/5/2015
- Elisei P (2014) *Strategic Territorial Agendas for Small and Middle-sized Towns and Urban Systems*. Dissertation South East Europe Program.
- EuroCities (2014) *An EU urban agenda. Engaging cities for a smart, sustainable and inclusive Europe*, Bruxelles.
- European Commission (2013) *Cohesion policy: Strategic report 2013 on programme implementation 2007-2013*, Brussels, 18.4.2013 COM(2013) 210 final.
- Harrison P (1985) *Inside the Inner City: Life Under the Cutting Edge*, Penguin, Harmondsworth.
- Haughwout A (2002) Public Infrastructure Investments, Productivity and Welfare in Fixed Geographic Areas. *J Public Economics* 83:405-425.
- Hendler's S (1993) The Three E's of Planning: Effectiveness, Efficiency, Ethics'. *Planning Theory* 9:49-54.
- Katsarova I (2013) The (low) absorption of EU Structural Funds, European Parliament.
- Lucia MG, Rizzo LS (eds) (2014) *A geographical approach to the European financial crisis. Challenges and policy agenda*, Aracne, Roma.
- Martin R, Krugman P, Sunley P (1996) *Geographical Economics and its Implications for Regional Development Theory: A Critical Assessment*. *Economic Geography* 72-3:259-292.

- Monfort P (2011) The regional and urban dimension of Europe 2020. In: Evidence-based Cohesion Policy: Territorial Dimensions. Speech in: Krakow ESPON Seminar, see https://www.espon.eu/main/Menu_Events/Menu_ESPON2013Events/Menu_InternalSeminars/internalseminar11112930.html. Accessed 14/03/2016.
- Myrdal G (1957) *Economic Theory and Underdeveloped Regions*, Duckworth, London.
- Montanari A, Staniscia B (2014) Territorial Impact of Globalisation for Europe and Its Regions. In: M. Prezioso (ed) *ESPON Italian evidence in Changing Europe*, University of Rome Tor Vergata, Rome, pp:71-74. <http://stf.uniroma2.it/e-book-espon-italian-evidence-in-changing-europe-en/>. Accessed 15/3/2016.
- O'Brien P, Sykes O, Shaw D (2015) The evolving context for territorial development policy and governance in Europe from shifting paradigms to new policy approaches. *L'Information géographique* 79-1: 72-97.
- Ocse (2009) *How regions Grow: Trends and Analysis*, Ocse, Paris.
- Osterloh S (2009) The Fiscal Consequences of EU Cohesion Policy after 2013. *Presupuesto y Gasto Público* 57:77-98.
- Porter M (1995) The Competitive Advantage of the Inner Cities. *Harvard Business Review* 3:55-71.
- Prezioso M (2013) Geographical and territorial vision facing the crisis. *J Global Policy and Governance* 2-1:27-44.
- Prezioso M (2014) Dal quadro europeo ispirazioni per la politica urbana per l'Italia. In: R. Cappellin R (ed), *Crescita, investimenti e territorio: dalle idee ai progetti*, Roma pp.1-10. www.economia.uniroma2.it/dedi/ebook-politiche-industriali. Accessed 14/5/2015.
- Prezioso M, D'Orazio A (2015) Roma metropolitana: le dimensioni territoriali di una capitale. Un confronto a distanza con Parigi. In: Cremaschi M, Delpirou A, Rivière D, Salone C (eds) *Métropoles et Régions entre Concurrences et Complémentarités Regards croisés France/Italie*. Planum Publisher, Roma-Bologna, pp.142-159.
- Puga D (2002) European Regional Policies in Light of Recent Location Theories. *J Economic Geography* 2:373-406.
- Ottaviano G, Thisse J F (2004) Agglomeration and Economic Geography. In: V Henderson. and JF Thisse (eds), *Handbook of Regional and Urban Economics*, Vol. 4: Cities and Geography, Elsevier, Amsterdam, pp.2563-2608.
- Wostner P, Šlander S (2009) The effectiveness of EU Cohesion Policy revisited: are EU Funds really additional? European policy research paper No 69, University of Strathclyde-EPRC, Strathclyde-Bruxelles.
- Zaman G, Georgescu G (2015) Financing the endogenous development at regional and county levels. Particularities, trends and challenges. MPRA paper No 62270, pp:1-30. <http://mpra.ub.uni-muenchen.de/62270/>. Accessed 14/5/2015

All ESPON projects mentioned in the paper are available and downloadable by the web address: www.espon.eu. Accessed 15/3/2016.

Entrepreneurship challenges in a Less Developed Region of Hungary ELI-ALPS Laser Research Centre in Szeged

Imre Lengyel • Miklós Lukovics • Szabolcs Imreh

Abstract The Extreme Light Infrastructure (ELI) project was initiated by the European Strategy Forum on Research Infrastructures (ESFRI). The ELI research project is conducted in 3 countries; different facilities are constructed in the Czech Republic, Romania and Hungary. The ELI Attosecond Light Pulse Source (ELI-ALPS) laser research centre with its equipment unique in the world is established in Szeged, Hungary, in the less developed Southern Great Plain region at a value of approximately EUR 200 million and is expected to start operation in 2016. The buildings to be constructed will not only house the laser equipment, but also provide space for offices and laboratories for the 220-250 researchers and administrative staff and a science park shall also be established for enterprises. The investment shall provide an opportunity for Szeged to attract knowledge-intensive enterprises and promote start-ups.

In our study¹ we undertake to attempt to systemise the possible local economic and enterprise development effects of the ELI-ALPS based upon international scientific findings and experiences. We have developed a proposal on a development strategy based on the fundamental concepts of smart specialization that outlines realistic connection points and opportunities for cooperation between the local knowledge-intensive business sector and the ELI-ALPS, with a special role of the University of Szeged in economic end enterprise development.

Keywords Knowledge-intensive enterprises - Science park - Local economic development
Geographical and technological proximity - Smart specialisation strategy

JEL Classification L53, M13, O10, O30, O32

¹ The research was supported by the project "Extending the knowledge base of the Research University Centre of Excellence of the University of Szeged and establishing its long-term professional sustainability by means of providing an excellent next academic generation", identification number TÁMOP-4.2.2/B-10/1-2010-0012.

Imre Lengyel¹ • Miklós Lukovics² (✉) • Szabolcs Imreh³

¹ Faculty of Economics and Business Administration, University of Szeged
e-mail: ilengyel@eco.u-szeged.hu

² Faculty of Economics and Business Administration, University of Szeged
e-mail: miki@eco.u-szeged.hu

³ Faculty of Economics and Business Administration, University of Szeged
e-mail: iszabi@eco.u-szeged.hu

1. Introduction

The role of universities and the research institutes related to them has become more important in motivating regional and local economic development (Harding et al 2007; Huggins and Johnston 2009; Lawton Smith 2006; Varga 2009). Some excellent studies have provided detailed analyses of successful regions concentrating technology-driven or knowledge-intensive activities, such as the Silicon Valley (Saxenian 1994) or Oxfordshire (Lawton Smith 2003; Lawton Smith et al 2005). According to the literature, these knowledge-based activities exploit the advantages of geographical proximity, which have a different effect in metropolitan or small city, the regions of research universities or community colleges, in central regions or (semi-) peripheries (Anselin et al. 1997; Benneworth and Hospers 2007; Lengyel I. 2009; van Oort and Lambooy 2014).

Geographical and technological proximity can become the source of significant advantages in the case of knowledge-intensive activities, which operate efficiently when concentrated in space or when forming clusters (Boschma 2005; Capello and Faggian 2005; Varga 2007). They are cheap and reliable when the number of innovative companies and the connected business service provider, institutions and their employees reach a critical mass in the given industrial or business sector and positive external impacts take effect and a regional cluster is established (Porter 1998, 2008).

The exploitation of economies of scale is critical in global competition, and has two visible basic spatial types (Capello 2007; McCann 2013; van Oort and Lambooy 2014): in small towns so-called localization agglomeration advantages, Marshall-Arrow-Romer (MAR) externalities develop (companies in the same industrial segment exploit them and research and development conform to their demands), while in large cities or metropolitan regions so-called urbanization agglomeration advantages, Jacob's externalities operate (multiple industrial sectors can strengthen and the synergies between them are the engines of development).

Knowledge-intensive activities and relationships mainly concentrate **in city regions that have a research university, in growth poles**, often in science parks (Goddard and Vallance 2011; Goldstein and Renault 2004). Regions accommodating universities increase in importance where the most talented representatives of the given generations concentrate, and this **young, talented and creative labour force** is capable of quickly and efficiently applying new procedures (Huggins, Johnston, and Stride 2012). This labour force is "reproduced" every year in university towns and, with the existence of adequate training, it flexibly adapts to labour market demands, thus promoting local knowledge spillovers and the establishment of start-up enterprises (Harding et al. 2007; McKelvey and Holmén 2009; Anselin et al. 1997). Certain characteristics of collective learning promoting the spread of knowledge and its processes can be provided (Capello and Faggian 2005: 79): high mobility of local labour force, stable and fruitful relationships with local customers and suppliers, and spin-offs.

The city regions that have a research university in **less developed regions** are in a special position in the currently forming new, knowledge-based specialisation (Benneworth 2004; Benneworth and Charles 2005; Radosevic and Myrzakhmet 2009). The corporations participating in global competition that have their headquarters in these city regions compete mainly with factor-driven, or occasionally investment-driven strategies, that is, with cost advantages (Porter 2008). In these regions, the local innovation system is controlled externally, and the companies have no sources or demands for science research and do not develop new innovations (Lengyel B. and Leydesdorff 2008; Malecki 2014). The majority of newly developed knowledge-intensive companies and creative youth move from these regions to the large cities of more developed areas where it is easier to find business partners and a supporting local environment (Lengyel B. and Ságvári 2009; Pike et al. 2006).

The approach and applied set of tools of **regional and local economic development strategies** has undergone gradual changes in the past decades (Huggins and Williams 2009; Pike et al. 2011). Instead of the top-down type regional policies a **bottom-up strategic planning with an integrated approach has emerged** (Stimson et al. 2006; 2011). The improvement of the competitiveness of less developed regions, that is, **modernization is required**; the development of lacking public goods, the establishment of infrastructure and public services, which the market cannot perform (Lengyel and Rechnitzer 2013; Porter 2008). But this is only a necessary and not a satisfactory condition, since the local labour force and local enterprises must also be prepared for successful operation in a competitive environment, thus active economic and enterprise development programmes, culture change must also be implemented (Huggins and Strakova 2012; Julien 2007).

Bottom-up integrated strategic programmes mean the practical implementation of the well-known Triple Helix, or more recently the Quadruple Helix model, that is the harmonised operation of the local government and its institutions, the business sector (chambers, entrepreneurial associations), scientific communities (universities) and the interests of the local population and the agreed responses to new challenges (Carayannis and Rakhmatullin 2014; Etzkowitz and Leydesdorff 2000; Lengyel B. and Leydesdorff 2008). The traditional task of universities, education and research, are extended to the role fulfilled in the **development of the regional and local knowledge economy and society**.

According to the proposal of Huggins and Strakova (2012), three key fields of a knowledge-based development strategy can be differentiated in the emerging regions: **regional leadership and efficient coordination**, a **system-oriented policy** (the integrated development of the business environment and infrastructure) and a **firm-oriented policy**. That is, a separate economic development programme and enterprise development strategy are needed whose efficient local coordination can provide the opportunity for the development of a knowledge-intensive cluster. The **role of local governments is especially important** in the small towns of less developed regions (e.g. Newcastle, Enschede), since only they are capable of initiating the processes that strengthen the knowledge-based local economy in cooperation with universities (Benneworth and Hospers 2007). Universities do not have the financial sources or the organisational capacities to constantly manage university-industry relations and establish the lacking local business infrastructure that business life would develop in, for instance, a metropolitan regions. **Active local governmental behaviour** and a well-devised strategy are required in order to consciously strengthen knowledge spillovers, regional multiplier effects, the establishment of new spin-off companies, strengthening university-industry relationships, establishing forums of cooperation, etc., by making university workshops interested.

The European Union has established a triple objective for the 2014-2020 planning period: **smart, inclusive and sustainable growth**. Within regional policies, it supports place-based, integrated, bottom-up programmes promoting smart growth, primarily ideas based upon the principles of new development strategies (Thissen et. al 2013). The national/regional research and innovation strategies for smart specialisation (RIS3) are integrated, place-based economic transformation agendas (EC 2014: 2): “They focus policy support and investments on key regional priorities, challenges and needs for knowledge-based development. They build on each region’s strengths, competitive advantages and potential for excellence. They support technological as well as practice-based innovation and aim to stimulate private sector investment. They get stakeholders fully involved and encourage innovation and experimentation.”

In this study we shall review the possible local economic development role and opportunities of the ELI-ALPS laser research centre operating from 2016 financed by the European Union with

EUR 200 million in Szeged, centre of one of the less developed regions in Hungary. Following the presentation of a theoretical background and international experiences, we shall first present the ELI-ALPS investment and its environment, the economic and social conditions of the region and Szeged, highlighting the most important characteristics of the university and local research institutes. We shall also propose a development strategy based upon the basic concepts of smart specialization (RIS3) that outlines realistic connection points and opportunities for cooperation between the local economy and the ELI-ALPS and other local research institutes, with a special role provided for the University of Szeged. The advantages and disadvantages of the ELI-ALPS institute on the local economy evoke a serious dilemma which we shall attempt to resolve by means of local economic and enterprise development proposals.

2. The laser research institute and its geographical environment

During contemplating the economic development impacts of the ELI-ALPS laser research institute, the development of the integrated bottom-up strategy, we must not only consider the characteristics of the investment and the facility, but also the existing features of the region and the city region.

The Extreme Light Infrastructure (ELI) project is an integral part of the planned and already constructed generation of large European research facilities managed by the European Strategy Forum on Research Infrastructures (ESFRI). The EU laser project amounting to a total budget of EUR 850 million is implemented in three countries, in independent fields and with separate instruments: research centres are constructed in the Czech Republic (beamline), in Hungary (attosecond) and in Romania (photonuclear).

The **ELI Attosecond Light Pulse Source (ELI-ALPS)** is being built in Szeged with a total budget of EUR 200 million. The primary mission of the ELI-ALPS laser research centre „is to make a wide range of ultrafast light sources accessible to the user groups of the international scientific community, with special consideration to coherent extreme-ultraviolet (XUV) and X-ray radiations, and to attosecond pulses”².

The primary mission of the laser research centre *“is to make a wide range of ultrafast light sources accessible to the user groups of the domestic and international scientific community. The equipment operating in the research centre is expected to achieve significant research results not only in the case of ultrafast physical basic processes, but also in the field of biological, medical and materials sciences”*³. Main research and application areas of ELI-ALPS: valence electron science, core electron science, 4D imaging, relativistic interactions, biological, medical and industrial applications etc. Possible application fields are expected to come from biological sciences, chemistry, climate research, energy and materials sciences, medical imaging, etc. According to the international application, 5 laser tools will be constructed, which will be capable of a significantly higher performance than anywhere previously in the world in producing ultrashort pulses.

2 Source: <http://www.eli-hu.hu/>

3 Source: <http://www.eli-hu.hu/>

Figure 1 Location of ELI-ALPS and a planned Science Park



Source: <http://www.eli-alps.hu/>

The laser research centre is partly funded by the EU Structural Funds allocated to Hungary. Approximately 220-250 employees will work there, half of them as researchers who get their positions through international applications and whose salaries will reach a Western European level. The centre will be controlled and supervised by an international Scientific Advisory Committee without the active participation of any institutions of the university or the city. Researches conducted here will partly be funded from EU sources, but the equipment will also be rentable for corporate research.

The floor area of the research centre will be almost 24,462 square metres⁴ (5 buildings) and besides the rooms for the laser equipment, it will also accommodate laboratories (biological, chemical, medical, etc.), workshops, computer rooms, a conference room for 200, 8 seminar rooms, offices, a library, etc. The research centre can therefore accommodate not only researches, but also conferences, workshops and training courses.

In Hungary there are 7 regions of NUTS2 level, including 3-3 counties of NUTS3 level (Figure 2).

