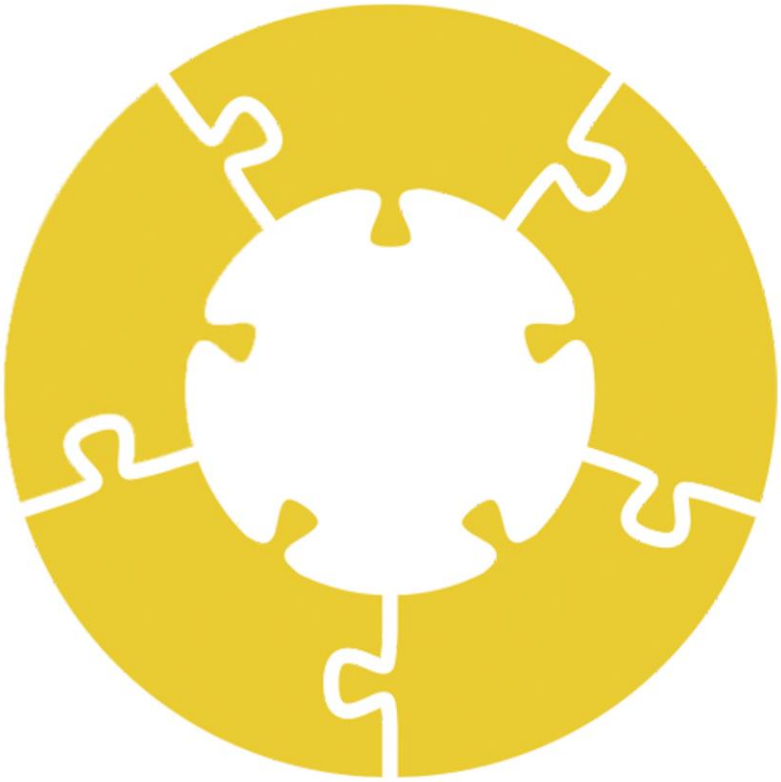
Research Projects



RSSIA 2018

EU PRACTICES FOR YOUNG RESEARCHERS: STUDYING ECONOMICS OF INSTITUTIONAL DEVELOPMENT

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The EU Practices for Young Researchers: Studying Economics of Institutional Development

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Contents

Agapova, Anna[1] (with Sharmila Vishwasrao[2]): Financial Sector Foreign Aid and Financial Intermediation

Abstract: *The effectiveness of foreign aid is typically measured by the effect of aid on economic growth. Prior literature provides ambiguous results on this effect. Examination of targeted foreign aid may provide a better way to measure effectiveness. Banking literature on emerging, transition, and developed economies shows that the level of development of the financial intermediation sector and financial markets plays a key role in spurring economic growth. We use foreign aid to the financial sector to capture the effect of aid on a specific economic sector, namely, financial intermediation. Foreign aid to the financial sector in transition economies may be particularly important because what mostly sets transition economies apart from developed and developing markets, is the difference in financial systems and market development. As transition economies build their financial systems to move to market economies, targeted foreign aid to the financial sector may be more effective than just general purpose foreign aid.*

Introduction

Effectiveness of foreign aid is a key question for providers and recipients of aid and for researchers and policy makers. It is often measured through its effect on economic growth in the recipient country. Prior literature examining the role of foreign aid on economic growth has found contradictory results (Radelet, 2006). Some find that foreign aid is associated with more short-term and long-term growth (Burnside and Dollar, 2000; Clemens et al, 2004; Dalgaard et al, 2004; Arndt et al, 2009; Minoiu and Reddy, 2010), while others find no relation between aid and future economic development (Easterly, 2003; Rajan and Subramanian, 2008) or negative effects of aid on growth (Easterly, 1999). Explanations offered for these conflicting findings range from the level of aid analysis, micro versus macro, to model specifications and endogeneity issues.

Some studies take a different approach to measuring effectiveness by looking at smaller objectives of sectoral aid, such as a reduction of poverty (Mosley et al, 2004), change in government size (Boone, 1996), or decrease in infant mortality rate (Mishra and Newhouse, 2009). Taking this approach may be less ambiguous and more accurate in measuring outcomes of different types of foreign aid, and can help to create more effective and efficient policies.

In this study, we take a similar approach by examining foreign aid to the financial sector, and its effect on the development of financial intermediation in the recipient country. However, in contrast to studies on narrow aid targets' effects, such as poverty reduction and infant mortality rate, development of financial intermediation in a recipient country has a direct effect on economic growth. Aid-growth literature finds

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that local financial development can spur general aid-growth relations and improve general aid efficiency (Nkusu and Sayek, 2004), while liberalization of recipient country financial systems improves the effectiveness of overall foreign aid (Ang, 2010). More importantly, a huge literature shows that level of development and structure of financial sector has a direct role in promoting long-term growth. Early studies by Goldsmith (1969), McKinnon (1973), and Shaw (1973) offer evidence on the role financial intermediaries have on economic growth without establishing a causal link. Later studies by King and Levine (1993a), Levine and Zervos (1998), Rousseau and Wachtel (1998), Levine et al (2000), Beck et al (2000), Levine (2003), Calderon and Liu (2003), and Hassan et al (2011) establish a causal link, and show that the intensity and exogenous components of financial intermediary development are positively associated with economic growth for developed as well as low- and middle-income countries.

The role of foreign aid to financial sectors of transition economies may be even more important than for other types of economies. Gorton and Winton (1998) theoretically show a link between financial system size and financial stability in transition economies, while Harper and McNulty (2008), and Agapova and McNulty (2016) empirically find that transition economy status has an effect on the development of financial intermediation.

This study examines the relationship between foreign aid to the financial sector of a recipient country and development of financial intermediation in the country, measured by the size of banking sector (bank assets, liquid liabilities, domestic credit and claims on the private sector) and interest rate spread, by employing ordinary least squares panel estimation (OLS), and the generalized method of moments (GMM) approach. The status of transition economies on financial sector foreign aid effectiveness is also examined.

Aim of the Project

Numerous studies show that is it hard to measure effectiveness and efficiency of overall foreign aid on economic growth. Given the established causal positive link between financial intermediation and economic growth, we propose to measure aid effectiveness by aid specifically targeted to the financial sector, and its effect on financial intermediation in the recipient country.

Hypotheses and Methodology

Hypothesis 1: Targeted foreign aid to the financial sector is positively associated with development of financial intermediation of aid recipients.

Hypothesis 2: The effect of foreign aid to the financial sector is more pronounced in transition economies.

Hypothesis 3: The likelihood and the size of foreign aid to the financial sector is negatively related to the current level of financial intermediation development and positively related to transition economy status.

The project level data on foreign aid to the financial sector come from AidData Core Research Release 3 database as reported on April 2016 (AidData.org). The dataset covers 96 donors and includes official development assistance (ODA), other official flows (OOF), Equity Investments, and Export Credits where available. Financial sector data include 16,746 projects from 1990 to 2013 using the three digit AidData code category 240-Banking and Financial Services.

We use the IMF's International Financial Statistics (IFS), to obtain banking system characteristics – lending rates, deposit rates, bank assets, demand deposits, time and savings deposits, domestic assets, such as claims on the central bank, net claims on the central government, and claims on other sectors, including claims on the private sector, exchange rates, and gross domestic product (GDP); and the World Bank's World Development Indicators (WDI) Database, where we collect data on inflation, population, urban population, and agriculture as percent of GDP; with supplemental data from the World Bank's Worldwide Governance Indicators database – rule of law, and from the World Health Organization (WHO) – literacy rate.

Our sample consists of 170 countries (22 transition, 29 developed and 119 developing economics) for the period of 1995 – 2013. Following Levine et al (2000), McNulty, Harper and Pennathur (2007), Harper and McNulty (2008), and Agapova and McNulty (2016) we control for legal, accounting and enforcement systems in the country, as well as transition status of the economy, along with other traditional measures that may affect financial intermediation.

