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RELATIONSHIPS BETWEEN ECONOMIC GROWTH, FOREIGN DIRECT INVESTMENT AND INFLATION: ARDL MODELS APPROACH FOR THE CASE OF GHANA

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Orhan COBAN¹
Abdul-Razak Bawa YUSSIF²

ABSTRACT

The study applies Autoregressive Distributed Lags models and the Toda and Yamamoto (1995) causality test to analyze the relationships as well as the causality properties among various pairs of Ghana's inflow of Foreign Direct Investment (FDI), Inflation and Economic growth for the period 1980 to 2017. The study finds that Inflation relates inversely with both Economic growth and inflows of Foreign Direct Investment. However, Ghana's Economic growth and its inflows of FDI are positively related. Finally, the study finds a bidirectional causal effect between inflation and FDI. In addition, a unidirectional causal effect moving from Economic growth to Inflation was established and the causal effect is non-existent between Economic growth and inflow of FDI.

Key Words: ARDL, Causality test, Economic growth, FDI, Inflation, Ghana.

1 Prof. Dr., Selcuk University, Yeni Istanbul St. No. 369, Konya, 42130, Turkey, e-mail: ocoban@selcuk.edu.tr

2 PhD student, Selcuk University, Yeni Istanbul St. No. 369, Konya, 42130, Turkey, e-mail: bawaabdulrazak09@gmail.com

INTRODUCTION

In both developed and developing countries, the principal goal of policy formulators towards reducing poverty is to attain high sustainable economic growth induced by low inflation (Pesaran et al. 2001). High economic growth has the potential to raise living standards of poor societies. Empirical and theoretical studies present varied views on the relationship between economic growth and inflation. Nonetheless, a significant number of studies still confirm that high inflation has a negative impact on economic growth. The distortion and uncertainty caused by high inflation in an economy subsequently retard sustainable economic growth through that economy's spending and its investments. Moreover, the international competitiveness of a country is greatly reduced by high price levels; this makes exports more expensive thereby creating balance of payment problems.

Foreign Direct Investment (FDI) serves as an essential path through which inflation indirectly affects economic growth for the improvement of society (Pesaran et al. 2001). A country experiencing low inflation is a sign of economic stability - this implies increases in the returns on FDI and signifies the ability of the central bank carrying out fitting monetary policies as well as the government's readiness to balance the country's budget. Hence low inflation level in a country boosts FDI.

According to World Bank data, the world's FDI inflows hit a record high in 2007 of \$3.1 trillion but has fallen to about \$2 trillion in the next decade (2017). In developing economies FDI contribute immensely to economic growth as it increases total investment, productivity gains through improved managerial skills and technology adoptions and implementations. However, (Herzer et al. 2008) argue that FDI also has the potential to hurt the host country by reducing investment opportunities for local investors. These ambiguous results have triggered more empirical studies on the FDI-economic growth nexus in both developed and developing countries.

Just like most developing countries, in Ghana, one of the obstinate problems of the economy is high inflation. This has been persistent for a long time and tends to confirm the belief that high and volatile inflation has the potential of hampering economic growth. In Ghana, the 1983 Economic Recovery Program (ERP) was used as a measure to control inflation in order to attract FDI and thereby triggering economic growth. Recently, the central bank (Bank of Ghana) in 2007 adopted inflation targeting as another measure to combat high inflation and subsequently to achieve more rapid economic growth. Since the adaptation of price stability as a major measure by the Bank of Ghana, there has been a fall in inflation from 80.76% in 2006 to 13.40% in 2017. Net FDI inflows rising from \$63.6 million in 2006 to \$3.3 billion in 2017 and real Gross Domestic Product growth increasing from 6.4% in 2006 to 8.5% in 2017. These trends would suggest the existence of a correlation between FDI, inflation and economic growth, this, however, does not necessarily translate into causation. Thus, it cannot be said with certainty that falling inflation drives upwards the trends in FDI and economic growth in Ghana. Seemingly, the studies on the causal links of the relationship among FDI, economic growth and inflation are still of interest to macroeconomist due to

the mixed results provided by empirical studies on different economies. Hence, the nature of a specific economy greatly helps in deciding the relationship between these three macroeconomic variables.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The literature on the relationship between FDI, inflation and economic growth has still not been generalized with certainty in empirical studies. The question of what the relationship is between these variables still requires an empirical study to answer because the individual country-specific economic peculiarities also indirectly affect the interactions of the trio.

Empirical studies on the link between FDI and inflation provides mixed findings. Whereas some studies conclude a positive relationship between FDI and inflation, other studies suggest a negative relationship. Udoh and Egwaikhide (2008) employ a GARCH model for the estimation of the uncertainty in inflation and exchange rate volatility to find the impact on FDI in Nigeria. The findings suggested a statistically significant inverse effect on FDI. This goes to affirm that for developing countries, a low and stable inflation level attracts FDI inflows. This then incentivizes economic growth. Udoh and Egwaikhide, however, could not establish any directional causal link between FDI and inflation using the Granger causality test. Djokoto (2012) also discovered a negative relationship between FDI and inflation in Ghana for the period 1970-2009. On the contrary, findings from Gul et al. (2012) and Nazir et al. (2012) on how domestic inflation impacts FDI and trade in Pakistan were positive but statistically insignificant for the periods 1990-2008 and 1970-2010 respectively. Whereas the former used Simple Least Square Method, the latter adopted the co-integration test and error correction model. Both studies found a positive and insignificant relationship. These findings disagree with Djokoto (2012) results likely due to the different estimation techniques employed.

Assessing the relation between FDI and economic growth, numerous empirical studies conclude on a positive relationship between FDI and economic growth. Balasubramanyam et al. (1996) establish that FDI affects economic growth with a strongly positive effect than it does on domestic investment. Just as Balasubramanyam et al. (1996) and Borensztein et al. (1998) failed to also check for the direction of causality between FDI and economic growth and concluded a positive relationship between FDI and economic growth. They concluded that the effect of FDI on economic growth is positive if only the education level is above a given threshold. Other studies that confirm the positive relationship hypothesis between FDI and economic growth, as well as identified causal link from FDI to economic growth, include (Zhang, 2001; Hansen and Rand, 2006, and Esso, 2010). These studies find that FDI spurs economic growth in developing countries. However, Herzer et al. (2008) revisited the FDI-led economic growth in developing countries hypothesis using 28 developing countries and found that there is no causal link between FDI and economic growth.

On the Ghanaian scene, Asafu-Adjaye (2005) concluded a bidirectional

causality between FDI and economic growth in Ghana when he examined time series data from 1970-2007 and adopting multivariate maximum likelihood method developed by Johansen and Juselius (1990). He, however, established a significant positive relationship between inflow of FDI and economic growth. Frimpong and Oteng-Abayie (2006) contend with Asafu-Adjaye when their study revealed no directional causal link between the two variables for the sample period of 1970-2002 as well as for the pre-Structural Adjustment Program period. They however determined a unidirectional causal link from FDI to economic growth during post-Structural Adjustment Program in Ghana. The contradiction in finding emanates from the usage of varying estimation techniques. While the former used multivariate maximum likelihood method by Johansen and Juselius (1990), the latter established the causal link between FDI inflows and economic growth using the Toda and Yamamoto (1995) method. Other studies on Ghana like Antwi et al. (2013) by employing Vector Autoregression and Johansen co-integration and ordinary least square regressions also confirm that there is a statistically significant positive relationship between FDI and economic growth in Ghana.

Empirical literature on the link between inflation and economic growth provide huge support to confirm that inflation affects economic growth negatively. Such studies include (Bruno and Easterly, 1998; Sarel, 1996; Ghosh and Phillips, 1998; Khan and Senhadji, 2001; Hossain, 2005; Erbaykal and Okuyan, 2008; Risso and Sánchez, 2009; Marbuah, 2010; Quartey, 2010; Hossain et al. 2012; and Olaiya et al. 2011). Whereas all these studies confirm a negative relationship between inflation and economic growth, there seem to be mixed findings on the causality link between the two macroeconomic indicators. For instance, the results of Sarel (1996) and Bruno and Easterly (1998) only confirm the view that economic growth is negatively affected only at high levels of inflation with Sarel (1996) establishing an inflation threshold of 8% above which the negative impact manifests. Some researchers find a unidirectional causation that runs from inflation to economic growth (Hossain, 2005; Erbaykal and Okuyan, 2008; Adrián and Sánchez, 2009; Marbuah, 2010; Olaiya et al. 2011; and Er et al. 2014). However, Ghosh and Philips (1998) discovers that economic growth is positively impacted at low levels of inflation and that the inflation-economic growth relationship is a convex one when examined in a nonlinear model. It is obvious from the above that, inflation and economic growth generally has an inverse relation. However, we cannot make a general conclusion on the causality link between them.

In a nutshell, while the examined literature reveals a negative relationship between FDI and inflation, positive or negative relationship between inflation and economic growth and a positive relationship between FDI inflows and economic growth, empirical studies do not give us that liberty to conclude strongly on the direction of causal links between these three variables. This implies the threesome relationship is influenced by the specific nature of an economy being studied.

As shown above, the FDI-inflation-economic growth nexus literature offers mixed conclusions on the relationship that exist among the trio. Majority of these empirical studies used panel and cross-sectional data. This does not make it possible to study the actual relationship between the

three variables due to the fact that cross-sectional and panel data averages the data for the sample used and applies it across countries from non-related regions. Hence, the country-specific relationship between these variables is missed.

Theories on Inflation and Growth

The relationship between inflation and growth have theoretical models in the Keynesian school of thought and the Neo-classical school of thought. The Keynesian model focuses on Aggregate Demand and Aggregate Supply analysis. In this model, aggregate supply curve slopes upwards instead being vertical in the short-run. Due to the upwards sloping nature of the aggregate supply curve, any changes in demand is able to result in changes in prices and output. Hence, in the short-run equilibria of aggregate demand and aggregate supply curves, a positive adjustment path is formed between inflation and growth. However, this adjustment later turns negative. In the neo-classical school of thought, Solow (1956); Tobin (1965); and Stockman (1981). Firstly, Solow's model postulates that technological changes is exogenously determined and is the main explanation for long-term growth. Therefore, Solow believed that, inflation and growth exhibits no relationship since it is assumed to be exogenously determined (Ray, 1998). Secondly, Tobin (1965) followed Solow (1956) and included the assumption of money being the store of value in an economy. Therefore, according to Tobin's model, a rise in the rates of inflation in an economy motivates people to keep money instead of interest bearing assets, thereby stimulating economic growth. Thus, a positive relationship between inflation and growth is suggested by Tobin's model. Thirdly, Stockman (1981) postulates a model that assumes that, money is a complement to capital. Therefore, when there is an increase in inflation, purchasing power of money declines, and this leads to low capital accumulation, which then leads to decline in output growth. This provides a significant justification for an inverse relationship between inflation and economic growth.

Theories on Inflation and Foreign Direct Investment

The Fisher equation postulates that, nominal interest rate is made up of real interest rate plus inflation rate. From this relationship, it implies that low inflation rates lead to low nominal interest rates. Consequently, cost of capital and financial cost of new investment will be low. Thus, the availability of capital at lower nominal interest rate in the host country will attract investors from foreign countries. Fisher's equation provides a base for the conclusion that inflation and foreign direct investment relates inversely.

Theories of Foreign Direct Investment and Growth

According to the endogenous growth theory, the main determinants of economic growth include factors such as economies of scale, increas-

ing returns or induced technological changes in the production process. Romer (1990) and Grossman and Helpman (1991) developed a growth model explaining the relationship between FDI and economic growth within the endogenous growth theory. In this model, technological advancement is assumed to be the main driving force of economic growth. The creation of technological knowledge, the transfer of this knowledge and innovation are major engines for growth in these theories. New growth theories finds a bidirectional causality between FDI and growth. Factors that could explain this are as follows: the incorporation of new inputs and foreign technologies in the production function of host country, the increase in host country's existing knowledge through training and development (Borensztein et al., 1998 and De Mello, 1999). Nonetheless, Dowling and Hiemenz (1982) contends that inflow of FDI is stimulated when there is rapid economic growth in the host country. This rapid growth creates an enabling environment and a self-assurance to foreign investors to invest in the host country. Additionally, high levels of capital requirements created as a result of sustainable growth coupled with the host country's need for FDI gives birth to a macroeconomic climate that attracts foreign investors. Hence, foreign direct investment and economic growth has a positive and bidirectional causality relationship.

DATA AND METHODOLOGY

This paper uses data on real GDP as a measure of economic growth, net inflow of Foreign Direct Investment (FDI) and consumer price index (inflation) for Ghana obtained from World Development Indicators (WDI). The paper uses annual data for the period 1980-2017 for the Ghanaian economy.

This study applies the Autoregressive Distributed Lags (ARDL) model to examine the relationship between FDI, inflation and economic growth in Ghana and goes further to apply the Toda and Yamamoto (1995) causality test to check for the existence of causality between these variables. Additionally, to fill the gap of studies that employed the ordinary least square and bivariate VAR technique that likely suffer from miss specification and omission biases, a tri-variate ARDL model is specified. This is to capture and fit the theoretical and empirical relationships established among these three variables as discussed above. While Keynesian model supports an initial positive relationship between inflation and growth, which turns negative later, the neoclassical framework suggests that growth can be affected positively or negatively by inflation. Moreover, the endogenous growth theory postulates that inflation affects FDI and economic growth negatively. Finally, FDI and economic growth has bidirectional causality and relates positively according to the new growth model. Therefore, the model that will be applicable to the Ghanaian economy becomes an empirical question.

Stationarity Test

The stationarity of the series used in this study is checked using Dickey and Fuller (1979), and Phillips and Perron (1998) tests. The Phillip-Perron

(PP) test supports and confirms the results of the ADF test, which is not reliable if there is structural breaks in the series. The Augmented Dickey-Fuller (ADF) test uses the following model to check for non-stationarity in variables:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t=1} + \alpha_t \sum_{i=1}^m \Delta Y_{t-1} + \varepsilon_t \quad (1)$$

where:

Y_t is the variable in question

t is a time trend

Δ is the difference operator

ε_t is a white noise process

From equation 1, the test for stationarity is achieved by testing the following hypothesis:

$H_0: \delta = 0$ (Y_t is non-stationary)

$H_1: \delta < 0$ (Y_t is stationary)

Bounds Co-integration Test

The test for stationarity is followed by Bounds test for co-integration between the three variables. The advantage of this method over other multivariate co-integration techniques such as Johansen and Juselius (1990) its simplicity and allows co-integration relationships to be estimated by OLS once lag order of the model is known. Moreover, Bounds test is applicable regardless of the level of stationarity of the underlying regressors. Using the Bounds approach for the test for co-integrating relationship eliminates the possibility of spurious regression. Bounds approach also simultaneously estimates the long-run and short-run components of the model (Narayan and Narayan, 2006). The Null hypothesis of no level relations between variables. The Wald or F-statistic is compared with the lower and upper critical values at varying levels of significance. If the F-statistic is greater than the critical value of the upper bound I(1), then there is co-integration and consequently a long run relationship between variables. However, if the F-statistic is lower than the critical value of the lower bound I(0), we fail to reject the null hypotheses of no long-run relationship.

Auto-Regressive Distributed Lags (ARDL) Models

This long-run relationships using ARDL (m, n, k) can be specified as follows:

$$INF_t = \alpha_0 + \sum_{i=1}^m \alpha_{2i} \Delta INF_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta FDI_{t-i} + \sum_{i=1}^k \alpha_{4i} \Delta GDP_{i-1} + \mu_t \quad (2)$$

$$FDI_t = \alpha_0 + \sum_{i=1}^m \alpha_{2i} \Delta FDI_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta INF_{t-i} + \sum_{i=1}^k \alpha_{4i} \Delta GDP_{i-1} + \mu_t \quad (3)$$

$$GDP_t = \alpha_0 + \sum_{i=1}^m \alpha_{2i} \Delta GDP_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta INF_{t-i} + \sum_{i=1}^k \alpha_{4i} \Delta FDI_{i-1} + \mu_t \quad (4)$$

The short run and the Vector Error Corrections ARDL (m, n, k) models are specified as follows:

$$\Delta INF_t = \alpha_{01} + \alpha_{1i} EC_{t-1} + \sum_{i=1}^m \alpha_{2i} \Delta INF_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta FDI_{t-i} + \sum_{i=1}^k \alpha_{4i} \Delta GDP_{t-1} + \mu_t \quad (5)$$

$$\Delta FDI_t = \alpha_{02} + \alpha_{1i} EC_{t-1} + \sum_{i=1}^m \alpha_{2i} \Delta FDI_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta INF_{t-i} + \sum_{i=1}^k \alpha_{4i} \Delta GDP_{t-1} + \mu_t \quad (6)$$

$$\Delta GDP_t = \alpha_{03} + \alpha_{1i} EC_{t-1} + \sum_{i=1}^m \alpha_{2i} \Delta GDP_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta INF_{t-i} + \sum_{i=1}^k \alpha_{4i} FDI_{t-1} + \mu_t \quad (7)$$

where:

INF = first difference of the logarithmic transformation inflation (consumer price index)

FDI = first difference of the logarithmic transformation of net inflows of FDI

GDP = first difference of the logarithmic transformation of real GDP

EC_{t-1} = error correction term of 1-year lag.

$\alpha_{2i}, \alpha_{3i}, \alpha_{4i}$ are coefficients to be estimated.

α_{1i} = the speed of adjustment to equilibrium in the long-run.

μ = the error term.

Optimum lag selection

The study employs the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criteria (SIC) in the determination of the optimum lag lengths of the variables. Appropriate lag length selection is crucial in determining the variables to be included in any model. A model with relatively large number of lags will possibly generate residuals that are close to white noise process, but might not be parsimonious. On the other hand, relatively lesser number of lags can result in parsimonious models, but the residuals generated might not be closer to a white noise process. Lag selection criteria is in table 1.

Table 1: Lag Selection Criteria

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-110.248				0.156938	6.66167	6.7076	6.79635
1	-25.8476	168.8	9	0.000	.001866*	2.22633*	2.41004*	2.76504*
2	-20.5411	10.613	9	0.303	.002353	2.4436	2.7651	3.38635
3	-16.2568	8.5687	9	0.478	.003218	2.72099	3.18028	4.06778
4	-5.60216	21.309*	9	0.011	.003128	2.62366	3.22074	4.37448

Source: Authors' computation using Stata 13

Endogenous: logINF logGDP logFDI

Exogenous: constant

Tests for Causality

The Toda and Yamamoto (1995) causality test is applied to investigate the directional causality between FDI, inflation and economic growth. This method is preferred over the Granger causality test because the latter is founded on the asymptotic concept which implies the critical values are applicable to only variables that are stationary and their long-run co-integrating relationship are not bound together (Granger, 1988). This implies the results from Granger causality test are to some extent weak and conditional on absence of co-integration between the variables in

the model. In view of these shortcomings associated with the traditional Granger causality test and without recourse to the stationarity of variables or order of integration of variables, Toda and Yamamoto (1995) causality test is applicable. This test involves using the order of integration of the series to determine the number of extra lags, (d_{max}) to add to the optimum lag length (k) in order to correctly specify level VARs. This aims to control for potential co-integration. Therefore, the causality between inflation, foreign direct investment and economic growth can be tested using the following VARs:

$$\log INF_t = \alpha_0 + \sum_{i=1}^{k+d_{max}} \lambda_{1i} \log INF_{t-1} + \sum_{j=k+1}^{k+d_{max}} \beta_{1j} \log FDI_{t-1} + \sum_{i=1}^{k+d_{max}} \gamma_{1i} \log GDP_{t-1} + \varepsilon_t \quad (8)$$

$$\log FDI_t = \alpha_0 + \sum_{i=1}^{k+d_{max}} \lambda_{1i} \log INF_{t-1} + \sum_{j=k+1}^{k+d_{max}} \beta_{1j} \log FDI_{t-1} + \sum_{i=1}^{k+d_{max}} \gamma_{1i} \log GDP_{t-1} + \varepsilon_t \quad (9)$$

$$\log GDP_t = \alpha_0 + \sum_{i=1}^{k+d_{max}} \lambda_{1i} \log INF_{t-1} + \sum_{j=k+1}^{k+d_{max}} \beta_{1j} \log FDI_{t-1} + \sum_{i=1}^{k+d_{max}} \gamma_{1i} \log GDP_{t-1} + \varepsilon_t \quad (10)$$

where:

k = optimal lag length in the original VAR system

d_{max} = the maximum order of integration of the variables in the VAR system

$\log INF$ = log of consumer price index expected to have a negative sign

$\log FDI$ = log of foreign direct investment inflows expected to have a positive sign

$\log GDP$ = log of real GDP expected to have a positive sign

λ, β, γ = are parameters to be estimated

ε_t = error term

Using the Wald test statistic, the null hypothesis that foreign direct investment and economic growth do not cause inflation is given in equation (8) by testing the hypothesis:

$$H_0: \beta_{1i} = \gamma_{1i} = 0$$

Next, the null hypothesis that inflation and economic growth do not cause foreign direct investment is given in equation (9) by testing the hypothesis:

$$H_0: \lambda_{1i} = \gamma_{1i} = 0$$

Finally, the null hypothesis that inflation and foreign direct investment do not cause economic growth is given in equation (10) by testing the hypothesis:

$$H_0: \lambda_{1i} = \beta_{1i} = 0$$

ESTIMATION RESULTS

Descriptive Summary Statistics for Variables in table 2.

Table 2: Descriptive Summary Statistics for Variables from 1980-2017

Variables	Observations	Mean	Std. Deviation	Minimum	Maximum	Skewness
INFLATION	38	27.480	25.286	7.126	122.875	2.649
GDP(USD)	38	1.54e+10	1.49e+10	4.04e+09	4.78e+10	1.087
FDI (USD)	38	9.12e+08	1.34e+09	2000000	3.49e+09	1.057
log (INFLATION)	38	3.059	0.666	1.964	4.811	0.799
log(GDP)	38	23.048	0.874	22.119	24.590	0.717
log(FDI)	38	18.681	2.412	14.509	21.972	-0.01

Source: Author's computation using Stata 13

The study period saw average inflation at 27% in table 2. This indicates a very high inflation average for the Ghanaian economy. Economic growth measured by real GDP at current prices and net inflows of foreign direct investment averaged a little above \$15 billion and \$9 million respectively. The economy of Ghana experienced a maximum inflation rate of about 123% and with 7.13% being the minimum inflation over the period of the study. GDP and FDI recorded maximums of \$47 billion and \$3 billion respectively. The minimum GDP was \$4 billion and \$2 million was the minimum for net inflows of foreign direct investment.

The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, the null hypothesis suggests that the series include unit roots (Non-Stationary). The results of the stationarity tests are given in table 3.

Table 3: Unit Root Tests

Unit Root Test Results (ADF)				Unit Root Test Results (PP)		
Level				Level		
Variable	logINF	logFDI	logGDP	logINF	logFDI	logGDP
t-statistic	-3.699	-0.476	0.408	-3.599	-0.470	0.224
Prob.	0.0041***	0.8966	0.9818	0.0058***	0.8977	0.9736
First Difference				First Difference		
Variable	D.logINF	D.logFDI	D.logGDP	D.logINF	D.logFDI	D.logGDP
t-statistic	-9.027	-5.281	-4.801	-10.493	-5.237	-4.776
Prob.	0.0000***	0.0000***	0.0001***	0.0000***	0.0000***	0.0001***

Source: Author's computation using Stata 13

Notes: (***) significant at the 1%, *MacKinnon (1996) one-sided p-values.

According to table 3 The computed t-statistics for logFDI and logGDP are less than the critical values in their level forms for the ADF test. Hence, we fail to reject the null hypothesis, suggesting that logFDI and logGDP are non-stationary in their level. From table 3, according to the (ADF) unit root test and the (PP) unit root test (stationarity), logINF is stationary at level at 1% significance level. However, logGDP and logFDI are non-sta-

tionary at level. After the first difference of logGDP and logFDI series, they both become stationary at 1% significance level in both ADF test and PP test. With these results, we conclude that the logGDP and logFDI in this study are integrated at I(1) order.

Bounds test for Co-integration is in table 4.

Table 4: Bounds Test for Co-integration

Dependent Variable	F- statistic for three variables	1%		5%		10%	
		I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
logINF	11.842***	5.947	7.416	4.123	5.302	3.350	4.396
logGDP	1.200	5.938	7.349	4.132	5.277	3.362	4.383
logFDI	5.467**	5.938	7.349	4.132	5.277	3.362	4.383

Source: Author's computation using Stata 13

**(*) H0: No co-integration is rejected at 5% and 1% respectively.

According to table 4, the F-statistics for the inflation and FDI equations are greater than the upper bound I(1) at 1% and 5% significance levels respectively. Therefore, we reject the null hypothesis of no co-integration between the variables, thus, there exist a long run relationship in the inflation and FDI equations (as dependent variables) through which deviations from equilibrium in the short-run will converge in the long-run. However, the economic growth equation shows no significant evidence of co-integration and/or long-run relationship at any of the standard levels of significance. Once co-integration has been established we estimate the long and short-run relationships in table 5.