Figure 2 Regions and counties of Hungary



⁴ Source: <http://www.eli-hu.hu/>

The Southern Great Plain region is situated in the south-eastern border area of the country, and includes three counties: Bács-Kiskun, Békés, and Csongrád. Szeged, Hungary's fourth most densely populated city, which is situated approximately 180 kilometers south from Budapest, is the centre of both the Southern Great Plain region and Csongrád county. Trans-European transport corridors pass the city, the motorway towards Romania and Serbia reached the city in December 2005.

The GDP per capita on purchasing power parity of both the region and the county is far behind the EU average and varied between 45-50% thereof, and the economic growth following Hungary's accession to the EU in 2004 has also been minimal (Table 1). The employment rate is also significantly lower than the EU average, but also falls behind the Hungarian average.

In the majority of figures related to research and development, however, the Southern Great Plain has a strong position and comes directly after Central Hungary in the rank of regions. Csongrád county, in turn, is in an even better position, since in the majority of R&D input and output figures it ranks first among the counties. Indeed, the specific number of those with an academic degree (35 persons per 10,000 inhabitants) is higher than in Central Hungary (29 persons per 10,000 inhabitants) that belongs to the developed regions, and the proportion of those with tertiary education is close to the EU average.

Table 1 Main data of Hungarian regions and Csongrád county

Territorial unit	GDP per capita (PPS, EU27 =100%), 2012	Employment rate (ages 20-64) (%), 2013	R&D expenditures per GDP (%), 2011	R&D employees per 10,000 residents (%), 2013	Higher educational attainment (%) (ages 25-64), 2011	Academic degree (PhD) per 10,000 residents, 2013
Central Hungary	107.7	67.4	1.7	191	30.9	29
Central Transdanubia	58.5	66.0	0.8	35	17.2	6
Western Transdanubia	68.3	66.8	0.8	34	17.9	9
Southern Transdanubia	45.4	60.4	0.6	36	16.6	11
Northern Hungary	39.6	56.5	0.6	24	15.6	6
Northern Great Plain	42.8	58.4	1.1	34	16.3	11
Southern Great Plain	45.5	61.6	1.1	52	17.1	13
Hungary	65.7	63.2	1.2	59	21.0	15
EU-27	100.0	68.4	2.0	-	22.4	-
Csongrád county	50.5	61.6	1.3	116	21.1	35

Source: HCSO 2014, 2015

The close environment of the laser centre is comprised of Szeged and its agglomeration. The ELI-ALPS is being constructed at the edge of the city, near the motorway in a former Soviet barracks managed by the university. In general, the city region of Szeged, based upon the size of the population, the increase in the proportion of residential population (there was an increase from 201 thousand to 208 thousand between 2001 and 2011), the high proportion of those with tertiary

education, but even according to the high number of corporate enterprises operating there is a dynamically growing region by Hungarian standards. 29% of people between 25 and 64 in the city hold tertiary a degree, which is one and a half times more than the national average, while the specific number of those with an academic degree is multiple the times thereof. According to the employee LQ-indexes of the 13 sub-sections of the manufacturing industry, only the food industry (CA: the manufacturing of food products, beverages and tobacco products) displays characteristics of specialization and concentration in Szeged city region, which means that not only the county, but not even Szeged has any knowledge-intensive manufacturing industry (Lengyel and Szakálné Kanó 2012; Szakálné Kanó and Vas 2013).

The tertiary education sector and knowledge-intensive service providing activities are mainly connected to the University of Szeged, which is one of the top quality universities of Eastern Europe according to international rankings⁵ (Lengyel I. 2009). The University of Szeged is the largest employer in the region with its approximately 7 thousand employees; it has 27 thousand university students studying at 12 faculties and 6-7 thousand students graduate there each year. Some 130 departments operate in a wide field of disciplines and the university has 770 professor-researchers with an academic degree. 8-9,00 PhD students study at the 19 doctoral schools, and the university has a significant international relationship network and an extended university-industry relationship system (Vilmányi 2011).

Many units of the research institute network of Hungary outside of Budapest are located in Szeged. Besides the University of Szeged, the Biological Research Centre of the Hungarian Academy of Sciences (with 260 researchers) also represents a significant scientific capacity and in 2000 it was awarded the prestigious title Centre of Excellence of the European Union. The Szeged Biotechnology Institute of Bay Zoltán Nonprofit Ltd for Applied Research (BAY-BIO) and the Szeged Cereal Research Nonprofit Ltd also operate here.

Based upon available data, the economy of the Southern Great Plain and Csongrád county qualifies as less developed, and industrial sectors and clusters that would classify as knowledge-intensive in the competitive sector are hardly present. However, the knowledge base concentrated in the county and the city region of Szeged is significant not only in Hungary, but also at an international level. There is a constant supply of graduates coming from the University of Szeged, some of whom continue their studies at the local doctoral schools. This knowledge base and the masses of talented youth emerging each year provide an opportunity for a knowledge-intensive economic restructuring to take place in the region. The ELI-ALPS investment does not only create the opportunity for local scientific capacities to strengthen in Szeged, but also for a real, knowledge-based local economic and enterprise development.

3. ELI-ALPS, as an opportunity for local economic development

Results published in prestigious international literature point out that three programmes are required in small city regions: the improvement of the business environment (in narrow terms, economic development), enterprise development and the motivation of clusters. In the smaller towns of less developed regions, as for instance in Szeged, these programmes must be coordinated efficiently, which requires local collaboration between the government, business, university and non-governmental sectors. In these regions the role of the university is especially important, as a constant output source for a highly qualified labour force and a motivator for new, innovative (start-up) enterprises.

5 Quacquarelli Symonds (QS) (The QS University Rankings: EECA is a dedicated ranking of the top universities in Eastern Europe and Central Asia) ranks the University of Szeged at number 22: <http://www.iu.qs.com/eecca2014-rankings-results/>.

During the 2014-2020 period, EU Structural Funds sources for the development of knowledge-based local economy can be applied for based upon the RIS3 strategies, thus for strengthening the regional multiplier effects of the ELI-ALPS (Thissen et. al 2013). Based upon the available data, according to the standardization of the RIS3 manual (EC 2012): **Szeged and its city region is a catching-up city region** (knowledge region) of population growth and inflows and a knowledge and potential technology hub where economic activities **exploiting new market niches** can start. In the case of such a city region type, the recommended strategy is the support of knowledge-intensive enterprises strengthening the potential competitive advantages of the region and the research institutes creating new knowledge that cooperate with them (EC 2012): reinforcing the R&D infrastructure related to new industrial sectors, attracting knowledge-intensive companies and their units, establishing science parks and incubators, attracting and supporting talented youth and a constant monitoring of high-tech market niches.

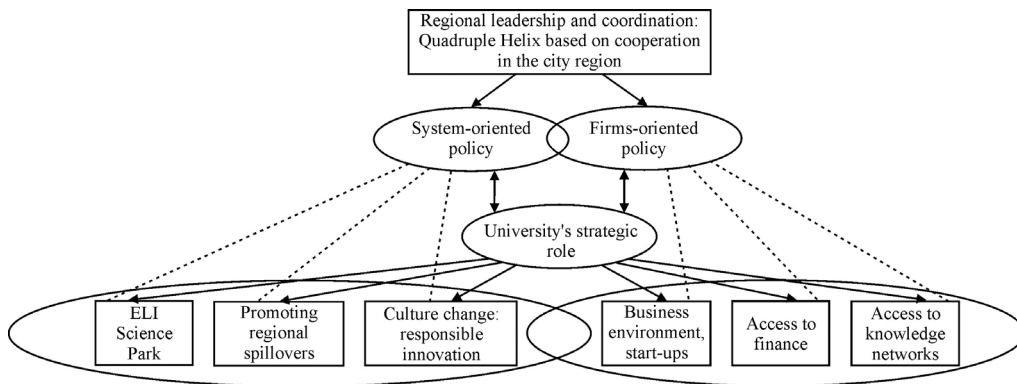
During the development of local economic development recommendations related to the activities of the ELI-ALPS, we highlight three special local aspects. One is the critical mass determined by the city size (the population of 208 thousand), which only enables the strengthening of one or two industrial sectors (localization agglomeration advantages), that is, a strong specialization and a concentration of scarce sources are required. The other aspect involves the low development of the region and the shortcomings of the service providing background, due to which a modernisation process must be started where the university will be assigned a special role. The third aspect is the too broad potential application scope of the results achieved during the experiments performed at the ELI-ALPS. Because of that, it is currently unknown which scientific disciplines will experience fundamental breakthroughs, that is, which industrial sector will utilise any innovation, which means that the development of knowledge-intensive clusters, if they are even established, can only take place later.

Based upon the aforementioned, we believe that boosting the economic development effects expected on behalf of the ELI-ALPS research institute should be divided into two steps according to the logic of the RIS3 strategies. In the first step, two elements of the microeconomic business environment, the quality of the business environment (as economic development) and the refinement of company operations and strategy (as enterprise development) must be strengthened, while in the second step, clusters should be motivated. According to Huggins and Strakova (2012) two priorities can be distinguished in knowledge-based local economic development in small cities of emerging regions: a system-oriented policy (in essence, economic development) and an firm-oriented policy (enterprise development). This model, at the same time, emphasizes the importance of the coordination role of local governmental actors, in concurrence with the recommendations of Benneworth and Hospers (2007).

Based upon these concepts, we reshaped Huggins and Strakova's model according to the special local conditions of the ELI-ALPS research centre (Figure 3). Since the development of clusters will take place later, we highlight two of the aforementioned subsystems of the system-oriented policy promoting economic development (Huggins and Strakova 2012): on the one hand, it is necessary to establish the infrastructural background of regional spillovers, and on the other hand, a culture (attitude) change is required that would promote the foregrounding of **responsible innovation** in the field of R&D. In the first step, a science park, including an incubator, would be established parallel to the ELI-ALPS investment, directly neighbouring the laser research centre in the area managed by the university. At the same time, company-oriented developments must also be implemented: various divisions of companies must be attracted, start-ups supported, funding ensured and knowledge relationships reinforced (locally and globally). It is also important to consider that the role of the university in local knowledge-based economic

development is of special interest due to the special environment of Szeged and we believe it is related to all issues to be developed.

Figure 3 Knowledge-based economic development organised around the ELI-ALPS



Source: own edition based on Huggins and Strakova (2012: 971)

4. Regional leadership and coordination

As we have already highlighted, the efficient operation of local cooperation networks is indispensable in bottom-up integrated economic development. In the RIS3 strategy, in a given region, the actors (according to the Quadruple Helix model) accept a joint vision based on a consensus, which they use as a basis for an economic development strategy. In Szeged, the local government and its institutions must actively participate in the coordination of the development and implementation of local economic development programmes aligned to the RIS3 strategy utilising the ELI-ALPS as an opportunity. However, due to the special conditions of the city region, the university and its concerned departments and research institutes must also participate with various levels of intensity in the implementation of practically all elements of the development programmes⁶.

4.1 *System-oriented policy: the improvement of the business environment*

The system-oriented policy encompassing economic development is comprised of three programmes that concentrate on creating an efficient business environment.

ELI Science Park: access to physical infrastructure

The role of science parks as generators of dynamic economic restructuring is significant in RIS3 strategies of city regions (Nauwelaers et al. 2014). The ELI Science Park will provide an infrastructure background for a wide range of knowledge-intensive activities. Since the business utilisation of research results is expected to cover a rather broad scope, the park will not concentrate on a single R&D&I area, but will provide room for the geographical concentration of heterogeneous, multifocal high added value companies. The special characteristic of the ELI Science Park is that, the ELI-ALPS itself fulfils an “integrator role”, however, that will

⁶ The expression “fourth generation” university has already appeared in the literature and refers to the fact that modern universities of our day must become capable of proactively influencing the economic and social processes of their region (Lukovics and Zuti 2013; Pawlowski 2009).

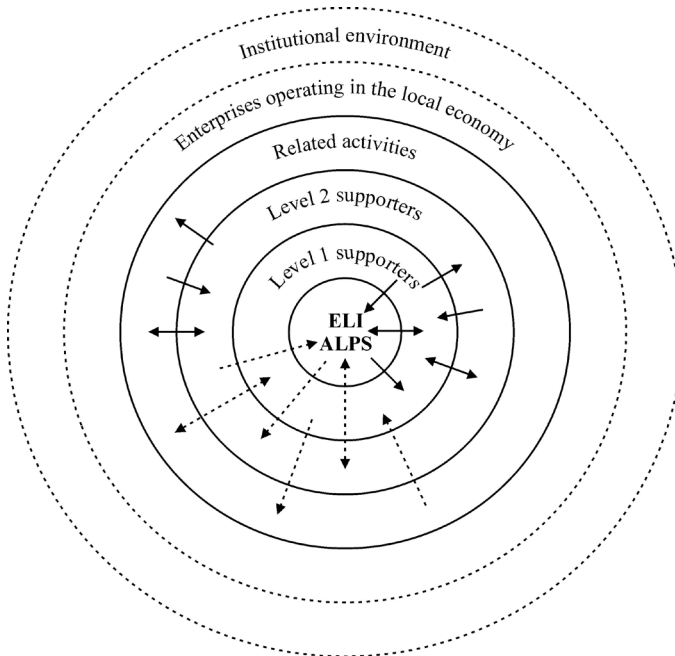
not generate a supplier dependence as strong as what is visible in the case of a manufacturing industry supplier network, and instead only carries the function of initiating the development of geographical concentration.

An **incubator** is to be established within the science park, which would not only provide rooms for starting enterprises with advantageous conditions, but also provide high-quality and cheap business services (counselling, accounting, information technology, etc.).

Promoting regional spillovers

The types of relationships of the companies to the ELI-ALPS and the science park are easiest to describe in the form of concentric circles based upon their technology-orientedness and their demand for geographical proximity (Figure 4).

Figure 4 The types of activities organised around the ELI-ALPS



Source: prepared by the authors

- **Level 1 supporters** are the divisions of primarily multinational companies settling in the science park and maintaining direct (even daily) contact with the ELI-ALPS. Geographical proximity is vital for level one supporters, since these companies are closely related or are suppliers (maintenance staff, etc.) to the technological operation of the ELI-ALPS and/or settled there because of the expected basic research findings.
- The **second concentric circle** depicts so-called **level 2 supporters** that are in indirect contact with the ELI-ALPS and have a direct (supplier or R&D&I) relationship with the companies in the first concentric circle. In their case, geographical proximity to level 1 supporters is vital, since they utilise the latter supporters' applied research or experimental development results, or are their suppliers, whereas they only have an indirect R&D or supplier's relationship with the ELI-ALPS. This group includes, among others technology-oriented start-up companies connected in some way to research conducted in the ELI-

ALPS, which have a high risk and therefore the services provided by the science park are vital to them.

- The **third concentric circle** is where we find the so-called **related activities** that have a direct (supplier or R&D&I) relationship with the enterprises in the first and second concentric circles, and which presumably have no direct relation towards the ELI-ALPS. They logically include, among others, primarily local companies that have no technological relationship with any research conducted in the ELI-ALPS (their activities including patenting, interpretation, information technology, etc.) and also other, technologically prepared local companies striving to apply the new technologies based upon the findings of the research conducted in the ELI-ALPS. Although in the case of the latter companies a relationship (technological) proximity is vital, a further advantage is constituted by geographical proximity, since, in possession of local, “noiseless” information they can start development earlier and at a lower risk than distant competitors, thus most of them will probably settle in the science park.
- The **fourth and fifth concentric circle** is where we primarily find those mostly **local enterprises** that may have any (supplier or R&D&I) relation with the enterprises in the science park and **local institutions** that fundamentally influence the broader city and county business environment of the science park. The enterprises of the fourth circle and the institutions of the fifth circle are not expected to settle in the science park, but will, however, maintain an intense relationship with those in the park.

The description above clearly illustrates that the establishment of a science park in the immediate environment of the ELI-ALPS is of vital importance from the aspect the enterprises of the local economy. The reason being that the existing enterprises in the area will not, or only to a limited extent and in small numbers be capable of establishing any business relations with the ELI-ALPS initially, due to its special nature. It is rather the divisions of the high-tech international companies settling in the science park that would be expected to primarily constitute significant business relationships with enterprises of the local economy, more precisely, mainly the level 2 supporters and those performing related activities and, to a lesser extent level 1 supporters.