The formal model testing our hypotheses is as follows, applied to panel data at the country level. We employ ordinary least squares (OLS), and the generalized method of moments (GMM) approach.

$$FI_{ct} = \alpha + \beta Ln(FA)_{ct-1} + \beta FI_{ct-1} + \beta X_{ct-1} + \delta_t + \gamma_c + \varepsilon_{ct} \qquad (1)$$

where dependent variable FI_{ct}, a measure of financial intermediation in country c at time t, is one of the following: bank interest rate spread (*Spread*) and four balance sheet based measures: *Bank Assets per Capita*, *Liquid Liabilities/GDP*, *Domestic Credit/GDP*, and *Claims on the Private Sector/GDP* (we use natural logarithms where appropriate). The explanatory variables are lagged logarithm of the foreign aid amount to financial sector per capita in real 2011 US dollars, Ln(FA)_{t-1}, lagged dependent variable, FI_{t-1}, and vector X contains lagged country and year specific characteristics including indicator variables for transition economies (*Transition*) and developing economies (*Developing*), *Inflation, Size,* logarithm of GDP per person in 2011 US dollars, percentage of urban population (*Urban*), percentage of GDP in agriculture (*Agriculture*), and rule of law measured by the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5 Year fixed effects, represented by δ_t, control for annual global trends and country specific unobserved characteristics are accommodated through country-specific fixed effects denoted by γ_c. ε is the error term.

Expected and Preliminary Results

We expect to find a positive relation between foreign aid and efficiency of a recipient country's financial intermediation sector and its size. For interest rate spread, the coefficient on financial aid is expected to be negative, i.e. smaller spread more efficiency. The coefficient on financial aid in model specifications with balance sheet measures of financial intermediation is expected to be positive, i.e., larger financial intermediation sector more development. Preliminary results using fixed effects panel data linear regression and system GMM (reported in Tables 3 and 4) indicate a positive effect of financial aid on efficiency as interest rate spreads decrease. However, financial aid does not affect the size of financial intermediation sector.

We expect the effect to be more pronounced for transition economies. Table 1 illustrates that transition economies on average have more financial aid project commitments per year with a larger size per project than developing economies do. We also expect to find that aid will be inversely related to the current level of financial intermediation and directly related to transition economy status. Results obtained in the study will allow us to assess effectiveness of foreign aid in its more narrow definition and to create appropriate policies on foreign aid distribution.

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Appendix

Figure 1. Trends in Real Aid.

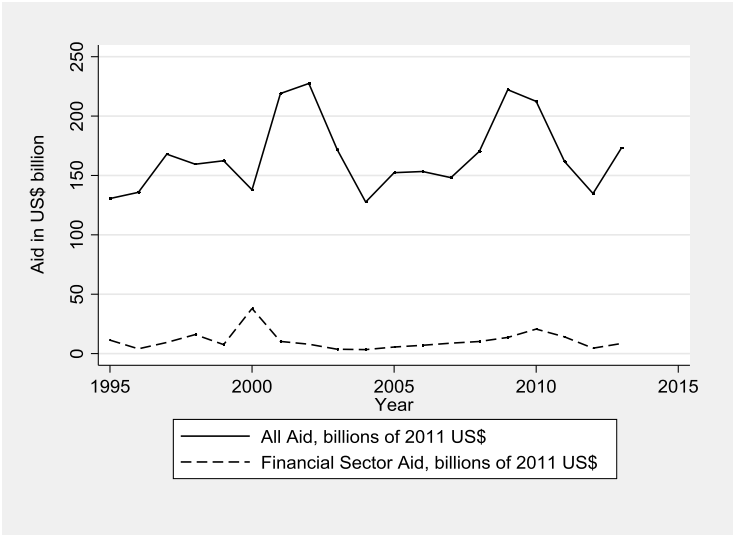

Figure 2. Aid by sector as a percent of GDP.

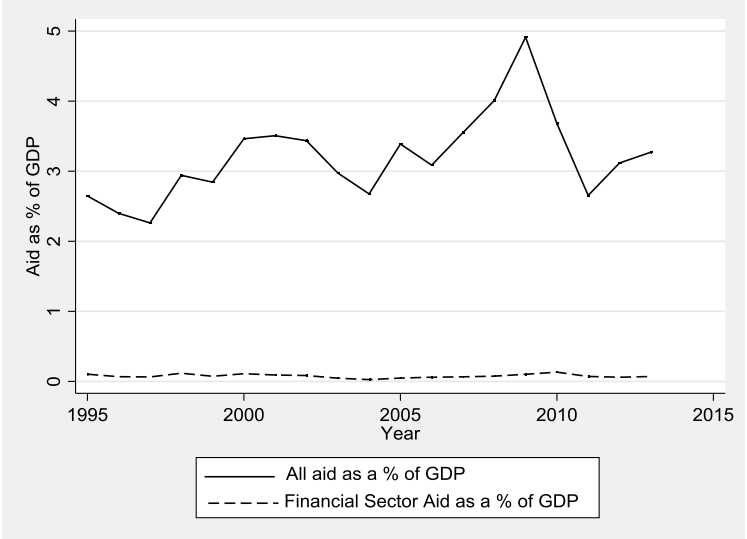

Table 1. Distribution of financial aid by type of economy

The table reports descriptive statistics of committed number of contracts/projects, their average size and total annual amount by type of an economy: developed, developing and transition, per country over 1995-2013.

	N	mean	median	std dev	min	max
Developed						
Number of commitments/projects per year	22	1.68	1	1.32	1	6
Average commitment in 2011 US$ million per project	22	754.64	9.58	2907.93	0.004	13594.3
Annual Financial Aid in 2011 US$ million per country	22	883.49	11.23	2997.11	0.004	13594.3
Developing						
Number of commitments/projects per year	1602	6.23	4	6.27	1	48
Average commitment in 2011 US$ million per project	1602	17.11	1.05	207.45	0	8057.6
Annual Financial Aid in 2011 US$ million per country	1602	92.65	4.54	845.15	0	32230.3
Transition						
Number of commitments/projects per year	294	7.06	5	6.07	1	38
Average commitment in 2011 US$ million per project	294	57.41	3.45	716.53	0.003	12207.1
Annual Financial Aid in 2011 US$ million per country	294	124.23	18.75	770.95	0.004	12207.1

Table 2. Descriptive statistics of the sample variables.

The table reports descriptive statistics of the dependent and explanatory variables used in the analysis. Dependent variables are bank interest rate spread (*Spread*) and four traditional balance sheet based measures: *Bank Assets per Capita*, *Liquid Liabilities/GDP*, *Domestic Credit/GDP*, and *Claims on the Private Sector/GDP*. Explanatory variables are The explanatory variables are lagged logarithm of the foreign aid amount to financial sector per capita in real 2011 US dollars, $Ln(FA)_{t-1}$, lagged dependent variable, FI_{t-1}, and indicator variables for transition economies (*Transition*) and developing economies (*Developing*), *Inflation, Size,* logarithm of GDP per person in 2011 US dollars, percentage of urban population (*Urban*), percentage of GDP in agriculture (*Agriculture*).

Variable	Observations	Mean	Std. Dev.	Min	Max
Spread, %	809	9.419	7.988	-2.808	69.943
Real Bank Assets per Capita	974	2638.1	5308.4	0.05	84228.2
Liquid Liabilities/GDP	893	0.529	1.152	0.026	15.717
Domestic Credit/GDP	914	0.754	1.617	0.04	19.299
Claims on the Private Sector/GDP	967	0.429	0.541	0.021	6.005
Aid, % of PPP GDP	968	0.071	0.232	0	3.677
Aid per Capita	974	4.876	22.945	0	509.65
Urban, %	974	49.271	20.524	9.139	94.983
Agriculture, %	922	17.634	12.111	2.255	57.319
Population, Millions	974	78	228	0.1	1360
Population growth, %	974	1.564	1.049	-1.316	4.515
Real GDP growth, %	734	4.747	3.779	-14.759	33.267
Size	968	25.03	2.15	19.494	30.417
Real PPP GDP per capita	968	7252.4	5546.8	597.7	24310.0
Inflation, %	974	8.65	11.505	-35.837	152.561

Table 3. Fixed effect panel estimates.