Table 5: Estimated Coefficients for Long and Short-Run Relationships

Equation	(5)	(6)	(4)
Model	ARDL(1 0 1)	ARDL(1 0 0)	ARDL(1 0 0)
Dependent Variable	Δ logINF	Δ logFDI	logGDP
EC_{t-1}	-0.917*** (0.157)	-0.181** (0.085)	
logINF			-0.079 (0.052)
logGDP(-1)			0.925*** (0.078)
logFDI			0.020 (0.027)
Constant			1.636 (1.413)
Long-Run estimates			
logGDP	-0.432* (0.241)	1.552* (0.875)	

logFDI	0.004 (0.089)		
logINF		-2.863 (1.798)	
Short-Run estimates			
Δ logFDI	-0.387*** (0.130)		
Constant	11.916*** (4.080)	-1.399 (4.932)	
Observations	37	37	37
R-squared	0.561	0.332	0.967
Diagnostics			
Durbin-Watson d-statistic	1.926603	1.82100	1.751857
Br-Godfrey LM test for Autocorrelation (Prob>chi2)	0.681 (0.4092)	0.195 (0.6591)	0.661 (0.4163)
White's test for Homoscedasticity (Prob>chi2)	19.04 (0.1634)	10.17 (0.3369)	5.41 (0.7975)
Jarque-Bera test for normality chi2 (Prob>chi2)	0.2573 (0.8793)	3.097 (0.2126)	18.05 (0.00012)

Source: Author's computation using Stata 13

Standard errors are in parenthesis *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

From the estimated results in table 5 above, equation (5) estimates the error correction for inflation using an ARDL (1 0 1) model. The results indicate that in the long-run economic growth negatively affects inflation at 10% level of significance. Moreover, in the short-run, there is a decrease in inflation by 0.387% for every 1% increase in net inflows of foreign direct investment into the Ghanaian economy, holding all other variables constant. However, the adjustment coefficient of -0.917 implies the speed of correction of deviation from long-run equilibrium inflation. EC has the expected negative sign and statistically significant at 1%. This implies that deviations from the long-run equilibrium inflation is corrected up to 91% by the following year.

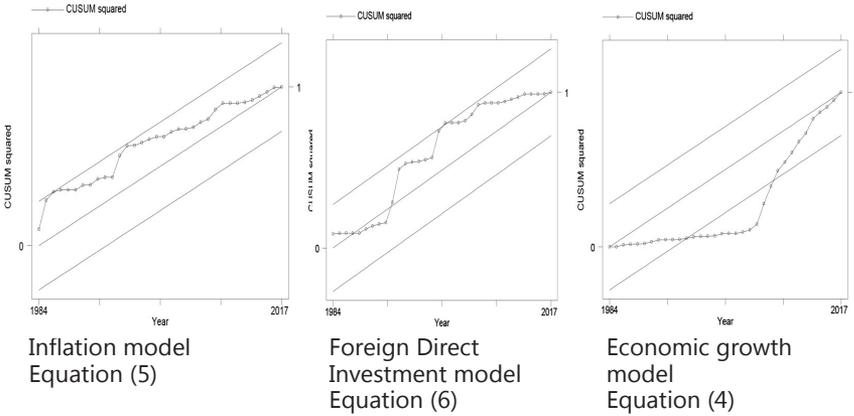
Equation (6) estimates the error correction for foreign direct investment using an ARDL (1 0 0) model. The results indicate that in the long-run economic growth positively affects FDI at 10% level of significance. Thus, a 1% increase in economic growth will see foreign direct investment increase by 1.6% ceteris paribus. However, the adjustment coefficient of -0.181 represents the speed of correction of deviation from long-run equilibrium inflows of foreign direct investment. The adjustment factor has the expected negative sign and statistically significant at 5%. This implies that deviations from the long-run equilibrium inflows of FDI is corrected up to 18% by the following year.

Equation (4) estimates an ARDL (1 0 0) model for the economic growth equation. This is because of the absence of co-integration in the logGDP equation from the Bounds test. Ceteris paribus, only the first lag of real GDP significantly affects economic growth at 1% level.

As shown in table 5 above, all three models do not have problems of

autocorrelation and hetroskedasticity. Most importantly, the models for inflation and FDI are stable within the 5% bound as shown in the CUSUM graph below. However, the model for economic growth in this study is unstable.

Figure 1: CUSUM graphs



The result for Toda and Yamamoto Causality Test is in table 6.

Table 6: Toda and Yamamoto Causality Test

Null Hypothesis:	Wald test statistic	P-value.
LOGFDI does not Cause LOGINF	474.2629***	0.0000
LOGINF does not Cause LOGFDI	63.74285***	0.0000
LOGGDP does not Cause LOGINF	195.1111***	0.000
LOGINF does not Cause LOGGDP	2.293506	0.9707
LOGGDP does not Cause LOGFDI	12.65651	0.1242
LOGFDI does not Cause LOGGDP	1.42496	0.9939

Source: Author's computation using Stata 13

Note: *** Null Hypothesis is rejected at 5%.

From table 6, we conclude that there is a bidirectional causal effect between Inflation and inflows of Foreign Direct Investment. Thus, at 5% level of significance, inflows of foreign direct investment has a causal effect on Inflation. Likewise, there exist a causal flow running from Inflation to inflows of foreign direct investment. Secondly, the causal relationship between economic growth and inflation is unidirectional which only runs from economic growth to inflation but not vice versa. This means that at 5% significance level, economic growth has a causal effect on Ghana's inflation. Finally, for economic growth and inflows of foreign direct investment, there is an independent causal relationship between them. Thus, neither is there a causal effect flowing from economic growth to inflow of FDI nor is there a causal effect moving from inflow of FDI to economic growth at 5% level of significance.

CONCLUSION

The study first established empirically that, there is some relationship between inflation, FDI and economic growth. The study finds the causality link between these economic variables using the Toda and Yamamoto causality test. Empirically from this study, there is a bidirectional causality effect between FDI and Inflation, which is contrary to the study by Udoh and Egwaikhide (2008) which could not find a causality link between FDI and Inflation. Economic growth and Inflation showed a unidirectional causality effect running from economic growth to Inflation. These findings are consistent with Marbuah (2010) and Olaiya et al. (2011) but it is different from Hossain (2005) and Erbaykal and Okuyan (2008) who established a bidirectional causal relationship between economic growth and Inflation. Additionally, just as the findings by Frimpong and Oteng-Abayie (2006) our study finds that the causality link between economic growth and net inflows of foreign direct investment is independent. Thus, there is no causal effect between economic growth and FDI.

Firstly, the inverse relationship between inflow of FDI and inflation signifies that high inflation in the Ghanaian economy deters foreign direct investment. Moreover, an effort to stabilize prices will not attract FDI because of the unidirectional causality from FDI to inflation. Therefore, a more laudable policy recommendation is to attract export-oriented FDIs into the industrial and agricultural sectors of the Ghanaian economy. Other ways to attract foreign investors is for government to create an enabling environment in the economy. Provision of sustainable energy and water, improvement in transportation and communication systems, building and expansion of ports and harbors are necessary if government aims to attract foreign direct investment into Ghana. Secondly, the unidirectional causality running from economic growth to inflation indicates that, higher output growth is essential towards the achievement of price stability. As a policy recommendation, real economic factors that inhibit the growth of GDP should be tackled head on as an effort to overcome the inflation problem in Ghana.

REFERENCES

- Antwi, Samuel, Ebenezer Fiifi Emire Atta. Mills, Gifty Atta Mills and Xicang Zhao (2013). "Impact of foreign direct investment on economic growth: Empirical evidence from Ghana". *International Journal of Academic Research in Accounting, Finance and Management Sciences* 3(1): 18–25.
- Asafu-Adjaye, John (2005). *What has been the impact of foreign direct investment in Ghana?* Institute of Economic Affairs, No. 1.
- Balasubramanyam, Vudayagiri N., Mohammed A. Salisu and David Sapsford (1996). "Foreign direct investment and growth in EP and IS countries". *The Economic Journal* 109(434): 92-105.
- Borensztein, Eduardo R., De Gregorio José R. and Jongwha Lee (1998). "How does foreign direct investment affect economic growth?". *Journal of International Economics* 45(1): 115–135.
- Bruno, Michael and William Easterly (1998). "Inflation crises and long-run growth". *Journal of Monetary Economics* 41(1): 3–26.
- De Mello, Luiz R. (1999). "Foreign direct investment-led growth: evidence from time series and panel data". *Oxford economic papers*, 51(1): 133-151.
- Dickey, David A. and Wayne A. Fuller (1979). "Distribution of the Estimators for Autoregressive Time Series with a Unit Root". *Journal of the American Statistical Association* 74(366): 427-431.
- Djokoto, Justice G. (2012). "The effect of investment promotion on foreign direct investment inflow into Ghana". *International Business Research* 5(3): 46-57.
- Dowling, John M. and Ulrich Hiemenz (1982). "Aid, savings and growth in the Asian region, Economic office report series 3". *Manila: Asian Development Bank*.
- Er, Perihan H., Can T. Tugcu, and Orhan Coban (2014). "Investigating the Link Between Savings, Inflation and Economic Growth: an ARDL Analysis for the Case of Turkey". *Journal of Economics, Finance and Accounting-JEFA* 1(2): 81-90.
- Erbaykal Erman, and Aydin H. Okuyan (2008). "Does inflation depress economic growth? Evidence from Turkey". *International Research Journal of Finance and Economics* 13(17): 40-48.
- Esso, Jacques L. (2010). "Long-run relationship and causality between foreign direct investment and growth: Evidence from ten African countries". *International Journal of Economics and Finance* 2(2): 168-177.
- Frimpong, Joseph M., and Eric F. Oteng-Abayie (2006). "Bivariate causality analysis between FDI inflows and economic growth in Ghana". *International Research Journal of Finance and Economics* 15: 103-112.

Ghosh, Atish R. and Steven Phillips (1998). "Warning: Inflation may be harmful to your growth". *Staff Papers* 45(4): 672–710.

Granger, Clive W.J. (1988): "Some recent development in a concept of causality". *Journal of econometrics* 39(1-2): 199-211.

Grossman, Gene M., and Elhanan Helpman (1991). "Trade, knowledge spillovers, and growth". *European economic review* 35(2-3): 517-526.

Gul, Sajid, Muhammad Sajid, Farman Afzal, Muhammad B. Khan and Sumra L. Mughal (2012): "Factors Influencing Foreign Direct Investment: The Case of Pakistan". *Economics and Finance Review*, 2(2): 21-25.

Hansen, Henrik and John Rand (2006). "On the causal links between FDI and growth in developing countries". *World Economy* 29(1): 21–41.

Herzer, Dierk, Stephan Klasen and Felicitas D. Nowak-Lehmann (2008). "In search of FDI-led growth in developing countries: The way forward". *Economic Modelling* 25(5): 793-810.

Hossain, Akhtar (2005). "The Granger-causality between money growth, inflation, currency devaluation and economic growth in Indonesia: 1954-2002". *International Journal of Applied Econometrics and Quantitative Studies* 2(3): 45–68.

Hossain, Elias M., Bikash C. Ghosh and Khairul M. Islam, (2012). "Inflation and economic growth in Bangladesh". *Journal of Arts, Science & Commerce* 3(4-2): 85-92.

Johansen, Soren and Katarina Juselius (1990). "Maximum likelihood estimation and inference on co-integration —with applications to the demand for money". *Oxford Bulletin of Economics and Statistics* 52(2): 169-210.

Khan, Mohsin S. and Abdelhak S. Senhadji (2001). Threshold Effects in the Relationship between Inflation and Growth, IMF Staff Papers 48(1): 1-21.

MacKinnon, James G. (1996). "Numerical distribution functions for unit root and co-integration tests". *Journal of Applied Econometrics* 11(6): 601-618.

Marbuah, George (2010). "On the inflation-growth nexus: testing for optimal inflation for Ghana". *Journal of Monetary and Economic Integration* 11(2): 71–72.

Narayan, Paresh K., and Seema Narayan (2006). "Savings behaviour in Fiji: an empirical assessment using the ARDL approach to co-integration". *International Journal of Social Economics* 33(7): 468-480.

Nazir, Shumaila, Nadia Sarwar and Sami Ullah (2012). "Impact of capital inflows on domestic inflation: a case study of Pakistan". *Journal of Asian Development Studies* 1(1): 4–12.

Olaiya, Sam A., Ifeakachukwu Nwosa Philip and Amassoma Ditimi (2011). "A trivariate causality test among economic growth, government expenditure and inflation rate: Evidence from Nigeria". *The Journal of World Economic Review* 6(2): 189–199.

Pesaran, M. Hashem, Yongcheol Shin and Richard J. Smith (2001). "Bounds testing approaches to the analysis of level relationships". *Journal of Applied Econometrics* 16(3): 289–326.

Phillips, Peter C.B., and Pierre Perron (1988). "Testing for a unit root in time series regression". *Biometrika* 75(2): 335–346.

Quartey, Peter (2010). "Price stability and the growth-maximizing rate of inflation for Ghana". *Modern Economy* 1(3): 180–194.

Ray, Debraj (1998). *Development Economics*. Princeton, NJ: Princeton University Press.

Risso, Adrián W. and Edgar J., Sánchez Carrera (2009). "Inflation and Mexican economic growth: long-run relation and threshold effects". *Journal of Financial Economic Policy* 1(3): 246–263.

Romer, Paul M. (1990). "Endogenous technological change." *Journal of Political Economy* 98(5, Part 2): 71–102.

Sarel, Michael (1996). "Nonlinear effects of inflation on economic growth". *Staff Papers* 43(1): 199–215.

Solow, Robert M. (1956). "A contribution to the theory of economic growth". *The Quarterly Journal of Economics* 70(1): 65–94.

Stockman, Alan C. (1981). "Anticipated inflation and the capital stock in a cash in-advance economy". *Journal of Monetary Economics* 8(3): 387–393.

Tobin, James (1965). "Money and economic growth". *Econometrica: Journal of the Econometric Society* 33(4): 671–684.

Toda, Hiro Y. and Taku Yamamoto (1995). "Statistical inference in vector autoregressions with possibly integrated processes". *Journal of Econometrics* 66(1-2): 225–250.

Udoh, Edet J. and Festus O. Egwaikhide, (2008). "Exchange rate volatility, inflation uncertainty and foreign direct investment in Nigeria". *Botswana Journal of Economics* 5(7): 14–31.

Zhang, Kevin H. (2001). "How does foreign direct investment affect economic growth in China?". *Economics of Transition* 9(3): 679–693.

HISTORY OF THE ENERGY SECTOR DEVELOPMENT AND KAZAKHSTAN'S ENERGY POTENTIAL

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Zhuldyz KANAPIYANOVA¹

ABSTRACT

Kazakhstan has the largest oil resources in Central Asia mainly concentrated in the Caspian Sea region. Revenues from oil exports is the primary source of income for the state budget of Kazakhstan and essentially important for the entire economy of Kazakhstan. Europe is the major market for Kazakhstan's crude oil. However, the fact that pipelines connecting Kazakhstan and European consumers go through Russia and other countries poses certain political and economic risks on Kazakhstan. In this light, China appears to be an alternative for Kazakhstan's oil exports. The aim of the study is to examine Kazakhstan's major energy deposits, their capacities, oil and gas pipelines and projects, and to investigate the energy policy within the framework of neoliberal theory. The results show that Kazakhstan is pursuing an energy policy dependent on Russia and seeks to strengthen cooperating with China. However, there are certain pitfalls and obstacles that Kazakhstan needs to overcome.

Key Words: Kazakhstan, energy policies, pipelines, oil and gas resources, neoliberal theory.

¹ PhD Candidate, Uludag University, Bursa, 16059, Turkey, e-mail: juldyz777@hotmail.com

INTRODUCTION

After gaining its independence in 1991, Kazakhstan started to take its energy resources in its own hands and to take steps towards its production and export. The energy sector is decisive for the economy of Kazakhstan and is the main factor of participation in the global economy and socio-economic development. The control over energy resources is very critical in defining the geopolitical importance of each country. Kazakhstan with its enormous oil reserves has a considerable influence on the foundation and requirements of the world energy market.

Given the fact that the initial pipelines of Kazakhstan were built during the Union of Soviet Socialist Republics (USSR), Kazakhstan exported its oil primarily through Russia to Europe. This fact makes Kazakhstan and Russia interdependent when it comes to oil exports and energy policy. The interdependence relation of Kazakhstan with Russia is asymmetrical due to the fact that Russia is much powerful economically and in terms of political influence, which makes Kazakhstan more dependent on Russia. During Boris Yeltsin's presidency in 1990s, the political attention of Russia was largely concentrated on establishing friendly relations with the West and the policy of "near abroad" was practically abandoned. The situation has changed drastically when Vladimir Putin took the office and Russia began to reclaim its political interest in Central Asia. Furthermore, President Vladimir Putin declared Russia as a major energy actor in the region and started to seek ways to secure control over energy transport from Central Asia.

During a long period of time the first President of Kazakhstan Nursultan Nazarbayev has been defining his foreign policy as multi-vector. This policy allowed Kazakhstan to maintain balanced relations with all major global and regional powers. Therefore, this policy of Kazakhstan was immediately extended to the energy policy and its intentions perfectly matched with the interests of China, which was seeking ways to diversify its energy suppliers. The new direction in energy exports required new pipeline infrastructure. The energy infrastructure inherited from the USSR was an asset and an impediment at the same time since it was initially designed for redistribution of crude oil among various regions of the USSR. Oil exports through these pipelines were feasible but it was very risky and costly to deliver oil to foreign markets. The government of Kazakhstan continues to face problems concerning how to export its energy resources and to protect its independence from foreign energy interests. This situation brings a negative effect on the competitiveness of Kazakhstan's oil exports in international markets.

In this study, energy policies of Kazakhstan will be examined from the neoliberal point of view and will be supported by hypothesis and assumptions of neoliberal theorists. The main aim of the study is to examine the energy policies and position of Kazakhstan and to determine the energy potential of the country, to identify energy deposits and pipeline systems and to determine their potential for energy exports. The research question is what are the main countries that could be markets for Kazakhstan's oil exports, outside Russia, and what are the ways of accomplishing this task.

The main thesis of the study is that, Kazakhstan, which has a big energy potential, and other countries, which are ready to cooperate with each

other, are rational actors and will negotiate in order to reach a relative gain rather than the absolute gain. The relationship that develops with the principle of interdependence will be profitable and long lasting for both parties. Kazakhstan, which is in an asymmetric relationship with Russia, wants to develop interdependence cooperation and develop a more independent policy while, the alternative buyers, such as China and the Western world, especially Europe and USA cooperating with Kazakhstan in energy field, will reduce their energy dependence on the Middle East and OPEC. The huge natural resources of the country, growing production and export of goods give Kazakhstan a chance to use energy reserves as an instrument, to support and reach country's interests and foreign policy goals. Kazakhstan can accomplish its difficult foreign policy position and forestall too much dependence on any country, especially Russia.

In the first part of the study, the conceptual and theoretical framework will be analyzed with the assumptions of the neoliberal theorists. The historical background of Kazakhstan's energy policies will be investigated in the second part of the study. The energy deposits of Kazakhstan are discussed in the third part final fourth part of the study tackles the issue of pipeline in Kazakhstan.

CONCEPTUAL AND THEORETICAL FRAMEWORK

In the international system, neoliberal theory, which prevailed in the 18th and 19th centuries, is differed from realism and it focuses on peace and cooperation rather than international conflict. Unlike realists who consider the main actor of the international system as a state, neoliberals argue that there are other actors besides the state in the system. Neoliberal theory has been distinguished from the previous liberal theories by criticizing realist theory and occasionally participating in some of its assumptions. For example, according to neoliberals, the anarchic structure of the system does not interfere with the cooperation between states (Wendt, 1999).

Neoliberals also argue that there is a "reciprocity" mechanism that prevents the realists' assumption "international politics is the basis for the gain of a state but the loss of the other and therefore deception is common, that they see as a zero-sum situation" (Cakmak, 2014). This reciprocity mechanism, which envisages both parties to win, will enable Kazakhstan and the other states to co-operate with Kazakhstan and to have easier access to their common interests. In addition, according to neoliberal theory, interdependence is increasing among states, especially in economic matters (Viotti and Kauppi, 1999). According to Robert Keohane and Joseph Nye, who contributed significantly to neoliberalism, interdependence is a set of conditions that shape the interaction between countries and the actors in countries. In other words, it is a complex of conditions of connections and relations, which creates interaction channel among the states, actors and societies in the international system (Keohane and Nye, 2001). According to interdependence, the relationship between the two actors occurs when one of the two is more important than the other. Particularly, one actor is always more in need of another and this means an important bargaining power for the other actor. However, regardless of whether they have interests, the relation-

ship between the parties is mutually beneficial. In the interdependence relationship, there is a desire and effort to maintain the relations of both parties, which are at different levels, instead of the asymmetric power relations dominated by one of the actors. There should be no cost for the parties to talk about interdependence and this cost should limit the freedom of movement of the parties (Keohane and Nye, 2001).

The interdependence between Kazakhstan and other countries will be realized by marketing rich energy resources of Kazakhstan to countries with energy problems. At the end of this cooperation, Kazakhstan will improve its political relations with its economic power, while the states with energy problems will solve the energy demand and, thus, both parties will benefit from the cooperation. As Kazakhstan and other states that can cooperate with it are rational actors, it will be easier to enter into cooperation. Moreover, according to Arthur Stein, states give importance to economic power because of their military power and therefore cooperation in the economic field is accomplished more intensively and successfully (Stein, 1993). Therefore, cooperation in the economic and energy spheres between the states, which cooperate with Kazakhstan, will proceed successfully. Moreover, according to the neoliberal theory, the "welfare state" aims to increase the welfare of its citizens. "The welfare state" model for Kazakhstan consists in reducing unemployment in the country and inflation, strengthening the economic situation and increasing the standard of living of the people. For these purposes, Kazakhstan aims to diversify its energy policy by cooperating with other states. Consequently, the government of Kazakhstan will seek to cooperate in energy, which will increase the economic well-being of its citizens. In order to become a leader in the economy and energy sector, Kazakhstan will deal with "absolute gain" instead of "relative gain". Nonetheless, this situation will be more successful in the economic issues that are defined as "low policy" instead of realists "high policy" which is related to the military and security issues (Keohane and Nye, 2001), because the cost of deception in military matters is more costly than economic issues (Lipson, 1993). Kazakhstan will try to take part in oil and natural gas projects, which are considered as "low policy", instead of more costly military issues which are defined as "high policy".

HISTORICAL BACKGROUND

The Central Asian countries, including Kazakhstan, which gained independence with the collapse of the USSR in 1991, stepped into a new era at the export of their energy resources. Kazakhstan, an oil-rich country, has been producing oil for more than 100 years and the first energy discovery was made very long ago. For example, the first Kazakh oil was found in Karashungul oil field (Atyrau region) in November 1899 and the Kazakh oil production started from that period. After that, a high-quality oil deposit in Dossor was discovered in 1911; the Makat oil deposit (Guryev region) in 1913 etc. In 1914, the oil production from Dossor and Makat deposits exceeded 200 thousand tons (Uyzbayeva, Tyo, and Ibraev, 2015).

After the October Revolution in 1917, it was decided to nationalize all productions, because of a big role in the development of the country's economy. After that, developments in the oil field continued at full speed.

For instance, "Embanefit" were established in 1922 to organize management of Ural Emba region oil fields. In 1926 rotary drilling and geophysical research methods began to be used. Further, the Guryev-Dossor railway was opened enabling transportation of oil. In 1930, Aktobe region started developing in terms of energy. As a result, the rapid development of the Guryev region continued. In order to foster the energy policy in the region, laboratories and petroleum technical colleges were opened and the "Embanefiteproekt" office was established. Within the framework of these developments, the Guryev-Emba-Orsk oil pipeline construction started in 1932 and Baychunas, Koschagil, Shubarkuduk and Kulsary oil fields were opened.

Kazakh oil production, which experienced a great pause in the years of World War II, started to revive after the 1960s. For example, higher speed turbine drilling used, instead of rotary drilling. In addition, oil exports increased, and the emergence of cheap Soviet oil has led other oil companies to lower their prices. Similarly to the old fields, new oil fields, such as Karsak, Prorva, Martishi, Tanatar, Kenkiyak and Ozen have been opened and oil production has started. During 1960-1965, Kazakhstan had a capacity to produce 2 million tons of oil annually. With the opening of Ozen and Jetibay deposits in the Mangishlak region in 1969, Kazakhstan's proven reserve being up to 20 times and annual revenue increased up to 14 times and annual production exceeds 10 million tons (Hardin, 2012).

In 1970, several oil fields such as Karazhanbas, Severnie Buzachi and Kalamkas were discovered. Additionally, the construction of the Ozen-Guryev-Kuybishev railway pipelines was completed. In 1974, the oil production in Mangishlak reached 21 million tons, and Kazakhstan became the second in the oil production in the Soviet Union after Russia.

In 1990, the year of independence, Kazakhstan experienced a decline in oil production due to an economy's instability and begun to attract foreign investment. In the context of developing energy, KIOGE International Petroleum and Natural Gas Fair was organized for the first time in Almaty in 1993 and the Ministry of Oil and Natural Gas Industry of the independent Republic of Kazakhstan was opened. The "Petroleum law" was adopted and a contract was signed for the operation of Karachaganak oil deposit between Agip, British Gas, Gazprom, Kazakhgaz and Kazakhstan's government. National companies such as, "Kazakhoil" and "Kaztransoil" were established and they were given the opportunity to participate in energy projects on behalf of the Kazakhstan government. In 1998, an agreement was signed between Kazakhstan and the Russian Federation on the northern border of the Caspian Sea and the construction of the Aktau port was completed. In 2000, the national Kaztransgaz Company was established. The largest Kashagan deposit was opened in the last 30 years in the world and national company "KazMunayGaz" was established in the same year. Kazakhstan's annual oil production reached 76 million tons in 2010. As can be seen from the numbers, oil production is an important budget source and economic income for the Kazakhstan government. For example, in 2017, half of the country's budget came from the oil sector. 80% of the oil production in the country is exported to other countries. Approximately 70% of the country's annual exports comprise energy resources. According to British Petroleum (BP) 2017 data, Kazakhstan's proven oil reserves were 30 billion barrels. This ratio constitutes 1.8% of the world's oil reserves and ranks 12th in the world.