Culture change: responsible innovation

The ELI-ALPS and the science park may also become initiators of a change in approach and culture (entrepreneurial spirit, risk taking, tolerance, etc.) observed by Huggins and Strakova (2012) necessary for knowledge-intensive activities in an emerging region. Disseminating the concept of **regional responsible innovation** (RRI) is an important part of that process. The ELI-ALPS and the science park to be established around it could create a geographical concentration, an innovative environment where the introduction and dissemination of the concept of responsible innovation may result in real positive effects. The adaption of the RRI approach on behalf of the ELI-ALPS is the first step of the introductory phase. It may well be expected of the introduction of RRI that the approach would reach the organisations settled in the park through various channels and, through them, the local enterprises related to them too (Gyurkovics and Lukovics 2014).

4.3 Firm-oriented policy: integrated enterprise development programme

The development of the infrastructure – in this case, the science park – is necessary, but not satisfactory for successful local economic development, thus efforts must be made to strengthen existing and newly established enterprises. The enterprise development strategy is based upon

a defined target system and the related three enterprise development interventions, which carry special characteristics in a less developed country (Kállay and Lengyel 2009).

Business environment, start-ups

Services that help to become an entrepreneur and aid the operation of inspiring, new companies are required:

- **Education, a conscious development of “entrepreneurship” and business management competences:** high-level enterprise education is required for the ELI-ALPS, the researchers and experts of the science park and the professors and students of the University of Szeged to ensure the establishment of spin-off enterprises with a large growth potential. For that purpose, a practical education of entrepreneurial and business skills must be organised for actors with no economic qualifications (researchers).
- **Developing special business development services for spin-off and start-up enterprises:** special business development services (consulting, mentor programmes, early growth management) that contribute to long-term success both during establishing an enterprise and throughout its operation are of utmost importance. Developing a consulting background specialising in knowledge-intensive enterprises is worthwhile in the long run in the case of such concentration.
- **Managing knowledge transfer and technology transfer:** installing technologies that are key sectors within the European Union (e.g. photonics, medical device manufacturing) would significantly enhance the success of the economic region developing around the science park. The conscious management of the knowledge and technology transfer based upon these sectors, with, for instance, technology transfer offices, could expedite the development of knowledge-intensive enterprises.

Access to finance

Newly started and rapidly growing knowledge-intensive companies have special financing demands, which can only be efficiently supported with special financing structures.

- **Supporting seed funding, or business angel financing:** the greatest obstacle for larger-scale and successful investments is usually not the insufficient amount of risk capital, but the actors even finding each other. Connecting to various business angel networks and organising investors’ forums or brokerage events is therefore of special importance. These include the preparation of knowledge-intensive enterprises (the receiving side) for receiving risk capital.
- **Supporting donor financing:** monitoring domestic and EU grants and preparing and managing application materials are a great help both for the enterprises in the science park and the related knowledge-intensive companies in the city region. The professional background satisfactory to the current regulators must be established, with a clear distinction between tasks to be performed by the community funded (non-profit) and the for-profit sectors.

Access to knowledge networks

Knowledge-intensive companies possess both local relationships (based on geographical proximity) and global relationships (based on technological proximity), which are equally necessary for success in international competition.

- **Supporting foreign market expansion, encouraging export:** the international relationships of the companies strengthening in the park are of fundamental importance

for appearing on the export market, thus consciously managing efficient external market relationships and networks is an important task. Personal meetings are also required to establish relationships, which have to be facilitated by organising business meetings, conferences and workshops, appearing at exhibitions, inviting guest researchers and professors, etc.

- **Encouraging business and scientific networks:** connecting to interpersonal and business networks makes it easier for researchers and corporations to get access to existing knowledge and experience and also to create new knowledge and at the same time decrease the risk of their decisions (clubs, associations, etc.). The professional relationships can also be reinforced by organising ad-hoc meetings.

4.4 Strategic role of the university

Due to its size and position, the University of Szeged participates in the development and implementation of the activities of both system-oriented and firm-oriented policies: it is an organiser of training courses adapting to the labour force demand of knowledge-intensive companies, one of the entities preparing regional economic development decisions, an active participant in forming university-industry relationships, and an actor in local enterprise development programmes. Therefore, it has an especially important role in promoting spillover, developing the science park, the practical introduction of the concept of responsible innovation, facilitating access to financial sources and knowledge networks and developing the business environment (Table 2).

Table 2 The possible role of the university in each programme

Name	Possible university activities
ELI Science Park	<ul style="list-style-type: none"> • performing economic impact analysis of companies settled in park • promoting local embedding of settlers • contributing to the exploitation of the economic development potential of the ELI and the science park • organising relationships between settling companies and university departments and institutes • extension training and courses provided for the employees of settling companies
Regional spillovers	<ul style="list-style-type: none"> • developing local innovation system • establishing economic and enterprise development centre • preparing economic situation analyses • operating technology transfer office • organising informal meetings, professional forums and business clubs • organising training for related activities generated by the ELI-ALPS

Name	Possible university activities
Culture change: responsible innovation	<ul style="list-style-type: none"> • disseminating the approach of responsible innovation • facilitating the practical introduction of responsible innovation • providing training in laser application opportunities • strengthening engineering training • organising related PhD programmes, advertising research topics • inviting guest professors and researchers
Business environment, start-ups	<ul style="list-style-type: none"> • wide-scale education of entrepreneurial skills • developing legal, business, IT, etc. consulting network • organising patenting procedure • organising brainstorming sessions • screening project ideas • managing mentoring network • consulting in strategic planning • monitoring grants, preparing applications and consulting
Access to finance	<ul style="list-style-type: none"> • providing help in reaching investors, business angels • organising investors' meetings • helping the preparation of business plans
Access to knowledge networks	<ul style="list-style-type: none"> • organising international conferences • organising business meetings • strengthening international professional relations with fellow universities • supporting international research cooperation

A "Strategic Council" ought to be established from the representatives of the concerned departments and research institutes at the University of Szeged that would prepare and constantly monitor the accession of the various university divisions to the aforementioned programmes. One of its important tasks would be to sense and indicate in a timely manner, if any deviations or negative phenomena were seen in programmes the university participated in. It is also important that an 'Economic and Enterprise Development Centre' should operate at the University of Szeged, which would establish and maintain a relationship between the research institutes and the knowledge-intensive companies, and would coordinate the services of the related university divisions (training, events, consulting, etc.).

5 Summary

A high-tech laser research centre, the ELI-ALPS, is implemented in Szeged, a university town in one of the less developed regions in Hungary. This international research institute, operational as of 2016, will operate laser equipment unique worldwide, which can be utilised by both scientific

researchers and industrial appliers. The ELI-ALPS was placed in Szeged for fundamentally two reasons: in order to exploit the internationally renowned scientific capacity existing there and also to boost the development of the local knowledge-based economy and enterprises. The research institute is an opportunity in Szeged that both the city and the university wish to utilise in order to facilitate the economic development of the region.

According to international experiences, an efficient collaboration between the town leadership, the city's institutions and the university and its research institutes is necessary in a small university town of a less developed region in order to strengthen knowledge-intensive economy. The management and the logical framework of knowledge-based local economic development concepts ought to be financed within the framework of a bottom-up smart specialization strategy (RIS3) supported by the EU.

Based upon the literature and local characteristics, we believe that in the case of the expected economic development impacts generated by the ELI-ALPS we must distinguish two chronologically consecutive phases. In the first phase, two elements of microeconomic fundamentals must be strengthened: economic development that improves the quality of the business environment and the refinement of corporate operation and strategy. The research conducted in the framework of the ELI-ALPS provide an opportunity for a multitude of business applications, therefore, it is impossible to say today, which activities will form clusters. Thus, encouraging knowledge-intensive clusters shall take place in the second phase when the number of companies related to the activities of the ELI-ALPS has reached critical mass in a sector. In the first step of the development strategy, we recommend establishing a science park, including an incubator, which would be established directly neighbouring the ELI-ALPS and would provide a home to knowledge-intensive enterprises, settling companies and start-ups. Supporting enterprise development is also very important, so that knowledge-intensive companies be established related to the university and so that local enterprises be able to become business partners of the companies operating in the science park.

References

- Anselin L, Varga A, Acs Z (1997) Local geographic spillovers between university research and high technology innovations. *Journal of Urban Economics* 42: 422–448.
- Benneworth P (2004) In what sense 'regional development?': Entrepreneurship, underdevelopment and strong tradition in the periphery. *Entrepreneurship & Regional Development* 16(6): 439–458.
- Benneworth P, Charles D (2005) University spin-off policies and economic development in less successful regions: learning from two decades of policy practice. *European Planning Studies* 13: 537–557.
- Benneworth P, Hospers GJ (2007) Urban competitiveness in the knowledge economy: Universities as new panning amateurs. *Progress in Planning*, 105–197.
- Boschma R (2005) Proximity and Innovation: A Critical Assessment. *Regional Studies* 1: 61–74.
- Capello R (2007) *Regional economics*. London – New York: Routledge.
- Capello R, Faggian A (2005) Collective Learning and Relational Capital in Local Innovation Processes. *Regional Studies* 1: 75–88.
- Carayannis,EG, Rakhmatullin R (2014). The Quadruple/Quintuple Innovation Helixes and Smart Specialisation Strategies for Sustainable and Inclusive Growth in Europe and Beyond. *Journal of Knowledge Economy* 5: 212–239.

- EC (2012) Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3). Luxembourg: European Commission.
- EC (2014). National/Regional Research and Innovation Strategies for Smart Specialisation (RIS3 strategies). Luxembourg: European Commission.
- Etzkowitz H, Leydesdorff L (2000) The dynamics of innovation: from National Systems and “Mode 2” to a Triple Helix of university–industry–government relation. *Research Policy* 29: 109-123.
- Goddard J, Vallance P (2011) Universities and regional development. In *Handbook of Local and Regional Development*, edited by Pike, A, A. Rodríguez-Pose, J. Tomaney, 435-437. London – New York: Routledge.
- Goldstein HA, Renault CS (2004) Contributions of universities to regional economic development: a quasi-experimental approach. *Regional Studies* 38 (7): 733–746.
- Gyurkovics J, Lukovics M (2014) Generations of Science Parks in the Light of Responsible Innovation. In *Responsible Innovation*, edited by Buzás, N, M. Lukovics, 193-208. University of Szeged, Faculty of Economics and Business Administration, Szeged.
- Harding A, Scott A, Laske S, Burtscher C eds. (2007) *Bright Satanic Mills - Universities, Regional Development and the Knowledge Economy*. Aldershot: Ashgate.
- HCSO (2014) *Research and Development 2013*. Budapest: Hungarian Central Statistical Office.
- HCSO (2015) *STADAT system*. Budapest: Hungarian Central Statistical Office.
- Huggins R, Johnston A (2009) The economic and innovation contribution of universities: a regional perspective. *Environment and Planning C: Government and Policy* 27(6): 1088-1106.
- Huggins R, Johnston A, Stride C (2012) Knowledge networks and universities: locational and organisational aspects of knowledge transfer interactions. *Entrepreneurship and Regional Development* 7-8: 475-502.
- Huggins R, Strakova L (2012) Knowledge-based economic development in emerging regions: policy issues and implications in the Balkan Peninsula. *Regional Studies* 7: 961-975.
- Huggins R, Williams N (2011) Entrepreneurship and regional competitiveness: The role and progression of policy. *Entrepreneurship and Regional Development* 23 (9–10): 907–932.
- Julien PA (2007) *A Theory of Local Entrepreneurship in the Knowledge Economy*. Cheltenham-Northampton: Edward Elgar.
- Kállay L, Lengyel I (2008) The Internationalization of Hungarian SMEs. In *Handbook of Research on European Business and Entrepreneurship. Towards a Theory of Internationalization*, edited by Dana LP, Welpel IM, Han M, Ratten V 277-295. Cheltenham- Northampton: Edward Elgar.
- Lawton Smith H (2003) Local innovation assemblages and institutional capacity in local high-tech economic development: the case of Oxfordshire. *Urban Studies* 40 (7): 1353–1369.
- Lawton Smith H (2006) *Universities, Innovation and the Economy*. London and New York: Routledge.
- Lawton Smith H, Glasson J, Chadwick A (2005) The geography of talent: entrepreneurship and local economic development in Oxfordshire. *Entrepreneurship and Regional Development* 17: 449–476.
- Lengyel B, Leydesdorff L (2011) Regional innovation systems in Hungary: The failing synergy at the national level. *Regional Studies* 5: 677-693.
- Lengyel B, Ságvári B (2011) Creative occupations and regional development in Hungary: mobility of talent in a one-centred transition economy. *European Planning Studies* 19(12): 2073-2093.
- Lengyel I (2009) Knowledge-based local economic development for enhancing competitiveness in lagging areas of Europe: The case of the University of Szeged. In *Universities, Knowledge Transfer and Regional*

Development: Geography, Entrepreneurship and Policy, edited by A. Varga, 322-349. Cheltenham-Northampton: Edward Elgar.

Lengyel I, Rechnitzer J (2013) Drivers of Regional Competitiveness in the Central European Countries. *Transition Studies Review* 20(3): 421-435.

Lengyel I, Szakálné Kanó I (2012) Competitiveness of Hungarian Urban Microregions: Localization Agglomeration Economies and Regional Competitiveness Function. *Regional Statistics* 52(2): 27-44.

Lukovics M, Zuti B (2013) Successful universities towards the improvement of regional competitiveness: 'Fourth Generation' universities. Paper presented at the „Regional Integration: Europe, the Mediterranean and the World economy, 53th Congress of the European Regional Science Association (ERSA), Palermo, Italy, August 27-31.

Malecki EJ (2014) The Geography of Innovation. In *Handbook of Regional Science*, edited by Fischer M, Nijkamp P 375-389. Heidelberg: Springer.

McCann P (2013) *Modern Urban and Regional Economics* (2nd ed.). Oxford: Oxford University Press.

McKelvey M, Holmén M eds. (2009) *Learning to Compete in European Universities. From Social Institution to Knowledge Business*. Cheltenham- Northampton: Edward Elgar.

Nauwelaers C, Kleibrink A, Stancova K (2014). The role of science parks in smart specialisation strategies. *JRC Technical Reports, S3 Policy Brief Series, No. 08/2014*, European Commission.

Pawlowski K (2009) The 'Fourth Generation University' as a Creator of the Local and Regional Development. *Higher Education in Europe* 34(1): 51-64.

Pike A, Rodríguez-Pose A, Tomaney J (2006) *Local and Regional Development*. London – New York: Routledge.

Pike A, Rodríguez-Pose A, Tomaney J eds. (2011) *Universities and regional development*. In *Handbook of Local and Regional Development*. London – New York: Routledge.

Porter ME (1998) Clusters and the New Economics of Competition. *Harvard Business Review* 11-12: 77-90.

Porter ME (2008) *On Competiton*. Updated and Expanded Edition. Boston: Harvard Business Review Book.

Radosevic S, Myrzakhmet M (2009) Between vision and reality: Promoting innovation through technoparks in an emerging economy. *Technovation* 29: 645-656.

Saxenian A (1994) *Regional Advantage*. Cambridge, MA: Harvard University Press.

Stimson R, Stough RR, Nijkamp P (2011) *Endogenous Regional Development*. Cheltenham: Edward Elgar.

Stimson RJ, Stough RR, Roberts BH (2006) *Regional Economic Development. Analysis and Planning Strategy*. Berlin: Springer.

Szakálné Kanó I, Vas Zs (2013) Spatial Distribution of Knowledge-intensive Industries in Hungary. *Transition Studies Review* 19(4): 431-444.

Thissen M, van Oort F, Diodato D, Ruijs A (2013) *Regional Competitiveness and Smart Specialization in Europe: Place-based Development in International Economic Networks*. Cheltenham: Edward Elgar.

Van Oort F, Lambooy JG (2014). Cities, knowledge, innovation. In *Handbook of Regional Science*, edited by Fischer, M, P. Nijkamp, 475-488. Heidelberg: Springer.

Varga A (2007) Localized knowledge inputs and innovation: The role of spatially mediated knowledge spillovers in Hungary. *Acta Oeconomica* 1: 1-20.

Varga A ed. (2009) *Universities, Knowledge Transfer and Regional Development: Geography, Entrepreneurship and Policy*. Cheltenham- Northampton: Edward Elgar.