The table reports estimates from the panel regression of model (1). All control variables are lagged by one period. Each regression also includes a vector of year and country fixed effects. Standard error estimates are in parentheses and robust standard error estimates allow for non-independence of observations within each country. *, **, *** Significance at the 10, 5, and 1 percent level, respectively.

	Spread	lnBAcap	liqliab/GDP	domcredit/GDP	claimprivate/GDP
	1	2	3	4	5
Intercept	-256.622	38.176	-25.899	-0.645	12.021
	(175.009)	(26.239)	(29.135)	(28.964)	(12.464)
lnAidPerCapita	-0.560***	-0.005	-0.02	-0.022	-0.013
	(0.181)	(0.024)	(0.028)	(0.032)	(0.014)
Urban	0.297	-0.046	-0.007	-0.092*	0.02
	(0.233)	(0.033)	(0.040)	(0.048)	(0.018)
Agriculture	-0.280**	-0.033	0.039*	0.056**	0.023**
	(0.138)	(0.020)	(0.023)	(0.028)	(0.010)
lnPopulation	82.411	-24.31	-10.689	-51.482	-22.718
	(333.430)	(54.513)	(44.796)	(53.881)	(27.042)
PopGrowth	-1.261	0.182	0.215	1.302***	0.139
	(1.401)	(0.229)	(0.245)	(0.224)	(0.092)
realGDPgrowth	-0.440***	-0.060***	-0.011	-0.024	-0.006
	(0.119)	(0.017)	(0.020)	(0.023)	(0.005)
Size_ppp	-56.916	22.462	11.813	51.378	22.156
	(332.800)	(54.459)	(44.786)	(53.808)	(27.017)
lnReaGDPpercap	39.484	-22.842	-10.42	-50.445	-22.526
	(332.995)	(54.513)	(44.863)	(53.867)	(27.025)
Inflation	0.030***	-0.021***	-0.005	0.009***	0
	(0.009)	(0.005)	(0.006)	(0.002)	(0.001)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	876	652	648	694	1091
R2	0.144	0.632	0.469	0.415	0.18
ll	-3,270.86	-987.49	-1,067.16	-1,285.17	-1,387.40

Table 4. Two step system GMM estimates with corrected robust standard errors.

The table reports estimates from the panel regression of model (1) using system GMM using up to two lags and specifying aid variable as endogenous. All control variables are lagged by one period. Each regression also includes a vector of year and country fixed effects. Standard error estimates are in parentheses and robust standard error estimates allow for non-independence of observations within each country. *, **, *** Significance at the 10, 5, and 1 percent level, respectively.

	Spread	lnBAcap	liqliab/GDP	domcredit/GDP	claimprivate/GDP
	1	2	3	4	5
Intercept	194.606**	-0.307	-6.319	0	0
	(98.391)	(4.748)	(5.069)	(.)	(.)
lnAidPerCapita	-0.410**	-0.016	0.005	0.011	-0.014
	(0.184)	(0.014)	0.018)	(0.027)	(0.017)
Urban	-0.071	0.008	-0.007	-0.024	-0.018*
	(0.089)	(0.008)	(0.014)	(0.025)	(0.011)
Agricalture	-1.188*	0.009	0.032	-0.039	0.011
	(0.650)	(0.022)	(0.030)	(0.032)	(0.042)
lnPopulation	15.196*	-0.064	-0.715	-0.804	-0.729*
	(8.948)	(0.564)	(0.670)	(1.154)	(0.387)
PopGrowth	-1.151	-0.354*	0.196	0.832	0.024
	(1.329)	(0.192)	(0.162)	(0.574)	(0.136)
realGDPgrowth	-0.615	-0.003	-0.039	-0.041	-0.031
	(0.380)	(0.033)	(0.033)	(0.081)	(0.029)
Size_ppp	-16.364*	0.086	0.76	0.787	0.656*
	(9.078)	(0.553)	(0.610)	(0.848)	(0.380)
lnReaGDPpercap	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)
Inflation	-0.035	-0.003	-0.018	0.004	-0.001
	(0.050)	(0.008)	(0.013)	(0.006)	(0.003)
Lag Spread	0.705***				
	-0.078				
Lag lnBAcap		0.805***			
		-0.109			
Lag liqliab/GDP			0.481***		
			-0.111		
Lag domcredit/GDP				0.286**	
				-0.12	
Lag claimprivate/GDP					0.320***
					-0.072
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	871	618	616	665	1091
ll					
ar1p	0.575	0.01	0.103	0.086	0.007
ar2p	0.21	0.549	0.993	0.632	0.891
hansenp	1	1	1	1	0.985

Alimukhamedova, Nargiza[1]*:* Microfinance and Institutional Development: What is on the Reverse Side of the "Development Medal"?

Abstract: *The main objective of this project is to analyse the long-term contributions of microfinance. This is a novel contribution as most of empirical studies have been focusing on measuring immediate and short-term effects of microfinance on borrowers' business and household wellbeing outcome indicators. First, we define the analytical framework and a theory of change for analysing mechanisms of microfinance long-term contributions. We make a hypothesis that the long-term contributions of microfinance could be captured by improvements in trust to financial institutions, regulation, and the quality of institutions. Next, we plan to conduct the panel data test on measuring the long-term contributions. Endogeneity and reverse causality of microfinance is addressed by using Arellano and Bover (1995), Blundell and Bond (1998) GMM system estimator where lagged values serve as instruments for proper identification purposes. The results expected to shed more light on what type of long-term contributions microfinance programs are promising to bring for societies and institutional development.*

Introduction

Microfinance is defined as a provision of a broad spectrum of banking services to low-income households. By its original mission microfinance has been considered as an important development policy tool to eradicate poverty, employment generation and increasing access to finance (Bauchet et al. 2011).

After five decades of rapid expansion microfinance has been recognized as an important poverty eradication and development tool. However during the last decade microfinance has been criticized for low power of "magic transformations" of low-income households from poverty and drastic business improvements. Empirical findings based on Randomized Control Trials (RCTs) find that microfinance has heterogeneous effect on existing entrepreneurs and start-ups. Households below (national) poverty lines are not able to grow and "graduate" extensively from poverty levels after using microcredits.

While microfinance direct impact has been paid a considerable attention, however, little is known on its long-term effects. In the long-term, microcredits could have important role in "educating" households, improving business environment and contributing to institutional environment. While implementing microcredit, households learn how to better allocate resources, improve financial literacy and thus ultimately improve their household wellbeing (See Alimukhamedova et al., 2017 for empirical evidence). Few country evidence also indicates positive spillover effects on

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communities and neighborhoods. Therefore we consider that microfinance institutions (MFIs) bring physical and intellectual infrastructure in nearby locations.

We believe that beside their direct impact on household development indicators, there is much spillover and learning effect in the long-term. The latter effect is more important compared to direct one as it leads to a potential transformations of informal institutions. One of the most prominent contributions of microfinance could be on improvements of trust that most of low-income households are claimed to be lack of. The true nature of microfinance programs is that they consider far more trustful relationship than expected in other financial institutions. The direction of trust goes in both directions: (i) borrowers exacerbate more trust to a new form of financial institution; (ii) MFIs trust more clients who do not have sufficient collateral to pledge and therefore only provide social capital in terms of joint liability of group lending.

Aim of the Project

The microfinance literature has been mainly focusing on measuring its direct effects. A comprehensive summary and the findings for recent RCTs and other impact studies is provided by Bauchet et al. 2011, Duvendack et al. 2011, Fouillet et al. 2013, Guerin et al. 2015. Most of these studies find quite modest effect of microfinance borrowing on key business and household development outcomes.

Literature on contribution of microfinance programs for institutional development is rather thin. Few studies analyze various social and community level contributions of microfinance (Dhakal and Nepal, 2016). Addressing the gap in the literature, in this paper first we define conceptual framework for microfinance impact evolution that is perceived through three milestones: immediate effect that benefits directly businesses and household development; intermediate – integrating deeper to communities, and finally the long-term – perceived as tangible contributions for institutional economies such as improvements of business environment and trust. Based on this analytical framework we will test these channels using dynamic panel data of countries that have been implementing microfinance.