According to 2017 data, daily oil production was 1 million 835 thousand barrels and daily consumption was 311 thousand barrels. At the end of 2017, the natural gas reserve comprised 1 trillion cubic meters. It consists of 0.5% of the world natural gas reserves and ranks 20th in the world. While natural gas production in 2017 was 27.1 billion cubic meters, daily consumption was 16.3 billion cubic meters (BP Statistical Review, 2017).

ENERGY FIELDS OF KAZAKHSTAN

Kazakhstan's energy deposits are located in the west of the country and the Caspian Sea region contains about 223 oil and 58 natural gas deposits. One of the three largest oil fields such as Tengiz and Karachaganak are on land whereas Kashagan is under the sea bottom and 50% of the country's energy reserves are located in these deposits (Hays, 2016).

Tengiz natural gas and oil field was discovered in 1979 with its 26 billion barrels of oil reserves in Atyrau region and the production capacity is over 25 million tons and it is considered as the second largest field after Kashagan deposit. The field which started production in 1988 is still operated by "Tengizshevroil" (joint venture between Chevron 50%, Exxon Mobil 25%, KazMunayGaz 20% and LukArko (a subsidiary of the Russian oil company Lukoil) and US's "Chevron" company in 1993. Today, the field is operated by KazMunayGaz by 20%, Chevron Overseas with 50%, Exxon Mobil with 25% and Lukoil with 5%. As can be seen, 75% of Tengiz is operated by US's Chevron and Exxon Mobil, Kazakhstan with 20% and Russia with 5%. Here we can see the dominance of the US in the operation over the field compared to Russia. Tengiz's oil production reached 26 million tons in 2010. Since 2001, Tengiz's oil has been exported to Novorossisk (Russia) through the Caspian Pipeline Consortium. Since November of 2008, Kazakhstan has increased its exports with the Baku-Tbilisi-Ceyhan (BTC) pipeline. In addition, after August 2008, transfer of oil via the Baku-Batumi rail recommenced (Kenter et al. 2010). As it can be seen, the oil produced in Kazakhstan is mainly exported through Russia via oil pipelines contributing to an asymmetric power relationship between the two countries. Therefore, Kazakhstan that wants to diversify its energy policy needs a new pipeline system, capital to build it and to solve the Caspian Sea property rights problem by following an independent policy in order to transport its oil to foreign markets. In terms of diversification of Kazakhstan's energy policy, the BTC pipeline is an alternative market. However, the amount of oil transported through the BTC pipeline and the amount of oil exported to Russia cannot be compared.

Karachaganak oil and natural gas deposit, which is located near Aksay city of Western Kazakhstan, opened in 1979. The production started with Russia's "Orenburg Gazprom" company in 1980. The deposit is estimated to contain 1.22 million cubic meters of natural gas and 1.2 billion tons of oil. "Karachaganak Petroleum Operating" (KPO) company was founded in 1984 to operate the so-called field. KPO is operated by Italy's ENI, England's British Gas, US's Chevron, Russia's Lukoil and is expected to operate until 2038. Natural gas produced from the company is exported to Orenburg, Russia (Elliot et al., 1998). The produced natural gas here is also transferred to Russia through existing infrastructure and the field is operated by Russian and western companies. Therefore, Kazakhstan's policy of diversification is limited by the fact that the field is not only

operated by Russian companies but also with participation of western companies.

Kashagan oil and natural gas deposit is one of the largest and most operationally difficult fields in the sea which is located at a 75km*45km area, with 36.6 billion barrels of oil and 1 trillion cubic meters of natural gas reserves. The difficulty of the field depends on the physical properties of the reservoir, the high pressure in the reservoir and the high hydrogen sulfide content, as well as the geographic location of the reservoir, which is frozen in winter. In order to overcome the technical and financial difficulties, an agreement on operating the field was signed in 1997 between the government of Kazakhstan and the Offshore Kazakhstan International Operating Company N.V (OKIOC), international oil company with vast experience in development of similar types of oil and gas fields. In 2001, the rights of OKIOC were passed to AgipCo and in 2008 to North Caspian Operating Company (NCOC). Currently NCOC comprises of the following partners: Eni (Italy), Total (France), Exxon Mobil (USA), Shell (Holland), CNPC (China), Inpex (Japan) and KazMunayGaz (Kazakhstan). As can be seen, Kashagan field is operated by western companies as well as with the contribution of Chinese and Japanese companies, disabling Russia. Kashagan field was opened with Vostok 1 well in 2000. The start of oil production was postponed several times and it was announced that it would be launched in 2012, but the first production was made in 2013 and the pipeline was stopped again due to the fault in the pipeline. The studies did not give the expected result and the opening of the field was postponed until 2016. The first production started in November 2016 and 8.35 million tons of oil was produced in 2017 (Hays, 2016). Produced oil from this field is transported to an export terminal near Novorossiysk (Russia) through Caspian Pipeline Consortium (CPC). Kashagan became the second largest source of CPC, overtaking Karachaganak.

Kazakhstan, which has similar oil and natural gas deposits, has to solve two important problems in order to increase the existing oil production, diversification of energy policy and carrying out an interdependence relationship with other countries which will be based on absolute gain principle. First, the "property rights" issue related to resources that are contained in this sea between the countries bordering the Caspian Sea. If this issue is resolved, potential deposits will be put into operation and Kazakhstan will be able to diversify its energy policy by producing more oil. Another important problem shared by all countries in the region is the development of routes that will carry Kazakh oil to the world market. Because the region, which is surrounded by land from all sides, needs new pipelines and new routes to transport the oil and natural gas to the world markets.

PIPELINES OF KAZAKHSTAN

Energy-rich Kazakhstan built 10715 km of oil and gas pipelines to transfer its natural resources abroad. Nevertheless, the Astana government faces a number of problems to move its energy either domestically or abroad. With regards to the problem within the country, as mentioned above, the rich resources of the country are in the west, but the country's major and industrial cities are located in the north and south-east. As a legacy of the Soviet economic system, oil exports to the West is transported to

the world markets through Russia, while the domestic demand in the eastern region is imported from Russia's Siberian region. Furthermore, most of the existing pipelines were built long ago and were intended to achieve the goals of the USSR, and not of independent Kazakhstan. Today, various projects such as Caspian Pipeline Consortium are under development to improve the current situation. The Kazakh natural gas sector has often been faced with a significant lack of infrastructure, especially pipelines. Although Kazakhstan is connected to other Central Asian countries by 6 natural gas pipelines and to Russia, there is no connection between gas production areas located in the west of the country and consumption areas such as relatively densely populated southeast and industrialized north.

Oil Pipelines of Kazakhstan

The first Pipeline Consortium agreement was signed on the islands of Bermuda between Kazakhstan and the Sultanate of Oman on June 17, 1992, then the Russian Federation was included in the agreement. The agreement foresaw that Russia and Kazakhstan would transfer all pipeline shares to the Consortium and the Sultanate of Oman would finance pipelines. In order to make the agreement functional in 1994, Tengiz-Atyrau-Astrakhan-Novorossiysk (with other name CPC) construction of the export pipeline system was adopted by the Ministry of Kazakhstan (Hardin, 2012).

The CPC, which has changed its shareholder a few times since its establishment, is now operated by companies such as "Mobile", "Shell", "British Gas", "British Oil", "Rosneft" and "Lukoil", except Russia, Kazakhstan and Sultanate of Oman. The cost of the CPC pipeline, which is important in the transfer of Kazakhstan's oil, was at \$2.5 billion. The consortium, which started its construction in May 1999, unloaded its first tanker in October 2001. The 1510 km long CPC pipeline is targeted to carry 28 million tons of oil annually in the first stage and then is planned to carry 67 million tons of oil annually. It has reached a capacity of 32 million tons by 2012 (Dellecker, 2008). Together with BTC pipeline, CPC, is transported the oil from Caspian Sea to the world market. These two pipelines were made to diversify the new transfer routes to the world market in the post-Soviet period independent from Russia. Since the BTC pipeline does not have any connection to the Kazakhstan deposits, Kazakh oil is transported by tankers. CPC passes through Russian territory to bring Kazakh oil into the world market. In order to bring Kazakhstan resources to the world market as an alternative to CPC, Kazakhstan-Caspian Sea-Azerbaijan route (this can also be connected to the BTC pipeline), Kazakhstan-Caspian Sea-Iran-Turkey or Kazakhstan-Turkmenistan-Iran-Turkey (this route is longer than CPC, and therefore more costly, and may also lead to political obstacles for Turkmenistan, which pursue a neutral policy) route can be improved. However, the construction of submarine pipelines is costly as well as CPC, and is unlikely to be possible until the property rights issue is resolved. Kazakhstan, which has most of its natural resources in the vicinity of the Caspian Sea, is obliged to transfer to the West by submarine pipelines or through Russian territory but in interdependence policy.

The first agreement on operating fields and the construction of oil pipelines between the government of Kazakhstan and the national oil and gas

company CNPC of China, was signed on September 24, 1997. On May 17, 2004, Kazakhstan President Nursultan Nazarbayev and China President Hu Zintao signed a framework agreement on the development of bilateral cooperation between the Republic of Kazakhstan and the People's Republic of China in the field of oil and natural gas. KazTransOil and the China National Oil and Gas Exploration and Development Cooperation (CNODC) with equal share requirement established the "Kazakh Chinese Pipeline" company on 30 June 2004. As a result of the cooperation, the construction of the Atasu-Alashankou oil pipeline was started on September 28, 2004. The first export oil pipeline (Atasu-Alashankou) of independent Kazakhstan with 962 km long (2 km in Chinese territory), which has an annual capacity of 10 million tons, was inaugurated on December 15, 2005. The construction of the Kenkiyak-Kumkol pipeline, which is the first stage of the Kazakhstan-China pipeline, was announced at the Kenkiyak station of the Aktobe region of Kazakhstan on 11 December 2007. The pipeline is designed to transport Kazakhstan's oil to China. Construction of the 794 km long pipeline was completed in September 2009. In the first stage, annual oil carrying capacity of the pipeline was 10 million tons and it is aimed to increase to 20 million tons in the next stage (Hardin, 2012). Though the current Chinese Five-Year Plan targets oil imports meeting no more than 61% of demand by the end of 2015, it is projected that actual import dependence will be over 66% and China's primary oil demand will rise to 12.2 barrels per day by 2020, as demand is expected to grow faster than domestic crude supply. Meanwhile, total natural gas demand will reach 400 billion cubic meters (bcm) annually by 2020, and may be as high as 420 bcm (Wang, 2015, s. 12). Considering that China's demands and natural gas and oil deposits are limited, it is understood that China wants to diversify its energy policy as much as Kazakhstan in interdependence relationship, where absolute gain is more important than relative gain. So the Atasu-Alashankou pipeline is one of the most important projects in meeting the needs of the two countries.

An agreement was signed between Kazakhstan and Russia to transport at least 15 million tons of Kazakh oil to Russia in the direction of "Atyrau-Samara" on June 7, 2002. The "Ozen-Atyrau-Samara" oil pipeline, which is 1380 km long (1232 km in Kazakhstan) and was constructed between 1968 and 1970, is a heated pipeline starting from the field of Ozen and extending to Samara, Russia. 15.75 million tons of oil is currently being transported through the pipeline which has an annual transportation capacity of 30 million tons of oil (Chow and Hendrix, 2010). Putin's Russia is trying to control its role as a leader in Central Asia and keeps historical and cultural ties, plus active relationships with political authorities. Russia's pipeline policy is concentrated on controlling direct exports routes from Central Asia to Europe by joining to all energy projects in the region or by transferring these routes through its territory in asymmetric power relationship.

Natural Gas Pipelines of Kazakhstan

The natural gas transportation system in the former Soviet Union was built in the mid-20th century. At that time, development of the natural gas sector in Central Asia was dependent on Turkmenistan. The fourth largest natural gas reserve in the world was discovered in this part of the Soviet Union. In the following years, no major changes were made

to the natural gas pipeline map. Today, two of the three longest natural gas pipelines in the world pass through the territory of Kazakhstan. These are 7 thousand km long "Turkmenistan-China" and 5 thousand km long "Central Asia-Center" (CAC) pipeline. The longest natural gas pipeline in the world is 8704 km long Chinese "West-East" pipeline. The "Turkmenistan-China" railway natural gas pipeline passes through the territory of Turkmenistan, Uzbekistan, Kazakhstan (1900 km) and China (4500 km). The Kazakhstani section of the route is called the "Kazakhstan-China" natural gas pipeline. The total cost of the pipeline is 7 billion dollars and annual capacity of pipelines is 55 billion cubic meters (Chow and Hendrix, 2010). This natural gas pipeline is a great advantage for countries that want to diversify their energy policies by transferring Central Asian gas to another country outside Russia. Kazakhstan and other Central Asian countries may consider the Eastern as well as the Western route in order to diversify their energy policy. In this context, China, which necessitates much energy, is a good alternative. Kazakhstan and China can easily cooperate in the field of energy, which is an essentially important commodity and factor for any economy, on the basis of development of mutual interdependence.

The "Central Asia-Center" is the third largest natural gas pipeline in the world and an important source for the Russian gas company "Gazprom". The route of this natural gas transfer passes through the territory of four countries. According to a number of agreements signed between all the participants of this project, the pipeline is filled by Turkmenistan's and Uzbekistan's natural gas; Kazakhstan and Russia serve as transfer countries. Today, the pipeline is considered one of the oldest pipelines in the world. The first phase of the pipeline was completed in 1967 and the 3000 km long pipeline was defined as the longest pipeline in the world. The "Central Asia-Center" with an annual capacity of 80 billion cubic meters was turned into a multi-line pipeline system in 1985. Russia used to be practically a monopolist purchaser of the Central Asian natural gas, which was transported via five lines of the Russia controlled CAC pipeline. Russia needed Central Asian gas to compensate its responsibility to the western consumers as a result of gas crises with Ukraine. The 25-year agreement which was signed between Turkmen gaz and Gazprom in 2003 was stopped in 2016 due to the deterioration of the agreement conditions and Russia experienced a gas shortage. However, on April 15, 2019, after a three-year period, the parties met again and agreed to transfer Turkmen gas to Russia.

Apart from these two major pipelines, in order to transfer the Uzbek natural gas to Russia via Kazakhstan, the Bukhara-Ural pipeline with capacity of 8 billion cubic meters was constructed in the 1960s. Russia has been buying Uzbek gas since 2003 and in 2006, Gazprom and the Uzbekneftegaz, National Holding Company signed an agreement on the basic principles for conducting a geological survey of the subsoil of investment blocks of the Ustyurt region of the republic. In May 2016, the gas-chemical complex in Ustyurt was opened, allowing for the first time in the countries of Central Asia to launch a block of polypropylene and other gas-chemical products. In turn, Kazakhstan in Aktobe due to the gas shortage will build a new line of the Bukhara-Ural gas pipeline. Thus, transportation of Uzbek-Kazakh gas again goes for the Russian market and its further transportation through Russia. In order to deliver natural gas to the world market, suitable infrastructure and new routes are need-

ed as in case with oil.

In addition, "Bukhara-Tashkent-Bishkek-Almaty" natural gas pipeline is designed to transfer Uzbek natural gas to Kyrgyzstan's North and South of Kazakhstan. The railway pipeline originates from Bukhara and passes through the territory of Uzbekistan, Kazakhstan, is twice in Kyrgyzstan and again sends blue fuel to Kazakhstan, Almaty. The total length of the gas pipeline is 1585 km and capacity is 12 billion cubic meters per year. The current gas pipeline was built over 40 years ago. Since then, the site passing through Kyrgyzstan has never been reconstructed, although it is technically designed for 30 years (Petersen and Barysch, 2011). Therefore, the primary tasks were the construction and reconstruction of 111 kilometers of the railway. Reconstruction work was carried out within the framework of bilateral cooperation between Russia and Kyrgyzstan and Russia is understood as the leader in these gas projects of Central Asia.

CONCLUSION

With the discovery of the first energy field in 1899, Kazakhstan became one of the energy leaders in the region after gaining independence. Kazakhstan, which has most of its energy deposits in Western Kazakhstan and Caspian Sea, has managed to take advantage of natural gas and oil deposits of Tengiz, Karachaganak and Kashagan and has made a great economic use of them. Currently, large amounts of its natural resource exports provide make a great share of its budget income. When transferring energy resources to other countries, it primarily prefers the pipeline to land transport and tankers.

The basis of the pipelines was laid in Soviet times and the energy transfer is exported firstly to Russia then through territory of Russia to other countries. Russia, who a hegemonic energy actor in the region tries to control all energy routes in Central Asia. Russia's pipeline policy is concentrated on controlling direct exports routes from Central Asia to Europe by joining to all energy projects in the region or by transferring these routes through its territory. For instance, the oil from Tengiz is transported to Russia and as an alternative Baku-Tbilisi-Ceyhan pipeline provides diversity in this subject. The natural gas from Karachaganak is also transferred to Russia, but the field is operated by western companies with participation of Russia. However, Kashagan field is operated by western companies as well as with participation of Chinese and Japanese companies, disabling Russia. This field makes a major contribution to the diversification of Kazakhstan's energy policy. CPC and Atyrau-Samara oil and CAC natural gas pipelines pass through Russian territory to deliver Kazakhstani oil and gas to the world markets.

Kazakhstan, which has most of its natural resources in and around the Caspian Sea, in order to transfer them to the West directly needs to develop alternative ways, such as subsea pipeline or the Turkmenistan-Iran-Turkey route. However, firstly, Kazakhstan has to solve the issue related to "property rights" on resources that are deposited in the subsoil of this sea between the countries around the Caspian Sea. Secondly, it needs to develop new routes in order to increase the existing oil production and diversification of energy policy in interdependence relationship that would be more symmetric, and less asymmetric, like in case with Russia.

At present, the global energy sector passes through dramatic changes and the world's demand for energy resources increases. Kazakhstan, as an energy rich country, wants to diversify its energy transfer and to carry out its own independent energy policy. In this light, Kazakhstan has preferred to cooperate with PRC and western international oil companies in operating energy fields within the country. Considering that China's demands and natural gas and oil deposits are limited, China also wants to diversify its energy policy. In this sense, the Atasu-Alashankou pipeline is one of the most important projects in meeting the needs of the two countries. The Central Asia-China natural gas pipeline is a great advantage for countries that want to diversify their energy policies by transferring Central Asian gas to other countries outside Russia in the principles of the absolute gain.

As we have seen, Kazakhstan has an energy policy dependent on Russia due to historical ties and existing infrastructure. At the same time, it cooperates with China and western oil and natural gas companies in diversifying its energy policy. Kazakhstan aims to become an independent energy supplier by transferring its natural resources to other countries directly, not through territory of Russia, which necessitates energy, like Europe and China.

REFERENCES

British Petroleum. "Statistical Review of World Energy". June 2018. Available at <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf>. (Accessed 26.04.2019).

Chow, Edward. C., and Hendrix, Leigh. E. (2010). Central Asia's Pipelines: Field of Dreams and Reality. NBR Special Report, No. 23.

Cakmak, Haydar (2014). *Uluslararası İlişkiler: Giriş, Kavramlar ve Teoriler*. Istanbul: Dogu Kitabevi.

Dellecker, Adrian (2008). Caspian Pipeline Consortium, Bellwether of Russia's Investment Climate? *Russie Nei Visions*, No. 31.

Elliott Steve, Hsin-Wei Hsu, Terry O'Hearn, Sylvester Y. F., & Ricardo Vercesi (1998). "The Giant Karachaganak Field, Unlocking its Potential". *Oilfield Review* (Autumn, 1998): 16-25.

Hardin, Katherine (2012). Kazakhstan's Energy Sector since Independence: Two Decades of Growth and Challenges Ahead? Atlantic Council Issue Brief.

Hays, Jeffrey (2016). Oil and Gas Fields in Kazakhstan. Facts and Details, May 3, 2019. Available at http://factsanddetails.com/central-asia/Kazakhstan/sub8_4e/entry-4677.html. (Accessed: 03.05.2019).

English Russia. "History of Kazakhstan Oil Industry". Available at <https://englishrussia.com/2011/09/26/history-of-kazakhstan-oil-industry/>. (Accessed: 03.05.2019).

Kenter, Jeroen, Skalinski Mark, Tankersley Terrell, Mark Skalinski, Paul (Mitch) Harris, Marge Levy, Tony Dickson, Gary Jacobs (2010). "Tengiz Field (Republic Of Kazakhstan) Unit 1 Platform Static Model: Using a Hybrid Depositional –Diagenetic Approach". *SPE International* SPE-139935: 1-9.

Keohane, Robert O., and Nye, Joseph S. (2001). *Power and Interdependence*. New York: Addison Wesley Longman.

Lipson, Charles (1993). International Cooperation in Economic and Security Affairs. Chapter in David A. Baldwin, *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.

Petersen, Alexandros and Katinka Barysch (2011). Russia, China and the Geopolitics of Energy in Central Asia. Center for European Reform. Available at https://www.cer.eu/sites/default/files/publications/attachments/pdf/2011/rp_010-4118.pdf. (Accessed: 03.05.2019).

Stein, Arthur A. (1993). Coordination and Collaboration: Regimes in an Anarchic World. Chapter in David A. Baldwin, *Neorealism and Neoliberalism*. New York: Columbia University Press.

Uyzbayeva, Aigerim, Tyo Valeriya, and Ibrayev, Nurlan (2015). Towards Achieving Energy Efficiency in Kazakhstan. *International Journal of Environmental, Chemical, Ecological, Geological and Geophysical Engineering* 9(2): 77-85.

Viotti, Paul R., and Kauppi, Mark. V. (1999). *International Relations Theory: Realism, Pluralism, Globalism and Beyond*. USA: Boston: Allyn and Bacon.

Wendt, Alexander (1999). *Social Theory of International Relations*. Cambridge: Cambridge University Press.

RUSSIA'S POLICY IN CENTRAL ASIA DURING THE PUTIN ERA

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Abulhairkhan ZHUNISBEK¹

ABSTRACT

The period immediately after the end of the Cold War (1991–1999) is often viewed as post-imperial and marked by Russia's loss of the areas it once dominated. During Boris Yeltsin's presidency, Moscow's foreign policy was largely driven by a Euro-Atlanticist concept that put the post-Soviet countries, including those in Central Asia, on the periphery of its interests. In contrast, Vladimir Putin after his accession to power adopted a "multipolar world" concept of foreign policy, envisaging the Kremlin's dominance in the Eurasian heartland. This article employs empirical studies of cause-effect relationships that discuss the evolution of Russia's foreign policy orienteers. In particular, it looks into the question of what Vladimir Putin aimed to achieve in Central Asia and whether he managed to accomplish his goals. The article argues that the geopolitical considerations are the main determinants of Russia's approach to Central Asia, with other factors like security and policies towards the Russian community being distinctive to each state separately.

Key Words: Russia, Central Asia, multipolar world, foreign policy, Vladimir Putin.

¹ Independent researcher, Almaty, Kazakhstan, e-mail: abuzhunisbek@yahoo.com

INTRODUCTION

On May 7, 2018, Vladimir Putin was sworn in for the fourth term as president of the Russian Federation, and by the end of his new term in 2024, he will have ruled for 16 years, in effect making him one of the longest serving rulers of the world's largest country. Russian foreign policy during Putin's presidency, like any other aspect of life of the country, has gone through considerable changes. Although Central Asian states have always been of importance for Russia in terms of being the source of challenges (terrorism, drugs, and extremist ideas) and opportunities (an area of Russian integration initiatives), the way Russia approaches them have certainly changed under his rule. To illustrate, the period immediately following the collapse of the Soviet Union was marked by the virtual neglect of Central Asia by Moscow, leading to the erosion of its influence and the subsequent geopolitical vacuum in this part of the world. However, this trend was reversed as a consequence of President Vladimir Putin's arrival to power in 2000. Under his rule, the Kremlin adopted a more active stance towards Central Asia which resulted in two policy shifts: (a) the reintegration of Central Asian states and Russia within the institutional context, and (b) the strengthening of bilateral arrangements with each state separately. Putin's tenure has seen a number of integrations launched and strengthened. The most important Russian initiatives cover areas of the economy (the Eurasian Economic Union), defense (the Collective Security Treaty Organization) and politics (Shanghai Cooperation Organization), thereby allowing Russia not only to regain its influence but also to expand it. The bilateral agreements include: the establishment of a military bases in Kyrgyzstan and Tajikistan, a series of bilateral 'friendship treaties' that Russia has signed with all the Central Asian republics and the establishment of a number of major joint projects (approx. 7,500), mainly in the energy sphere. Considering the fact that the political structure of Russia is largely personified in the president who has the ultimate decision-making power, it seems worth reviewing Russian policy towards Central Asia over the twenty years since Putin first came to power.

LITERATURE REVIEW AND METHODOLOGY

Russia's foreign policy under Vladimir Putin's rule has been the subject of great interest for IR analysts and scholars alike, with special emphasis on its relations with the West. It is quite common to approach the subject through the lens of realist concepts of 'dominance' and 'hegemony'. However, since the annexation of Crimea, domestic and cultural-institutional factors have also started to come to the surface.