Vilmányi M (2011) The relationship performance in the field of university-industrial R&D cooperation. In *Diversity of Research at the Szeged Institute of Business Studies*, edited by Hetesi, E, Zs. Kürtösi. 75-95. JATEPress: Szeged.

Remittances Flow to Pakistan A Gravity Approach

Shujaat Abbas

Abstract This study investigates macroeconomic determinant and potential of remittances flow to Pakistan from selected 12 major partners, using the augmented Gravity model on panel framework from 1995 to 2012. The Generalized Least Square technique is used to explain the macroeconomic behaviour of remittances flow. The result shows that the standard Gravity variables explain the remittances flow, and the result of augmented variables shows that the real exchange rate and inflation rate have significant positive, whereas the interest rate has significant negative impact. The binary variable for common language and GCC shows significant positive impact indicating importance of the Gulf region and common language for remittances flow. The potential of remittance flow shows existence of high potential in Japan, Germany, Norway, Qatar and Kuwait respectively. It urges Pakistan to send migrant workers to potential economies, and make domestic environment investment friendly and reduce interest rate to encourage remittances.

Keywords International Migration - Remittances Flow - Economic Integration - Gravity Model - Panel Data

JEL Classification F22 - F24 - F15

1. Introduction

The remittance inflow is the major source of foreign exchange reserve for developing countries, which are persistently facing chronic trade and fiscal deficit. According to the United Nation, (2013), there are 232 million international migrant in the World, of which 59 percent live in developed and 41 percent in developing economies. The developing economies receive 60 percent of total world's remittance flow, accounting 414 billion in 2013¹. The South Asian economies are major migrant sending countries and the remittance inflow is an important source of international investment and international reserve inflow.

Pakistan is a capital deficient country of 180 million peoples with highly sluggish trade and

¹ The World Bank, (2013).

Shujaat Abbas (✉)

Department of Economics, University of Karachi, Pakistan

e-mail: shujaat.abbass@gmail.com

economic growth performance. It is characterized by lower investment and productivity growth. It is major migrant sending country and remittance received is the major source of international capital flow. Approximately 7.4 million Pakistanis are working around the globe and send \$15 billion remittances in 2013. The migrant workers are broadly categorized into two groups. First groups comprise professional and qualified workers migrate and settle in developed economies and second group comprise short term low skilled migrant workers. The first category migrants found in developed economies, i.e. USA, UK, Germany and France, and second group of migrant, is major sources of remittances, is found in Gulf countries.

The Saudi Arabia and UAE are major economies contributing 30 and 20 percent respectively. The figure 1 in appendix shows that the share of Saudi Arabia has increased from 20 percent in 2007 to 30 percent in 2012. The Middle East emerged as largest markets for lower skilled temporary migrants, which is followed by developed European, 28.3 percent, and American economies, 16.2 percent. The remittances from developed economies is determined by the traditional trading partners, i.e. USA 15 percent and UK 14 percent, see figure 2 in appendix. The remittance from USA has drastically reduced from 34 percent in 2001 to 15 percent in 2012, whereas that of the United Kingdom has modestly increased from 7 percent in 2001 to 14 percent in 2012.

This study investigates macroeconomic behaviour of remittance flow to Pakistan from major 12 partner countries, using Gravity model on panel framework. The remittances flow is modelled using economic conditions of home and partner countries, and estimated model is then used to analyse potential of selected partners to send remittances. The rest of this study is organized as follows: Following the introduction in section 1, section 2 reviews selected empirical literatures. The methodology and data issues are discuss in section 3, and results are presented in section 5, whereas section 6 concludes the study with policy recommendations.

2. Literature Review

This section discusses impact of remittances flow on economic growth, and reviews selected empirical literature on determinants of worker remittances.

2.1 Remittances and Economic Growth

The International remittance according to Jr, (2009), is the money transferred to the household, by the migrant workers working outside the country of their origin. The remittance is the largest source of international capital flow to developing countries, Barajas, (2009). The remittance flows to developing countries are expected to reach 414 billion in 2013. The World Bank expects an average annual growth of 8 percent during 2013-2016. South Asian economies are major recipient of worker remittances, accounting \$115 billion in 2013 and expected to reach \$154 billion in 2016². Pakistan ranked top 8th recipient of worker remittances with an annual flow of \$15 billion in 2013.

The empirical studies urge mixed impact of remittances on economic growth of recipient economy. (Stark and Lucas, 1988; Faini, 2002), argues that the remittances have a significant growth enhancing impact. Mughal, and Anwar, (2012), urges that the remittance flow increases economic prosperity and reduces poverty level and economic disparities. Siddique, et al., (2012), found that the remittance leads to productivity growth in Bangladesh, India and Sri Lanka, whereas (Barajas et al, 2009; Chamia, 2003), found no relationship between remittances and economic growth, whereas Jawaid and Raza, (2014), urges that the remittances flow has

² Migration and Development Brief, the World Bank, (2013).

significant positive impact on India, Bangladesh, Sri Lanka and Nepal, whereas negative impact is observed in economic growth of Pakistan. The rest of this section discusses channels through which remittances affect economic growth of recipient economy.

2.1.1 Aggregate Demand

The inflow of remittances increases domestic purchasing power which results increase in aggregate demand for consumption, which induces investment and productivity growth. Adams, (2006), urges that the consumption expenditure constitute the largest portion of remittance in recipient economy. The increase in demand for consumption goods induces productivity growth and employment level.

2.1.2 Financial Development

The remittances send by the migrant workers are an important source of international payment and investment in capital deficient developing economies. The flow thus develop financial sector of recipient countries and provide liquidity for international transactions. (Levine, 1997; Rajan and Zingales, 1998) urges that the poor economic performance of many developing countries is due to inadequate finance. The remittances constitute the largest source of external finance in developing economies. Giuliano, and Arranz, (2009), argue that the remittance flow increases economic growth host developing economies through financial sector development. Qayyum, and Nawaz, (2014), urges that remittances flow to Pakistan increase steady-state output growth and capital stock through financial development.

2.1.3 Dutch Diseases

The remittance flow according to Dutch disease perspectives, negatively affects economic growth of recipient countries through appreciation of real exchange rate and distorting the trade balance. The Swan-Corden-Dornbush model, argues that the remittances induces aggregate demand results increase in domestic price level and exchange rate. Rodrik (2008) urges that the appreciation of real exchange rate makes the country's exports expensive and deteriorates competitive position of exports in international markets. Makhloof, and Mugal, (2013), investigated Dutch Diseases in Pakistan arising from international remittances by investigating its impact on the real effective exchange rate. The findings shows that the remittances from Persian Gulf contribute to the Dutch disease, whereas those of North America and Europe do not. Javaid, (2009), urges that the remittances flow exert upward pressure on real exchange rate and causes Dutch Diseases phenomena of South East Asian economies.

2.1.4 Labour Market

The outflow of migrant workers from remitting economy results decrease in available labour force and correspondingly increase in cost of labour. The outflow of labour thus results in the declining competitiveness of recipient economy, Bussolo, and Medvedev, (2007). Pakistan is labour intensive economy with 13 million unemployed workforce. The lower domestic and foreign investment along with sluggish productivity growth and unemployment level of Pakistan negates stated supposition.

2.2 Empirical Literatures

The review of above empirical literatures urges mix impact of remittances on economic growth of recipient economy. This section reviews selected empirical literature on macroeconomic determinants of migration and remittances.

Nishat, and Bilgrami, (1993), investigated determinants of worker remittances in Pakistan using survey data of 7061 migrants from Gulf countries. They investigate motivational behaviour of these migrant towards remittances based on altruism and self-interest theories. The dependent variable in monthly remittances in rupees which is explained by a set of explanatory variables such as income, overseas experience, number of dependents, family status, value of property, year of schooling and other dummies. The results show both altruism and self-interest motives determine remittances. They suggested sending unskilled and less educated workers, and attractive business investment opportunities to attract remittances.

El-Sakka, and McNabb, (1999), investigate macroeconomic determinants of migrant remittances to their countries of origin. They use annual data of Egypt for the period of 1965 to 1991 for cash remittances and 1974 to 1991 for imports financed through remittances. The result shows that the both exchange rate and interest rate differential are important in attracting remittances. The results also show that imports financed through remittances have higher income elasticity, suggesting either imports are consumer durable and luxury goods.

Lueth, and Ruiz-Arraz, (2006), applied Gravity model to explain bilateral migrant remittances of major remittance recipient developing countries, i.e. Bangladesh, Croatia, Indonesia, Kazakhstan, Macedonia, Moldova, Philippines, Serbia, Montenegro, Slovenia, Tajikistan and Thailand. The result shows that the Gravity model explained remittances flow quite well as 50 percent variation in remittances flow explained by few gravity variables. The model is later extended the model and approached 85 percent explanation of variation.

Vargas-Silva, and Huang, (2006), investigate whether the macroeconomic condition of the host country or recipient country determine worker remittances, using data of Brazil, Colombia, the Dominican Republic, El Salvador, Mexico and the USA. Two data sets from 1881: 1 to 2003:4 is used in this study: the first dataset contains US net aggregate remittance flows with the rest of the world and the second dataset contains remittance received by the Mexico. Time series variance decomposition, impulse response function and Granger causality analysis derived from the vector error correction model is used to explain macroeconomic behaviour. The results indicate that remittances respond more to change in condition in the host country than macroeconomic conditions of the home country. The domestic poverty level, unemployment, economic and political stability of remitting country encourages outflow of workers.

Jr, (2009), investigate determinants of international remittances in developing countries. He aims to investigate what causes developing countries to receive different level of international remittances, using variables such as skill composition of migrants, poverty, interest rate and exchange rate. The panel data estimation technique is used to investigate the relationship. Panel work file comprising 76 lower and middle income developing countries. The findings show that countries with higher skilled migrant receives lower and lower skilled migrant sending country receives greater, per capita remittances. The result also shows that the poverty level of the migrant sending country does not have the positive impact of level of remittance inflow.

Lin, (2011), investigate the determinants of remittances to Tonga, using GMM in a dynamic panel with the lag value of the dependent variable, for the period of 1994Q1 to 2009Q1. The dependent variable is the growth of remittances in the quarter. In order to address potential endogeneity concerns lagged values of real GDP growth of remitting countries, lagged unemployment rate, and lagged interest rate differentials. The finding of study shows that

the macroeconomic condition of remitting countries and exchange rate fluctuation influences remittance. The findings of this study do not find any evidence of the Dutch Diseases in Tonga as the real exchange rate does not appear to be affected.

Ahmed, and Martinez-Zarzoso, (2014), investigate external and internal factors driving remittances flows from 23 source countries to Pakistan using Gravity model for the period of 2001-2011. The distinguishing factor is the use of transaction cost of remittance alternative to geographical distance. The result shows that several factors have significant effect on remittances such as an improved economic condition on receiving country, migrant stock in Pakistan, financial development has a significant impact and political stability, geographical distance, economic conditions and unemployment rate do not appear to play a substantial role. The findings of the study recommend policy to focus on the transaction cost of sending money.

The review of the above empirical literature identifies the economic condition, distance, inflation rate, interest rate, real exchange rate, etc., as major determinants of remittances flow. This study investigates the macroeconomic behaviour of remittance flow to Pakistan from selected major 12 partners. The estimated model is then used to determine potential of remittances flow from selected partners. The study thus explain behaviour and potential of remittances flow.

3. Methodological Framework

3.1. Modelling Remittances Flow

The Gravity model was introduced to international trade and capital flow by Tinbergen in 1962. It describe most stable relationship in international economics, that is, the economic interaction between larger economies is stronger than smaller one, and closer economies attack more than far off. The standard Gravity model of remittance flow is presented as follows:

$$WR_{ijt} = \beta_{1i} + \beta_2 Y_{it} + \beta_3 Y_{jt} + \beta_5 D_{ij} + \mu_{it} \quad (1)$$

Where: W_{ij} presents remittance flow to Pakistan i from partners j , Y_i presents real domestic product of Pakistan measure for domestic production capacity, and Y_j is the real economic condition f trading partner. The D_{ij} is bilateral distance from capitals measured in Km. The standard Gravity equation 1 is augmented by the addition of macroeconomic variables such as the bilateral real exchange rate (RER_{ij}), domestic inflation, domestic interest rate and dummy variables for countries with a common official language ($LANG_{ij}$), and Gulf countries (GCC). Ln presents natural log. The augmented Gravity model of worker remittances is presented as

$$\begin{aligned} LnWR_{ijt} = & \beta_0 + \beta_1 LnY_{it} + \beta_2 LnY_{jt} + \beta_3 LnD_{ij} + \beta_4 LnRER_{ijt} + \beta_5 LnINF_{it} + \beta_6 LnRT_{it} \\ & + \beta_7 CLANG_{ij} + \beta_8 GCC + \mu_{it} \end{aligned} \quad (2)$$

The real bilateral exchange rate with trading partner of Pakistan is not directly available and generated using data of the nominal exchange rate and relative prices (measure by relative GDPDs).

$$RER_{ijt} = ER_{ij}(P_{jt}/P_{it}) \quad (3)$$

Where, ER_{ij} is the bilateral exchange rate, P_j is price level trading partner and P_i is price level in Pakistan. As per theory of Gravity model and empirical literatures, the coefficients $\beta_1, \beta_2, \beta_4,$ and β_6 are expected be positively associated, whereas β_3 and β_5 are negatively associated with remittance flow. The dummy variable coefficients β_7 and β_8 are assumed to positively associated.

3.2 Potential of Remittance Flow

Following, Helmers et al., (2005), the ratio of predicted and actual remittance flow is used to investigate potential of remittances flow to Pakistan from selected major economies.

$$WRp_{ijt} = \frac{\sum \overline{WR}_{ijt}}{\sum WR_{ijt}} \quad (4)$$

Where: WRp_{ijt} is potential of remittance flow, $\sum \overline{WR}_{ijt}$ is the predicted export flow, whereas is the actual flow. The value of indices $WRp_{ijt} > 1$ indicates that the actual flow is lesser than predicted indicating untapped potential, whereas the value $WRp_{ijt} < 1$ indicate that the actual flow is greater than predicted indicating exhausted potential. The value $WRp_{ijt} = 1$ indicates actual flow equals predicted.

3.3 Data

The annual data on remittance inflow to Pakistan from selected 12 major partners³, from 1995 to 2012, has been taken from Economic Survey of Pakistan, published by Ministry of Finance, Govt. of Pakistan. The Data on GDP, inflation, interest rate, the official exchange rate, GDPD is taken from International Financial Statistics, published by the IMF. The data of distance and official language are collected from Centre d'Etudes Prospectives et d'informations internationales (CEPII). The GCC dummy is created valuing 1 if GCC member, 0 otherwise.

4. Estimation Results

This section will discuss results of Gravity model of remittances solved using Generalized Least Square (GLS) technique with cross sectional weight. The log linear model is used to address the problems of serial correlation and heteroskedasticity. The result of macroeconomic determinants of remittance flow, is presented in the table 1.

Table 1 Macroeconomic determinants of Remittance flow

Macroeconomic Variable	Generalized Least Square			Random Effect Model		
	Coeff.	t-Stat.	Prob.	Coeff.	t-Stat.	Prob.
<i>C</i>	-10.270	-8.516*	0.000	-8.586	-1.155	0.249
<i>LnY_i</i>	2.210	21.618*	0.000	2.148	6.067*	0.000
<i>LnY_j</i>	0.652	48.998*	0.000	0.966	7.747*	0.000
<i>LnDIS_{ij}</i>	-2.566	-42.960*	0.000	-3.100	-4.172*	0.000
<i>LnRER_{ij}</i>	0.468	60.512*	0.000	0.359	5.114*	0.000
<i>LnINF_i</i>	0.214	3.486*	0.001	0.330	2.033**	0.043
<i>LnRT_i</i>	-0.219	-5.891*	0.000	-0.371	-3.082*	0.002
<i>GCC</i>	1.177	19.800*	0.000	1.203	1.869***	0.063
<i>LANG_{ij}</i>	1.710	16.817*	0.000	1.216	2.903*	0.004

3 Bahrain, Canada, Germany, Japan, Kuwait, Norway, Oman, Qatar, Saudi Arabia, UAE, United Kingdom and United States of America.