We develop the following analytical framework to study transformative effects of microfinance programs (Figure 1).

“A” arrow reflects on microfinance evolution. Once it is introduced, there are (A1) immediate effects on business and household indicators. After several years of rapid growth, microfinance program becomes a (A2) self-sustained segment. Finally, with the very long presence and deep roots in societies, we could capture the (A3) long-term effects of microfinance programs and contributions to institutional economics.

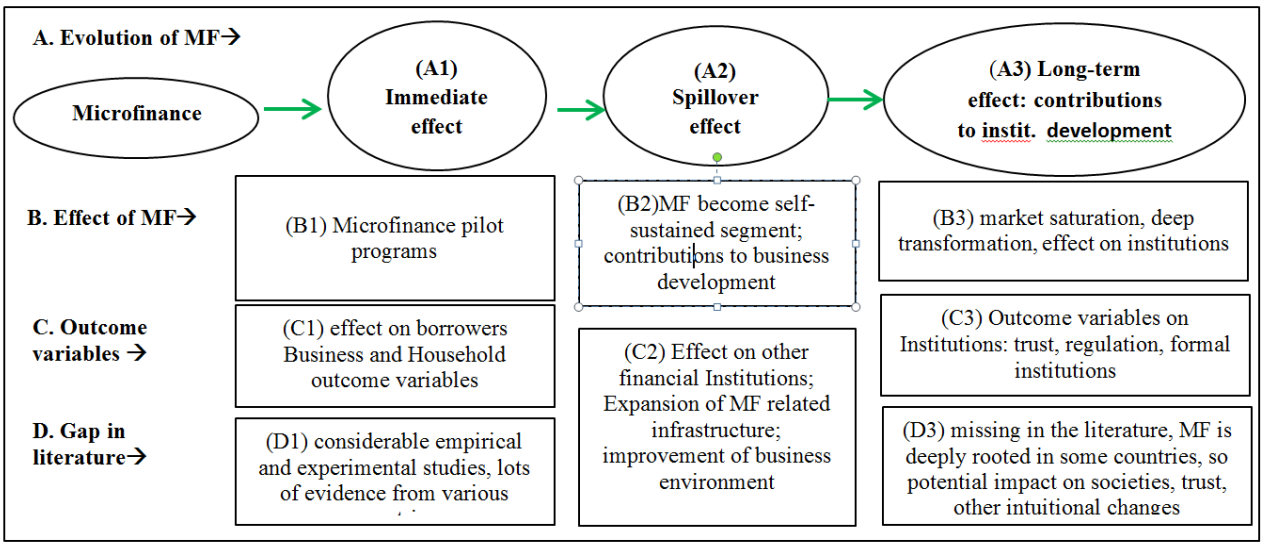
“B” arrow reflects on microfinance effects for each stage of microfinance development. For long-term contributions (B3), we expect to see these effects once markets become more saturated and microfinance programs become well integrated into societies.

“C” arrow reflects outcome variables respective to each stage of microfinance evolution. We aim to measure the long-term contributions by increased level of trust

to general financial institutions, MFIs and other improvements in business environments.

Finally, "D" arrow indicates on the relevant literature in microfinance. As can be seen, while evidence on (D1) immediate effect is largely present, empirical evidence on long-term contributions is rather missing.

Figure 1. Long-term effect of microfinance and contribution to institutional development



Hypotheses and Methodology

We will conduct cross-country panel data regressions linking microfinance development with various measures of institutional development. We focus on various measures of institutions comparing countries that have been integrating intensively microfinance in their economics, i.e. so-called "deep roots". For formal institutions we consider level of trust. We also focus on quality of institutions and their improvements after adopting microfinance. We capture improvements in general business environment in countries adopting microfinance.

Given potential reverse causality between microfinance and institutions we will conduct panel data Granger causality test based on vector autoregressive model (VARs) model. To address potential endogeneity issues we will use lagged values that will serve as instruments for proper identification purposes. We will estimate the following baseline models:

$$InstDev_{it} = \sum_{j=1}^{p1} \propto_{1j} GDP_{i,t-j} + \sum_{j=1}^{p2} \propto_{2j} BisDevelop_{i,t-j} + \sum_{j=1}^{p3} \propto_{3j} Microfin_{i,t-j} + \epsilon_{1,it} \quad (1)$$

$$BisDevelop_{it} = \sum_{j=1}^{q1} \beta_{1j} BisDevelop_{i,t-j} + \sum_{j=1}^{q2} \beta_{2j} GDP_{i,t-j} + \sum_{j=1}^{q3} \beta_{3j} Microfin_{i,t-j} + \epsilon_{2,it} \quad (2)$$

where $i = \{1, \ldots, N\}$, $t = \{1, \ldots, T_i\}$, and ϵ_{it} are i.i.d.

Equation (1) captures microfinance intermediate effects and contribution of microfinance on improvements of business environment (A2, Figure 1). Equation (2) captures the long-term contribution of microfinance on institutions (A3, Figure 1). To obtain consistent estimates, we will employ a dynamic panel-data model based on Arellano and Bover (1995), Blundell and Bond (1998), and Blundell, Bond, and Windmeijer (2000)[1].

Following the conceptual framework (Figure 1) to empirically examine microfinance (A2) intermediate and (A3) long-term contributory effects we will estimate (1) and (2) models using Arellano-Bover/Blundell-Bond system estimator with lags of dependent variables included as regressors. We will use Sargan overidentifying restriction test (Sargan, 1958; Hansen, 1982) to test the validity of instruments and the specification-type test for equations (1) and (2). The lengths of lags *p*, *q*, *r* or *s* will be also determined accordingly. The null hypothesis in this test is that instruments used in equations (1) and (2) are exogenous.

Data and variables: For microfinance development we will use the MIX (Microfinance Information eXchange[2]) market global database for variables on microfinance institutions. We will construct a dynamic panel for MFIs for 1995-2017 periods and use two measures: (i) number of borrowers and (ii) gross loan portfolio.

To capture business environment we plan to exploit the World Bank "Doing Business" survey which contains various aspects of business environment and has consistent annual waves for 2010-2017 period. For a subset of transition economies, we can also benefit from EBRD Life in Transition Survey (LITS) three survey rounds: 2016, 2010, and 2006.

[1] Building on the work of Arellano and Bover (1995), Blundell and Bond (1998) proposed a system estimator that applies moment conditions in which lagged differences are used as instruments for the level equation, in addition to the moment conditions of lagged levels serving as instruments for the differenced equation.
[2] http://www.themix.org/mixmarket.

For institutional development we plan to use various measures of institutions, although our primary focus is on measures of trust. Berggren (2006) distinguishes three types of trust: (i) social trust (ii) particularized trust and (iii) organizational trust. The social trust is defines as the share of people in a country who say that *"most people can be trusted".* Variables on social trust will be based on the World Values Survey[1] six different waves: 1981-1984, 1990-1994, 1995-1998, 1999-2004, 2005-2009, and 2010-2014.

For additional measures of quality of institutions we could also benefit from the recent Bjørnskov-Rode regime data v.1.2[2], March 2018 release which includes Cheibub, Gandhi and Vreeland's DD dataset. It provides a comprehensive global dataset on regime types and regime changes.

Expected Results

Expected results of this project are going to contribute academic literature in the following ways:

Firstly, within microfinance area, expected results should help for better understanding the long-term benefits of microfinance programs in terms of improvement in trust for alternative financial service providers. These long-term effects of microfinance programs are far much important than short-term transformative effects. Implementation of microfinance programs in new environments envisages not only the establishment of MFIs, relevant legislation and other country specific elements. In some developing economies the success of microfinance programs is strongly associated with how deeply microfinance has integrated within national economies and formal institutions. This would require deep transformation in various aspects of economies including legislation, technical expertise for adopting and using "new microfinance" models, training and capacity building. Therefore, we believe that in the long-term, microfinance program have strong capacity for producing measurable changes in institutional improvements. We will also shed light on which type of institutions microfinance program are contributing to, i.e. formal, informal. This is important to know as microfinance is among the top development priorities and many countries are rapidly focusing on its expansion. However, the very long-term effects of microfinance and evidence of "deep roots" in local institutional environment are not well researched so far. We also try to explain whether microfinance program could possess strong capacity to restore trust and confidence for alternative financial intermediaries, and also understand the transformation of values in societies.