At the same time, a relatively small number of experts have studied the issue in the context of Central Asia. There is also hardly any literature that divides Russian foreign policy in Central Asia into periods. Although scholars agree that Russian foreign policy in Central Asia went through an evolution from indifference to intensive cooperation, the dynamics behind such changes are often overlooked. Therefore, this paper addresses the following core questions: What did Moscow under Vladimir Putin aim to achieve in Central Asia, and did it manage to accomplish these goals? To discuss these issues the article will be divided into two broad sections: 1) the place of Central Asia in Russian foreign policy, and

2) the main instruments in achieving Russia's strategic goals.

Since it is restricted to a certain period and is a case study requiring a multilevel interpretive analysis based on empirical studies of cause-effect relationships, the interpreted policy that forms the basis for this work is in the form of available published and online secondary sources such as books, journals, articles, research papers, etc. To answer the research question regarding the role of factor(s) leading to a policy shift, this research also employs a study of some primary sources which are available.

THE PLACE OF CENTRAL ASIA IN RUSSIAN FOREIGN POLICY THINKING

Background Study: Russia's Central Asia Policy under Yeltsin

At the end of the Cold War, Russia as a successor state of the Soviet Union lost its superpower status and its direct rule over the former Soviet republics. The first years after the collapse of the Soviet Union saw Russia in the midst of turmoil making its foreign policy subordinate to domestic considerations. The new government of the Russian Federation led by President Boris Yeltsin and Prime Minister Yegor Gaidar embarked on a difficult process of transformation in the economic, political, and social realms. Yeltsin's initial years of the presidency (1990–1996) were driven by a Euro-Atlanticist concept of foreign policy declared by the Russian Foreign Minister, Andrei Kozyrev, who pursued the goal of making the country part of the Euro-Atlantic 'family' (membership in G7, CSCE, etc.) and creating an environment/relations that would make undertaking urgent reforms successful (Mesbahi, 1993). As a result of Russia turning westward, its leadership adopted an almost indifferent approach to the post-Soviet countries, including those in Central Asia.

There exist numerous, sometimes contradictory, explanations that look into the rationale behind this particular policy approach. One line of thought suggests that at that time a paternalistic belief prevailed among Russian authorities. According to it, Central Asia had no choice but to rely on Russia, and hence it did not have to make any effort to remain appealing to them since, in their view, Moscow still retained the right to interfere and oversee post-Soviet space at any point in time if needed (Bowker and Ross, 1999). Others, however, maintain that Russia in line with its Euro-Atlanticist concept viewed itself as an integral part of the civilized (Western) world while, in the words of Kozyrev, "immature" Central Asian states which "belong to another world" presented a hurdle in Moscow's plans to undertake urgent reforms. In other words, the newly established Russian technocratic government held an opinion that the implementation of liberal reforms might come under threat from newly established states of Central Asia whose leaders (Islam Karimov in Uzbekistan, Nursultan Nazarbayev in Kazakhstan, Saparmurat Niyazov in Turkmenistan) were all the first secretaries of their republics' respective Communist parties before 1991. Hence, they maintained strong linkages with the Soviet past that made them potential supporters of Communist retaliation (Zvyagelskaya, 2009). As a result, getting rid of the 'political ballast' was necessary. Whatever the reasons were, it is clear that Central Asian states were not the ones who did separate from Russia, and, in fact,

Kazakh President Nazarbayev back then was seen as “the most enthusiastic defender of a revitalization of the USSR” and at first floated various initiatives to boost reintegration between Russia and the countries of the region (Olcott, 1996), but it was Moscow that did not show any activity in the region until the mid-1990s, leaving them to their fate.

As a result of Euro-Atlanticist foreign policy, the Russian hegemonic position in the region was undermined. The Russian neglect of Central Asia was perceived by the five states of the region and other regional and extra-regional players as a signal to act. These years were marked by the de-Sovietization/de-Russification in their domestic politics that put an end to Russia’s role of being ‘the only point of reference’ with the process of re-Islamization gaining ground (Górecki, 2014). Turkey, Iran, and the United States were the most active players in responding to the so-called geopolitical vacuum left by Moscow, signing a number of agreements in various fields. As a result, apart from Russia, the region also inclined towards the West (e.g., signing the NATO Partnership for Peace Program in 1994 and a number of joint ventures exploring newly found significant hydrocarbon reserves particularly in the territories of Kazakhstan and Turkmenistan), Muslim countries (Turkey, Iran), and China. The strengthening of these ties back then, however, was viewed by Russian authorities as a normal development within the rights of newly established sovereign states.

With the appointment of Yevgeny Primakov as Minister of Foreign Affairs in 1996, however, Russian foreign policy priorities shifted from West to East. This subsequently led Moscow to pay more attention to developing cooperation with the Central Asian states. It was Primakov who declared Russia as one center of the *multipolar world*, a center around which its neighbors should revolve. This shift is underpinned by the belief that Russia’s interests are better served when the security and predominance within its traditional areas of influence are ensured. Change in attitude went hand in hand with the growing threat of Islamic radicals from within (Chechen War 1994–1996) and outside of Russia (Taliban seizure of control in Afghanistan in 1996, ongoing civil war in Tajikistan, etc.) making Russia realize the flaws of its previous approach. Moreover, the largely failed implementation of “shock therapy” advised by the IMF and the United States took a heavy toll on its economy, Russia’s GDP between 1992–1996 fell by 37 percent; this fueled suspicion towards the West. Therefore, if the tactic of the Euro-Atlanticist was to rely on the West to attract its accumulated capital and experience for Russian transformation, Primakov’s doctrine, in contrast, upheld the idea of reasserting Russian statehood and recovering lost economic ties with its neighboring countries, including Central Asia (the trade turnover between Russia and the region experienced a sharp decline in the period between 1992–1995 falling from \$60 billion to \$6.7 billion). More important was a paradigm shift away from considering foreign policy as a mere extension of domestic factors towards viewing it as an important element in continuing Russia’s historical great power status. This marks the return of a realist approach to foreign policy where power and security play a central role away from a ‘utopian’ ideal in which Westernization is idealized. This shift in approach coupled with the growing presence of external players in post-Soviet space has led some researchers to consider this as the starting point for a “New Great Game” in Central Asia (Smith, 1996).

Overall, Russia's foreign policy during Yeltsin's presidency (1991–1999), which encompassed almost a decade, was characterized as being inconsistent and contradictory, and so many consider it unsuccessful. On the one hand, it failed to achieve its initial aspiration to become an integral part of the Euro-Atlantic community, and on the other hand, Russia lost its dominant position in Central Asia. To illustrate, Uzbekistan and Turkmenistan largely distanced themselves from Russia. Tashkent left the Commonwealth of Independent States (CIS) Collective Security Treaty in 1999 and became a member of GUAM states (Georgia, Ukraine, Azerbaijan and Moldova, hence transforming it to GUUAM), while Turkmenistan adopted a policy of neutrality that has successfully kept it separate from Moscow. At the same time, it should be noted that Moscow managed to restore peace in the Tajik Civil War (1992–1997) and retained its monopoly on the transit of hydrocarbons from the resource-rich Central Asian states.

Central Asia in Russia's foreign policy priorities (2000 to the present day)

Vladimir Putin's accession to power was a turning point for Russia's foreign policy in general and, in particular, towards Central Asia. The concept of the "multipolar world", introduced by Yevgeny Primakov, became a cornerstone of this. The period since the collapse of the Soviet Union till the beginning of Putin's arrival to power in 2000 is often viewed as post-imperial, marked by Russia's lost position in international relations. In contrast, throughout the entire following period under Putin and the years under Dmitri Medvedev as a president (2008–2012), during which Russia's foreign policy line has not changed significantly, the Kremlin arguably has been demonstrating neo-imperialistic tendencies marked by efforts to bind the countries near its borders (Central Asia and the Eastern European part of the Soviet Union) to Moscow with the ultimate goal of establishing a multipolar world, thereby reconstructing the unipolar domination of the U.S. in the 1990s, where Russia is one of the power centers (Korinman and Laughland, 2008). From Moscow's perspective there are three global centers—the United States, China, and Russia—with each exerting power in their respective 'spheres of influence' or 'spheres of interest'. This belief envisages the United States leading the West, China dominating the East, and Russia overseeing the Eurasian heartland. The assertiveness in international relations has been facilitated by an improving economic situation thanks to an incremental rise in world prices for the main Russian export products, particularly oil that went from \$27 per barrel in 2000 to \$94 at the end of Putin's second presidential term in 2008. Growing economic resources resolved numerous domestic problems which were the main focus of the Kremlin's attention in the early 1990s, thereby opening the way for a more proactive foreign policy.

Although Putin clearly regrets the collapse of the Soviet Union, calling it in 2005 "the biggest geopolitical catastrophe of the century", it is argued that he has no intention of restoring the USSR but rather wishes to ensure the maximum influence possible over the foreign and security policies of the ex-Soviet republics (Lo, 2015). Foreign policy concepts (FPC) and the annual presidential address to the federal assembly over the past two decades have presented similar arguments that emphasize engaging

in mutually beneficial cooperation with neighbouring states whilst taking into account Russia's 'legitimate interests'. At the same time the desire of West, according to the 2016 FPC, to regain their dominant position by imposing their views on others is leading to turbulence and instability in the world. Any perceived NATO expansion therefore in Russia's sphere of influence is seen as a blow to its interests. The fact that Georgia and Ukraine turned westward made Moscow wary of the same happening in Central Asia. Therefore, the main priority in the region is to prevent the Central Asian republics from aligning themselves with foreign powers and to integrate the maximum number of them into various Russian-led projects, such as the Eurasian Economic Union (EEU) and the Collective Security Treaty Organization (CSTO). This is also reflected in the every FPC since 2008 that placed emphasis on cooperation in the neighborhood through the Russian-led regional bodies (Frear and Mazepus, 2017). In this context, the integration is viewed as a way of maintaining Russia's position as a global power and preventing other actors from expanding their influence within its sphere of influence. Another important tactic used by the Kremlin is to avoid taking sides in sensitive regional issues (water and borders issues in Fergana Valley; ethnic tensions as illustrated by its hesitancy to settle inter-ethnic conflict in Kyrgyzstan during 2010) to maintain its role as a regional mediator (Cooley and Laruelle, 2013).

The Kremlin recognizes its inability to exclude any interactions altogether, and hence it aims to push cooperation with foreign powers towards economic cooperation rather than the realms of politics and security (Lo, 2015). That being said, Moscow largely favors seeing the predominance of Chinese economic investments over Western ones since Beijing demonstrates only limited ambition in the region while acknowledging Russia as a security provider (Lo, 2015). Moreover, until now Chinese investments have largely been made in the energy sphere (e.g., the Central Asian Gas Pipeline); this does not undermine Moscow's plan for keeping Central Asian countries dependent on the transit of their natural resources to the West (75% of the oil exported from Kazakhstan is transported via Russia). The flow of natural resources in an eastern direction does not compete with Russian energy supplies to Europe—a market Russia wants to dominate. However, Moscow's approach to prioritizing the oil and gas sector to ensure its own energy interests rather than establish full-fledged economic ties with the Central Asian states is often criticized by observers as it pushes countries to seek other economic partners (Paramonov and Stokov, 2008). In fact, the value of Central Asia's trade with China in 2010 exceeded the value of its trade with Russia.

Although the region's importance to Russia is frequently viewed in geopolitical terms in which it is argued to be an area of its relations (rivalry and limited co-operation) with major global players, other factors should not be overlooked, including security anxieties. This is because Central Asia serves as a kind of buffer zone against the Islamic threat emanating specifically from Afghanistan and the Middle East, and concerns related to the growth of ethno-nationalist ideas that may threaten Russia's cultural dominance. It can be argued that if the geopolitical considerations are principal determinants of Russia's approach to Central Asia, other factors like security and policies towards the Russian community are distinctive for each individual state depending on the factors on the ground.

To illustrate this, the policies towards Tajikistan and Kyrgyzstan are mainly

guided by a security rationale to contain the spread of religious extremism, as well as the smuggling of narcotics, weapons, and human trafficking from Afghanistan, part of which supplies terrorist organizations operating in North Caucasus. According to the statistics, Afghanistan is responsible for more than 90% of the world's illicit opium and heroin production, and 15% to 20% of drugs produced in Afghanistan are smuggled through the territory of Central Asia to Russia, Eastern Europe, and China. Russia's most important instrument is the military presence in the form of the Kant air base in Kyrgyzstan and the 201st ground troop base in Tajikistan with a total number of 9,000 military personnel.

This particular issue presents a dilemma for Putin who has to reconcile considerations related to security and geopolitics. Although there is a clear understanding that Russian security interests are served by the presence of U.S. troops within Afghanistan—since strengthening the borders with Afghanistan is not an answer, and something else must be done beyond the borders—it nevertheless pressured Kyrgyzstan to terminate the lease for the American base/transit center at Manas in 2014, even though Russia initially supported the coalition's intervention in Afghanistan. At the same time, Russia negotiated with Kyrgyzstan and Tajikistan the extension of its troop deployments in these countries by over ten years. This, in general, indicates that currently Moscow prioritizes geopolitical aims over security objectives since the presence of the U.S. military changes the geopolitical map in the Eurasian heartland (Lo, 2015).

Following the collapse of the Soviet Union, almost 25 million ethnic Russians suddenly found themselves effectively living abroad; this made them the second-biggest diaspora in the world after the Chinese. Although during the 1990s there was a mass migration of ethnic Russians to Russia, their presence in Kazakhstan and Kyrgyzstan remains significant. The presence of these large communities provides Russia with the advantage of being able to exercise soft power, including dominance in the information space of Russian and local Russian-speaking media that influences domestic and foreign policies in these countries. This is in sharp contrast to Turkmenistan and Uzbekistan, where Russians are only a small minority, thus allowing them to pursue foreign policy more independently from Russia. The Putin government therefore attaches great importance to the Russian diaspora in Russian foreign policy. The "Foreign Policy Concept of the Russian Federation" in 2013 declared that Russia would protect the rights and interests of Russian citizens and compatriots living abroad. The Russo-Georgian War in 2008, the conflict in the eastern part of Ukraine, and the annexation of Crimea by the Russian Federation indicates that the Kremlin will take a hostile attitude if an aggressive campaign is adopted in these states to promote the interests of the titular group at the expense of Russians and Russian-speaking people beyond its borders (Sencerman, 2018).

All in all, it can be argued that Russia under Putin based its foreign policy towards Central Asia on implementing both "hard" and "soft" power mechanisms, and establishing Russian military bases in the region. These mechanisms included promoting the integration of these countries in Russian-led integration projects, energy cooperation with the Central Asian countries and cultural ties with the considerable Russian minorities in these states which largely consisted of the influence of Russia's mass media over their information space.

INSTRUMENTS IN ACHIEVING RUSSIA'S STRATEGIC GOALS

After the collapse of the Soviet Union, Russia needed to adjust to new geostrategic realities and to find new ways of promoting its interests in its immediate periphery. The previous section attempted to explore the question of why Central Asia matters, and it concluded that Russia's most important goal is to maintain its influence there and to restrict the influence of other actors. This part of the article will explore the main instruments at its disposal to project its dominance; these can be divided into fostering multilateral diplomacy and bilateral relationships.

Central Asian states participate in various supraregional structures that are created by the Russian Federation at the expense of intraregional integration. As a result, they all developed closer ties with Moscow than among themselves. For Russia, regional organizations have been about advancing its geopolitical and geoeconomic goals, a balancing act against American unilateralism. The integration of the post-Soviet area is a top priority issue in Russian foreign policy. Therefore, some have even argued that the CSTO and the EEU perform roughly analogous roles to the Warsaw Pact and COMECON (Council of Mutual Economic Assistance) during the Cold War (Lo, 2015). At present, when the conflict with the West is escalating, Moscow aims to break the isolation from the West by developing stronger ties with non-Western States. At the same time, despite its desire to cover the entire Central Asia, the outreach is limited to only three Central Asian countries: Kazakhstan, Kyrgyzstan, and Tajikistan. Uzbekistan and Turkmenistan are absent from organizations in which Russia's position is dominant.

Perhaps the main vehicle to reach this objective is the CSTO, established in 2003 that provides Russia with the legitimacy to be a regional power. Russia dominates the CSTO, whose members also include Kazakhstan, Kyrgyzstan, and Tajikistan. The Russian Foreign Policy Concept describes it as "one of the key elements of the current security framework in the post-Soviet space and in the adjoining regions". According to its statute, its member states consult and coordinate their positions on foreign policy issues and regional security problems. More importantly, in December 2011, the leaders of the organization's member states agreed that third-party military bases could only be deployed in their territories following consultations with the other partners. At present, taking into account recent military exercises that took place under the auspices of CSTO to increase the practical skills of the military contingents of CSTO member states in conducting peacekeeping operations, it has been speculated that Moscow is using these exercises to get some of its allies to deploy peacekeeping operations in Syria or Ukraine. However, both the leaders of Kazakhstan and Kyrgyzstan have denied these allegations.

During Putin's era the CIS transformed into a genuinely collective multinational entity. At the same time, there were several setbacks with Tashkent leaving the organization in 2009. Moreover, the unresolved border issues in the Ferghana Valley between Kyrgyzstan and Tajikistan, members of the CSTO, from a purely legal perspective present a potential threat to the organization as there is no definite clause or article in the treaty that envisages a plan of action in the case of a conflict between its members (Baizakova, 2017).

In the economic sphere, Putin launched the Eurasian Economic Union

(EEU) on January 1, 2015, the final stage of an economic integration process which started in 2000. The establishment of the EEU was preceded by the establishment of the Customs Union (January 1, 2010) and the Common Economic Space (January 1, 2012). The new organization, which unlike its predecessor has legal personality, consists of Russia, Kazakhstan, Belarus, Armenia, and Kyrgyzstan. Critics of the EEU argue that Russia is using it as a foreign policy tool. According to this proposition, Moscow will have the opportunity to shape the economic relations of its member states with outsiders and isolate them from other potential partners. As one expert put it, Russia uses the EEU to allegedly "strengthen its influence (in Central Asia)," avoid "the integration of the countries of the region with the West, and contain China's growing influence" (Duararte, 2017).

The Shanghai Cooperation Organization (SCO) is another tool to contain the intrusion of any global power, namely China. The SCO has grown from the Shanghai Five format, initiated in the 1990s to settle border and territorial disputes between China and its newly independent Central Asian neighbors. As it is often seen as a Chinese and Moscow led union, the SCO is a vehicle for Beijing and Moscow to jointly coordinate their interests in Central Asia. For China, the organization initially served as a tool to enter into the post-Soviet space without disrupting Russian political and military dominance. Since 2011, Russian policymakers, aware of a growing Chinese influence in Central Asia and the geopolitical balance shifting in favor of Beijing, have been actively advocating for the expansion of the SCO by way of inviting India, a country with which it has traditionally close ties. Therefore, it seems that from the Kremlin's point of view the accession of India as a full member to the SCO shall constrain Beijing by binding it to the institutional obligations while the presence of another great power and main Chinese geostrategic rival in the organization would restore the balance of power. Although China initially resisted the idea of enlargement, it has changed its position due to two factors. First, the current behavior of Beijing suggests its weak commitment to the multilateralism, i.e., in promoting its interests, China avoids multilateral forums where it can be constrained and instead prefers to use bilateral diplomacy. To illustrate, China's active engagement to revive the Silk Road project is arguably the result of Moscow's resistance to establish a free-trade area (FTA) under the SCO framework, an agenda that had been actively promoted by China in 2010. Second, the accession of Pakistan (its close ally) and India is likely to increase the clout of the organization, at least on paper, while allowing for the status quo between Moscow and Beijing to be maintained.

BILATERAL RELATIONS

For most of the time since their independence, the Central Asian countries have been ruled by presidents who were former communist leaders. As rightly pointed out, the present leaders were born and raised between the 1950s and 1970s, educated in the Russian language, and have strong ties with Russia (economic, cultural, interpersonal, etc.), which affect their political preferences (Górecki, 2014). This serves as Russia's most important instrument. For example, without the personal involvement of Nazarbayev, the Eurasian Economic Union (and its predecessor, the Cus-

toms Union) would not have got off the ground, while Putin's personal support for President Almazbek Atambayev, and the latter's dependence on it, is "the single most important factor in Moscow's resurgent influence in that country" (Lo, 2015).

This is Russia's greatest advantage over the other players active in the region. However, over time, this advantage will naturally weaken. Taking into account the fact that Nazarbayev, who will not remain in office forever, is central to maintaining good relations with Russia represents a source of vulnerability for Moscow. It is predicted that any successor of Nazarbayev is likely to be more "Kazakh", and thus Kazakh nationalism may gain solid ground. Currently, Russians have an exceptionally high desire to emigrate; in 2013, 60% of ethnic Russians declared they would be willing to leave the country if, in their opinion, the situation deteriorated, for example, due to intensifying Kazakh nationalism and a change in government (Jarosiewicz, 2016). Some even provide examples of worst-case scenarios like the Tajik civil war and the more recent violence in Southern Kyrgyzstan (Bechain and Kevlihan, 2013). The Russian president's argument at the time of the youth forum by Lake Seliger in August 2014 was that it is Nazarbayev who set up the state of Kazakhstan who is alarming and may signal a threat to the state's functioning if in a post-Nazarbayev era an aggressive campaign to promote the interests of the titular group is implemented. Therefore, one might expect Russia to follow closely any power transitions and ethnonationalistic policies in these republics.

CONCLUSION

This paper has divided post-Soviet Russian foreign policy in Central Asia into two stages: the period of indifference (1991–1999) and the period of return (1999–present). Russia's influence has strongly eroded during the first years since the collapse of the Soviet Union. The trend has been largely reversed as a result of Putin's arrival to power upon which a number of integrations have been launched and strengthened. Each stage has been discussed in detail in order to portray the characteristics and focuses of Russian foreign policy during these periods.

As the paper has illustrated, dominance in this region is important for Putin from a geopolitical perspective as Russia's position as a major power depends on this. However, the author argues that Russia under his rule has been successful only in expelling Western powers; securing its sphere over all of Central Asia proved to be a more difficult task. In Central Asia, Russia's relations are the strongest in Kyrgyzstan, Tajikistan, and Kazakhstan who are members of the organizations supported by Moscow. At the same time, Turkmenistan and Uzbekistan are geopolitically removed from Russia. Turkmenistan declared a strategy of 'permanent neutrality' in 1994 that was recognized by the United Nations in 1995. Under Karimov's rule, Uzbekistan pursued a self-reliance policy in international affairs, going back and forth from Russia, rejoining the CSTO, and leaving it again in 2012. Uzbekistan did not join EAEU or sign any free-trade agreement. Largely with the arrival of Mirziyoyev, it is likely that Uzbekistan will continue to adhere to the policy of remaining free of any politico-military coalitions.

In the short-run Russia seems likely to remain the most prominent external power in Central Asia given its record of intensive bilateral and multi-lateral engagement in the region in the form of security cooperation and variety of investment projects. However, as China's role and significance grows steadily throughout Central Asia, the question arises how Russia would react if Beijing's engagement shifts from largely an economic sphere to encompass political and even security realms.

REFERENCES

- Baizakova, Zhulduz (2017). "Border Issues in Central Asia: Current Conflicts, Controversies and Compromises". UNISCI, No. 45. Available at: <http://dx.doi.org/10.5209/RUNI.57292>. (Accessed: 20.05.2019).
- Bechain, Donna O. and Kevlihan, Rob (2013). "Threading a needle: Kazakhstan between civic and ethno-nationalistic state-building". *Nations and Nationalism* 19(2): 337–356.
- Bowker, Mike and Ross, Cameron (1999). *Russia After the Cold War*. Edenborough: Pearson Education Limited.
- Cooley, Alexander and Laruelle, Marlene (2013). "The Changing Logic of Russian Strategy in Central Asia: From Privileged Sphere to Divide and Rule". *PONARIS Eurasia*, Policy Memo No. 261.
- Duarte, Paulo (2017). Russia's Eurasian Dream: The Original Sin Revisited. *International Policy Digest*. Available at: <https://intpolicydigest.org/2017/10/19/russia-s-eurasian-dream-original-sin-revisited/>. (Accessed: 04.04.2019).
- Frear, Matthew and Mazepus, Honarata (2017). "A New Turn or More of the Same? A Structured Analysis of Recent Developments in Russian Foreign Policy Discourse". *Eu-Strat Working Paper Series* No. 3.
- Górecki, Wojciech (2014). Ever Further from Moscow Russia's Stance on Central Asia. Warsaw: Center for Eastern Studies. Available at https://www.osw.waw.pl/sites/default/files/prace_48_ever_further_from_moscow_net.pdf. (Accessed: 04.07.2019).
- Jarosiewicz, Alexandra (2016). Perestroika the Nazarbayev Way: Crisis and Reforms in Kazakhstan. Center for Eastern Studies. Available at: https://www.osw.waw.pl/sites/default/files/pw_58_perestroika-the-nazarbayev-way_net.pdf. (Accessed: 06.07.2019).
- Korinman, Michael and Laughland, John (2008). *Russia: A New Cold War?* London: Vallentine Mitchell Academic Publishers.
- Lo, Bobo (2015). Frontiers New and Old: Russia's Policy in Central Asia. *Russie.Nei.Vision* (82).
- Mesbahi, Mohiaddin (1993). "Russian Foreign policy and security in Central Asia and the Caucasus". *Central Asia Survey* 12(2): 181–215.
- Olcott, Martha B. (1996). *Central Asia's New States: Independence, Foreign Policy, and Regional Security*. Washington D.C.: United States Institute of Peace Press.
- Paramonov, Vladimir and Stokov, Alexey (2013). "The Evolution of Russia's Central Asia Policy". *Advanced Research and Assessment Group*, Central Asian Series 08/21.
- Sencerman, Öncel (2018). "Russian Diaspora as a Means of Russian Foreign Policy". *Military Preview*, March-April 2018: 40.
- Smith, Dianne L. (1996). "Central Asia: A New Great Game?" *Asian Affairs: An American Review* 23(3): 147–175.
- Zvyagelskaya, Irina (2009). *Formation of Central Asian States. Political Process*. Moscow: Aspect Press.