Macroeconomic Variable	Generalized Least Square			Random Effect Model		
	Coeff.	t-Stat.	Prob.	Coeff.	t-Stat.	Prob.
Diagnostic Tests						
Adjusted R²	0.987			0.794		
Dw. Stat.	1.508			0.766		
F-Statistic	1980.288 (0.000)			104.524 (0.000)		
JB. Stat	0.196 (0.906)			4.417 (0.109)		
S.E of regression	1.007			0.469		
Bias Proportion	0.000			0.000		
Variance Proportion	0.111			0.017		

Source: Author's estimation. Note: *, ** and *** indicates significant at 1, 5 and 10 percent level respectively

The estimated result shows that the remittances flow to Pakistan is positively determined by the economic conditions of both countries involved and negatively determine by bilateral distance, validating the application of Gravity model on remittance flow. The real exchange rate shows a significant positive impact. The depreciation of real exchange rate by 1 percent results increase in remittance flow by 0.468 percent. The domestic inflation rate has significant positive impact on remittance inflow, indicating an increase in remittance flow to finance consumption expenditures. The result of interest rate shows significant negative impact, which implies that higher the interest rate lower the domestic investment and hence remittance flow for investment purpose. The result of dummy variable shows that remittances flow from member of the GCC countries are 1.177 times greater than the rest of the world, and language dummies show that Pakistani workers trend to migrate towards countries with the same language, English. The remittances flow from countries with common language is 1.71 times greater than others.

The coefficient of determination shows that 98.7 variation in dependent variable is explained by the selected explanatory variables of the model. The result of JB. Stat. shows normality of residual, DW Stat. shows model does not contain serial correlation and F-stat. conform goodness of fit of the regression model. The result of S.E of regression, Bias Proportion and Variance proportion validates forecasting efficiency of the model.

The high explanatory power of the model along with favourable diagnostics test results, encourages use of the model to evaluate potential of remittance flow to Pakistan from selected trading partners. The actual and predicted value of remittances flow is used to investigate potential of remittances flow. The results are presented in the table 2.

Table 2 Potential of Remittance flow

Trading Partners	1995	2000	2005	2010	2012
Bahrain	0.259	0.483	0.575	0.684	0.653
Canada	1.079*	1.576*	0.827	0.842	0.888
Germany	1.575*	2.078*	1.405*	1.386*	1.506*
Japan	1.798*	1.929*	1.938*	2.064*	2.759*
Kuwait	1.152*	1.014*	1.118*	1.094*	1.099*
Norway	1.180*	1.582*	1.362*	1.309*	1.360*
Oman	0.807	1.091*	1.009*	0.943	0.945
Qatar	1.043*	2.107*	1.017*	1.093*	1.129*
Saudi Arabia	0.893	0.974	0.946	0.902	0.925
UAE	0.557	0.727	0.800	0.755	0.740
United Kingdom	0.989	1.191*	1.051*	0.984	0.947
United States	0.829	0.976	0.821	0.854	0.873

Source: Author's calculation. Note * presents existing of potential.

The results show that the remittance flow to Pakistan from its major partners has significantly exhausted, i.e. USA, Saudi Arabia, UK, UAE, Oman and Bahrain respectively, whereas high potential is observed in Japan, Germany, Norway, Qatar and Kuwait respectively.

5. Conclusion and Policy Implications

This study investigates macroeconomic determinants and potential of remittance flow to Pakistan from its major partners, using augmented Gravity model on panel framework of 12 cross sections for the period of 1995 to 2012. The model is solved using Generalized Least Square technique and sensitivity analysis is performed by solving the model using the panel random effect model. The forecasting efficiency of the model is tested using various diagnostic tests. The estimated coefficients of the model are used to estimate the potential of remittance flow to Pakistan from selected partners, based on actual and predicted value.

The result of the augmented Gravity model shows significant positive impact of the economic condition of the home and partner countries and negative impact of bilateral distance. The result of real exchange rate shows significant positive, whereas that of domestic inflation shows significant positive impact indicating increase in remittance flow for the consumption purpose. The result of the interest rate shows significant negatively affects, and dummy variables show that common language and Gulf economic integration has significant positive impact. The results of remittances potential shows that the remittance from major partners has significantly exhausted potential with major partners, i.e. USA, Saudi Arabia, UK, UAE, Oman and Bahrain respectively whereas high potential is observed in Japan, Germany, Norway, Qatar and Kuwait. The policy implication of this study is that Pakistan should make domestic environment investment friendly and reduce interest rate to encourage remittances for investment purpose, and send migrant workers to economies with higher potential of employment.

References

- Ahmed J, Martinez-Zarzoso I (2014) What drives bilateral remittances to Pakistan? A gravity model approach. Centre for European, Governance and Economic Development Research, Discussion Paper No. 209
- Amuedo-Dorantes C, Pozo C (2004) Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts. *World Development*, 32(8): 1407–1417
- Bagehot W (1873) *Lombard Street: a description of the money market*. Henry King and Co, London
- Barajas A, Chami R, Fullenkamp C, Gapen M, Montiel P (2009) Do Workers' Remittances Promote Economic Growth? International Monetary Fund, Working Paper No. 153
- Bouhga-Hagbe J (2004) A Theory of Workers' Remittances with an Application to Morocco, International Monetary Fund, Working Paper No. 194
- Chami R, Fullenkamp C, Jahjah S (2003) Are Immigrant Remittance Flows a Source of Capital for Development? International Monetary Fund, Working Paper No. 189.
- Chowdhury MB, Rabbi F (2013) Workers' remittances and Dutch Disease in Bangladesh, *The Journal of International Trade Economic Development*, DOI: 10.1080/09638199.2012.738240.
- Corden W, Neary J (1982) Booming sector and de-industrialisation in a small open economy, *Economic Journal* 92: 825–848
- EL-Sakka MI, McNabb R (1999) The Macroeconomic Determinants of Emigrant Remittances. *World Development* 27(8): 1493-1502
- Faini R (2002) *Migration, Remittances and Growth*, Italian Ministry of the Economy and University of Brescia
- Jone B, Olken B (2005) *The Anatomy of Start-Stop Growth*. National Bureau of Economic Research, Working Paper No. 11528
- Giuliano P, Ruiz-Arranz M (2009) Remittances, financial development and growth, *Journal of Development Economics* (90): 144–152
- Govt. of Pakistan, (2013) *The Economic Survey of Pakistan*, Ministry of Finance, Islamabad Pakistan
- Gupta P (2005) *Macroeconomic Determinants of Remittances: Evidence from India*, International Monetary Fund, Working Paper No. 224.
- Helpman E, Melitz M, Rubinstein Y (2008) Estimating Trade Flows: Trading Partners and Trading Volumes, *Quarterly Journal of Economics* (123): 441-487
- Irfan M (2011) *Remittances and Poverty Linkages in Pakistan: Evidence and Some Suggestions for Further Analysis*, Pakistan Institute of Development Economics, Working Paper 78.
- Javaid SH (2009) *Dutch Disease Investigated: Empirical Evidence from Selected South-East Asian Economies*. State Bank of Pakistan, Working Paper No. 31
- Jawaid ST, Raza SA (2014) Effect of Workers' Remittances and its Volatility on Economic Growth in South Asia. *International Migration*, doi: 10.1111/imig.12151
- Jr RH (2009) *The Determinants of International Remittances in Developing Countries*. *World Development*, 37(1): 93–103
- Levine R (1997) Financial development and economic growth: views and agenda, *Journal of Economic Literature* (35): 688-726
- Lin HH (2011) *Determinants of Remittances: Evidence from Tonga*, International Monetary Fund, Working Paper No. 18

Lueth E, Ruiz-Arranz M (2006) A Gravity Model of Workers’ Remittances. International Monetary Fund, Working Paper No. 290

Mughal MY, Anwar A (2012) Remittances, Poverty and Inequality: Some Macro and Microeconomic Evidence from Pakistan,” Working Papers, 12/13/2, Université de Pau et de Pays de l’Adour

Nishat M, Bilgrami N (1993) The Determinants of Worker’s Remittances in Pakistan, The Pakistan Development Review, 32(4): 1235-1245

Qayyum U, Nawaz M (2014) Remittances and Economic Growth: The Role of Financial Development, Pakistan Institute of Development Economics, Working Paper No. 100

Rajan RG, Zingales L (1998) Financial Dependence and Growth, American Economic Review, 88 (3): 559-586

Rodrik D (2008) The Real Exchange Rate and Economic Growth, Brooking Papers Econ Activity , p. 365–412

Stark O, Lucas R (1988) Migration, Remittances, the Family, Economic Development and Cultural Change 36(3): 465-481

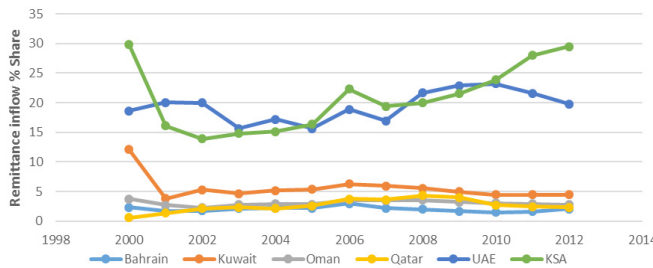
United Nation (2013) Trends in International Migrant Stock: The 2013 revision, The United Nation

Vargas-Silva C, Huang P(2006) Macroeconomic Determinants of Workers’ Remittances: Host versus Home Country’s Economic Conditions, J. Int. Trade Economic Development 15(1): 81 – 99

World Bank (2014) The World development indicators, The World Bank, Washington DC

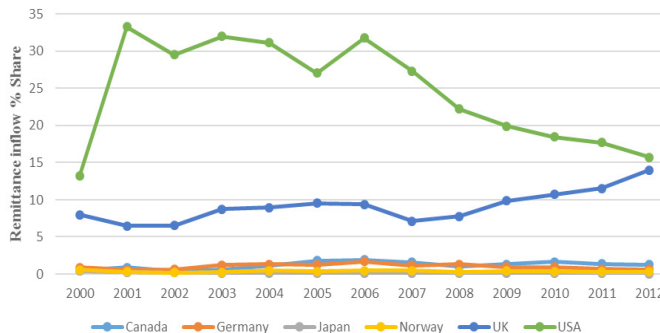
Appendix

Figure 1 Remittances flow from Gulf Countries



Source: Author’s Calculations: Data taken from Ministry of Finance, Govt. of Pakistan, (2013)

Figure 2 Remittances from Developed Countries



Source: Author’s Calculations: Data taken from Ministry of Finance, Govt. of Pakistan, (2013)

“Are Shocks to Real Output Permanent or Transitory?” Evidence from a Panel of Indian States and Union Territories

Suresh KG

Abstract Mean reversion properties of per capita SDP of 31 Indian states and Union territories have been analyzed using panel unit root test assuming cross sectional independence among Indian states and later relaxing this assumption. The first generation panel unit root test assuming cross sectional independence shows that Indian per capita GDP data contains unit root. The second generation panel unit root test, relaxing the cross sectional independence assumption, also provides no evidence for mean reversion (stationarity) of Indian per capita GDP. Our results indicate that Indian output data is not reverting back to the natural rate and stabilization policies are required to bring the economy to the equilibrium path.

Keywords India - Mean reversion - Panel Unit root test - Per capita GDP - Unit root

JEL Classification E - E3 - E32 - C23

Introduction

Theoretically Neo-Keynesian and Monetarist economists assume that the business cycles are transitory phenomena, and output returns to its innate rate in long run. Therefore, if we found unit root in output data, it is against the natural rate hypothesis predicted by the traditional economic theory and implies that real variables such as technology shock have role in economic fluctuations. Further the evidence of presence of unit root in real variables provides evidence for the relevance of stabilisation policies suggested by Keynes. Presence of unit root implies that the output variable is not returning to the natural rate after shocks and the stabilisation policies are required to control the economy. On the contrary, absence of unit root implies that the output variable is returning to the natural rate and the stabilisation policies will have temporary effect on the variable of interest (Libanio 2005). Nelson and Plosser (1982) was the first study in this area using US macroeconomic data and they observed that “real shocks associated with the secular component contribute substantially to the variation in observed output, and either these shocks are correlated with the innovations in the cyclical component or the secular component contains transitory fluctuations (or both)” (page 141). Many authors have extended the study of Nelson and Plosser by using different unit root methodologies and data.

Dr.Suresh KG (✉)
Assistant Professor, IBS-Hyderabad
IFHE University,Hyderabad, India
e-mail: sureshkg2020@gmail.com

The current study is an attempt to examine the mean reversion properties of the per capita State domestic Product (hereafter PSDP) of 31 Indian states and/ or union territories using the first and second generation panel unit root test. The mean reversion properties of the Indian PSDP have not studied much in the literature. Here we are attempting to study this in panel framework. Panel unit root tests are popular since it is found that univariate unit root tests suffer from low power and the possible way to increase the power of the test is to exploit cross-section variation together with univariate time series dynamics see Quah, 1994; Levin et al., 2002 quoted in Costantini and Claudio (2011)).

The rest of the paper is structured as follows. The following section provides an overview of the data and in the next section we narrate the various panel unit root tests we used in this study, followed by the interpretation of results. The policy implications of the study are considered in the conclusion section of the paper.

Data and Variables

We used the PSDP data of 31 Indian states or union territories for the period 1992-1993 to 2009-2010 from the “*Data Base on Indian Economy*” maintained by the Reserve bank of India (RBI). We have used data for 27 states and 4 union territories (UTs). States included are Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Jharkhand, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Chhattisgarh, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal and the union territories (UTs) are Andaman & Nicobar Islands, Chandigarh, Delhi and Puduchery. Since data for the new states such as Uttarakhand, Jharkhand and Chhattisgarh are available only from 1992-93 onwards we have selected the period 1992-1993 to 2009-2010, the data for Mizoram is not available for the entire study period, therefore barred.

First and Second Generation Panel unit root tests

Panel unit root tests are admired since the univariate unit root tests suffer from low power and the possible way to increase the power of the test is to exploit cross-section variation together with univariate time series dynamics. (See Quah, 1994; Levin et al., 2002 quoted in Costantini and Claudio (2011)). Costantini and Claudio (2011) observed that apart from the increasing power, panel unit root tests are useful to avoid complications arising from multiple testing using the univariate tests and more suitable when the “focus is on testing for the presence of a unit root as an interesting and economically interpretable common feature in a whole set of time series” (page 1).

We used both first generation and second generation panel unit root tests to examine the mean reversion properties of Indian PSDP data. The first generation tests assume cross section the independence, as the second generation tests relaxes this assumption and assumes cross section dependence. Among the first generation tests, we used LLC test (Levin-Lin-Chu (2002), IPS test (Im, Pesaran and Shin 2003), ADF - Fisher Chi-square (Maddala and Wu, 1999 (hereafter MW test)) and PP - Fisher Chi-square tests (Choi, 2001 (hereafter Choi test)). Among these LLC test assumes that the mean reversion coefficient are common across states or UTs ($\rho = \rho_i$).

However, the other three tests, ie. IPS test (Im, Pesaran and Shin 2003), ADF - Fisher Chi-square and PP - Fisher Chi-square tests relax this assumption and allow individual unit root process (allowing ρ_i to vary across states or UTs). So in these three cases the null of unit root is tested against the alternative hypothesis of some individuals without unit roots.

In LLC tests we derive the estimates of ρ from proxies for ΔY_{it} and Y_{it} that are standardized and free of autocorrelations and deterministic components

The LLC test employs the following adjusted t-statistic:

$$t_{\hat{\rho}}^* = \frac{t_{\hat{\alpha}} - (NT) \hat{s}_N \sigma_{\hat{\epsilon}}^{-2} \sigma_{\hat{\alpha}} \mu_T^*}{\sigma_T^*} \quad (1)$$

where \hat{s}_N is the average of individual ratios in the long-run to short-run variance for state/UT i;

$\sigma_{\hat{\epsilon}}$ is the standard deviation of the error term in equation (2); $\sigma_{\hat{\alpha}}$ is the standard deviation of the slope coefficients in equation (2); σ_T^* is the standard deviation adjustment; μ_T^* is the mean adjustment.