Secondly, our results should shed more light on what type of long-term contributions microfinance programs are promising to bring. There could be some positive and transformative direct effects on borrowers' outcomes; however the long-term contribution to societies is ambiguous. Microfinance has been given high importance

[1] http://www.worldvaluessurvey.org/WVSOnline.jsp
[2] http://www.christianbjoernskov.com/bjoernskovrodedata/

and acceptance by many countries. Most of this "acceptance", however, is based on immediate effects of microfinance, whereas long-term institutional contributions have not been sufficiently clear.

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Bekova, Saule[1]*:* Types of PhD Student-Supervisor Relationships and the Effectiveness of Doctoral Training in the Context of Transformation of Russian PhD Education System

Abstract: *Traditionally, the Russian system of doctoral education was based on the so-called 'apprenticeship' model, with the student-supervisor relationship being at its core. But the new Federal law 'On education in Russian Federation', enacted in 2013, aimed at improving the effectiveness of Ph.D. training and marked the transition from the 'apprenticeship' to the structured model. Within this new model, Ph.D. students get more workload and are supposed to become more engaged in the academic life of their institution. It is yet hard to tell whether this reform has had the intended effect of increasing the efficacy of Ph.D. programs, including the system of academic supervision. Nevertheless, the significant changes in doctoral education require further reflection and analysis. The proposed study is aimed at filling this gap by undertaking a comprehensive analysis of the institute of academic supervision in Russia. The overarching research question is 'How different aspects of academic supervision impact the effectiveness of Ph.D. education?' This study will be a stepping stone to a deeper understanding of the mechanisms of academic supervision in Russia and will inform policies aimed at increasing the efficacy of Ph.D. programs.*

Introduction

In recent years, both in academic literature [Bedny, Rybakov, Sapunov 2017, Bedny 2017], and in the media the problem of the effectiveness of graduate programs is being actualized. The completion rates are sharply reducing (18.1% in 2014, 15.5% in 2016). However, the reasons for underperformance of Russian doctoral programs and high dropout rates are under-explored. The discussion about the efficacy of doctoral education in Russia is rather speculative than evidence-based. This might be explained by the lack of necessary data. Although the increased interest in the issue of effectiveness does not result in an increased state or university demand for research.

Studies conducted in various sociocultural and institutional environments have shown that an effective doctoral student – supervisor relationship is vital for increasing completion rates and overall scientific productivity of Ph.D. students [Zhao et al. 2007, Mainhard et al. 2009, Balabanov et al. 2009, Erstein 2011a]. Academic supervision is especially important in the so-called 'apprenticeship' model, according to which doctoral student's training relies mainly on their interaction with a supervisor. This model is characterized by a low level of diversification in the control of Ph.D. students' activities, consequently, not the Ph.D. program but rather the student and his/her supervisor are the only ones responsible for the final result. Such model boosts a risk of poor matching of supervisor and supervisee, resulting in low quality interaction

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between them [Sadowski, Schneider 2008; McCallin, Nayar 2012] and untimely discovery of problems a student might have.

The new Federal law 'On education in Russian Federation', enacted in 2013, aimed at improving the effectiveness of Ph.D. training and marked the transition from the 'apprenticeship' to the structured model. Within this new model, Ph.D. students get more workload and are supposed to become more engaged in the academic life of their institution. The reformed Ph.D. education system was supposed to raise the effectiveness of Ph.D. education in Russia, through introducing additional control over students' work and improving the effectiveness of academic supervision [Bedny et al. 2014]. However, it is yet hard to tell whether this reform has had the intended effect, including improving the system of academic supervision, which is why further reflection and analysis is required. In Russia there is a lack of evidence-based studies on academic supervision, its principles and functions, and its impact on the effectiveness of doctoral education. The majority of existing research is theoretical and based on expert opinions, with the exception of studies by Reznik et al. 2012, Bekova et al. 2017. Moreover, these studies discuss only certain aspects of academic supervision. Namely, they are often focused on supervisor's skills and competencies necessary for successful Ph.D. supervision [Reznik 2012, Fedorova, Zavyalov 2012], functions and styles of supervisors [Erstein 2011b, Gribankova 2011], motivation for supervision [Kotlyarov 2010, Anikin, Poizner 2015], institutional environment in relation to improving the quality of supervision [Bendy et al. 2011]. Consequently, certain issues remain out of focus, such as the mechanisms of supervisor-supervisee pairing and its effectiveness, including its impact on a successful doctoral thesis defense.

Aim of the Project

The research project is aimed at filling this gap in data on doctoral programs' effectiveness and its determinants. We will look at the institutional characteristics of programs, Ph.D. students' training process and the socio-psychological characteristics of students' interaction with the university environment as main determinants of successful Ph.D. education.

Due to the lack of accessible and good quality statistical data, we will carry out a survey. In order to improve the validity of the data, the survey will be conducted simultaneously among two groups of respondents – supervisors and their students, both those who have successfully completed a Ph.D. and dropouts.

Hypotheses and Methodology

Our study will employ a mixed-method approach. The first planned stage of the research involves a series of semi-structured interviews with academic supervisors and their doctoral students in several Russian universities. The interview data will help define the mechanisms and typology of supervisor-student pairing and identify the turning points critical to a Ph.D. student's success.

The interview data will also form the basis for developing a subsequent quantitative stage of research, that includes a questionnaire survey of Ph.D. students and supervisors from at least 3 Russian universities. This data will enable us to give a quantitative assessment of the types of interaction, the mechanisms, and determinants of student-supervisor pairing defined at the first stage, as well as to compare these pairs in terms of their effectiveness.

The questionnaire will be conducted online via email invitations. This format will help extend the survey reach and accelerate data collection and analysis. Moreover, considering the sensitive nature of the topic, an online questionnaire provides an increased level of anonymity compared with the traditional paper-based format, which may positively affect the quality of the data.

The prospective findings of this study can be used to improve the admission criteria, provide changes in the supervisory mentoring and supervisor–supervisee matching, spread good practices and eliminate ineffective ones.

Expected Results

The following key results will be achieved within the project:

1. A typology of academic supervision and collaboration the pair - "academic supervisor-doctoral student" will be developed. This typology, on the one hand, will take into account previous studies and theoretical background developed in this area, on the other hand, these results can be useful preparation of scientific and pedagogical personnel in the Russian context. The developed typology can be used for further studies of Russian doctoral programs, and it might become the basis for the educational policy in the field of doctoral programs and interaction between an academic adviser and his/her doctoral student.

2. A methodology for studying the relationship of the "academic supervisor-doctoral student" in dyadic pairs will be developed; a tool for measuring the quality of these relationships will be created.

3. The effectiveness of different types of academic supervision will be assessed and recommendations for further transformation of institute of academic advising will be developed.

In addition, the Russian case of doctoral education system transformation is matter of interest for international academic community. Currently, the Russian doctorate undergoes changes under effect of global and local challenges that are similar to changes that were in US, Canada, Australia, Western European countries and close to final stage now. In Russia, the process of radical transformations in doctoral education is on the beginning stage as well as in other less developed countries. Meanwhile, existing scientific publications are mainly dedicated to research of doctorate in developed countries that does not allow to draw a complete picture of processes and worldwide tendencies for this level of education. In this regard, the description of the Russian doctorate transformation case will contribute to overcoming the existing

imbalance in consideration of most developed systems of training academics and highly qualified personnel.