INDUSTRIAL CONCENTRATION IN KAZAKHSTAN

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Kanat MAKHANOV¹

ABSTRACT

This study focuses on geographical concentration of industries in Kazakhstan at 2, 4 and 5-digit disaggregation level, across 16 regions of Kazakhstan during 1990 - 2013. The main objective of this study is to identify the change in regional concentration of industries during the sample period. There are certainly considerable differences in levels of concentration between industries and their changes during the sample period. Thus, sectors like utilities, food and beverage industries show less concentration, whereas industries with high knowledge intensity present very high levels of spatial concentration during the whole sample period. In addition, there was a considerable decline in concentration of oil and gas and related extractive industries during the period of under consideration both in absolute and relative terms. It happens to be that many new industries with high knowledge intensity have emerged since 1990 and that there are many sectors that are negligibly small.

Key Words: industries, industrial concentration, Gini index, absolute concentration, relative concentration.

¹ Eurasian Research Institute, Mametova St. No. 48, Almaty, 050004, Kazakhstan,
e-mail: kanat.makhanov@eurasian-research.org

INTRODUCTION

Transition economies are very likely to experience significant shifts in spatial distribution of economic activities. The time period subsequent to the collapse of the Soviet Union is unique and interesting from the analytical point of view because it corresponds to the period of economic transition from planned economy to an economy based on market conditions. The necessary transformations in economic policy terms of international trade and regional policy intensified by integration to the world economy and accompanied by further increase of mobility of the production factors and natural resources and significant reduction of transaction and transportation costs created conditions of inevitable spatial shifts of economic activities in Kazakhstan. Moreover, recent economic integration of Kazakhstan with Belarus and Russia into the so-called Eurasian Economic Union created regimes of considerable trade liberalization with among these trade partners and neighboring countries that are to prepare to the accession, the spatial effects of which are to be seen in the years to come.

The issues of industrial concentration, agglomeration, localization and regional specialization are highly interrelated and are frequently discussed together in different contexts. This topic is frequently discussed with relation to industries in the United States (US). Classical well known examples of industrial concentration include Silicon Valley, automotive industry in Michigan, financial institutions in New York City, insurance industry in Connecticut and etc. Concentration and specialization in many cases are positively interrelated. This can be retrieved from the *New Economic Geography*.

Our study includes industries in Kazakhstan during the time period from the very beginning of its existence as an independent state. The aim of this study is to identify spatial relocation of the industries during the sample period on the given territory. The main contribution of this study, however, is the high level of disaggregation of industries which reaches 4 and 5 digit level. Such a deep disaggregation level permits us to construct a rather precise and detailed picture of the spatial dynamics of the industries in Kazakhstan. Given that studies on spatial allocation of economic activities in Kazakhstan are extremely infrequent and out of focus in policy making, we hope that we will contribute to better understanding and clarification of this issue contribute to stimulation of further research on this and related fields of study.

THEORETICAL BACKGROUND

The earliest scientifically consistent theory developed on locational economics belongs to Prussian economist von Thunen (1826), who identified transportation cost and crop price as the determining factors of location of farm lands relative to urban centers. His theory referred to Prussian farmlands during the last years before the industrial revolution came there and this was a pioneering insight on spatial agglomeration that was generally accepted and remains important until nowadays and it is heavily cited and revised in academic literature. The main advantages of von Thunen's theory and its linkages with the New Economic Geography are presented by Fujita (2011).

Further theories concerning locational determinant of industries were developed by Marshall (1920), Weber (1909), Christaller (1933), Losch (1940) and others. Marshall (1920) tried to explain the existence of industrial agglomerations. He identified three main reasons of spatial concentration of industries: emergence of related industries, formation of labor with specific skills and knowledge spillover. Weber (1909) in his theory focused his attention on cost minimization. According to his theory, the fundamental incentive that stands behind the decision of location choice is the minimization of costs. Weber's theory underlines the two notions that are undisputedly important in spatial economics, which are economies of scale and the role of historical accidents. The two theories have many similarities and in many aspects complement each other and explain rather well the emergence and existence of industrial agglomerations. Weber with his industrial location theory also contributed to the development of industrial organization (Perreur, 1998). The theories of Weber (1909) and Marshall (1920) gain much more explicative power when analyzed together (Inamizu and Wakabayashi, 2013).

The most recent theory concerning locations of firms is attributed to Krugman (1991). His ideas concerning geographical economics of the US were described in his famous monograph called *Geography and Trade*. In this book, he explains the current locational feature of the economic activities in the US. According to this theory, historical accidents play the fundamental role in the formation of industrial belts. However, the further development of industrial agglomerations is strictly dependent on economies of scale, transportation cost and demand. Firms always try to serve large markets from one geographic location and the largest markets are usually those that already have high concentration of other firms. Moreover, historically when most of the current industrial agglomerations were emerging the transportation costs were extremely high. That is why initially firms were oriented to local markets. According to Krugman (1991), the totality of these factors explains the agglomeration of industries in the North-Eastern US. Comparing US to the European Union (EU) he also points out an amazing fact that in the US industries are more concentrated and regions are more specialized than in the EU. This approach was further developed into *New Economic Geography* by Fujita et al. (1999).

Many economic theories concerning a distribution of economic activity across territory are closely tied to trade theories. The well-known Ricardian trade model is one of the basic and comprehensive models that explain trade (Ricardo, 1817). It explains the trade through comparative advantage, which results from the difference in labor productivity between two countries. However, Ricardian trade model is too simplistic and it requires too many unrealistic assumptions to be hold. Another famous model called is Heckscher-Ohlin model, which explain trade between countries by the differences in endowments of factors of production (Heckscher, 1919 and Ohlin, 1933). According to this theory, labor abundant countries specialized in labor intensive industries and capital abundant countries specialize in capital abundant industries. However, these theories, despite their huge contributions to the formation of the basics of international trade, were in many aspects inconsistent with complexities of modern trade processes and required too many restrictive assumptions. In this sense, the *New Trade Theory*

was developed in order to adapt the theory to the complexities of the reality. Unlike other theories, this new approach takes into consideration returns to scale, allows imperfect competition, takes into account the demand side of production and allows many other realistic conditions to intervene. However, due to the specificities of our data, in our analysis we leave trade factors out of our focus.

Forces that lead to industrial concentration and dispersion are associated with other factors too. Many studies test spatial allocation of economic activities relative to other reasons. Low transportations costs decrease concentration of industries (Rossi-Hansberg, 2003). Lafourcade and Mion (2004) find that bigger plants have more incentive to concentrate than smaller ones in Italian industries. Before that, the idea of linkage was developed by Ellison and Glaeser (1997), which underlines the importance of natural advantages in spatial concentration of industries. Specialization and concentration react in parallel to changes in transport costs (Aiginger and Rossi-Hansberg, 2006). Finally, concentration degrees may largely depend on the specific features of each industry (Athreya and Kapur, 2003).

LITERATURE REVIEW

Spatial concentration of certain economic activities is tackled directly or indirectly in various contexts. Amess and Roberts (2006) analyze the change in industrial concentration in Poland during the transition era between 1989 and 1993 in the context of the type of property ownership.

With recent Eastward expansion of the EU the issues concerning spatial dynamics of economic activities, including industrial concentration have started to be mentioned more frequently in academic literature. This can be seen in Traistaru et al. (2002) who analyzed regional specialization and concentration of industries in Bulgaria, Romania, Estonia, Hungary and Slovenia between 1990 and 1999 and found evidence of significant increase in industrial concentration in these countries. It is worth to mention that all these countries entered the EU very recently and still experience a heavy pressure of trade liberalization with the rest of the EU. East European countries that recently became EU members have gained special interest among scholars when it comes to industries. There is a great study made on Romania by Goschin et al. (2009), who found an increasing trend towards concentration of most economic activities starting from the year of the accession of Romania into the EU in 2007.

Hallet (2000) in his study on EU member states on regional level finds no major changes in concentration of 17 industries between 1980 and 1995. However, he finds considerable differences between different economic sectors. The most concentrated industries according to Hallet (2000) are industries related to some specific raw material processing. In general, according to Hallet (2000) the EU was a rather homogenous structure in terms of industrial concentration.

Another research on Europe with a very big geographical scale and extraordinarily deep level of industrial disaggregation was done by Brühlhart and Traeger (2004). This study encompasses the time period from 1975 to 2000 and was done by entropy indices. They found no

significant changes in concentration of aggregate employment. Also they detected a significant shift towards concentration in manufacturing sector relative to the spatial spread of total employment whereas relative to physical space it decreased during the sample period. Textiles, clothing and footwear sectors experienced the most pronounced decrease in the relative concentration level.

There are numerous studies conducted on geographic concentration of industries in developing countries that recently have gone through policies of trade liberalization, which make them similar to Kazakhstan. Trejo Nieto (2009) in her research on Mexican industries between 1988 and 2003 found evidence of significant geographic dispersion of industries mainly towards northern border-states. She also states that only a third of all industries became more concentrated during the sample period. The most concentrated industries by Trejo Nieto (2009) were pharmaceuticals and machinery and equipment while tortillas and beverages were among the most dispersed ones.

There are a plenty of studies that consider concentration of industries in the scope of trade regimes. Burghardt (2013) in his research on concentration of industries in Switzerland in the context of trade liberalization with the EU found a significant increase in concentration in industries with low R&D. Nozaki (2014) studying the case of Thailand found a significant dispersion of industries from the capital city after implementing an export oriented economic policy.

There is a study by He et al. (2008) that concludes a similar statement about Chinese economy. Particularly, He et al. (2008) note an increasing concentration of industries that are export oriented in the coastal provinces of China. They also found that firms when choosing location rely more on comparative advantage.

Naude (2006) finds high industrial concentration levels in South Africa between 1972 and 1996. Aparecida et al. (2003) in their studies on industrial concentration and labor productivity in Brazil from 1985 to 1998 found evidence of increase in concentration of industries since trade liberalization during 1990s. Fedderke and Simbanegavi (2008) in their study on South African manufacturing find a very high level of spatial concentration. Tipuric and Pejic Bach (2009) on their test on Croatian industries found that two fifths of industries had declining concentration levels and only one fifth had increasing levels of concentration. Another study on Croatia was made by Pervan et al. (2013) which focused on food and beverage industry only between 1999 and 2011 and found a clear pattern of concentration.

DATA DESCRIPTION

All the data that figure in this study are taken from the official website of the Agency of Statistics of the Republic of Kazakhstan (ASRK). Particularly, major part of the data on output of industries disaggregated till the 4 and 5-digit level is taken from the statistical yearbooks called "Industries in Regions of Kazakhstan" and published on a yearly basis from 2002 to 2014 covering the period from 1998 to 2013. The data on industries till the 2-digit level disaggregation and aggregated industrial output that

cover the time period from 1990 to 2013 is also available on the website of the Agency of Statistics of Kazakhstan and is updated every year.

The statistical yearbooks provide very detailed data source on output by hundreds of economic activities. However, these data are not standardized and number of industries, level of disaggregation and the names of industries change from year to year, which makes it difficult to extract a continuous dynamic picture of the concentration of industries during our observation period. In order to avoid this and make our study comparable to other studies on industrial concentration we approximate our data to the fourth revision of the International Standard Industrial Classification of All Economic Activities (ISIC), which is widely used as a format of different reports and official publications on national and international levels. The ISIC is also frequently used as a benchmark in many studies whenever a disaggregated classification of industries is necessary. Unfortunately, due to the structure of data that is available, we cannot use only one disaggregation level along our observation period. Nor can we use a single disaggregation level during each year of observation. For this reason, for the observation period from 1998 to 2013 we use a full 4-digit level disaggregation and partial 5-digit level disaggregation of industries. The latter two disaggregation levels are largely conventional due certain peculiarities of the data. However, the emphasis will be always made on 4-digit level disaggregation whenever it is possible without a loss of continuity of the data. All the 6-digit level data are aggregated to 5-digit level. As for the 2-digit level disaggregation data which is used for the whole observation period along with 4 and 5 digit disaggregation levels the original data provided by the Agency of Statistics of Kazakhstan is standardized in accordance with the ISIC. The numerical description of the data can be summarized in Table 1:

Table 1. *Data Availability.*

Year	2-digit level			4-digit level			5-digit level		
	Number of industries available	Total ISIC industries	Units of measurement	Number of industries available	Total ISIC industries	Units of measurement	Number of industries available	Total ISIC industries	Units of measurement
1990	31	36	Tenges	0	161	Various	0	263	Various
1991	31	36	Tenges	0	161	Various	0	263	Various
1992	31	36	Tenges	0	161	Various	0	263	Various
1993	31	36	Tenges	0	161	Various	0	263	Various
1994	31	36	Tenges	0	161	Various	0	263	Various
1995	31	36	Tenges	0	161	Various	0	263	Various
1996	31	36	Tenges	0	161	Various	0	263	Various
1997	31	36	Tenges	0	161	Various	0	263	Various
1998	32	36	Tenges	41	161	Various	83	263	Various
1999	32	36	Tenges	46	161	Various	95	263	Various
2000	32	36	Tenges	47	161	Various	95	263	Various
2001	32	36	Tenges	51	161	Various	200	263	Various
2002	32	36	Tenges	53	161	Various	197	263	Various
2003	32	36	Tenges	53	161	Various	204	263	Various
2004	32	36	Tenges	51	161	Various	221	263	Various

2005	32	36	Tenges	51	161	Various	217	263	Various
2006	32	36	Tenges	52	161	Various	217	263	Various
2007	32	36	Tenges	52	161	Various	216	263	Various
2008	32	36	Tenges	53	161	Various	208	263	Various
2009	32	36	Tenges	49	161	Various	180	263	Various
2010	32	36	Tenges	47	161	Various	181	263	Various
2011	32	36	Tenges	54	161	Various	180	263	Various
2012	32	36	Tenges	51	161	Various	176	263	Various
2013	32	36	Tenges	53	161	Various	171	263	Various

Source: Author's calculations based on the data from ASRK.

There is a lack of data on four industries on 2-digit level throughout all the sample period. These are *18-Printing and reproduction of media*, *30-Manufacture of other transport equipment*, *32-Other manufacturing*, *39- Waste management*. Till 1998 there is another missing industry which is *37- Sewerage*. Obviously, at two digit level not all data are provided in our data source. At four digit level that covers the time period from 1998 to 2013 some existing industries are also not represented. These are *0721 - Mining of uranium and thorium ore*, *0910 - Support activities for petroleum and natural gas extraction*, *0990 - Support activities for other mining*, *1075 - Prepared meals*, *3700 - Sewerage* and *3811 - Collection of non-hazardous waste*. Several other industries that in fact uninterruptedly existed throughout the observation period from year to year disappear from the statistical records of the ASRK. Despite this kind of minor failures of continuity of data, its coverage is enough for an analysis.

The complete set of industries that we consider in this study is listed in Table 12. One can notice that there was a growth of the number of existing industries at 4 and 5-digit levels from 1998 to approximately 2003. This can be attributed to improvement of data collection of the ASRK, switches of classification system and to certain emergence of new type of industrial activity. On the other hand, this limits the degree of objectivity of the analysis leading us to think that 1998 was a breaking point in the industrial structure of the regions, which would be wrong.

METHODOLOGY

As it was mentioned above, in order to measure the industrial concentration we consider its spatial distribution, which implies a measurement of the size of different industrial activities. Based on our data, we take the production as a measurement of industries. There are two types of techniques of measuring concentration as well as specialization: absolute and relative. Measurements of absolute concentration detect any kind of gathering of industries in a certain territorial unit without making reference to the overall distribution of economic activities. Thus, absolute measurements of industrial concentration are not very precise when overall industries are far from being uniformly distributed. Relative measurements of industrial concentration are more preferable to absolute measurements because they take into account the general distribution of industrial activity and detect any difference between overall industrial activities and in some particular industry. As a measurement of absolute concentration of industries we use the Herfindahl-Hirschman (HH) Index (Herfindahl, 1950, Hirschman, 1964), which is expressed as follows:

$$H_i = \frac{\sum_{j=1}^m x_j^2}{\left(\sum_{j=1}^m x_j\right)^2}, \quad x_j \text{ is the size of the output of region } j \text{ in}$$

the total output of industry i . In case of maximum absolute concentration $H_i = 1$, and the less concentrated is industry and the more regions we consider the closer it will be to zero. Due to its simplicity the HH-index became one of most frequently used indices of concentration and specialization among scholars. HH index also can easily be transformed and used for other measurements depending on the purpose the study. This was demonstrated by Bikker and Haff (2002) in their research on concentration in banking industry. HH index is also used in more complex indices like, for example, Ellison and Glaeser Index (Ellison and Glaeser 1994) and in Maurel and Sedillot Index (Maurell and Sedillot 1999).

In order to detect the relative concentration of industries we use the Gini Index which in some literature is also called locational Gini Index.

$$G^i = 1 - \sum_{j=1}^n \lambda_j [\lambda_{j(n)}^i + \lambda_{j(n-1)}^i], \quad \text{where } \lambda_j \text{ is the share of the industry}$$

of region j in the total national industrial out. $\lambda_{j(n)}^i$ is the accumulated share of industry of region j which is on the n^{th} position by its share in the industry i . $\lambda_{j(n-1)}^i$ is the accumulated share of region j which is on the n^{th} position among all the regions by its share of output in the industry i . It oscillates between 0, which implies absolute dispersion, and 1, which represents the maximum concentration. The Gini index is well known for its applicability in other fields as well. Originally developed by Gini (1912) it has been widely used in a broad range of human and natural sciences for different purposes. One of the economists who demonstrated the usefulness of this index in special economics was Krugman (1991). Graphically the Gini index measures the area between the 45 degrees line of equality and the Lorenz (1905) curve. In our case the greater this area the more concentrated is an industry. There are also other forms of Gini index that are based on the same technique but imply slightly different approach that can be found in Guillain and LeGallo (2005), Hong (2011), Ceapraz (2008), Campos (2012) and others.

There are of course many other techniques of measurement which are more complex and require more complex data. However, our choice is limited to HH and Gini indices due to the characteristics and availability of the data at hand.

There are also certain drawbacks that emerge depending on data characteristics and measurement techniques applied. Particularly, industries tend to become more concentrated as the level of industrial disaggregation increases (Goschin et al. 2009). It is also worth mentioning that there is no perfect measurement of concentration. Each approach bears in itself some advantages and shortcomings. Moreover, there are also different linkages between industries themselves which inevitably affects the degree of concentration. Thus the more related the industries are, there more correlated they become in terms of concentration.

In terms of geographic areas the data are not as detailed as we would like them to be. The amounts of production of each disaggregated industry are given at regional level. Hence, our empirical analysis will be done on 14 regions and 2 cities of republican status. There are 16 territorial units. This can cause certain imprecisions in detecting concentration. Moreover,

many regions of Kazakhstan are very big in terms of geographic space. This certainly limits the power of our research even further if to take into account that concentration usually takes place at smaller geographic levels (Ruiz-Valenzuela et al. 2006).

INDUSTRIAL CONCENTRATION IN KAZAKHSTAN

Absolute Concentration

Kazakhstan is one of the Post-Soviet states with large extractive sector and poor manufacturing. The share of its extractive sector in the total industrial output is roughly 60%. Its extractive industry is mainly based on oil and gas industry, which in our analysis corresponds to 06 - *Petroleum and natural gas*. The share of this particular sector is about 51%. Given that other 5.8% of the industrial sector is attributed to utility industry, the remaining manufacturing sector only account approximately for about one third of all industries and it is split into numerous small industries.

In Table 2, you can see the ranking of all the industries in absolute and relative terms at 2-digit disaggregation level in 2013.

Table 2. *Absolute and Relative Concentration Rankings of 2-digit Level Industries in 2013.*

Absolute concentration index ranking of industries (HH index)		Relative concentration index ranking of industries (Gini index)	
Industry	HH index	Industry	Gini index
10 - Food products	0.090	38 - Waste collection and treatment	0.402
36 - Water collection, treatment and supply	0.091	06 - Petroleum and natural gas	0.424
23 - Other non-metallic mineral products	0.092	36 - Water collection, treatment and supply	0.441
38 - Waste collection and treatment	0.095	08 - Other mining and quarrying	0.461
37 - Sewerage	0.096	35 - Electricity, gas, steam and air conditioning	0.570
25 - Fabricated metal products	0.104	37 - Sewerage	0.580
22 - Rubber and plastics products	0.106	09 - Mining support service activities	0.583
08 - Other mining	0.117	25 - Fabricated metal products	0.587
28 - Machinery and equipment n.e.c.	0.119	33 - Repair and installation of equipment	0.602
33 - Repair and installation of equipment	0.127	23 - Other non-metallic mineral products	0.631
35 - Electricity, gas, steam and air conditioning	0.129	19 - Coke and refined petroleum products	0.642
14 - Wearing apparel	0.130	22 - Rubber and plastics products	0.655
20 - Chemical products	0.143	10 - Food products	0.667
16 - Wood and cork products	0.148	20 - Chemical products	0.667
27 - Electrical equipment	0.179	14 - Wearing apparel	0.679
31 - Furniture	0.191	31 - Furniture	0.689
17 - Paper products	0.194	16 - Wood and cork products	0.725
15 - Leather products	0.203	24 - Basic metals	0.751

07 - Metal ores	0.213	17 - Paper products	0.778
24 - Basic metals	0.260	27 - Electrical equipment	0.800
09 - Mining service activities	0.267	07 - Metal ores	0.811
06 - Petroleum and natural gas	0.292	05 - Coal and lignite	0.833
11 - Beverages	0.293	28 - Machinery and equipment n.e.c.	0.840
19 - Coke and refined petroleum products	0.339	13 - Textiles	0.855
21 - Pharmaceuticals	0.385	11 - Beverages	0.855
26 - Electronic and optical products	0.396	15 - Leather products	0.869
13 - Textiles	0.397	29 - Motor vehicles	0.873
05 - Coal and lignite	0.420	21 - Pharmaceuticals	0.896
29 - Motor vehicles	0.475	26 - Electronic and optical products	0.916
12 - Tobacco products	1.000	12 - Tobacco products	0.967

Source: Author's calculations based on the data from ASRK.

As we can see, in absolute terms all the industries at 2-digit level are rather dispersed. *12 – Tobacco industry, (1.000)* which is almost totally based in Almaty region, is the only industry that exceeds $HH=0.500$. The least concentrated industries are *10 – Food products (0.090)*, *36 – Water management (0.091)*, *23 – Other non-metallic mineral products (0.092)*, *38 - Waste collection and treatment (0.095)*, *37 – Sewerage (0.096)*. The most concentrated industries in absolute terms other than *12 – Tobacco industry* are *26 – Electronic and optical products (0.396)*, *13 – Textiles (0.397)*, *05 - Coal and lignite (0.420)* and *29 – Motor vehicles (0.475)*

In relative terms the indices don't vary as greatly as in absolute terms. *38 – Waste collection and treatment (0.402)*, *06 – Petroleum and natural gas (0.424)*, *36 – Water collection, treatment and supply (0.441)* and *08 - Other mining and quarrying (0.461)*. It's remarkable that the two rankings industries in two columns don't match except for *12 – Tobacco industry* and *31 – Furniture industry*. However, there is some tenuous order. Particularly, most utility industries are very dispersed both in absolute and relative terms, as it is reasonable to expect. It is also noteworthy, that the industries that require more advanced scientific base are very concentrated in both terms. On the other hand, these industries are extremely small in terms of output.

Table 3 presents our conventional classification of industries by their change of indices of concentration at 2-digit disaggregation level during the time period from 1990 to 2013.

Table 3. Absolute Change of HH and Gini Indices between 1990 and 2013.

Industry Description	Industry	Δ HH Index	Δ Gini Index
Extractive industries	05 – Coal and lignite	-0.232	-0.013
	06 – Petroleum and natural gas	-0.210	-0.311
	07 – Metal ores	-0.020	0.036
	08 – Other mining	-0.072	-0.284
	09 – Mining service activities	-0.081	-0.064
Industries with Low Knowledge Intensity	10 – Food products	0.008	0.061
	11 – Manufacture of beverages	0.174	0.179
	12 – Tobacco products	0.000	0.014
	13 – Textiles	0.233	0.124
	14 – Wearing apparel	0.021	0.080
	15 – Leather products	0.048	0.061
	16 – Wood and cork products	0.053	0.076
	31 – Furniture	0.082	0.080
Industries with Medium Knowledge Intensity	19 – Coke and refined petroleum products	0.015	-0.159
	20 – Chemical products	-0.047	-0.104
	21 – Pharmaceuticals	-0.464	-0.053
	22 – Rubber and plastics products	-0.165	-0.057
	23 – Other non-metallic mineral products	0.005	0.061
	24 – Basic metals	-0.081	-0.033
Industries with High Knowledge Intensity	25 – Fabricated metal products	-0.060	-0.123
	26 – Electronic and optical products	-0.012	0.088
	27 – Electrical equipment	-0.057	-0.045
	28 – Machinery and equipment n.e.c.	-0.004	-0.132
	29 – Motor vehicles	0.222	-0.010
Non-Tradable and Utility Industries	30 – Other transport equipment	-	-
	18 – Printing	-	-
	32 – Other manufacturing	-	-
	33 – Repair and installation of equipment	0.040	0.031
	35 – Electricity, gas, steam and air conditioning	-0.025	-0.047
	36 – Water collection, treatment and supply	-0.018	-0.092
	37 – Sewerage	-0.080	-0.117
	38 – Waste collection and treatment	-0.049	-0.296
39 – Remediation and waste management	-	-	

Source: Author's calculations based on the data from ASRK.