The IPS test, MW tests and Choi tests allow ρ_i to vary across cross sections. In these entire tests individual unit root test are combined to derive the panel results. The IPS test employed a standardized $t_{\bar{}}$ statistic that is based on the movement of the Dickey–Fuller distribution:

$$Z_{t_{\bar{}}} = \frac{\sqrt{N} \{ t_{\bar{}} - N^{-1} \sum_{i=1}^N E(t_{it}) \}}{\sqrt{N^{-1} \sum_{i=1}^N Var(t_{it})}} \quad (2)$$

Where $E(t_{it})$ is the expected mean of t_{it} , and $Var(t_{it})$ is the variance of t_{it} .

The MW test (Maddala and Wu 1999) is based on the combined significance levels (p-values) from the individual unit root tests. According to Maddala and Wu (1999), if the test statistics are continuous, the significance levels π_i ($i=1, 2, \dots, N$) are independent and uniform (0,1) variables. The MW test uses combined p-values, or P_{MW} which can be expressed as:

$$P_{MW} = -2 \sum_{i=1}^N \log \pi_i \quad (3)$$

where $-2 \sum \log \pi_i$ has a χ^2 distribution with the $2N$ degree of freedom. Furthermore, Choi (2001) suggested the following standardized statistic:

$$Z_{MW} = \frac{\sqrt{N} \{ N^{-1} P_{MW} - E[-2 \log(\pi_i)] \}}{\sqrt{Var[-2 \log(\pi_i)]}} \quad (4)$$

Under the cross-sectional independence assumption, this statistic converges to a standard normal distribution (Hurlin 2004).

Among the second-generation unit root tests, this paper used: a) the MP test (Moon and Perron 2004) b) the Pesaran test (Pesaran 2007) and c) the Choi test (Choi 2006). Moon and Perron (2004) use a factor structure to model cross-sectional dependence. Their model assumes that error terms are generated by r common factors and idiosyncratic shocks.

$$y_{it} = \alpha_i + y_{it}^0 \quad (5)$$

$$y_{it}^0 = \rho_i y_{it-1}^0 + v_{it} \quad (6)$$

$$v_{it} = \lambda_i' F_t + e_{it} \quad (7)$$

Where F_t is a $r \times 1$ vector of common factors and λ_i is a vector of factor loadings. The idiosyncratic component e_{it} is assumed to be i.i.d: across i and over t . The null hypothesis corresponds to the unit root hypothesis $H_0: \rho_i = 1$; where $i = 1, \dots, N$ whereas under the alternative the variable y_{it} is stationary for at least one cross-sectional unit. For testing, under the data are de-factored and then the panel unit root test statistics based on de-factored data are proposed.

Moon and Perron treat the factors as nuisance parameters and suggest pooling de-factored data to construct a unit root test. The intuition is as follows. In order to eliminate the common factors, panel data are projected onto the space orthogonal of the factor loadings. By doing this, the de-factored data and its residual do not retain cross-sectional dependencies. This allows us to define standard pooled t-statistics, as in IPS, and to show their asymptotic normality. Following the above let $\hat{\rho}_{pool}^+$ pool be the modified pooled OLS estimator using the de-factored panel data. Then, Moon and Perron (2004) define two modified t-statistics, which have a standard normal distribution under the null hypothesis:

$$t_\alpha = \frac{T\sqrt{N}(\hat{\rho}_{pool}^+ - 1)}{\sqrt{2\gamma_e^4 / w_e^4}} \xrightarrow[T, N \rightarrow \infty]{d} N(0,1) \tag{8}$$

$$t_b = T\sqrt{N}(\hat{\rho}_{pool}^+ - 1) \sqrt{\frac{1}{NT^2} \text{trace}(Z_{-1}Q_\wedge Z_{-1}') \frac{w_e^2}{\gamma_e^4}} \xrightarrow[T, N \rightarrow \infty]{d} N(0,1) \tag{9}$$

where w_e^2 denotes the cross-sectional average of the long-run variances $w_{e_i}^2$ of residuals e_{it} and γ_e^4 denotes the cross-sectional average of $w_{e_i}^4$. Moon and Perron (2004) propose feasible statistics t_α^* and t_b^* based on an estimator of the projection matrix and estimators of long-run variances $w_{e_i}^2$.

In Pesaran’s test, the augmented Dickey-Fuller (ADF) regressions are augmented with the cross-sectional average of lagged levels and first-differences of the individual time series (Pesaran, 2007). This allows the common factor to be proxied by the cross-section mean of y_{it} and its lagged values. The Pesaran test uses cross-sectional augmented ADF statistics, (denoted as CADF), which are given below:

$$\Delta y_{i,t} = \alpha_i + b_i y_{i,t-1} + c_i \bar{y}_{t-1} + d_i \Delta \bar{y}_i + e_{i,t} \tag{10}$$

where $a_i, b_i, c_i,$ and d_i are slope coefficients estimated from the ADF test in country i ; \bar{y}_{t-1} is the mean value of lagged levels, and $\Delta \bar{y}_i$ is the mean value of first-differences; $e_{i,t}$ is the error term. Pesaran (2007) suggested modified IPS statistics based on the average of individual CADF, which is denoted as a cross-sectional augmented IPS (CIPS). This is estimated from:

$$CIPS = \frac{1}{N} \sum_{i=1}^N t_i(N, T) \tag{11}$$

where $t(N, T)$ is the t-statistic of the OLS estimate of in equation (5). The next test in this study is the Choi test based on the statistic that combines p-values from ADF tests in which their non-stochastic trend components and cross-sectional correlations are eliminated using the Elliott, Rothenberg and Stock’s GLS-based de-trending and the conventional cross-sectional

demeaning for the panel data (Choi, 2006). It is called the Dickey-Fuller-GLS statistic. Based on this statistic, Choi (2006) suggested the following Fisher’s type statistics:

$$P_m = - \frac{1}{\sqrt{N}} \sum_{i=1}^N [\ln(P_i) + 1] \tag{12}$$

$$Z = \frac{1}{\sqrt{N}} \sum_{i=1}^N \Phi^{-1} (P_i) \tag{13}$$

$$L^* = \frac{1}{\sqrt{\pi^2 N / 3}} \sum_{i=1}^N \ln(P_i / 1 - p_i) \tag{14}$$

Where is the p-values of the Dickey-Fuller-GLS statistic for country i; is the cumulative distribution of a standard normal variable.

Results and interpretation

The results of the first generation unit root test are given in table 1. While assuming the common unit root process across Indian states and/or UT in LLC test we are unable to reject the unit root null both the cases. However, while allowing the ρ_i to vary across states and/or UTs in IPS and MW and Choi test we are getting the same results. So while assuming the cross sectional independence in the panel of Indian states/UTs all the five test provides the same results that the Indian PSDP is a unit root process.

Table 1 Results of First generation panel unit root tests assuming cross sectional independence

Method	Statistic	probability
<i>Null: Unit root (assumes common unit root process)</i>		
Levin, Lin & Chu(LLC test)	3.33652	0.9996
<i>Null: Unit root (assumes individual unit root process)</i>		
Im, Pesaran and Shin W-stat(IPS test)	1.12902	0.8706
ADF - Fisher Chi-square (MW test)	37.8635	0.9813
PP - Fisher Chi-square(Choi test)	40.6711	0.9592

Note:***, ** and * indicates significance at 1%, 5% and 10% respectively

The assumption of cross sectional independence between Indian states/ UTs in first generational unit root test is unrealistic. Since we are using data within different Indian state there is high possibility that one state’s growth rate may affect the growth of other states.

Therefore we relaxed the assumption of cross sectional independence employing the second generation panel unit root test. As mentioned earlier we used two versions of MP tests, Pesaran test and three versions of Choi test to check the robustness of our results. The first and second MP tests provides evidences against the null of unit root, while by using Pesaran test and Choi tests we are unable to reject the unit root null. Among these, MP test is based on residual factor models and suggest estimating the factor loadings by the principal component method. They derived asymptotic properties of the null and alternative hypothesis assuming that $N/T \rightarrow 0$, as N and $T \rightarrow \infty$ and there is no deterministic trend. These assumptions are unrealistic in our panel since we have $N=31$ and $T=17$ and we are using GDP data where deterministic trend is present. This makes these tests less powerful in our context. Pesaran (2007) shows that the cross-sectional augmented Dicky Fuller test have better power even in case of small T. So with our sample

where $T < N$, we prefer the results provided by Pesaran(2007) test and Choi test. These tests provide evidences of the presence of unit root in panels indicating no tendency of the PSDP variable to move towards mean.

Table 2 Results of First generation panel unit root tests assuming cross sectional independence

Type of Tests	Test statistic
First Moon Perron's test computed in Eq. (8)	-12.0847***
Second Moon Perron's test computed in Eq. (9)	-13.9213***
Pesaran's CIPS test (2007) computed in Eq. (11)	1.0e+007
First Choi's test statistic computed in Eq. (12)	-3.4136
Second Choi's test statistic computed in Eq. (13)	5.0862
Third Choi's test statistic computed in Eq. (14)	5.2777

Note: ***,** and * represents significance at 1%,5% and 10% respectively.

Conclusion

Since Nelson and Plosser (1982) many studies have been conducted to examine the mean reversion properties of macroeconomic variables. Many authors have studied this issue in Asian panels where Indian data were also examined. However no study has been done to examine the mean reversion properties of Indian state level data till now. In this study we examined the mean reversion properties of state level PSDP of India for the period 1993-94 to 2009-10 in panels. We have done this analysis using first generation and second generation panel unit roots, where first generation tests assumes cross section independence and second generation tests relaxes this assumption. The first generation test performed are LLC test, IPS test, MW test and Choi test, where as we employed MP test, Pesaran test and Choi test assuming cross sectional dependence.

The entire first generation test provides evidences for presence of unit root in Indian date. But since cross sectional dependence is possible across Indian state PSDP we concentrate on the second generation test. Pesaran (2007) tests and Choi tests results provide no evidence of mean reversion in Indian state level PSDP. These tests are more suitable for our panel with $T < N$ and we concludes that the Indian percapita SDP data contains a unit root, where there is no tendency to return to the long term mean.

These results provide evidences for real business cycle theory, where the shocks on the output variable have permanent effect. The output data shows no tendency to return to its natural rate. This necessitates the stabilisation policies in the economy to control the fluctuations.

References

- Costantini M, Lupi C (2011) A Simple Panel-CADF Test for Unit Roots Economics & Statistics Discussion paper no. 062/11, University of Molise, Italy
- Choi I (2001) Unit root tests for panel data. *Journal of International Money and Banking* 20: 249–272
- Choi I (2006) Nonstationary Panels. In TC Mills, K Patterson (eds.), *Econometric Theory*, volume 1 of *Palgrave Handbook of Econometrics*, chapter 13, 511–539. Palgrave MacMillan, Basingstoke
- Im KS, Pesaran MH, Shin Y (2003) Testing for unit roots in heterogeneous panels. *Journal of Econometrics* 115, 53–74

- Kar S, Sakthivel S (2007) Reforms and Regional Inequality in India. *Economic & Political Weekly* 42, 24 - 30
- Libanio GA (2005) Unit roots in macroeconomic time series: theory, implications, and evidence. *Nova Economia* 15:145-176
- Levin A, Lin CF, Chu CSJ (2002) Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics* 108: 1–24
- Maddala GS, Wu S (1999) A Comparative Study of Unit Root Tests with Panel Data and A New Simple Test. *Oxford Bulletin Of Economics And Statistics* 61: 631–652
- Moon HR, Perron B (2004) Testing for a unit root in panels with dynamic factors. *Journal of Econometrics* 122:81–126
- Narayan PK. (2004) Are Output Fluctuations Transitory? New Evidence from 24 Chinese Provinces. *Pacific Economic Review* 9: 327-336
- Nelson CR, Plosser C (1982) Trends and random walks in macroeconomic time series. *Journal of Monetary Economics* 10: 139–162
- Pesaran M Hashem (2007) A Simple Panel Unit Root Test In The Presence Of Cross-Section Dependence. *Journal of Applied Econometrics* 22: 265–312
- Quah D (1994) Exploiting Cross-Section Variation for Unit Root Inference in Dynamic Dat. *Economics Letters* 44: 9–19

Transition Studies Review

Copyright information

For Authors

As soon as an article is accepted for publication, authors will be requested to assign copyright of the article (or to grant exclusive publication and dissemination rights) to the publisher (respective the owner if other than Transition Academia Press). This will ensure the widest possible protection and dissemination of information under copyright laws. Authors submitting articles for publication warrant that the work is not an infringement of any existing copyright and will indemnify the publisher against any breach of such warranty. More information about copyright regulations for this journal is available

at www.transitionacademiapress.org

For Readers

While the advice and information in this journal is believed to be true and accurate at the date of its publication, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may have been made. The publisher makes no warranty, express or implied, with respect to the material contained herein. All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g. offprints) as well as all the translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data base, on video disks, etc.. without first the publisher. The use of general descriptive names, trade names, trademarks, etc.. in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

General information

Transition Academia Press is an independent Journals Publisher established by Transition Studies and Research Network in Autumn 2014. Based in Venice, Italy, the Network has references in Universities and Research Centers worldwide: Singapore, Shanghai, Salzburg, Berlin, Istanbul, Santiago de Chile, Washington DC, Udine, Amman, Vienna, Rome, Munich, Beijing. More information can be found on our Aims & Scope and Bodies and Organs at the end of each Journal or on our website www.transitionacademiapress.org

Subscription Information

ISSN 1614 -4007

ISSN Electronic edition 1614 - 4015

For more information on subscription rates please contact:

Transition Academia Press

info@transitionacademiapress.org

Electronic edition

An electronic edition of this journal is available at <http://www.transitionacademiapress.org>

For Orders and Inquires

Transition Academia Press

Dorsoduro 3593, Venice 31023 ITALY

email: info@transitionacademiapress.org

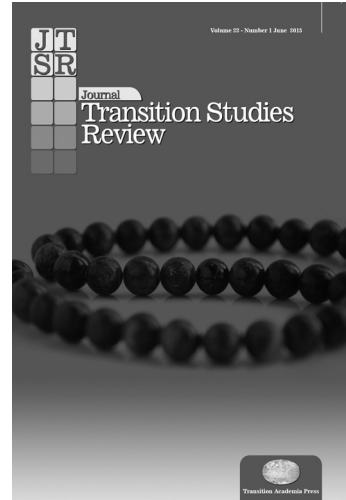
Fax: +39 06 25496031

Cancellations must be received by September 30 to take effect at the end of the same year.



Journal
**Transition Studies
 Review**

Editor-in-chief: G. Dominese
Co-Editor-in-Chief: W. de Vivanco
 B. Cerović, T. Muravska, M. Florio,
 L. Tran Dinh, S. Miani



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.