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Bryzgalin, Viktor*[1] *(with Ekaterina Borisova*[2] *and Irina Levina*[3]*):

Compliments or Substitutes? Influence of Trust and Norms on Economic Growth

Abstract: *Growing number of studies on the influence of social capital on economic outcomes calls into question the simplified version of the positive effect of social capital (and particularly generalized trust) on economic development and growth. Some papers indicate instability of the relationship between trust and growth, while the others point on the lack of clear connection between trust and civic norms which are suggested to have a positive influence on economic growth. We propose to explore the relationship between trust, civic norms and development deeply, with all the data which is currently available for generalized trust from the World Values Survey and European Values Study. Our preliminary results show that generalized trust being highly significant for economic growth in 1980th and in the beginning of 1990th turned to be mostly insignificant in the 2000th. But what matters is compatibility between trust and norms – the stronger it is the higher is the modern economic growth. Although low trust could be compensated with better norms. Additionally we find intriguing evidence for the sharp changes of the effects of institutional quality and education over time.*

Introduction

Social capital has become a popular topic among economists in the past two decades. There are numerous works how social capital impacts economic outcomes, including probability to become an entrepreneur, development of financial markets, bilateral international trade, happiness, etc. (see e.g. Guiso, Sapienza, & Zingales, 2004, 2009; Hall & Helliwell, 2014). Beginning with the classic work "Does social capital has an economic payoff?" (Knack & Keefer, 1997) the statement about the positive impact of social capital on economic growth has become widespread. Following (Putnam, 1993), the authors considered the influence of three elements of social capital - trust, norms and networks. The strongest and the most robust effect was revealed for generalized trust, i.e. trust to unknown people. Most of the subsequent work focused on this characteristic and generally confirmed the relationship (Algan & Cahuc, 2014).

However, the relationship between trust and growth leaves many questions, which become even more relevant in the light of the most recent papers. The first point concerns issues about the universality of the positive impact of generalized trust on growth among different countries. In particular, does the effect vary in parts of the world with dissimilar historical and cultural background and for countries with different institutional environments? The magnitude of the trust effect and its stability leave concerns. The volatility of the influence of trust on economic growth is shown in

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a paper (Berggren, Elinder, & Jordahl, 2008). Additionally, (Gennaioli, La Porta, Lopez De Silanes, & Shleifer, 2014) demonstrate that the effect of trust on growth at the regional level is much weaker then at the country level. One of the recent papers show no positive effect of trust on economic growth in the sample of all countries (James, 2015).

There is also more evidence for the role of institutional framework in the relationship between trust and growth. In the paper by Roth (2009) the author finds parabolic influence of trust on economic growth: in countries with a very high level of trust growth rates may be lower than in countries with an average level of trust. Ahlerup, Olsson, and Yanagizawa show that the positive impact of trust on growth will be observed in countries with poor quality of the institutional environment, while in countries with a strong institutional environment effect is insignificant (Ahlerup, Olsson, & Yanagizawa, 2009). James (2015) obtained positive impact of trust in subsample of countries with weak institutions and neutral (and even negative in some specifications) impact within countries with strong institutions. Finally, in a paper by Horvath (2013) the influence of trust on economic growth was confirmed through the use of the Bayesian model, and again it was shown that trust is a significant predictor of growth in countries with weak rule of law.

The second point concerns about the fact that trust is not always connected to productive civic norms in expected way. Usually, trust is regarded as one of the components of the social capital, and from the theoretical point of view it should be closely related to other prosocial (civic) norms. In addition, economic literature widely considers the impact on growth of such cultural norms as work-luck beliefs and family ties, and the relationship of trust with them could shed light on the channels of influence of trust on growth. However, contrary to intuitive assumptions, the relationship between norms and values is ambiguous. The thesis that there is no connection between trust and civic norms and the insignificance of the latter for growth was disclosed in the work (Bjørnskov, 2006): the author showed that at the country level the civic norms variables are combined into one factor, trust in the other (both factors are uncorrelated with each other). Balan and Knack (Balan & Knack, 2012) show that different combinations of moral attitudes to work - on the one hand, and the level of education - on the other in countries may lead to different levels of economic development, holding educational level and moral attitudes constant. The papers (Letki, 2006; Marien & Hooghe, 2011) showed that generalized trust of an individual is an insignificant predictor of his civic norms. The absence of the influence of generalized trust on civic norms is also mentioned in the paper (Crepaz, Polk, Bakker, & Singh, 2014).

Aim of the Project

The role of the institutional environment (both formal and informal, expressed in a culture specific to certain regions) and of different combinations between norms is underexplored. We propose explore the relationship between norms and trust deeper and to identify the role of the both components of social capital in economic growth.

Hypotheses and Methodology

We assume that:

Institutional environment (both formal and informal) may weaken the linkage between social capital and growth

A specific combination of the institutional environment and dominant beliefs in a society can change the impact of the norm into the opposite direction and discourage growth in certain countries or regions

We use data about trust and norms from World Value Survey and European Value Study to test hypothesis. Trust is measured by the question "Most people can be trusted", norms – by questions about justifiability of cheating on taxes, accepting a bribe, claiming undeserved government benefits or avoiding a fare on public transport. We also use alternative measures of trust – trust to "people you meet for the first time" and outgroup trust (average of the questions about trust to people you meet for the first time, people of another religion and people of another nationality). We use all available data – by waves separately and average of the all waves.

We use data for different periods – including old periods (1980th and 1990th, widely tested by Knack and Keefer and other authors) and new periods (up to 2016). This allows us to estimate the role of trust and norms in dynamic.

We use empirical strategy broadly accepted in the literature with broad set of control variables and growth periods. The main specification is based on (Knack & Keefer, 1997; Roth, 2009):

$$Growth_i = \alpha_0 + \alpha_1 Human\ capital_i + \alpha_2\ Income_i + \alpha_3 PPPI_i + \alpha_4 Trust_i + \alpha_5 Norms_i + \alpha_6 Trust_i * Norms_i + \varepsilon,$$

$Growth_i$ – average growth rates of real GDP per capita, *Trust* – average trust, *Human capital* – mean years of schooling of adult population; *Income* – log GDP per capita in the beginning of the period, adjusted for PPP, *PPPI* – price level of investment, *Norms* – average civic norms. In some specifications we also add quality of institutions and coefficient of correlation between trust and norms in country. Data for GDP, Growth and PPPI is taken from Penn World Tables, for mean years of schooling – form (Barro & Lee, 2013) and UNDP, for institutions – from WGI.

Preliminary Results

Our preliminary results show existence of complicated relationship between trust, norms, institutions and economic growth. Firstly, there are strong differences in the relationship between civic norms and trust in different group of countries: in some countries correlation is positive (and persistent among waves), in some countries – negative, and in some countries the correlation is insignificant. Secondly, the main result of Knack and Keefer (Knack and Keefer, 1997) does not replicate on the latest time periods (despite using additional control variables, such as institutional quality).

Thirdly, we observe change in the role of institutions, trust and education in time: education is becoming more and more important, while the quality of institutions and trust can't explain variances in growth rates nowadays alone. Fourthly, stronger compatibility between trust and norms (in the form of correlation between trust and growth in individual regressions by countries) fosters economic growth today. Finally, addition of interaction term between trust and norms greatly increases the power of the growth models in all time periods, making trust and norms strong and positive determinants of economic growth. Moreover, while trust and norms have positive influence on economic growth, interaction term is negative, showing existence of substitution effect between norms and trust: poor civic norms could be compensated by generalized trust and vice versa. Results are robust to the inclusion of the quality of institutions.

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Dobromyslova, Ksenia[1]*:* Structure and Dynamics of the Russian Electoral Space, 2007-2018

Abstract: *Spatial elections have become quite widely utilized in contemporary political science researches. With regard to Russia are relatively few papers devoted to the study of electoral space. The current project arrives at a fundamental understanding of the structure and dynamics of Russian electoral space. The project is intended to cover the problem issues concerning the ways in which changes in electoral rules may influencing on the electoral space of Russian Federation. The fundamental tool employed in the research is the principal component analysis of Russian electoral statistics. The mentioned method can directly be developed much further to the complex research of the similar trends in the other countries with the similar regimes.*

Introduction

Studies of electoral space represent special value for modern political science, due to the fact that they are able to provide a comprehensive understanding of the spatial positions of the political parties and candidates. In turn, the electoral space is not a static, but a dynamic object, in which internal changes take place. In this regard, the study of the factors that influencing on the formation and change of the structure of electoral space is the matter of particularly important for contemporary researches.