Note that like in the previous Table 2 *12 – Tobacco products* and *31 – Furniture industry* demonstrate outstanding results. Both industries had minimum change in absolute and relative terms during the whole period. All the Utility industries that include *35 – Electricity, gas, steam and air conditioning*, *36 – Water collection, treatment and supply*, *37 – Sewerage* and *38 – Waste collection and treatment* show negative changes in absolute and relative throughout the given time period. Taking into account the specificities of this industries, we can attribute their dispersion

to infrastructural developments of remote areas and small towns. This is illustrated in Figures 16 and 23.

There are also negative changes among extractive industries in both terms. Particularly, 05 – *Coal and lignite* ($\Delta HHH=-0.232$) and 06 – *Petroleum and natural gas* ($\Delta HHH=-0.210$) have become considerably dispersed in absolute terms. In relative terms 06 – *Petroleum and natural gas* ($\Delta Gini=-0.311$) and 08 – *Other mining* ($\Delta Gini=-0.284$) have been dispersed in spatial terms during the sample period. Any shifts in terms of location in extractive industries should be considered with certain level of skepticism. The dispersion of extractive industries can be done in two ways. First – construction of new mine and development of new oil fields, second – establishment of new offices in other regions. Since 1990, both effects took place in Kazakhstan. The graphs of these changes are illustrated in Figures 10 and 17.

We can observe a very different situation with Industries with Low Knowledge Intensity. Here all the industries except for 17 – *Paper products* ($\Delta HHH=-0.087$, $\Delta Gini=-0.024$), have positive changes in their indices. However, many of these changes are small. Despite, 11 – *Manufacture of beverages* ($\Delta HHH=0.174$, $\Delta Gini=0.179$) and 13 – *Textiles* ($\Delta HHH=0.233$, $\Delta Gini=0.124$) have the largest positive changes in concentration levels. This is largely due to spatial expansion and growth of production of wine and soft drinks which correspond to 1102 - *Manufacture of wines* and 1104 - *Manufacture of soft drinks* in Table 17.

Table 4 shows the ranking of the 10 least concentrated industries in absolute terms in 1990 and 2013.

Table 4. 10 Least Concentrated 2-digit Industries.

1990			2013		
Rank	Industry	HH index	Rank	Industry	HH index
1	10 - Food products	0.082	1	10 - Food products	0.090
2	33 - Repair and installation of equipment	0.087	2	36 - Water collection, treatment and supply	0.091
3	23 - Other non-metallic mineral products	0.087	3	23 - Other non-metallic mineral products	0.092
4	16 - Wood and cork products	0.095	4	38 - Waste collection and treatment	0.095
5	36 - Water collection, treatment and supply	0.109	5	37 - Sewerage	0.096
6	31 - Furniture	0.109	6	25 - Fabricated metal products	0.104
7	14 - Wearing apparel	0.109	7	22 - Rubber and plastics products	0.106
8	11 - Manufacture of beverages	0.118	8	08 - Other mining	0.117
9	28 - Machinery and equipment n.e.c.	0.123	9	28 - Machinery and equipment n.e.c.	0.119
10	38 - Waste collection and treatment	0.143	10	33 - Repair and installation of equipment	0.127

Source: Author's calculations based on the data from ASRK.

In absolute terms *10 – Food* industry has the lowest degree of regional concentration in both years. From Figure 11 we can see that it has been the most dispersed industry throughout the whole sample period. The list is not quite surprising if to focus on the specificity of the industries. These are mainly industries for which proximity to consumer markets is vital. Apart from *10 – Food* industry these include *11 – Beverage* and *31 – Furniture* industries.

The main utility industries are also very dispersed among regions. These are *36 - Water collection, treatment and supply*, *38 - Waste collection and treatment*, *37 - Sewerage* and *38 - Waste collection and treatment*. All these industries together with *35 - Electricity, gas, steam and air conditioning* have been very dispersed on the regional level. These industries have experienced minor changes which can be seen in the previous Table 3. *14 - Wearing apparel* industry is also one of the least concentrated industries and it has been so during the whole observation period. *23 - Other non-metallic mineral products* is another industry with high stability in terms of concentration. In both years it is the 3rd most dispersed industry.

Table shows us the 10 industries with the highest HH index in 1990 and 2013.

Table 5. *10 Most Concentrated 2-digit Industries.*

1990			2013		
Rank	Industry	HH index	Rank	Industry	HH index
20	22 - Rubber and plastics products	0.271	21	09 - Mining service activities	0.267
21	17 - Paper products	0.282	22	06 - Petroleum and natural gas	0.292
22	19 - Coke and refined petroleum products	0.324	23	11 - Beverages	0.293
23	24 - Basic metals	0.341	24	19 - Coke and refined petroleum products	0.339
24	09 - Mining service activities	0.347	25	21 - Pharmaceuticals	0.385
25	26 - Electronic and optical products	0.408	26	26 - Manufacture of computer, electronic and optical products	0.396
26	06 - Petroleum and natural gas	0.502	27	13 - Textiles	0.397
27	05 - Coal and lignite	0.652	28	05 - Coal and lignite	0.420
28	21 - Pharmaceuticals	0.849	29	29 - Motor vehicles	0.475
29	12 - Tobacco products	1.000	30	12 - Tobacco products	1.000

Source: Author's calculations based on the data from ASRK.

An extraordinary performance is presented to us by *12 - Tobacco* industry, which has an HH=1.000 in 1990 and 2013. However, the *12-Tobacco* industry should be treated as an outlier due to its small size. As one might expect, many industries with high knowledge intensity, for which spillover effect is important, and extractive industries, for which physical proximity to natural resource deposits is the main requirement, are among the most concentrated industries. Among the knowledge intensive industries we can find *26 - Electronic and optical products* and *29 - Motor vehicles*. *26 - Electronic and optical products* had an interesting trajectory in terms

of absolute concentration during the sample period (see Figure 15). It increased incredibly from 1990 to 2000 and then started to decrease gradually. This is mainly due to the increase of the share of Almaty in this industry. Consequently, the output put of this industry started to increase in other regions like Aktobe, North Kazakhstan Karaganda and Astana. 29 - *Motor vehicles* industry also has an irregular fluctuating pattern. This probably due to the expansion of this industry in East Kazakhstan Region. The most concentrated extractive industry in 1990 as well as in 2013 in absolute terms is 05 - *Coal and lignite*, which holds its 3rd ranking position throughout the whole period. The second most concentrated industry that appears in the table is 06 - *Petroleum and natural gas*, which is the most important industry in terms of its output. However, this industry is not as concentrated as it was in the very beginning of the sample period. Obviously, this is almost totally attributed to the discovery of new oilfields in Kyzylorda, West Kazakhstan and Aktobe regions which began to produce oil recently. Unlike 05 - *Coal and lignite* industry, which is geographically tied to Karaganda and Pavlodar regions, 06 - *Petroleum and natural gas* expanded in spatial terms during our observation period. Correspondingly, 09 - *Mining service activities* also present high degrees of absolute spatial concentration. In the table above we can also observe some of the industries with medium knowledge intensity. These include 22 - *Rubber and plastics products*, 19 - *Coke and refined petroleum products*, 24 - *Basic metals* and 21 - *Pharmaceuticals*. All of these industries have experienced a substantial movement towards spatial dispersion. This can be seen in Figures 13 and 20. Especially, this refers to 21 - *Pharmaceuticals* industry which lost absolute concentration degrees dramatically during the first half of the 1990s.

In order to see a more detailed picture we look the industries at 4 and 5 digit disaggregation levels. The complete set industries and their corresponding HH and Gini indices at 4 and 5-digit level are shown in Tables 15-23 and 26-30.

Table 6 contains 10 least concentrated industries in 1998 and 2013.

Table 6. 10 Least Concentrated 4 and 5-digit Industries.

1998			2013		
Rank	Industry	HH index	Rank	Industry	HH index
1	3100-1 - manufacture of chairs and seats	0.003	1	3530 - Steam and air conditioning supply	0.091
2	1061-3 - flour or meal of dried vegetables	0.088	2	2220-1 - manufacture of finished plastic products	0.105
3	1392 - made-up textile, except apparel	0.097	3	1071 - bakery products	0.107
4	1071 - manufacture of bakery products	0.107	4	3100-4 - manufacture of furniture for bedrooms, living rooms, gardens etc.	0.108
5	1050-4 - manufacture of cheese and curd	0.111	5	0810-5 - breaking and crushing of stone and gravel	0.109
6	3530 - steam and air conditioning supply	0.119	6	1010-5 - production of sausages and salamis	0.110
7	0810-7 - quarrying of sand	0.127	7	2395-2 - structural components of cement, concrete or artificial stone	0.113

8	1010-5 - production of sausages and salamis	0.129	8	0810-4 - extraction and dredging of industrial sand	0.120
9	1050-3 - manufacture of butter	0.136	9	2392 - manufacture of clay building materials	0.125
10	0810-5 - breaking and crushing of stone and gravel	0.138	10	2220-6 - manufacture of plastic doors, windows, frames, etc.	0.126

Source: Author's calculations based on the data from ASRK.

As it is reasonable to expect, the industries in Table 6 are a more detailed reflection of the industries from Table 4. However this provides us a deeper insight into the issue. The degree of concentration of *3100-1 - manufacture of chairs and seats* is really incredible. It turns out that among the furniture industries, *3100-1 - manufacture of chairs and seats* was the only dispersed industry in 1998. However, among the food industries many were dispersed across regions in absolute terms. For 1998 there are other food industries that are close to the most dispersed industries but are not in the list of Table 6. These industries with their corresponding HH indices can be verified in Table 16. On the other hand, if we look at the right side of Table 6 we can notice a slight change represented by the presence of several industries with medium knowledge intensity among the most dispersed industries. These are *2220-1 - manufacture of finished plastic products*, *2395-2 - structural components of cement, concrete or artificial stone*, *2392 - manufacture of clay building materials* and *2220-6 - manufacture of plastic doors, windows, frames, etc.* This decline in concentration of the above mentioned industries can be also seen in plots of their 2 digit aggregation in Figures 12 and 13. As for the utility industries, there is also a slight movement towards dispersion in absolute terms. This can be seen from *3530 - Steam and air conditioning supply*, which by 2013 became the most dispersed industry with a very low $HH=0.091$.

The most concentrated industries at 4 and 5-digit levels in 1998 and 2013 are listed in Table 7.

Table 7. 10 Most Concentrated 4 and 5-digit Industries.

1998			2013		
Rank	Industry	HH index	Rank	Industry	HH index
119	2420-3 - crude aluminum and aluminum oxide	1.000	214	2814 - bearings, gears, gearing and driving elements	1.000
120	2420-5 - crude zinc	1.000	215	2821-6 - caterpillar tractors	1.000
121	2420-11 - tin and coating with tin	1.000	216	2822-2 - machine tools for turning, drilling, milling, shaping, planing, boring, grinding etc	1.000
122	2431-2 - casting of steel castings	1.000	217	2823 - machinery for metallurgy	1.000
123	2640-1 - manufacture of televisions	1.000	218	2826-1 - machinery for washing	1.000

124	2710-1 - electric distribution transformers	1.000	219	2826-2 - manufacture of wringing	1.000
125	2821-1 - tractors for agriculture and forestry	1.000	220	3020-1 - rail locomotives	1.000
126	2824 - machinery for mining and construction	1.000	221	3030 - air and spacecraft and related machinery	1.000
127	2826 - machinery for textile	1.000	222	3211-1 - manufacture of coins	1.000
128	2910 - motor vehicles	1.000	223	3240 - games and toys	1.000

Source: Author's calculations based on the data from ASRK.

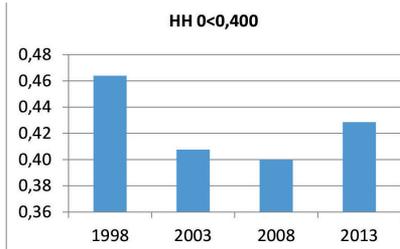
As it is reasonable to expect based on the ranking from Table 5, the most concentrated industries at 4 and 5-digit level disaggregation are mainly extractive industries and industries with high knowledge intensity and more valued added capacity. Also note that all the industries listed in Table 7 have $HH=1.000$ which is the maximum concentration that can be. Since we consider industries at regional level, this means that all the industries listed in Table 7 are based only in one or few of the 16 regions of Kazakhstan. Namely, in 1998 2640 - 1 - *manufacture of televisions* was totally concentrated in the city of Almaty, 2710-1 - *electric distribution transformers* and 2824 - *machinery for mining and construction* in South Kazakhstan region, 2821-1 - *tractors for agriculture and forestry* in East Kazakhstan region, 2826 - *machinery for textile* in Zhambyl region, 2910 - *motor vehicles* was mainly based in Akmola and East Kazakhstan regions. By 2013 many some industries had disappeared but other had emerged. These are 2826-1 - *machinery for washing* and 2826-2 - *manufacture of wringing*, both based in Zhambyl region, 3020-1 - *rail locomotives* which is a brand new industry based totally based in Astana, 3240 - *games and toys* based in Karaganda and 2821-6 - *caterpillar tractors* in East Kazakhstan region. Since the development of the advance industries based on high level of knowledge is declared to be the top economic priority by the government of Kazakhstan, there should be deep policy implications behind exploring the spatial behavior of these industries from the point of normative economic analysis. At first glance, it might seem that the high level of absolute concentration of these high knowledge intensive industries fits well into the framework concerning spillover effects. But there are factors that make this unsuitable for our case. Firstly, these industries are mainly single plant industries with extremely small output. Secondly, in most cases these newly based industries receive government interventions in different forms which means that they are highly uncompetitive.

As for the extractive industries, the reason of their high absolute concentration is obvious. As it was mentioned before, these industries are tied to the location of natural resource deposits.

Figures 2-5 reflect the numbers of industries that are dispersed with $HH < 0.400$, industries with low concentration level with $HH 0.400 < 0.600$, industries with medium concentration level with $HH 0.600 < 0.800$ and industries with high concentration level with $HH 0.800 < 1.000$. Such classification is purely conventional. In order to avoid the effect of merging and disappearing industries we take the percentage of

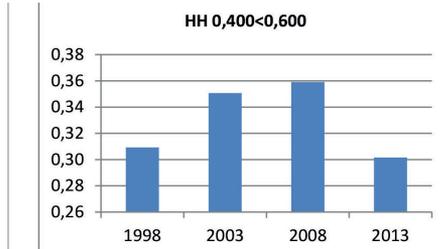
industries for each figure. As we can see the histogram of the numbers of dispersed industries follows a U-shaped figure. On the other hand, in case of industries with low concentration we observe the opposite shape.

Figure 2.
Dispersed Industries (HH Index).



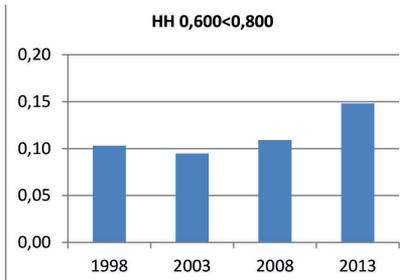
Source: Author's calculations based on the data from ASRK.

Figure 3.
Industries with Low Concentration (HH Index).



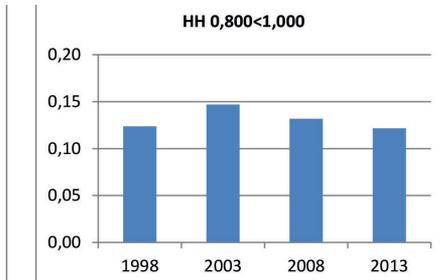
Source: Author's calculations based on the data from ASRK.

Figure 4.
Industries with Medium Concentration (HH Index).



Source: Author's calculations based on the data from ASRK.

Figure 5.
Industries with High Concentration (HH Index).



Source: Author's calculations based on the data from ASRK.

From Figure 2 we see a U-shaped graph of dispersed industries in absolute terms, whereas the industries with low concentration from Figure 3 have the opposite shape. Thus, there is a decline of the number of industries with low concentration since 2008. As for the industries with medium concentration in Figure 4, we can observe a stable increase of their number since 2003. The situation with industries with high absolute concentration is rather ambiguous. Their number grew from 1998 to 2003, but since then they have a moderate declining pattern. The Figures depicted above, however, don't give us a clear understanding concerning the number of industries.

Relative Concentration

While considering concentration it is always useful to apply measurements of relative concentration along with measurements of absolute concentration. As it was already mentioned, we use Gini index as a tool of measurement of relative concentration.

In Table 8, you can see the 10 industries with the lowest Gini indices in 1990 and 2013.

Table 8. *10 Least Concentrated 2-digit Industries (Gini Index).*

1990			2013		
Rank	Industry	Gini index	Rank	Industry	Gini index
1	36 - Water collection, treatment and supply	0.533	1	38 - Waste collection and treatment	0.402
2	23 - Other non-metallic mineral products	0.570	2	06 - Petroleum and natural gas	0.424
3	33 - Repair and installation of equipment	0.571	3	36 - Water collection, treatment and supply	0.441
4	14 - Wearing apparel	0.599	4	08 - Other mining	0.461
5	10 - Food products	0.607	5	35 - Electricity, gas, steam and air conditioning	0.570
6	31 - Manufacture of furniture	0.609	6	37 - Sewerage	0.580
7	35 - Electricity, gas, steam and air conditioning	0.617	7	09 - Mining service activities	0.583
8	09 - Mining service activities	0.647	8	25 - Fabricated metal products	0.587
9	16 - Wood and cork products	0.649	9	33 - Repair and installation of equipment	0.602
10	11 - Manufacture of beverages	0.676	10	23 - Other non-metallic mineral products	0.631

Source: Author's calculations based on the data from ASRK.

Comparing Tables 7 and 8 we can notice a great similarity. Like in the case of absolute concentration, utility industries and industries that tend to be closer to markets rather than raw materials are the most dispersed industries in relative terms. This sounds as a confirmation of the theory of Weber (1909). *14 - Wearing apparel and 31 - Furniture* also can be examples of that. All utility industries demonstrate very small rate of regional concentration initially and a slight pattern towards dispersion throughout the sample period. This is illustrated in Figure 23. Like in the case with absolute concentration, *10 - Food products and 11 - Manufacture of beverages* in 1990 are among the most dispersed industries. In Figure 18, we can see that the two industries had a slight but firm pattern towards concentration. In 1990, other industries of low and medium knowledge intensity were among the most dispersed ones. These are *23 - Other non-metallic mineral products, 09 - Mining service activities and 16 - Wood and cork products*. By 2013, we can see great changes in the ranking of the industries. First of all, it is very surprising to see extractive industries among the least concentrated ones. *06 - Petroleum and natural gas (0.424), 08 - Other mining (0.461) and 09 - Mining service activities (0.583)* present rather small Gini indices. This can be due to the shortcomings of the index itself and the nature of the data. Particularly, recall that we measure industries by their output and that the Gini index captures relative concentration. In other words, any deviation from the aggregate industrial output is recognized by Gini index as a concentration. Thus if to take into account that *06 - Petroleum and natural gas* industry accounts for more than a half of the total industrial output, this industry itself starts to act as a yardstick and doesn't detect its own

degree of concentration. However, we don't reject the spatial expansion of the 06 - *Petroleum and natural gas* and other extractive industries. In Figure 9 we can see that this refers to 09 - *Mining service activities* and 08 - *Other mining* too. 23 - *Other non-metallic mineral products* is one of the industries that experiences negligibly small growth of Gini index. The distortion that corresponds to 1998 is largely a matter of data quality.

Industries with the highest Gini concentration index are listed in Table 9:

Table 9. 10 Most Concentrated 2-digit Industries (Gini Index).

1990			2013		
Rank	Industry	Gini index	Rank	Industry	Gini index
20	19 - Coke and refined petroleum products	0.801	21	07 - Metal ores	0.811
21	17 - Paper products	0.801	22	05 - Coal and lignite	0.833
22	15 - Leather products	0.808	23	28 - Machinery and equipment	0.840
23	26 - Electronic and optical products	0.828	24	13 - Textiles	0.855
24	27 - Electrical equipment	0.845	25	11 - Manufacture of beverages	0.855
25	05 - Coal and lignite	0.846	26	15 - Leather products	0.869
26	29 - Motor vehicles	0.883	27	29 - Motor vehicles	0.873
27	21 - Pharmaceuticals	0.949	28	21 - Pharmaceuticals	0.896
28	12 - Tobacco products	0.953	29	26 - Electronic and optical products	0.916
29	28 - Machinery and equipment	0.972	30	12 - Tobacco products	0.967

Source: Author's calculations based on the data from ASRK.

12 - Tobacco industry holds a stationary position of very high regional concentration. Another particularity that is clear is the fact that all the higher technology industries are very concentrated both in 1990 and 2013. These include 26 - *Electronic and optical products*, 27 - *Electrical equipment*, 28 - *Machinery and equipment* and 29 - *Motor vehicles*. Apart from having high relative concentration these are the most stable industries in terms of regional concentration. This can be observed in Figure 23. In this sense there are no major contradictions between HH absolute and relative Gini indices. 21 - *Pharmaceuticals* is another industry that has been highly concentrated throughout the observation period. In 2013 two extractive industries appear to be highly concentrated which is due to the location of deposits of natural resources. If to look at Figure 17 we can see that these two industries have very stable relative concentration trajectory during the sample period. The same can be stated about 17 - *Paper products*. 15 - *Leather products* industry follows a trend towards concentration since 2000. Prior to this it had the opposite trend. 19 - *Coke and refined petroleum products*, on the other hand, has a clear pattern of dispersion.

In Table 10 we can see the 10 most dispersed 4 and 5-digit level industries. The industries in Table 10 mainly coincide with their 2-digit counterparts from Table 8.

Table 10. 10 Least Concentrated 4 and 5-digit Industries (Gini Index).

1998			2013		
Rank	Industry	Gini index	Rank	Industry	Gini index
1	3530 - steam and air conditioning supply	0.234	1	1410-2 - outerwear for women and children	0.249
2	1071 - bakery products	0.399	2	1020 - processing and preserving of fish	0.481
3	1392 - made-up textile articles	0.455	3	1920-2 - propane, butane and other gases	0.508
4	3510 - electric power generation	0.464	4	0610 - extraction of petroleum	0.510
5	3600 - water collection, treatment and supply	0.526	5	3530 - steam and air conditioning supply	0.517
6	1061-3 - flour or meal of dried vegetables	0.546	6	3600 - water collection, treatment and supply	0.579
7	2511 - structural metal products	0.556	7	1071 - bakery products	0.607
8	1050-4 - cheese and curd	0.571	8	1050-5 - manufacture of yoghurt	0.609
9	1010-1 - dressing or packing meat	0.572	9	2220-1 - finished plastic products	0.611
10	1104-1 - natural mineral waters	0.574	10	0620-1 - extraction of natural gas	0.623

Source: Author's calculations based on the data from ASRK.

As it was mentioned earlier, the most dispersed industries are mainly the sub industries of food and beverage industries and utility industries. As in case with absolute concentration, food industries and utilities are very dispersed. In 2013 1410-2 - *outerwear for women and children* became the most dispersed industry. However, it is quite surprising to see 1920-2 - *propane, butane and other gases* and 0610 - *extraction of petroleum* among the most dispersed industries. This is probably attributed to the reason mentioned above.

In Table 11, the most concentrated industries are shown.

Table 11. 10 Most Concentrated 4 and 5-digit Industries.

1998			2013		
Rank	Industry	Gini index	Rank	Industry	Gini index
119	0810-3 - mining of chalk and dolomite	0.966	214	2811 - engines and turbines	0.970
120	1520-5 - polymeric footwear	0.971	215	1072 - manufacture of sugar	0.975
121	2821-3 - manufacture of mowers	0.972	216	0891-2 - grinding of phosphates	0.979
122	2640-4 - radio receivers	0.974	217	2814 - bearings, gears, gearing and driving elements	0.984
123	0620-2 - extraction of condensates	0.974	218	3030 - air and spacecraft machinery	0.985

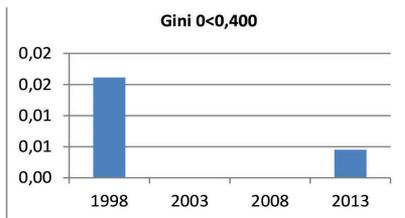
124	0891-1 - mining of phosphates and potassium salts	0.974	219	2011-3 - manufacture of phosphorus	0.987
125	0891-2 - grinding of phosphates	0.974	220	0891-1 - mining of phosphates and potassium salts	0.987
126	2011-3 - manufacture of phosphorus	0.974	221	1512-1 - saddlery and harness	0.987
127	2826 - machinery for textile	0.974	222	2826-1 - machinery for washing	0.987
128	2910 - motor vehicles	0.975	223	2826-2 - manufacture of wringing	0.987

Source: Author's calculations based on the data from ASRK.