Bodies and Organs

Co-Editors Board: *Erhard Busek*, President IDM, permanent Jean Monnet Chair European Union, Vienna; *Richard Schifter*, Ambassador, former US Assistant Secretary of State and Founder SECI Balkan Initiative, USA; *Chen Zhimin*, Dean School of International Relations and Public Affairs (SIRPA), Fudan University, Shanghai; *Michael Plummer*, Director, Johns-Hopkins-University-SAIS, Bologna Centre; President American Committee on Asian Economic Studies (ACAES); *Zhu Liqun*, Vice President of China Foreign Affairs University (CFAU), Beijing; *Wedigo de Vivanco*, Vice President Ernst Reuter Stiftung der Freien Universität, Berlin; *Gustavo Piga*, Vice Rector for International Relations, School of Economics, Tor Vergata University, Rome; *Felix Unger*, President, European Academy Sciences and Arts, Salzburg; *Zhao Zhongxiu*, Vice President UIBE, University, Beijing; *Carlo Carraro*, President, Ca Foscari University of Venice; *Alexey A. Gromyko*, European Section, Russian Academy of Sciences, Moscow; *Leonard A. Ferrari*, Executive Vice President and Provost, Naval Postgraduate School, Monterey, California; *Cui Zhiyuan*, School of Public Administration, Tsinghua University, Beijing; *Üstün Ergüder*, Sabanci University, Istanbul; *Osama Ibrahim*, President of Alexandria University; *Gregorio De Felice*, Chief Economist, Banca Intesa Sanpaolo, Milan; *Stefano Miani*, Department of Economics and Finance, University of Udine; *Valerii V. Kopūka*, Director, Institute of International Relations, Taras Shevchenko National University, Kyiv; *Miomir Zuzul*, International University, Dubrovnik, Croatia; *Euston Quah*, Head, Department of Economics, Nanyang Technological University, Singapore; *Eliot Sorel*, George Washington University, Washington DC; *Ugur Erdener*, Rector Hacettepe University, Ankara, Turkey; *Zhu Feng*, Deputy Director Center International Strategic Studies, Peking University; *Gian Candido De Martin*, Faculty of Political Sciences, LUISS University, Rome; *Božidar Cerović*, Belgrade University and President Serbian Scientific Society of Economists; *Yeo Lay Hwee*, Director, EU Center, Singapore; *Ludvik Toplak*, Rector Alma Mater Europaea, Maribor; *Anatoly Adamishin*, Ambassador, President Association Euro-Atlantic Cooperation, Moscow; *Maurits Van Rooijen*, President Compostela Group of Universities, Spain; *Abdouli Touhami*, University of Sousse; *Corrado Cerruti*, Faculty of Economics, Tor Vergata University, Rome; *David Faraggi*, Rector University of Haifa, Israel; *Albert Marouani*, President Université de Nice Sophia Antipolis, Nice, France; *Ioannis Mylopoulos*, Rector Aristotele University of Thessaloniki; *Andrea Garlatti*, Director of CIWE-Interdepartmental Research Center on Welfare, Udine University, Italy; *Mohammed Zaher Benabdallah*, Université Moulay Ismail Meknès, Morocco; *Dragan Marušič*, Rector Primorska University, Slovenia; *Sun Quixian*, Dean School of Economics, PKU, Beijing; *Filiberto Agostini*, Faculty of Political Sciences, University of Padua; *Marjan Svetličič*, Head of International Relations Research Centre, Faculty of Social Sciences, University of Ljubljana; *Joseph Stiglitz*, Columbia University, New York; *Werner Weidenfeld*,

*Center for Applied Policy Research-CA, Munich; **Dai Changzhen**, Dean School of International Relations, UIBE University, Beijing; **Marisa R. Lino**, International Affairs Expert, former Undersecretary of State, Washington DC; **Theodore H. Moran**, School of Foreign Service, Georgetown University, Washington; **Abdullah Atalar**, Rector, Bilkent University, Ankara; **Danijel Rebolj**, Rector University Maribor; **Marco Giglio**, Rector Politecnico di Torino; **Oxana Gaman-Golutvina**, MGIMO University, Moscow; **Victor Jakovich**, former US Ambassador in Sarajevo, Coordinator BAC South East Asia and Eurasia, Vienna; **Keun Lee**, Economics Department, National University, Seoul; **Massimo Florio**, Public Economics and Jean Monnet Chair, State University of Milan; **Hungdah Su**, Director General European Union Centre. Taiwan National University, Taipei; **Chun Ding**, Centre European Studies, Fudan University, Shanghai; **Wang Bo**, Director Business Confucio Institute at Leeds University, UK; UIBE University, Beijing; **Quang Minh Pham**, Vice Rector School of Social Science USSH, Vietnam National University, Hanoi*

Editorial Board: ***Paolo Guerrieri**, Director, Istituto Affari Internazionali, Rome; **Rajan Welukar**, University of Mumbai; **Amr Al-Dawi**, Beirut Arab University, Lebanon; **Shen Dingli**, Director Center of American Studies, Fudan University; **James T.H. Tang**, Management University, Singapore; **Jiazhen Huo**, Tongji University, Shanghai; **Anand Prakash**, University of Delhi; **Dino Martellato**, Ca' Foscari University of Venice; **Sudhir K. Sopory**, Jawaharlal Nehru University, New Delhi; **Masahiro Kawai**, Dean Asian Development Bank Institute, Tokyo; **Koji Miyazaki**, Faculty of Engineering, Kyushu Institute of Technology, Fukuoka Campus, Japan; **Zhongqi Pan**, Professor, School of International Relations and Public Affairs, Fudan University, Shanghai; **Pang Zhongying**, Director of the Centre for New Global Governance of the Renmin University, Beijing; **Melina Decaro**, Department of Political Science, LUISS, Rome; **Yong Deng**, United States Naval Academy; **Jin-Hyun Paik**, National University, Seoul; **Bachtiar Alam**, Universitas Indonesia, Depok City; **Giuseppe Cataldi**, Vice Rector L'Orientale University, Naples; **Giuseppe Giliberti**, Faculty of Law, University Carlo Bo of Urbino; **Andreas Anayiotos**, Cyprus University of Technology, Lemesos; **Wang Hongyu**, School of International Relations, University of International Business and Economics (SIR-UIBE), Beijing; **Antonio La Bella**, Tor Vergata University, Rome; **Ren Xiao**, Institute of International Studies (IIS), Fudan University, Shanghai; **Eric Zimmermann**, Interdisciplinary Center Herzliya (IDC), Israel; **Wei-Wei Zhang**, Geneva School of Diplomacy, Centre for Asian Studies Geneva University; **Aldo J. Pérez**, Universidad de Belgrano, Buenos Aires; **Joseph Mifsud**, Global Higher Education Consulting, United Kingdom; **Giovanni Perona**, Politecnico di Torino; **Khani Mohammad Hassan**, Faculty of Islamic Studies and Political Sciences, Teheran; **Wang Hongyu**, University of International Business and Economics (SIR-UIBE), Beijing; **Hui-Wan Cho**, National Chung Hsing University (NCHU), Taichung; **Joel Sandhu**, Global Public Policy Institute (GPPI) in Berlin; **Zhang Jianxin**, Professor of International Relations, Fudan University, Shanghai; **Tobias Debiel**, Institute of Political Science, University Duisburg-Essen, Germany;*

Lucia Serena Rossi, CIRDC, University of Bologna; **Ugo Villani**, Faculty of Political Sciences, Luiss University, Rome; **José Miguel Sanchez**, Institute of Economics, Pontificia Universidad Católica de Chile, Santiago; **Labib M. M. Arafteh**, Al-Quds University, Palestine; **Mohammed Dahbi**, Al Akhawayn University, Ifrane, Morocco; **Panagiotis Grigoriou**, University of the Aegean, Lesbos, Greece; **Jilani Lamloumi**, Virtual University of Tunis; **Rowaida Al Ma'aitah**, Hashemite University, Jordan; **Maria Amélia Martins-Loução**, Department of Biology, University of Lisbon, Portugal; **Alejandro del Valle Galvez**, University of Cadiz, Spain; **Jacek Ireneusz Witkos**, Adam Mickiewicz University, Poland; **Edmund Terence Gomez**, University of Malaya, Kuala Lumpur; **Saykhong Saynaasine**, National University of Laos; **Pan Suk Kim**, Yonsei University, Seoul; **Tien Dzong Nguyen**, Vietnam National University, Ho Chi Minh City; **Raphael F. Perl**, Executive Director, Pfp Consortium; **Lu Jing**, Institute of International Relations, China Foreign Affairs University (CFAU), Beijing; **Zhao Huaipu**, Director of EU Studies Center, China Foreign Affairs University, Beijing; **Aleksandra Prašević**, Faculty of Economics, University of Belgrade; **Alessandro Colombo**, Institute of Strategic Studies, State University, Milan; **Joseph Shevel**, President Galilee College, Nahalal; **Olga Butorina**, MGIMO University, Moscow; **Ali Doğramaci**, Bilkent University, Ankara; **Karl Aiginger**, Director, Austrian Institute of Economic Research, Vienna; **Michele Bagella**, Tor Vergata University, Rome; **Bruno Barel**, University of Padua; **Leonardo Becchetti**, Tor Vergata University, Rome; **Giacomo Borruso**, University of Trieste; **Yang Ruilong**, Dean of School of Economics, Renmin University of China, Beijing; **Marina Brollo**, Faculty of Economics, Udine University; **Milan Bufon**, Science and Research Center, University of Primorska; **John-ren Chen**, CIS, University of Innsbruck; **Fabrizio Onida**, Bocconi University, Milan; **Ozolina Žaneta**, Commission of Strategic Analysis, Riga; **Tiiu Paas**, Institute of Economics, Tartu University; **Luca Papi**, Faculty of Economics, University of Ancona; **Lorenzo Peccati**, Department of Decision Sciences, Bocconi University, Milan; **Tran Dinh Lam**, Director Center for Vietnamese and Southeast Studies, Vietnam National University, Ho Chi Minh City; **Flavio Pressacco**, Department of Economics, University of Udine; **Edward Sandoyan**, Faculty of Economics and Finance, Russian-Armenian State University, Yerevan; **Rainer Schweickert**, Institute for World Economics, Kiel; **Olexander Shnyrkov**, Taras Shevchenko National University, Kiev; **Kristina Šorić**, Zagreb School of Economics and Management-ZSEM, Croatia; **Werner Stuflesser**, President, European Academy of Bolzano; **Ilter Turan**, Bilgi University, Istanbul; **Giovanna Valenti Nigrini**, Director Flacso, Mexico City; **Paul Vasilescu**, Babeş-Bolyai University, Cluj-Napoca; **Ladislav Kabat**, Pan European University, Nitra; **Jeff Lovitt**, Director Pasos, Prague; **Andrea Moretti**, Dean Department of Economics, University of Udine; **Tatjana Muravska**, Faculty of Economics, University of Latvia, Riga; **Qian Yingyi**, Dean of School of Economics and Management, Tsinghua University, Beijing; **Ignazio Musu**, Ca' Foscari University, Venice; **Ahmet Evin**, Sabanci University, Istanbul; **Victoria De Grazia**, Columbia University, New York; **Liah Greenfeld**, Boston University; **Andrea Barbero**, Department of Economics, Universidad Nacional del Sur, Bahia Blanca, Argentina; **Djordje Popov**, Faculty of Law, University of Novi Sad; **Dejan Popović**, Belgrade University; **Jan Hanousek**, CERGE EI, Charles University, Prague; **Zlatan Fröhlich**, The Institute of Economics, Croatia; **Hui Zhang**, Head

International Relations, School of Economics, PKU, Beijing; Ernesto Tavoletti, Faculty of Political Science, Macerata University; Jih-wen Lin, Institute of Political Science, Academia Sinica, Taipei; Alfonso Giordano, Department of Political Science, Luiss University, Rome; Piero Susmel, University of Udine; Corrado Barberis, National Institute of Rural Sociology, Rome; Ernesto Chiaccherini, President Accademia Italiana di Merceologia, Rome; José M. Gil, Director Centre de Recerca en Economia i Desenvolupament Agroalimentari, Barcelona; Decio Zylbersztajn, Head of the Center of Studies of Law, Economics and Organization at the University of Sao Paulo; Rino Caputo, Dean Faculty of Literature and Philosophy Rome Tor Vergata University; Taizo Yakushiji, Research Director Institute for International Policy Studies Tokyo; Tomas Chiaqui Henderson, Director Institute of Political Science, Pontificia Universidad Católica, Santiago de Chile; Attila Varga, Business and Economics Faculty, Pécs University; Oscar Godoy Arcaya, School of Political Science, Pontificia Universidad Católica de Chile, Santiago; Margherita Chang, Department of Civil Engineering and Architecture, University of Udine; Elena Sciso, Political Science Faculty Luiss University Rome; Liu Fu-kuo, Division of American and European Studies, National Chengchi University Taipei; John Micgiel, Director East Central European Center, Columbia University, New York; Placido Rapisarda, Department of Economics and Quantitative Methods, University of Catania; Mihaela Miroiu, Dean Faculty Political Sciences, National School Political Administrative Studies, Bucharest; Mojmir Mrak, Economics Faculty Ljubljana University; Nicola Lupo, Political Science Faculty, Luiss University, Rome; Ziya Önis, Director Center Research Globalization Democratic Governance, Koç University, Istanbul; Evan Berman, National Cheng Chi University, College of Social Sciences, Taipei; Volker R. Berghahn, Department of History, Columbia University New York; Wang Haiyan, Director of International Cooperation Office, SEM-Tongji University, Shanghai; Chang Tai-lin, National Chengchi University, European Union Centre, Taiwan; Mircea Maniu, Department of Management of European Institutions, Babeş-Bolyai University, Cluj-Napoca; Aigerim Shilibekova, Director Center for International and Regional Studies, L.N. Gumilyov Eurasian National University, Astana; Carlo Jean, President Economic and Geopolitics Study Center-CSCE, Rome; Ermelinda Meksi, School of Economics, Tirana University; Ivana Burdelez, Head University of Zagreb Center Mediterranean Studies, Dubrovnik; Ksenija Turkovic, Vice Rector University Zagreb; Dušan Lesjak, Acting President, EMUNI-Euro Mediterranean University, Portorož, Slovenia;

Scientific Committee: Zongyou Wei, Shanghai International Studies University; K. Sundaram, Delhi School of Economics University of Delhi; Ichiro Iwasaki, Institute of Economic Research Hitotsubashi University; Andrea Appolloni, Tor Vergata University, Rome; Kameka M. Dempsey, International Affairs Association of Yale Alumni; Tina P. Dwia, Hasanuddin University; Maria Birsan, Centre for European Studies Alexandru Ioan Cuza University; David Camroux, Centre for International Studies and Research Paris; Olga Carić University Business Academy, Novi Sad; S. Chandrasekaran, Jawaharlal Nehru University, New Delhi; Nabil Fahmy, The American University in

Cairo; **Marina Formica**, Università degli Studi di Roma Tor Vergata; **Kaoru Hayashi**, Bunkyo University; **Bambang Irawan**, University of Indonesia; **Vasile Isan**, Alexandru Ioan Cuza University; **Adrian Lalâ**, “Carol Davila” University Foundation; **Henry E. Hale**, Institute for European, Russian and Eurasian Studies, George Washington University; **Roland Hsu**, Institute for International Studies Stanford University; **Dominick Salvatore**, Fordham University; **Quang Thuan Nguyen**, Institute of European Studies, Vietnamese Academy of Social Sciences, Hanoi; **Nisha A. Shrier**, American Jewish Committee, Washington DC; **Eric Terzuolo**, Expert International Affairs, USA; **John W. Thomas**, John F. Kennedy School of Government Harvard University; **Carolyn Ban**, European Studies Center, University of Pittsburgh; **Larry Wolff**, Department of History, New York University; **Alessandra Gianfrate**, International Affairs expert, Rome; **Limei Gu**, Fudan University, Shanghai; **Ankang Guo**, Nanjing University; **Weiyang Hou**, Zhengzhou University, China; **Min Hua**, Fudan University; **Gao Liping**, Nanjing Normal University; Beijing; **Ming Lu**, Department of Economics, Fudan University; **Songjian Ma**, Zhengzhou University, China; **Changhe Su**, Shanghai International Studies University; **Ruiguang Wang**, Tongji University Shanghai; **Wai Keung Li**, University of Hong Kong; **Bing Ling**, Sydney Law School; University of Sydney; **Yun-wing Sung**, Chinese University of Hong Kong; **Amintabh Kundu**, School of Social Sciences, Jawaharlal Nehru University, New Delhi; **Bulat K. Sultanov**, Institute of World Economy and Policy, Almaty; **Federica Santini**, Ernst&Young, LUISS University Rome; **Ljiljana Vidučić**, Faculty of Economics, University of Split; **Hong Lee Jae**, Seoul National University; **Bruna Zolin**, Ca’ Foscari University, Venice; **Younghoon Rhee**, School of Economics, Seoul National University; **Amit Prakash**, Centre for the Study of Law and Governance, Jawaharlal Nehru, Delhi; **Bohdan Krawchenko** University of Central Asia, Bishkek; **Joyashree Roy**, Jadavpur University; **Amita Singh**, Centre for the Study of Law and Governance, Jawaharlal Nehru University, New Delhi; **Alberto Dreassi**, University of Udine; **Kenji Hirata**, Tokyo University; **Wang Yong**, Center International Political Economy, Peking University; **Mehmet Huseyin Bilgin**, Faculty of Political Sciences, Istanbul Medeniyet University; **Fumiaki Inagaki**, Keio Research SFC, Shonan Fujisawa Campus; **Rashid Amjad**, Pakistan Institute of Development Economics, Islamabad; **Chwen-Wen Chen**, National Taiwan University; **David W.F. Huang**, Institute of European and American Studies Academia Sinica; **Francis Yi-hua Kan**, Institute of International Relations, National Chengchi University; **Yu-Cheng Lee**, Institute of European and American Studies, Academia Sinica, Taipei; **Chih-yu Shih**, National Taiwan University; **Thi Kim Anh Nguyen**, College of Economics, Vietnam National University; **Andrei Melville**, Centre for International Education, Higher School of Economics, Moscow; **Mustafa K. Mujeri**, Bangladesh Institute of Development Studies; **Aleksandra Parteka**, Gdansk University of Technology; **Adina Popovici**, West University of Timisoara; **Victoria Seitz**, California State University, San Bernardino; **Nicolae Tapus**, Politehnica University of Bucharest; **Enrico Traversa**, University of Rome “Tor Vergata”; **Stacy C. VanDeever**, University of New Hampshire; **Jian Wang**, Shandong University; **Bambang Wibawarta**, University of Indonesia; **Konstantin Yurchenko**, Ural State University, Russia; **Liuhua Zhang**, China University of Political Science and Law, Beijing; **Khadijah Al-Amin-El**, Elliott School of International Affairs George Washington University; **Galib Efendiyev**, Open