There was widespread research on the analysis of various aspects of the Russian electoral space of the 1990s - early 2000s. (for example, Meleshkina E.Y.[2], Petrov N.V.[3]). At the same time, the electoral cycle, which began in 2007, and the following are no longer subject to such a strong interest in the context of the concept of electoral space, perhaps because of the widespread idea of stabilization and the absence of changes in this field.

The Russian electoral space in this context represents a special case. In the conditions of so-called "electoral authoritarianism" (the concept, widely analyzed by Gelman V.Y.[4], Polyakov L.V.[5]) it may seems that the elections are rather formal procedure, the outcome of which is not unexpected, and which in fact does not occur any changes . According to G.Golosov[6] "elections, parties and other democratic attributes will be used by the regime to consolidate power and not to lose it." In accordance with this, it is assumed that the main purpose of elections is the reproduction of power.

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[2] Meleshkina E.Yu. (2000) Faktory strukturirovaniya elektoralnogo prostranstva. Struktura i dinamika rossiyskogo elektoralnogo prostranstva. «Kruglyy stol». Polis. № 2.

[3] Petrov N.V. Elektoralnyy landshaft: geograficheskiy i politologicheskiy. Struktura i dinamika rossiyskogo elektoralnogo prostranstva. «Kruglyy stol» // Polis. 2000. № 2.

[4] Gelman V.Ya. (2012) Rastsvet i upadok elektoralnogo avtoritarizma v Rossii // Politiya. № 4(67)

[5] Polyakov L.V. (2015) Elektoralnyy avtoritarizm i rossiyskiy sluchay / L.V. Polyakov // – Politiya. – №2.– p. 6-20.

[6] Golosov G. (2015). Rossiya: "elektoralnyy avtoritarizm" ili "gibridnyy rezhim"? – Republic (Slon.ru) https://republic.ru/posts/1607

At the same time, there are a large number of modern studies that consider authoritarian elections primarily to determine the likelihood of democratization. In these studies, a search is made for conditions under which elections do not meet the interests of the dominating group and instead allow rivals to implement a change of power or various political changes.[1] Some scholars have focused on the study of elections in countries with authoritarian traits, trying to figure out when the elections turn into a real confrontation on the existing rules of the game (Greene[2], Lust-Okar[3]). Thus, the problem faced by many researchers is to find out how the elections will contribute to the democratization of two ways: firstly, by facilitating the collapse of the regime as a whole and, secondly, by increasing the probability of the emergence of democracy in its place.

At the same time, it is possible to assume that every election leads to the accumulation of electoral, structural heritage. A repetition of the elections may lead to a change in the structure of the Russian electoral space. So, gradually, while maintaining the basic cleavage of the electoral space (means, delimitation which is finally formed by 2007-2008 "the power – all others"[4]), there will be changes in other cleavages. It will be especially interesting to consider how different economic political social and other factors influenced these changes. Thus, the main focus of this research is the analysis of the transformation of the structure of the Russian electoral space in the last ten years.

Aim of the Project

During the study period there were many quite important changes in the electoral legislation of the Russian Federation. The electoral system was changed twice - the elections to the State Duma in 2007 and 2011 were held according to a proportional system, and the elections in 2016 were mixed. The changes also touched upon the barrier for parties to enter the State Duma. In 2007, this barrier was raised from 5% to 7%, but already in 2016 the 5% barrier was returned.

Gary W. Cox in the essay 'Electoral Institutions and Political Competition: Coordination, Persuasion and Mobilization' mention that 'The question that much scholarship in electoral studies addresses, and on which this essay will focus, is: how does changing the rules of the electoral game change the strategies of parties and candidates, hence the outcome of elections?'[5] It will be very interesting to try to apply this question to the Russian electoral space with all its specifics described above.

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[1] Gandhi J. Lust-Okar E. (2009) Elections Under Authoritarianism. Annual Review of Political Science 12:1, 403-422

[2] Greene K. (2007). Why Dominant Parties Lose: Mexico's Democratization in Comparative Perspective. New York: Cambridge Univ. Press

[3] Lust-Okar E. 2008a. Elections in authoritarian regimes: catalysts for, or obstacles to, reform? In Democracy and Globalization, ed. A Langlois, K Soltan, pp. 130–45. London: Routledge

[4] Akhremenko A.S. (2009) Elektoralnoye prostranstvo: teoretiko-metodologicheskiye problemy dissertatsiya … doktora politicheskikh nauk: 23.00.01. — Moskva. 2009. — p. 12

[5] Ménard, Claude; Shirley, Mary M. (Eds.) (2008) Handbook of New Institutional Economics. Springer p. 69

So the main goal of this project is to analyze the changes that have occurred in the structure of Russia's electoral space in the 2007-2018 and the factors that influenced them. And the main focus will be on the analyzing how changes in electoral rules influencing on the electoral space of Russian Federation.

Hypotheses and Methodology

The principal component analysis will become the main tool for analyzing the Russian electoral space and identifying the most significant factors affecting the changes in its structure.

For the purposes of this study, a systematic approach is essential. With its help, considering the electoral space as a whole system consisting of interrelated elements, it is possible to analyze the structure of this concept.

One of the approaches suitable for future research is the theory of rational choice. This approach has borrowed much from modern economic theory and brought with it a number of diverse opportunities. This approach was used in the works of Anthony Downs[1], Duncan Black[2] to analyze the rivalry of political parties and the voting of citizens. This approach has several advantages and allows obtaining interesting results.

Russian electoral statistics will be the empirical basis of the current research. For the analysis, official data provided by the Central election committee will be used. Also, various social, economic, cultural indicators and development indices of the districts of the Russian Federation will be used to analyze the factors of changes.

Expected Results

According to the results of this study, the structure of the Russian electoral space will be presented in the time interval from 2007 to 2018. The dynamics of the changes in electoral system will be traced. After all we can understand whether changes in electoral rules led to the changes into party's behavior and how it's have an influence on outcome of the elections.

As a result of the analysis, changes will be presented not only within the time cycle of 2007-2018, but also in comparison with previous electoral cycles. Also, groups of factors affecting changes in the structure of the electoral space will be presented. Among these factors, the most significant will be identified.

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[2] Black, Duncan "On the Rationale of Group Decision-making"// Journal of Political Economy.-1948.-Vol. 56. №1 - С. 23–34. URL: http://www.jstor.org/stable/1825026

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Egorov, Aleksei[1] (with Tommaso Agasisti[2], Daria Zinchenko[3] and Oleg Leshukov[4]): Does the Efficiency of Regional Higher Education Systems Matter for Regional Economic Development? Evidence from Russia

Abstract: *This paper analyses the link between efficiency of regional higher education systems in Russia and rates of regional economic development. The efficiency scores are estimated on institutional and regional levels using a double-bootstrap data envelopment analysis procedure taking into account different internal characteristics of universities that may affect its production process. Next, we formulate a regional economic endogenous growth model that considers the efficiency of regional higher education systems as one of the explanatory variables that may determine economic growth rates. The model also includes spatial interactions between regional economies and between regional higher education systems in neighboring regions. A robust system GMM estimator is employed as the econometric approach. The results of the analysis suggest that efficiency of regional higher education system is a crucial determinant of regional economic growth.*

Introduction

Today there is a large number of studies in which universities are positioned as full-fledged economic agents and analyzed in terms of economic activity [Hanushek E. A., 2016; Agasisti, 2011; Agasisti and Johnes, 2010]. There has been also much discussion about a positive effect of the educational system to the local economic development and most of the researchers conclude that the development of education is associated with economic growth of particular territories. There are a lot of different conceptual frameworks that describes universities' involvement in processes of social and economic development of localization territories – from the "triple helix approach" and entrepreneurial university models to different economic approaches of impact evaluation (see [Varga, 1997] for more detailed review).