As in case with absolute HH indices, the most relatively concentrated industries are mainly industries with high knowledge intensity and extractive industries. There are also some intermediate industries like *1520-5 - polymeric footwear*, *2011-3 - manufacture of phosphorus* and *1512-1 - saddlery and harness*. The high concentration of the industries with high knowledge intensity can be explained by their small size rather than spillover effect.

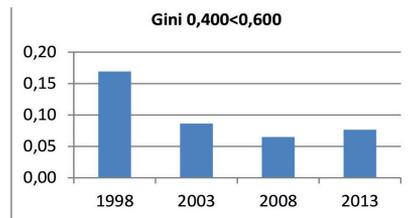
Figures 6-9 summarize the Gini indices of industries at 4 and 5-digit level shown in Tables 17-23.

Figure 6.
Dispersed Industries (Gini Index).



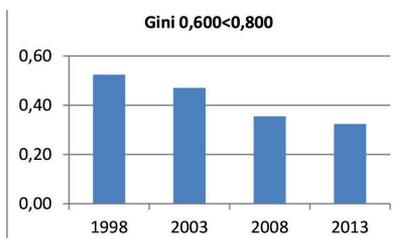
Source: Author's calculations based on the data from ASRK.

Figure 7.
Industries with Low Concentration (Gini Index).



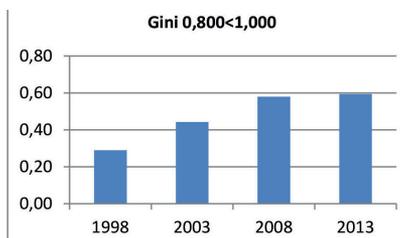
Source: Author's calculations based on the data from ASRK.

Figure 8.
Industries with Medium Concentration (Gini Index).



Source: Author's calculations based on the data from ASRK.

Figure 9.
Industries with High Concentration (Gini Index).



Source: Author's calculations based on the data from ASRK.

Like in Figures 2-5 Dispersed industries: Gini 0<0.400; Industries with low concentration level: Gini 0.400<0.600; Industries with medium concentration level: Gini 0.600<0.800; Industries with high concentration

level: $Gini\ 0.800 < 1.000$. In case with dispersed industries we see that very few industries were dispersed throughout the sample period. In 2003 and 2008 there not even single industry with $Gini\ 0 < 0.400$. This can be mainly attributed to "strictness" of the Gini index itself or to our conventional rule of definition of dispersed industries. Thus, the percentage of industries with low concentration has from 17% to 8% in 2013. The proportion of industries with medium relative concentration fell from 52% to 32% during the same sample period and the proportion of industries with high relative concentration has grown from 29% to 59%. The depiction above gives us a clear pattern towards high concentration of industries. The same trend is described in Figures 7 and 8, which corresponds to industries with low and medium concentration.

Summarizing the analysis presented above, we must admit the absence of a definite and unambiguous pattern of the concentration of industries at regional level that could be attributed to all the industries under consideration. However, some industries present clear signs of concentration, dispersion or both during the time period under consideration.

CONCLUSION

Our analysis has focused on geographical concentration patterns in industries, including extractive and utility industries at 2, 4 and 5-digit level industries, across 16 regions of Kazakhstan encompassing the time period from 1990 to 2013. The objective of this study was to identify the change in regional concentration of industries during the sample period. The theories of trade and spatial relocation of industries in conditions of transition in general terms predict prevalence of concentration patterns over forces of dispersion. In order to detect spatial relocations of industries we applied well known Herfindahl-Hirschman index for absolute concentration and Gini index for identification of relative concentration.

Our findings appear to be rather ambiguous. There are certainly considerable differences in levels of concentration between industries and their changes during the sample period. Particularly, utilities, food and beverage industries appear to be the least concentrated industries of all, whereas industries with high knowledge intensity present very high levels of spatial concentration during the whole sample period. Also there was a considerable decline in concentration of oil and gas and related extractive industries during the period of under consideration in absolute as well as relative terms, which might be explained by discovery of new deposits of natural resources. Our findings also suggest that many new industries with high knowledge intensity have emerged since 1990 and that there are many sectors that are negligibly small. In relative terms majority of the 4 and 5-digit industries have become more concentrated. Our study also suggests that it is also worthwhile to take into account that there is a huge asymmetry of sizes of different industries. This creates certain distortions of measurement.

The results show that in case of huge dominance of certain industries, it is better to rely on absolute measurement techniques. In order to achieve deeper levels of understanding of the spatial patterns of economic activity in Kazakhstan, further research is needed in this and other related fields. It would be useful to consider the issue in contexts of knowledge spillover, economies of scale and market structure. Particularly, there should be more research on spatial distribution of industries with more precise data on plant number and size, considering smaller spatial units and application of more sophisticated measurement techniques.

REFERENCES

- Aiginger, Karl and Esteban Rossi-Hansberg (2006). "Specialization and Concentration: a note on theory and evidence". *Empirica*, Springer, 33(4): 255-266.
- Amess, Kevin and Barbara M. Roberts (2006). "The Impact of Foreign and State Ownership on Post-Transition Industrial Concentration: the Case of Polish Manufacturing". *Economic Change and Restructuring* 38: 211-225.
- Aparecida, F. Carmen, Paulo Gonzaga M.C. and Maristella Schaefer R. (2003). Concentração Industrial e Produtividade do Trabalho na Indústria de Transformação nos anos 90: evidências empíricas (Industrial Concentration and Productivity Work in the Manufacturing Industry in the 1990s: Empirical Evidence).
- Athreya, Suma and Sandeep Kapur (2003). "Industrial Concentration in a Liberalising Economy: A Study of Indian Manufacturing", Economics, Open University.
- Bikker, Jacob A. and Katharina Haff (2002). "Measures of Competition and Concentration in the Banking Industry: A review of the Literature". *Economic Financial Modelling*, Central Bank of the Netherlands.
- Burghardt, Dirk (2013). "The Impact of Trade Policy on Industry Concentration in Switzerland". Discussion Paper No. 2013-17, University of St. Gallen.
- Brulhart, Marius and Traeger Rolf (2004). "An Account of Geographic Concentration Patterns in Europe". *Regional Science and Urban Economics* 35(6) 597– 624.
- Ceapraz, Lucian I. (2008). "The Concepts of Specialization and Spatial Concentration and the Process of Economic Integration: the Theoretical Relevance and Statistical Measures. The Case of Romania's Regions". *Romanian Journal of Regional Science* 2(1): 68–93.
- Christaller, Walter (1933). *Die Zentralen Orte in Süddeutschland*. English translation: *The Central Places of Southern Germany*, Englewood Cliffs (N.J.), Prentice-Hall (1966).
- Campos, Cecilia (2012). "The Geographical Concentration of Industries". Regional Economic Analysis, Office of National Statistics.
- Ellison, Glenn E. and Edward L. Glaeser (1997). "Geographic concentration in US manufacturing industries: A dartboard approach". *Journal of Political Economy* 105: 889-927.
- Ellison, Glenn E. and Edward L. Glaeser (1994). "Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach". National Bureau of Economic Research Working Paper No. 4840. August. Cambridge, MA.
- Fedderke, Johannes and Simbanegavi Witness (2008). "South African Manufacturing Industry Structure and its Implications for Competition Policy". *Journal of Development Perspectives* 4(1): 134-189.

Fujita, Masahisa (2011). "Thunen and the New Economic Geography". The Research Institute of Economy, Trade and Industry, Discussion Paper Series 11-E-074.

Fujita, Masahisa, Paul Krugman and Anthony J. Venables (1999). *The Spatial Economy, Cities, Regions and International Trade*. MIT Press.

Gini, Corrado (1912). "Variabilita e Mutabilita" (Variability and Mutability), 156 pages, Reprinted in *Memorie di metodologica statistica* (Eds. Pizetti E., Salvemini, T.). Rome: Libreria Eredi Virgilio Veschi (1995).

Goschin, Zizi, Daniela L. Constantin, Monica Roman and Bogdan V. Ileanu (2009). "Specialization and Concentration Patterns in the Romanian Economy". *Journal of Applied Quantitative Methods* 4(1): 95-111.

Guillain, Rachel and Julie LeGallo (2005). "Measuring Agglomeration: an Exploratory Spatial Analysis Approach Applied to the Case of Paris and its Surroundings". REAL Working Paper. No. 06-T-10.

Hallet, Martin (2000). "Regional Specialisation and Concentration in the EU". ECONOMIC PAPERS, European Communities.

He, Canfei, Dennis W. Wei and Xiuzhen Xie (2008). "Globalization, Institutional Change and Industrial Location: Economic Transition and Industrial Concentration in China". *Regional Studies* 42(7): 923-945.

Heckscher, Eli F. (1919). "The Effect of Foreign Trade on the Distribution of Income." *Ekonomisk Tidskrift*. Reprinted in Ellis, H. and A. Metzler (eds.). (1949). *AEA Readings in the Theory of International Trade*. Philadelphia: Blakiston.

Herfindahl, Orris C. (1950). *Concentration in the Steel Industry*. Ph.D. thesis, New York City, Columbia University.

Hirschman, Albert O. (1964). "The Paternity of an Index". *The American Economic Review* 54: 761-762.

Hong, Chang (2011). "Trade Liberalization, Wages, and Specialization in China". *Journal of Japanese and International Economics* 26(4): 561-577.

Inamizu, Nobuyuki and Takahisa Wakabayashi (2013). "A Dynamic View of Industrial Agglomeration: Toward an Integration of Marshallian and Weberian Theories". *Annals of Business Administrative Science* (12): 13-29.

Krugman, Paul (1991): *Geography and Trade*, Cambridge: The MIT Press.

Lafourcade, Miren and Giordano Mion (2004). "Concentration, Spatial Clustering and the Size of Plants: Disentangling the Sources of Co-location Externalities". PSE Working Papers, 2005-42.

Lorenz, Max O. (1905). "Methods of Measuring the Concentration of Wealth". *Publications of the American Statistical Association* 9(70): 209-219.

Losch, August (1940). *Die Raumlische Ordnung der Wirtschaft*, English translation: *The Economics of Location*. New Haven, Connecticut, United States: Yale University Press.

Marshall, Alfred (1920). *Principles of Economics*, 8th ed., London, UK: Macmillan.

Maurel, Françoise and Beatrice Sedillot (1999). "A Measure of the Geographic Concentration in French Manufacturing Industries". *Regional Science and Urban Economics* 29(5): 575-604.

Naude, Clifford (2006). "Measures of Manufacturing Industry Concentration – Implications for South Africa", TIPS Forum 2006.

Nozaki, Kenji (2014). "Industrial Dispersion in Thailand with Changes in Trade Policies". *International Journal of Asian Social Sciences* 4(7): 806-819.

Ohlin, Bertil (1933). *Interregional and International Trade*. Cambridge, MA: Harvard University Press.

Perreur, Jacky (1998). "Industrial Location Theory in German Thought-Launhardt and Weber". Discussion Papers No. 1998015, REL (*Recherches Economiques de Louvain*), Université catholique de Louvain, Institut de Recherches Economiques et Sociales (IRES).

Pervan, Maja, Monika Mlikota and Marina Sain (2013). "Industrial Concentration in Croatian Food and Beverage Industry". *Interdisciplinary Management Research* 9: 379-388.

Ricardo, David (1817). *On the Principles of Political Economy and Taxation*, London: John Murray.

Rossi-Hansberg, Esteban (2003). "A Spatial Theory of Trade". Stanford University, SIEPR Discussion Paper, 39.

Ruiz-Valenzuela, Jenifer, Rosina Moreno-Serrano and Esther Vayá-Valcarce (2006). "Concentration of the Economic Activity: Comparing Methodologies and Geographic Units", AQR Research Group – IREA, Universitat de Barcelona.

Traistaru, Iulia, Peter Nijkamp and Simonetta Longhi (2002). "Regional Specialization and Concentration of Industrial Activity in Accession Countries". ZEI working paper No. B 16-2002, ZEI - Center for European Integration Studies, University of Bonn.

The Agency of Statistics of the Republic of Kazakhstan (2015). The official statistical information, Operational data (express information, bulletins, industry).

The Agency of Statistics of the Republic of Kazakhstan (2015). Statistical Compilations, "Industry of Kazakhstan and its Regions" yearly publications from 2002 to 2013.

Tipuric, Darko and Mirjana Pejic Bach (2009). "Changes in Industrial Concentration in the Croatian Economy (1995-2006)", Working Paper Series, Paper No. 09-03, University of Zagreb.

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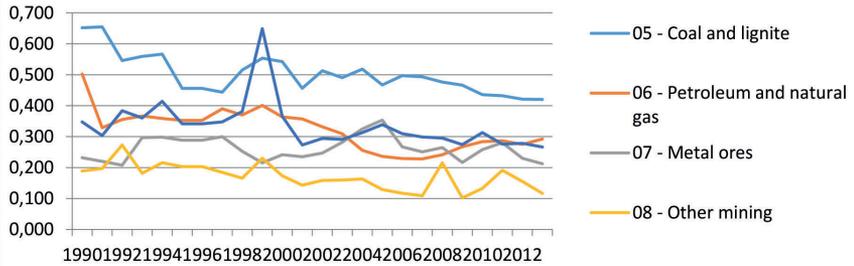
Trejo Nieto, Alejandra (2009). "The Geographic Concentration in Mexican Manufacturing Industries, an Account of Patterns, Dynamics and Explanations: 1988-2003". *Investigaciones Regionales* 18: 37-60.

Von Thunen, Johann H. (1826). *Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie*, Hamburg: Perthes. English translation by C.M. Wartenberg: *The Isolated State*, Oxford: Pergamon Press (1966).

Weber, Alfred (1909). *Ueber den Standort der Industrien (About the location of the industries)*, Tübingen, Germany: Mohr.

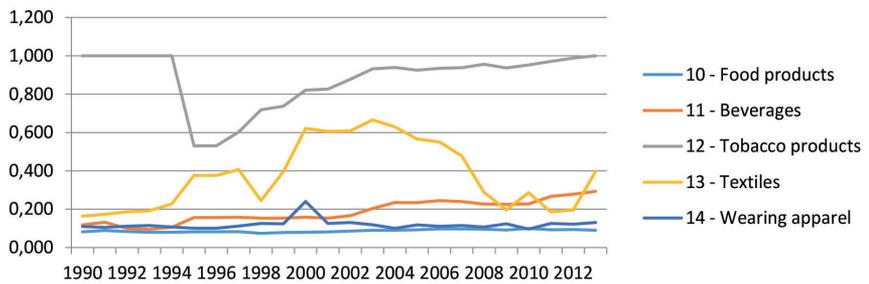
APPENDIX

Figure 10.
HH Index for Extractive Industries.



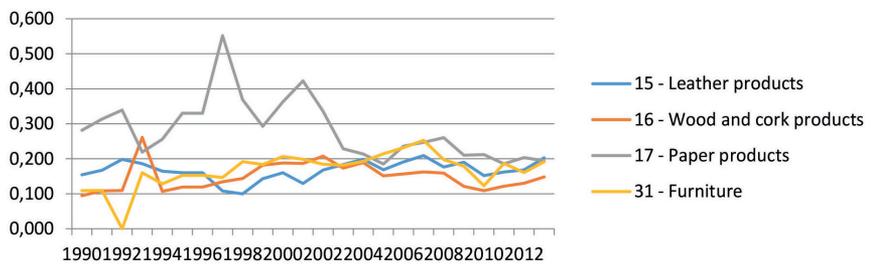
Source: Author’s calculations based on the data from ASRK.

Figure 11.
HH Index for Industries with Low Knowledge Intensity - 1.



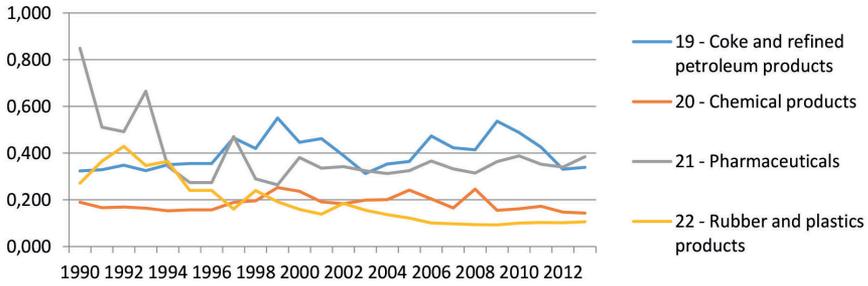
Source: Author’s calculations based on the data from ASRK.

Figure 12.
HH index for Industries with Low Knowledge Intensity - 2.



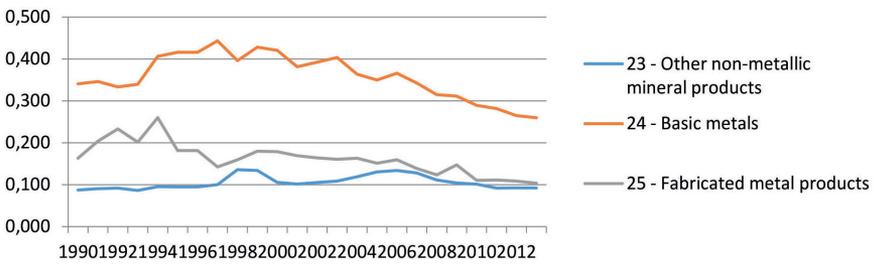
Source: Author’s calculations based on the data from ASRK.

Figure 13.
HH index for Industries with Medium Knowledge Intensity - 1.



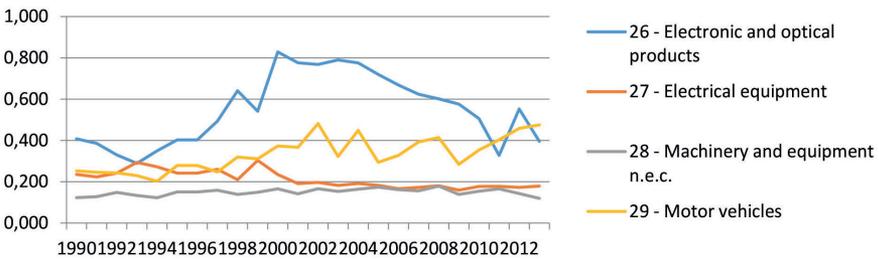
Source: Author's calculations based on the data from ASRK.

Figure 14.
HH Index for Industries with Medium Knowledge Intensity - 2.



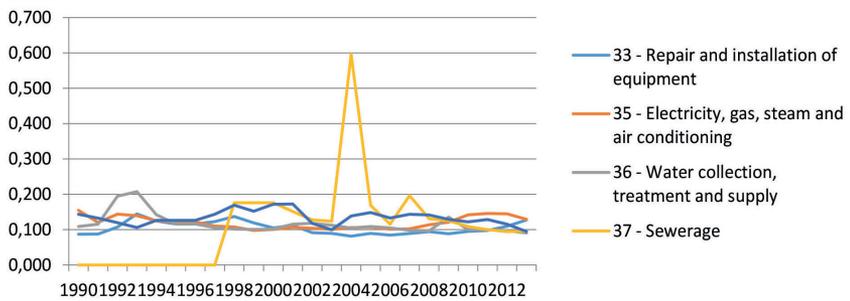
Source: Author's calculations based on the data from ASRK.

Figure 15.
HH Index for Industries with High Knowledge Intensity.



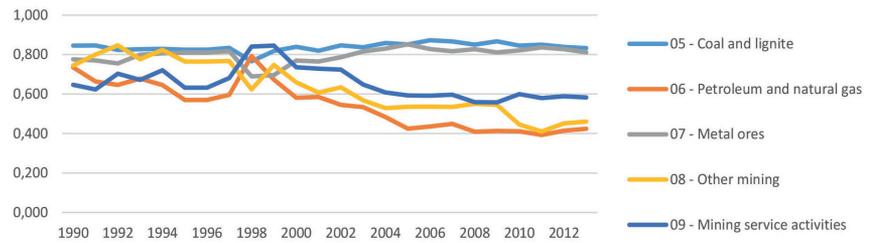
Source: Author's calculations based on the data from ASRK.

Figure 16.
HH Index for Utility and Non-Tradable Industries.



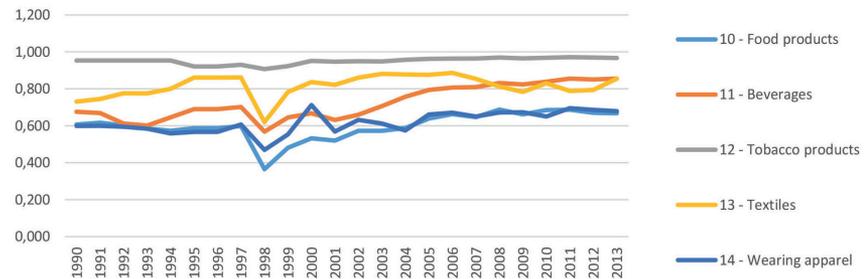
Source: Author's calculations based on the data from ASRK.

Figure 17.
Gini Index for Extractive Industries.



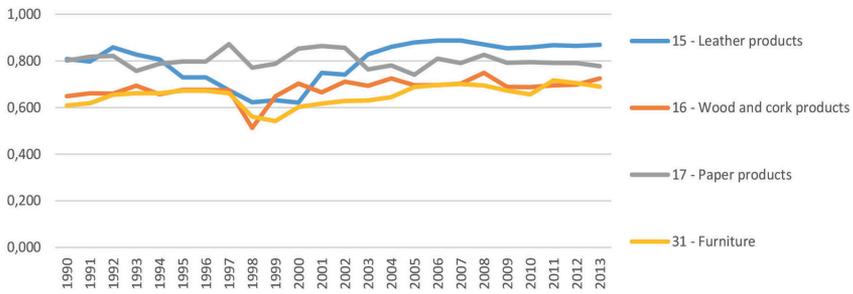
Source: Author's calculations based on the data from ASRK.

Figure 18.
Gini Index for Industries with Low Knowledge Intensity - 1.



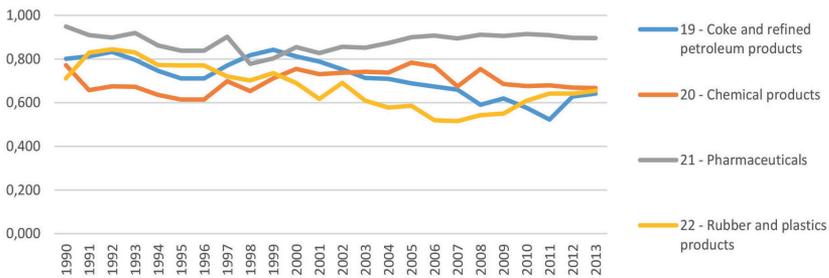
Source: Author's calculations based on the data from ASRK.

Figure 19.
Gini Index for Industries with Low Knowledge Intensity - 2.



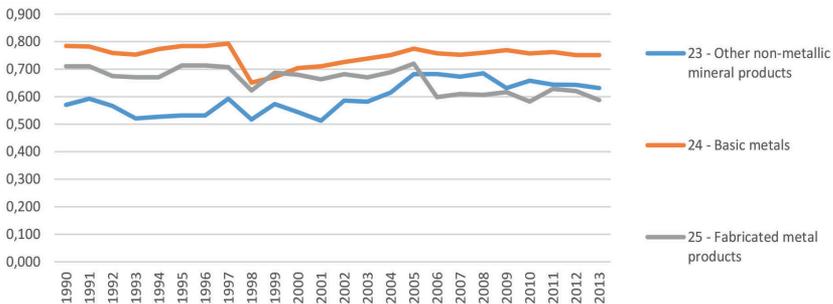
Source: Author's calculations based on the data from ASRK.

Figure 20.
Gini Index for Industries with Medium Knowledge Intensity - 1.



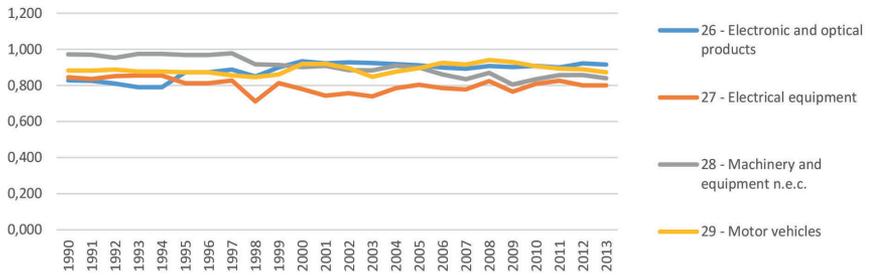
Source: Author's calculations based on the data from ASRK.

Figure 21.
Gini Index for Industries with Medium Knowledge Intensity - 2.



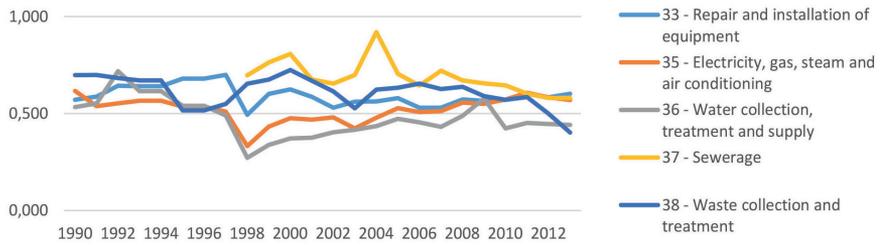
Source: Author's calculations based on the data from ASRK.

Figure 22.
Gini Index for Industries with High Knowledge Intensity.



Source: Author's calculations based on the data from ASRK.

Figure 23.
Gini Index for Utility and Non-Tradable Industries.



Source: Author's calculations based on the data from ASRK.