Society Institute-Assistance Foundation Azerbaijan; **Arif Yunusov**, Institute of Peace and Democracy, Baku; **Minghao Sui**, Tongji University, Shanghai; **Xiaohui Tian**, Beijing Foreign Studies University; **Atilla Silkü**, Ege University; **Steven C. Smith**, Institute for International Economic Policy, George Washington University; **Megumi Suenaga**, Research Institute for Sustainability Studies, Osaka University; **Timothy S. Thompson**, European Studies Center, University of Pittsburgh; **Alejandro Vivas Benitez**, Pontificia Universidad Javeriana, Bogotá; **Alexander Izotov**, Saint-Petersburg State University; **Vadim Radaev**, Moscow State University Higher School of Economics; **Giovanni Salvetti**, Rothschild & Cie Investment Banking Division; **Sergei F. Sutyryn**, World Economy Saint-Petersburg State University; **Yulia Vymyatnina**, European University at St. Petersburg; **Vladimir Popov**, New Economic School, Moscow; **Paula Dobriansky**, John F.Kennedy School of Government, Harvard University; **Richard B. Doyle**, Naval Postgraduate School Monterey; **Victor Friedman**, University of Chicago; **Lev S. Belousov**, INTERROS, Moscow; **Yeoh Seng Guan**, School of Arts & Social Sciences, Monash University Malaysia, Selangor; **Sataporn Roengtam**, Faculty of Humanities and Social Sciences, Khon Kaen University; **Thy Naroeun**, Royal University of Phnom Penh; **Kageaki Kajiwara**, Dean School of Asia 21, Kokushikan University in Tokyo; **Kyung-Taek Oh**, Chonnam National University; **Franz Lothar Altmann**, International Expert, Munich; **Bostjan Antoncic**, Primorska University, Koper; **Rossella Bardazzi**, Economics and Management Department, University of Florence; **András Blahô**, Doctoral School of International Relations, Corvinus University, Budapest; **Andrea Ciampani**, Department of Economics, Political Sciences and Modern Languages, LUMSA, Rome; **Giovanni Costa**, Padua University; **Daniel Daianu**, National School for Political Studies and Public Administration (SNSPA), Bucharest; **Marco De Cristofaro**, University of Padua; **Dejan Dinevsky**, University of Maribor; **Anto Domazet**, Economic Institute, University of Sarajevo; **Pierluigi Draghi**, Ca' Foscari University, Venice; **Jaroslava Durčáková**, University of Economics, Prague; **Atilla Eralp**, Center for European Studies, Middle East Technical University, Ankara; **Beáta Farkas**, Department World Economy Economic European Integration, Szeged University; **Pier Francesco Ghetti**, Ca' Foscari University, Venice; **Petar Filipić**, Faculty of Economics, Split University; **George Giannopoulos**, Hellenic Transport Institute and Aristotle University, Thessaloniki; **Marco Giansoldati**, Ca' Foscari University, Venice; **Maya Gonashvili**, Faculty of Economics, Tbilisi State University; **Olga Gradiska Temenugova**, Faculty of Economics, Ss. Cyril and Methodius University, Skopje; **Jean-Paul Guichard**, Centre d'Etudes en Macroéconomie et Finance Internationale (CEMAFI), Université de Nice Sophia Antipolis; **Sergei Guriev**, New Economic School, Moscow; **Josef Hochgerner**, Chairman ZSI-Centre Social Innovation, Vienna; **Julius Horvath**, Central European University, Budapest; **Piero Ignazi**, Faculty of Economics, University of Bologna; **Jiří Patočka**, Economics University, Prague; **Kalman Dezséri**, Institute for World Economics, Budapest; **Gianclaudio Macchiarella**, Interdisciplinary Center for Balkan and International Studies, Ca' Foscari University, Venice; **Stefano Magrini**, Faculty of Economics, Ca' Foscari University, Venice; **Sanja Maleković**, Institute for International Relations (IMO), Zagreb; **Marco Mazzarino**, Planning Faculty, Ca' Foscari University, Venice; **Neno Pavlov Nenov**, Tsenov Academy of Economics, Svishetov; **Fatmir Mema**, Faculty of Economics, University of Tirana;

Evangelios Nikolaidis, Department of Economics, University of Crete; **Gayane Novikova**, Center for Strategic Analysis, Yerevan; **Krzysztof Palecki**, Jagiellonian University, Krakow; **Anita Pelle**, University of Szeged; **Petr Musilek**, University of Economics, Prague; **Alessandro Politi**, Strategic Analyst, Rome; **Horia F. Pop**, Babeş-Bolyai University, Cluj-Napoca; **Otello Campanelli**, Tor Vergata Rome University; LUISS University, Rome; **Marta Bordignon**, Tor Vergata Rome University, LUISS University Rome; **Anrita Lambda**, JNU, New Delhi; **Radu Liviu**, Babeş-Bolyai University, Cluj-Napoca; **Veronica Rebreanu**, Faculty of Law, Babeş Bolyai University, Cluj-Napoca; **Zlatan Reic**, Economic Faculty, University of Split; **Alexander Rogach**, National Taras Shevchenko University, Kiev; **Bobek Shuklev**, Faculty of Economics, Ss.Cyril and Methodius University, Skopje; **Olena Slozko**, Institute of World Economy and International Relations (IWEIR), Kiev; **Andrés Solimano**, Economic Commission for Latin America and the Caribbean (CEPAL), Santiago de Chile; **Liga Sondore**, Centre for European and Transition Studies, University of Latvia, Riga; **Julide Yildirim**, Department of Economics, TED University, Ankara; **Dragomir Sundać**, Faculty of Economics, Rijeka University; **Ljubica Šturkova**, Ss.Cyril and Methodius University, Skopje; **Tanja Mišćević**, Faculty of Political Science, University of Belgrade; **Binnaz Toprak**, Bahgeqehir University, Istanbul; **Vittorio Torbianelli**, University of Trieste; **Kako Tsomaia**, Faculty of Economics, Tbilisi State University; **Dima Daradkeh**, Department of Banking and Finance, Yarmouk University, Irbid, Jordan; **Konstantinos Velentzas**, University of Macedonia, Thessaloniki; **Veselin Vukotić**, Economics Faculty, Podgorica University; **Sergey Yakubovskiy**, Odessa National University; **Raffaele Matarazzo**, Research Fellow IAI - Istituto Affari Internazionali Roma; **Florian Gruber**, Centre for Social Innovation, Vienna; **Matteo Meng-jen Chang**, EU Centre at Fu Jen Catholic University, Taipei; **Marina Schenkel**, Department of Economic Sciences, Udine University; **Roberto Camagni**, Politecnico di Milano; **Laura Ziani**, Udine University; **Barnard Turner**, EU-Centre National, University of Singapore; **Fabrizio Mattesini**, Faculty of Economics, Tor Vergata University, Rome; **Wang Dashu**, School of Economics, Peking University; **Yang Yao**, Deputy Director, National School of Development/CCER, Peking University; **Maurizio Maresca**, Faculty of Law, Udine University; **Richard Doyle**, Naval Postgraduate School, Monterey, California, USA; **Salvatore Abbruzzese**, Faculty Sociology, University Trento; **Irina Nasadyuk**, Department of World Economy and International Economic Relations, Odessa National University; **Radmila Jovančević**, Head Department Macroeconomics Economic Development, University Zagreb; **Wu Chengqiu**, School of International Relations and Public Affairs (SIRPA), Fudan University, Shanghai; **Yuriy Bilan**, Economics Faculty, University Szczecin, Poland

Journals Authors with Transition Academia Press 2014-2015

Vera A. Adamchik, University of Houston-Victoria, USA; **Elvin Afandi**, Islamic Corporation for the Development of the Private Sector (ICD), Jeddah, Saudi Arabia; **Melati Ahmad Anuar**, Faculty of Management, University Technology Malaysia; **Kamelia Assenova**, Faculty of Business and Management, University of Ruse, Bulgaria; **W.N.W. Azman-Saini**, Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Ivana Bassi**, Department of Food Science, Agrifood and Rural Economics Section, University of Udine, Italy; **M. Barseghyan**, Department of Economics and Finance, Institute of Economics and Business Russian-Armenian (Slavonic) University, Yerevan, Armenia; **Laura Bergnach**, Department of Human Sciences (DISU), Udine University, Italy; **Josef C. Brada**, Department of Economics, Arizona State University, Tempe, USA; **Marco Braggion**, Department of Economics, Ca' Foscari University, Venice, Italy; **Can Büyükbay**, Department of Political Science and Public Administration Turkish-German University, Istanbul; **Nadia Carestiato**, Department of Human Science, University of Udine, Italy; **Mehmet G. Celbis**, UNU-Merit, Maastricht University; **Pei-Fei Chang**, Institute of European and American Studies, Academia Sinica, Taipei; **Leila Chemli**, Faculty of Sciences Economic and Management, Sousse University, Tunisia; **Ho-Ching Lee**, Center for General Education, National Central University, Chungli, Taiwan; **Rabaa Chibet**, PhD Student Department of Economics, Faculty of Economic Sciences and Management; **Kok Sook Ching**, Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah; **Lim Guan Choo**, Faculty of Management, University Technology Malaysia; **Giulia Ciuffrida**, Luiss University, Rome; **Giovanni Covi**, Department of Economics and Finance, University of Verona, Italy/ European Central Bank, Frankfurt Am Main; **Demeh Darakhad**, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid, Jordan; **Dilip K. Das**, The Institute of Asian Business, Solbridge International School Of Business Woosong University, Korea; **Lidia Davoyan**, Department of Economics and Finance, Russian-Armenian (Slavonic) University; **Vahan Davoyan**, Department of Economics and Finance, Russian-Armenian (Slavonic) University, Yerevan, Armenia; **Prem Prakash Dewani**, Indian Institute of Management, Lucknow; **Irina Dokalskaya**, Department of Economics and Statistics, University of Udine, Italy; **Jovan Đurašković**, Faculty of Economics, University of Montenegro, Podgorica; **Tamás Dusek**, Department of Economic Analysis, Széchenyi István University, Győr, Hungary; **Fumitaka Furuoka**, Asia-Europe Institute, University of Malaya, Kuala Lumpur; **Iryna Harechko**, Lviv Polytechnic National University and Ivan Franko National University of Lviv, Ukraine; **Hanafiah Harvey**, Pennsylvania State University, Mont Alto; **Saifuzzaman Ibrahim**, Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Deepak Iyengar**, Department of Finance and Supply Chain Management, College of Business and Economics, Central Washington University, Ellensburg; **Mart Kaska**, University of Tartu, Estonia; **Faisal Khan**, Faculty of Management, University Technology Malaysia; **Zana Karkin**, Sarajevo School of Science and Technology, Bosnia and Herzegovina; **Ákos Kengyel**, Institute of International Studies, Corvinus University, Budapest, Hungary; **Majid Kermani**, Islamic Development Bank (IDB) Group,

Jeddah, Saudi Arabia; **Arthur E. King**, College of Business and Economics, Lehigh University, Bethlehem, USA; **Stella Kostopoulou**, Aristotle University of Thessaloniki, Greece; **Milena Lipovina-Božović**, Faculty of Economics, University of Montenegro, Podgorica; **Marek Louzek**, University of Economics, Prague, Czech Republic; **Lu Yi**, University International Business and Economics, Beijing; **Lu Yingchun**, Faculty Shanghai Administration Institute; **Miklós Lukovics**, Faculty of Economics and Business Administration, University of Szeged, Hungary; **Carlo Mastrosimone**, Luiss University, Rome; **Ermelinda Meksi**, Faculty of Economics, Tirana University; **Stefano Miani**, Department of Economics and Statistics, Udine University, Italy; **L.A. Mnatsakanyan**, Department of Economics and Finance, Institute of Economics and Business Russian-Armenian (Slavonic) University, Yerevan, Armenia; **Manoj Motiani**, Indian Institute of Management, Indore, India; **Junaina Muhammad**, Department of Accounting and Finance, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Qaiser Munir**, Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah; **Muhammad Nasir**, Pakistan Institute of Development Economics, Islamabad; **Rahul Nilakantan**, Gokhale Institute of Politics & Economics, Pune, India; **Adisa Omerbegovic Arapovic**, Sarajevo School of Science and Technology, Bosnia and Herzegovina; **Puja Padhi**, Department of Humanities and Social Sciences, Indian Institute of Technology, Bombay; **Tiiu Paas**, University of Tartu, Estonia; **Beginda Pakpahan**, Political and economic analyst on global affairs at the University of Indonesia, Jakarta; **Lucia Piani**, Department of Human Science, University of Udine, Italy; **Antonella Pocecco**, Department of Human Sciences (DISU), Udine University, Italy; **Mazlina Abdul Rahman**, Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Milivoje Radović**, Faculty of Economics, University of Montenegro, Podgorica; **Ehsan Rajabi**, Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Pinaki Roy**, IIM Ahmedabad, Gujarat, India; **Wang Zihan**, University International Business and Economics, Beijing; **Ghulam Samad**, Pakistan Institute of Development Economics, Islamabad; **Imlak Shaikh**, Department of Humanities and Social Sciences, Indian Institute of Technology, Bombay; **Garima Sharma**, Centre for the Study of Law and Governance, Jawaharlal Nehru University, New Delhi; **Hazirah Mohd Sidek**, Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Selangor; **Olesea Sirbu**, Academy of Economic Studies of Moldova; **Michael Strange**, Dept. of Global Political Studies, Malmö University, Sweden; **Mohammad Tahir**, Faculty of Management, University Technology Malaysia; **Serdar Turkeli**, UNU-Merit, Maastricht University; **Beáta Udvari**, Faculty of Economics and Business Administration, University of Szeged, Hungary; **Antimo Verde**, Tuscia University, Viterbo, Italy; **M.H. Voskanyan**, Department of Economics and Finance, Institute of Economics and Business Russian-Armenian (Slavonic) University, Yerevan, Armenia; School International Relations, University International Business Economics, Beijing; **Xiao Wei**, China Institute for Actuarial Science & School of Insurance Central University of Finance and Economics, Beijing; **Ermelinda Xhaja**, Faculty of Economics, Tirana University; **Jun Yang**, China Institute for Actuarial Science & School of Insurance Central University of Finance and Economics, Beijing; **Lu Yi**, University International Business and Economics, Beijing;

Mirzobobo Yormirzoev, Washington State University, Pullman, USA; Maria Bruna Zolin, Department of Economics, Ca' Foscari University, Venice, Italy.

Editorial Staff: Andrea Lattacher, translation and editorial referent, Vienna; Maria Bozoudi, BAC Council for Southeastern Europe and Eurasia; Simonetta Dominese, Transition Studies Research Network; Marta Sandoyan, PhD RAU University, Yerevan, Armenia; Zihan Wang, UIBE University, Beijing; Dima Daradkeh, Department of Banking and Finance, Yarmouk University, Irbid, Jordan; Liga Sondore, Centre for European and Transition Studies, University of Latvia, Riga, Latvia, Penny Chen, EU Centre, National Taiwan University, Taipei:

- JTSR** - Journal Transition Studies Review
- JGPG** - Journal Global Policy and Governance
- JMNE** - Journal Mittelforum and Next Europe