BOOK REVIEWS

TURKIC REPUBLICS IN THE TWENTY-SEVENTH YEAR OF INDEPENDENCE

Eurasian
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Omirbek HANAYI ¹

Ayse Colpan Yildiz and Murat Yilmaz (eds.), *Turkic Republics in the Twenty-Seventh Year of Independence*. Ankara, 2018, pp. 465.

The book "Turkic Republics in the Twenty-Seventh Year of Independence" was edited by Ayse Colpan Yildiz and Murat Yilmaz. As one of the most recent works in this field, this book, with its interesting range of contents, is very important for the Turkic world. It represents an important continuation of various academic studies and publications on Turkey and the independent Turkic Republics.

In the words of Victor Hugo, "a book is wider than the world because it adds thought to matter". Thus, we need to have a wider and deeper knowledge of the Turkic world, which covers a vast geography from the Altai Mountains in the east to the Balkans in the west. Providing a comprehensive analysis of the 27-year period of independence of the Turkic Republics, the book sheds light on the relations of the Republic of Turkey with Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan in the post-independence period and evaluates the political, economic and social transformations of these countries, as well as their global and regional foreign policy approaches. In addition, the fact that the authors are experts who have lived in the Turkic Republics or who have worked there for many years increases the originality of the book by further enhancing the depth of the research and the diversity of the resources used.

Azerbaijan and Central Asian countries have been under pressure from the totalitarian Soviet regime for nearly 70 years. In the introduction to the book, the editors underline that the problems faced by these countries in the post-independence processes for political, economic and social transformation stem from the bureaucratic structure of the Soviet Union. In addition, some of these countries' problems stem from today's structural conditions. This dual approach makes the book different from other studies written on the subject. Moreover, the editors note that despite the fact that the countries had been under the Soviet regime for 70 years, they continued to protect their national values and identities in different ways. The editors also examine the importance of the search for national identity in the independence process as it relates to both state- and nation-building.

The chapter "Turkey's Relations with the Turkic Republic in the Twen-

¹ Eurasian Research Institute, Mametova St. No. 48, Almaty, 050004, Kazakhstan, e-mail: kaztegin@hotmail.com

ty-Seventh Year of Independence: The Role of Institutions” focuses primarily on the historical background of the relations between Turkey and the Turkic Republics over the course of five periods. It is noteworthy that the periods covering 1991–2018 are explained by comparing them with the milestones of Turkey’s Central Asia policy and the process of reshaping Turkish foreign policy. The developments in relations between Turkey and the Turkic Republics are examined through the institutional structures at four different levels, including national, bilateral, regional and global dimensions. In this context, information is given about the corporate structure, vision and activities of the national institutions established by Turkey such as the Turkish International Cooperation and Coordination Agency (TIKA), the Yunus Emre Foundation and the Presidency for Turks Abroad and Related Communities (YTB). Additionally, it is stated that Turkey’s Maarif Foundation, founded in 2016, may increase its presence and activity in the region. Educational institutions have been established through bilateral agreements between Turkey and the Turkic Republics such as Khoja Akhmet Yassawi International Kazakh-Turkish University and Kyrgyz-Turkish Manas University. Examining the importance of these educational institutions in Turkey’s relations with the Turkic Republics is remarkable in terms of further development of the institutions as Turkey’s most persistent and strongest investments in the region. Regional organizations such as the Cooperation Council of Turkic Speaking States (Turkic Council), the International Organization of Turkic Culture (TURKSOY), the Parliamentary Assembly of Turkic Speaking Countries (TURKPA), the International Turkic Academy, the Turkic Culture and Heritage Foundation and the Turkic Business Council, as well as the Organization for Economic Cooperation and the Eurasian Islamic Council are of great importance in Turkey’s relations with the Turkic Republics. Therefore, mentioning these organizations in the book is also important for the study of the historical development of these institutions. It is also noted that the global organizations such as the United Nations (UN) and the Organization for Security and Co-operation in Europe (OSCE), of which both Turkey and independent Turkic Republics are members, as well as NATO, the European Council and the Shanghai Cooperation Organization, where some Turkic Republics and Turkey are members, have contributed to the development of relations between Turkey and the Turkic Republics.

In the following chapters, Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan are discussed in detail under several subheadings respectively. In the introduction to these chapters, which offer a brief history and basic geographical location of each Turkic Republic during or before the Soviet Union, their national political struggles are explained in parallel with the problems of the Soviet Union during the disintegration period. Under the first subheading, the political system, administrative and managerial structure, legal order, political institutions and organizations, political transformation processes of each Turkic Republic, the main problems they face in this framework and their important success areas are examined. Under the second subheading, the language, history, education, religious and cultural policies, and the national education system are discussed. In addition, the sociocultural developments which occurred while the Turkic Republics were in search of national identity during their independence years, the main problems faced in this context and their important achievements are also discussed. Under the third subheading, the demographic and ethnic struc-

ture of the Turkic Republics is given with statistical data. The results of the diaspora and migration policies, religious life, the main problems faced in this framework and their important achievements are analyzed. Under the fourth subheading, the economic transformation policies of the Turkic Republics, the economic structure of the countries, the dynamics of foreign trade, the prominent sectors, the main problems faced in this framework and their significant achievements are evaluated through various statistical data. Under the fifth subheading, the independent foreign policy approaches of the Turkic Republics on a global and regional scale, the main factors affecting their foreign policies and geopolitical developments, the relations they have developed with global and regional organizations and great powers, as well as the main problems and important achievements within this framework are examined. According to the book, as an example of success in this context, taking into account the balance of power between global and regional actors, the post-independence Turkic Republics' pursuit of an independent multilateral foreign policy has provided great opportunities for the stability and economic development of these countries.

In summary, the book "Turkic Republics in the Twenty-Seventh Year of Independence" presents the 27-year independence process of the Turkic Republics with the most recent developments. In addition, the inclusion of Tajikistan, which is outside the concept of the Turkic world but which has common historical, religious and cultural characteristics as well as a geographic neighborhood with the Central Asian Turkic Republics, is another feature of the work. In this respect, this work is more comprehensive than others. Therefore, Turkey and Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan with their geopolitical and geostrategic importance and rich underground natural resources are certain to continue to be the subject of similar studies. Thus, the book "Turkic Republics in the Twenty-Seventh Year of Independence" is an important academic reference point for future studies. However, the absence of a conclusion seems to be a shortcoming for such an academic study. The inclusion of a possible conclusion covering current developments in relations between Turkey and the Turkic Republics could further enhance the book's comprehensiveness. Furthermore, an important subject to be examined in future works is the regional integration between these countries. Since their independence, the lack of political-military and commercial-economic strong regional integration between the Central Asian Republics continues to be a problem for countries in the region. In conclusion, this work with its diverse content may attract not only academics, researchers and students primarily interested in Turkey and the Turkic Republics but also laypeople.

INDEPENDENCE AND STATE BUILDING PROCESS IN TURKIC REPUBLICS

Eurasian
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Dinara TALDYBAYEVA¹

Mehmet Akif Kirecci (ed.), *Independence and State Building Process in Turkic Republics*. Turkistan, Almaty, Ankara, Akhmet Yassawi University Press, pp. 793

The end of the Cold War marked not only a change in international political systems, but it was also an important historical moment for the Turkic World. Since then, Turkic Republics have experienced significant waves of reform and transformation, which have contributed to their actorness in the international arena. This book is important in the sense that it evaluates this historic process in quite an extensive manner.

This book contains articles in Turkish, Kazakh, Russian and English, and it is a very valuable piece of literature for academics, experts and students interested in the development process of the Turkic Republics. The contents of the book cover a wide range of research items from numerous authors and present many solution-oriented studies which contribute to the development of the Turkic World in a scientific environment.

This book covers many issues concerning history, culture, literature, language, education, and identity construction in the post-independence period of the Turkic Republics, including foreign policy, security, economy and foreign trade. Each of the six sections, which include 37 articles in total, provides information that illustrates the diversity of topics and viewpoints.

In the first chapter of the book, *Post-Independence State-Building and Bilateral Relations*, Alkan's article discusses the dimensions of political institutionalisation in Azerbaijan, Kazakhstan, Uzbekistan, Kyrgyzstan and Turkmenistan in terms of public governance, democratisation and functioning of political life. The second article offers suggestions for problems encountered between the connected units and institutionalisation in the field of internal security in Turkey and Kyrgyzstan. The following work examines the formation and development of local governments in Kyrgyzstan along with the democratisation process and restructuring steps. Another article that theoretically deals with the nation-building process in the Turkic world analyses Azerbaijan's post-independence experiences. In her article written in Russian, Ismayilova, evaluates the historical background of Russian-Azerbaijani relations, providing a thorough analysis

¹ Eurasian Research Institute, Mametova St. No. 48, Almaty, 050004, Kazakhstan, e-mail: dinarataldybayeva@gmail.com

of bilateral trade and economic relations. Otyzbai, in her article on the use of e-government in Turkey and Kazakhstan notes that the standards and characteristics of Turkey's e-government system are based on the system used by the EU. Regarding Kazakhstan, the author gives detailed information about the electronic government system e-gov.kz and says that the number of internet users exceeds 70% nowadays. Another important study that has contributed to the success of the book's aim is the *Socio-Economic Similarity Analysis in the Post-Soviet Countries*. The fact that the article's authors use cluster analysis and a SPSS program to determine the similarity levels of post-Soviet countries increases the scientific quality of the article.

The second section, which covers post-independence developments in Azerbaijan, is entitled *Azerbaijan's Achievements during the Period of Independence*. Necefoglu evaluates the works published in international peer-reviewed journals in Azerbaijan according to their fields and periods. In the paper by Hussein, Azerbaijan's capacity and advantages in the field of agriculture are evaluated with the use of extensive statistical data at the international level. The next paper addresses the language issue, which is one of the most common problems in post-Soviet countries, based on the case of language policy in Azerbaijan. The last article of this chapter, which focuses on the Karabakh conflict, examines the impact of the long-standing problem between Azerbaijan and Armenia in the context of the security of the Caucasus region and the role of international actors, particularly the OSCE, in finding a solution.

The first two articles in the third section, entitled *Kazakhstan's Achievements in the Independence Period*, examine the ethnic history in Kazakhstan and the development of Kazakh national folklore during different periods in history. The articles review the role of literature in explaining the political process in the country and the problems of introducing the Latin script to the modern Kazakh language. In the last article, Yildirim deeply examines Olzhas Suleimenov's book "Az i Ya" and describes the role of intellectuals such as Dulatov, Zhumabayev and Bukeikhanov in the formation of a national consciousness and independence for the protection of Kazakh culture.

In the fourth section, entitled *History, Culture and Literature*, Kizil touches upon the role of a common understanding of history in influencing the formation of a national history and identity. He also emphasises the study's scientific capacity and reliability by presenting a wide range of additional information at the end of the article. The research by Heshimova, a member of Azerbaijan Academy of Sciences, examines Turkey's role in the integration of the Turkic Republics into the world system. In addition, it addresses the problems and important projects in the cultural relations of these countries. The next two articles evaluate the impact of literature on cultural identity and reflections of socialism in Turkic folk literature. Finally, Erol's study aims to emphasise the unity and cooperation between Turkey and Azerbaijan by drawing attention to certain linguistic similarities and poetry.

The fifth section, entitled *Language, Education, Identity and Media*, starts with an article on the role of the horse in Kazakh culture and national identity. The second paper examines the formation of Kazakh and Kazakhstani identities and considers the establishment of the Assembly of People of Kazakhstan and the influence of ethnic groups in Kazakhstan on

identity formation. The other article in the section, which explores native language schools in the Karabakh region of northern Azerbaijan in the late 19th and early 20th centuries, deals with the efforts of Azerbaijani intellectuals in the field of education and training. The next paper presents a comparative analysis of the compulsory education system, covering elementary school, middle school and high school in Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan and Turkmenistan. Considering that there are several difficulties and obstacles in accessing data on Turkmenistan when conducting research on Turkic Republics, this study can be considered valuable in terms of detailed data on the primary education system in Turkmenistan. The article on *Psychological Distance between Turkey and the Central Asian Republics* discusses trade and economic relations between the countries from the perspective of psychological distance perception, which is a concept of international marketing. The ensuing articles present opinions on the establishment of educational programmes and standards, and they explore the difficulties in writing textbooks. Moreover, the studies review articles published in Turkish newspapers about republics that have declared their independence in the Turkestan region following the collapse of the Soviet Union. Finally, Yazici mentions the inclusion of national musical instruments, national clothing, historical games and historical characters on postage stamps. The article includes pictures of all the above-mentioned postage stamps. The author states that the characters related to Turkic culture and identity in the Turkic Republics are presented only as individuals raised in their own countries and as specific objects of historical importance. Instead, he concludes that objects involving a common Turkic identity should be included more.

In the sixth and final section of the book, *Foreign Policy, Security, Economy and Foreign Trade*, Tamcelik examines Turkish foreign policy strategies in the Caucasus region and explores the methods of process analysis and the understanding of cooperation from conflicting theories. The second article compiles the search for national security in Azerbaijan, the adoption of a security doctrine and its scope. Next, Agazade's work assesses the sectoral structure of the Azerbaijani economy, the importance of oil exports in the country and stresses that energy sources are a high percentage of the exports to Turkey. The subsequent article examines separate sections on international transport lines in the Caucasus and Central Asia, particularly freight, passenger and pipeline transport. The article, which discusses Azerbaijan's views on the status of the Caspian Sea, touches upon the geopolitical and geostrategic importance of the Caspian Sea. It also presents detailed information on the legal status and natural resources of the Caspian Sea, as well as the states' different approaches. TANAP is one of the projects that has an important place among the Turkic Republics in terms of natural gas transportation. Another article in this section emphasises the importance of the project and deals with the issue of energy security. The last article of the chapter, which focuses on the relationship between public expenditures and economic growth, states that it is one of the most researched topics in the field of economics. Using a cointegration and causality analysis, the article examines five Turkic Republics (Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan and Turkmenistan).

To conclude, the fact that the authors of the book are academics and representatives of authorised institutions from various universities in the Turkic Republics makes the book more valuable as we can find different

ideas and opinions about the state-building process in the Turkic Republics in single source. The symposium, which is regularly organised in honour of the anniversary of the independence of the Turkic Republics, is the source of inspiration for the publication of this book, and it shows that the scientific basis for the solution-oriented discussions of participating authorities and academics are the result of the development and formation processes in the Turkic world . The elimination of some technical errors in the book's forthcoming editions will raise the level of the study. Organising the articles according to a common format is also important for future publications. These modifications will enhance the usefulness of such studies as scientific sources of knowledge.

Editorial Principles

Eurasian Research Journal aims to publish scientific articles on dynamic realities of the Eurasian region in economics, finance, energy, transportation, security and other related fields. It also aims to contribute to the scientific literature, particularly, on Turkic speaking countries.

Submissions to **Eurasian Research Journal** should be original articles producing new and worthwhile ideas and perspectives or evaluating previous studies in the field. **Eurasian Research Journal** also publishes essays introducing authors and works and announcing new and recent activities related to the Turkic world.

An article to be published in **Eurasian Research Journal** should not have been previously published or accepted for publication elsewhere. Papers presented at a conference or symposium may be accepted for publication if this is clearly indicated.

Eurasian Research Journal is published biannually: in January and July. Each issue is forwarded to subscribers, libraries and international indexing institutions within one month after its publication.

Review of Articles

Articles submitted to **Eurasian Research Journal** are first reviewed by the Editorial Board in terms of the journal's editorial principles. Those found unsuitable are returned to their authors for revision. Academic objectivity and scientific quality are considered of paramount importance. Submissions found suitable are referred to two referees working in relevant fields. The names of the referees are kept confidential and referee reports are archived for five years. If one of the referee reports is positive and the other negative, the article may be forwarded to a third referee for further assessment or alternatively, the Editorial Board may make a final decision based on the nature of the two reports. The authors are responsible for revising their articles in line with the criticism and suggestions made by the referees and the Editorial Board. If they disagree with any issues, they may make an objection by providing clearly-stated reasons. Submissions which are not accepted for publication are not returned to their authors.

The royalty rights of the articles accepted for publication are considered transferred to Eurasian Research Institute of Akhmet Yassawi University. Authors have full responsibility for the views expressed in their articles and for their stylistic preferences. Quotations from other articles and duplication of photographs are permitted as long as they are fully referenced and cited.

Language of Publication

The language of the journal is English.

Style Guidelines

The following rules should be observed while preparing an article for submission to *Eurasian Research Journal*:

1. Title of the article: The title should suit the content and express it in the best way, and should be written in **bold** letters. The title should consist of no more than 10-12 words.

2. Name(s) and address(es) of the author(s): The name(s) and surname(s) of the author(s) should be written in **bold** characters, and addresses should be in normal font and italicized; the institution(s) the author(s) is/are affiliated with, their contact and e-mail addresses should also be specified.

3. Abstract: The article should include an abstract in English at the beginning. The abstract should explain the topic clearly and concisely in a minimum of 75 and a maximum of 150 words. The abstract should not include references to sources, figures and charts. Keywords of 5 to 8 words should be placed at the end of the abstract. There should be a single space between the body of the abstract and the keywords. The keywords should be comprehensive and suitable to the content of the article. The English and Russian versions of the title, abstract and keywords should be placed at the end of the article. In case the Russian abstract is not submitted, it will be added later by the journal.

4. Body Text: The body of the article should be typed on A4 (29/7x21cm) paper on MS Word in Size 12 Times New Roman or a similar font using 1,5 line spacing. Margins of 2,5 cm should be left on all sides and the pages should be numbered. Articles should not exceed 7.000 words including the abstract and bibliography. Passages that need to be emphasized in the text should not be bold but italicized. Double emphases like using both italics and quotation marks should be avoided.

5. Section Titles: The article may contain main and sub-titles to enable a smoother flow of information. The main titles (main sections, bibliography and appedices) should be fully capitalized while the sub-titles should have only their first letters capitalized and should be written in bold characters.

6. Tables and Figures: Tables should have numbers and captions. In tables vertical lines should not be used. Horizontal lines should be used only to separate the subtitles within the table. The table number should be written at the top, fully aligned to the left, and should **not** be in italics. The caption should be written in italics, and the first letter of each word in the caption should be capitalized. Tables should be placed where they are most appropriate in the text. Figures should be prepared in line with black-and-white printing. The numbers and captions of the figures should be centered right below the figures. The figure numbers should be written in italics followed by a full-stop. The caption should immediately follow the number. The caption should not be written in italics, and the first letter of each word should be capitalized. Below is an example of a table.

Table 1. *Information Concerning Publications in Eurasian Research Journal*

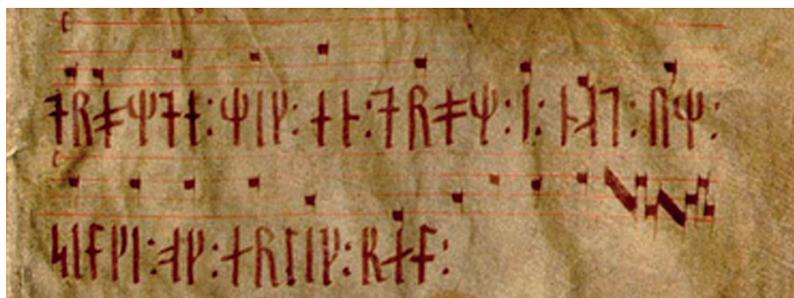
Publication type	Number of publication	Number of pages			Number of references		
		N	X	SS	N	X	SS
Article	96	2,042	21.3	7.5	2,646	27.6	15.8
Book review	4	30	7.5	4.4	31	7.8	8.3
Total	100	2,072	20.7	7.9	2,677	26.8	16.1

Source: Statistical Country Profiles

7. Pictures: Pictures should be attached to the articles scanned in high-resolution print quality. The same rules for figures and tables apply in naming pictures. The number of pages for figures, tables and pictures should not exceed 10 pages (one-third of the article). Authors having the necessary technical equipment and software may themselves insert their figures, drawings and pictures into the text provided these are ready for printing.

Below is an example of a picture.

Picture 1. *Ancient Rune script*



Source: en.wiktionary.org

8. Quotations and Citations: Direct quotations should be placed in quotation marks. Quotations shorter than 2.5 lines should be placed within the flowing text. If the quotation is longer than 2.5 lines, it should be turned into a block quote with a 1.5 cm indentation on the right and left, and the font size should be 1 point smaller. Footnotes and endnotes should be avoided as much as possible. They should only be used for essential explanations and should be numbered automatically.

Citations within the text should be given in parentheses as follows:

(Koprulu 1944: 15)

When sources with several authors are cited, the surname of the first author is given and 'et. al' is added.

(Gokay et al. 2002: 18)

If the text already includes the name of the author, only the date should be given:

In this respect, Tanpinar (1976: 131) says ...

In sources and manuscripts with no publication date, only the surname of the author should be written; in encyclopedias and other sources without authors, only the name of the source should be written.

While quoting from a quotation, the original source should also be specified:

Koprulu (1926, qtd. in Celik 1998).

Personal interviews should be cited within the text by giving the surnames and dates; they should also be cited in the bibliography. Internet references should always include date of access and be cited in the bibliography.

www.turkedebiyatiisimlersozlugu.com [Accessed: 15.12.2014]

9. References: References should be placed at the end of the text, the surnames of authors in alphabetical order. The work cited should be entered with the surname of the author placed at the beginning:

Example:

Isen, Mustafa (2010). *Tezkireden Biyografiye*. Istanbul: Kapi Yay.

Koprulu, Mehmet Fuat (1961). *Azeri Edebiyatının Tekamulu*. Istanbul: MEB Yay.

If a source has two authors, the surname of the first author should be placed first; it is not functional to place the surname of the other authors first in alphabetical order.

Example:

Taner, Refika and Asim Bezirci (1981). *Edebiyatımızda Secme Hikayeler*. Basvuru Kitapları. Istanbul: Gozlem Yay.

If a source has more than three authors, the surname and name of the first author should be written, and the other authors should be indicated by et.al.

Example:

Akyuz, Kenan et al. (1958). *Fuzuli Turkce Divan*. Ankara: Is Bankasi Yay.

The titles of books and journals should be italicized; article titles and book chapters should be placed in quotation marks. Page numbers need not be indicated for books. Shorter works like journals, encyclopedia entries and book chapters, however, require the indication of page numbers.

Example:

Berk, Ilhan (1997). *Poetika*. İstanbul: Yapi Kredi Yay.

Demir, Nurettin (2012). "Turkcede Evidensiyel". *Eurasian Research Journal, Turk Dunyasi Sosyal Bilimler Dergisi* 62: 97-117.

Translator's, compiler's and editor's names (if there are any) should follow

the author and title of the work:

Example:

Shaw, Stanford (1982). *Osmanli Imparatorlugu*. Trans. Mehmet Harmanci. Istanbul: Sermet Matb.

If several references by the same author need to be cited, then the name and surname of the author need not be repeated for subsequent entries following the first entry. A long dash may be used instead. Several references by the same author should be listed according to the alphabetical order of work titles.

Example:

Develi, Hayati (2002). *Evliya Celebi Seyahatnamesine Gore 17. Yuzyil Osmanli Turkcesinde Ses Benzesmesi ve Uyumlar*. Ankara: TDK Yay.

_____ (2003). *XVIII. Yuzyil Istanbul Hayatina Dair Risale-i Garibe*. Istanbul: Kitabevi.

If **more than one work by the same author of the same date** need to be cited, they should be indicated by (a, b).

Example:

Develi, Hayati (2002a). *Evliya Celebi Seyahatnamesine Gore 17. Yuzyil Osmanli Turkcesinde Ses Benzesmesi ve Uyumlar*. Ankara: TDK Yay.

Develi, Hayati (2002b). *XVIII. Yuzyil Istanbul Hayatina Dair Risale-i Garibe*. Istanbul: Kitabevi

For **encyclopedia entries**, if the author of the encyclopedia entry is known, the author's surname and name are written first. These are followed by the date of the entry, the title of the entry in quotation marks, the full name of the encyclopedia, its volume number, place of publication, publisher and page numbers:

Example:

Ipekten, Haluk (1991). "Azmi-zade Mustafa Haleti". *Islam Ansiklopedisi*. C. 4. Istanbul: Turkiye Diyanet Vakfi Yay. 348-349.

For **theses and dissertations**, the following order should be followed: surname and name of the author, date, full title of thesis in italics, thesis type, city where the university is located, and the name of the university:

Example:

Karakaya, Burcu (2012). *Garibi'nin Yusuf u Zuleyha'si: Inceleme-Tenkitli Metin-Dizin*. Master's Thesis. Kirsehir: Ahi Evran Universitesi.

Handwritten manuscripts should be cited in the following way: Author. Title of Work. Library. Collection. Catalogue number. sheet.

Example:

Asim. *Zeyl-i Zubdetu'l-Es'ar*. Millet Kutuphanesi. A. Emiri Efendi. No. 1326. vr. 45a.

To cite **a study found on the Internet**, the following order should be followed: Author surname, Author name. "Title of message". Internet address. (Date of Access)

Example:

Türkiye Cumhuriyet Merkez Bankası. "Gecinme Endeksi (Ucretliler)" Elektronik Veri Dagitim Sistemi. <http://evds.tcmb.gov.tr/> (Accessed: 04.02.2009).

An article accepted for publication but not yet published can be cited in the following way:

Example:

Atilim, Murat and Ekin Tokat (2008). "Forecasting Oil Price Movements with Crack Spread Futures". *Energy Economics*. In print (doi:10.1016/j.eneco.2008.07.008).