General theoretical framework of research papers focused on the role of universities in economic development is endogenous economic growth theory [Romer, 1986], [Lucas,1988]. The most important assumption of this theory is that knowledge as important factor of the production process has increasing marginal productivity. In such setting, the technological change in the sense of the Solow model [Solow, 1956] can be determined by knowledge accumulated by economic agents.

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The usual approach that is implemented in the research devoted to the universities' economic impact is to study the relationship between some proxy measure for development level of regional HE system and rates of economic development [Valero, Van Reenen, 2016].

Aim of the project

The aim of this paper is to explore another dimension of universities' activities – their efficiency and evaluate relationship between efficiency of higher education system and economic growth. This assumption is based on the notion of economic efficiency – to be efficient, particular university or the whole regional higher education system should maximize its outputs with constant amount of available resources. If the system of region A can generate greater outputs than system of region B with the same amount of inputs, economy of region A should be related with regional economic growth rates, there are also alternative explanations (see [Agasisti, Barra, Zotti], 2017).

In overall, the paper concentrates on the following research hypothesis:

(H1) Efficiency of regional higher education system is an important determinant of regional economic growth

(H2) There exist positive spillovers: rates of regional economic growth is determined by the efficiency of higher education systems in neighboring regions

Hypotheses and Methodology

We start with a detailed assessment of the efficiency of regional higher education systems using double-bootstrap DEA [Farrell, 1957] and SFA [Aigner et al., 1977] techniques. Next, we calculate the efficiency scores for particular universities and aggregate obtained measures for assessment of HEIs' efficiency at regional level using weighted average with total number of students as the weights.

In the case of DEA we apply the research methodology which follows [Simar and Wilson, 2007]. This technique involves a two-stage analysis to account for exogenous factors that might affect university performance and proposes double bootstrap procedures to improve statistical efficiency in the second-stage regression.

In order to implement SFA technique in multi-output case we use output distance function of the following form (Shephard distance function [Shephard, 1968]).

The university's relative efficiency is calculated upon condition converting inputs into a production set while maximizing outputs. The vector of inputs is composed as follows:

The income of universities from all sources per number of students (in constant prices)

The relative weight of academic staff with advanced degrees (Candidate of Sciences and Doctor of Sciences) in total number of academic staff in universities (excluding part-time staff and independent contracts).

The outputs are:

The average entrance exam score of entering students.

Graduate employment (share of employed graduates 1 year after the graduation).

The number of publications in science journals indexed in RSCI, Web of Science and Scopus, per capita of academic staff.

The total quantity of R&D per one employee of academic staff

The ratio of the average salary of academic staff in the educational organization to the average regional salary.

Share of young faculty.

We also take into consideration additional characteristics of universities and treat them as exogenous factors. The set of exogenous factors includes such variables as:

Share of students that are not provided with dormitory in total number of students who need dormitory

Share of masters' students in total number of students

Share of full-time students in total number of students

Location of university in the capital city of the region (dummy variable)

Market share of university – share of students in the university in total number of students in the region

Dummy variable reflecting the fact that there is a medical faculty in the university

Results

The sample includes all public universities - 448 universities for which data is available for each year in the period from 2012 to 2015. No more limits are applied.

As it was mentioned above, in case of stochastic frontier analysis we use distance function in order to implement SFA technique in multi-output case.

Densities estimates of efficiency scores obtained using stochastic frontier analysis and data envelopment analysis are presented on Figure 1.

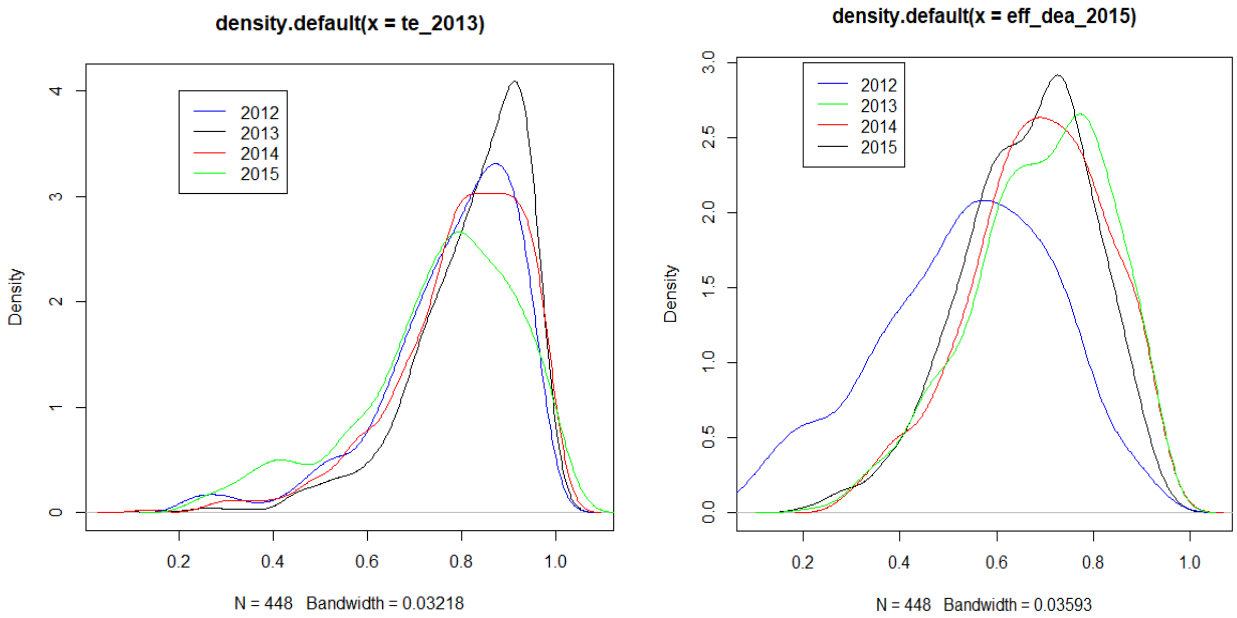

Figure 1. Densities of efficiency scores obtained using SFA distance function (left) and DEA (right)

After evaluating the degree of the efficiency of regional higher education systems, we measured the contribution of higher education institutions' efficiency to economic development of Russian regions. We estimate the regional economic growth model [Barro, 1996] from the point of endogenous economic growth theory. The dependent variable of the model is a log of real gross regional product growth per capita. The main model's explanatory variable is the efficiency scores of regional HEIs from the previous step of the analysis. Other regressors are the standard variables used for economic growth models estimation:

Gross regional product growth rates

Efficiency of regional higher education system measured using robust data envelopment analysis

Spatial lag of gross regional product growth rate

Spatial lag of regional higher education system efficiency score

Growth rate of total number of employed population

Growth rate of investment in regional economy

Share of employed population with higher education

Share of public sector in gross regional product

In order to construct spatial lags of the dependent variable and variable that reflects the regional higher education system efficiency score we use inverse distance matrix as spatial weights.

Our data covers the period from 2012 to 2015, so we can estimate panel data model. In order to deal with endogeneity problem we employ dynamic panel data methodology, particularly, sys-GMM approach, so lagged value of the dependent variable is one of the explanatory variables.

The results of economic growth model estimation are presented in Table 1.

Table 1. Results of regional growth model estimation (standard errors are presented in the brackets)

	Model1	Model2	Model3	Model4	Model5
Growth rate in previous period	0.423*** (0.060)	0.380*** (0.033)	0.447*** (0.039)	0.399*** (0.033)	0.400*** (0.034)
Investment growth rate	0.021 (0.027)	0.094*** (0.013)	0.088*** (0.014)	0.096*** (0.014)	0.093*** (0.014)
Employed population growth rate	4.129*** (0.389)	3.085*** (0.207)	3.008*** (0.214)	3.106*** (0.208)	3.130*** (0.212)
Gross regional product in previous period	-0.316*** (0.035)	-0.182*** (0.015)	-0.198*** (0.016)	-0.184*** (0.016)	-0.189*** (0.016)
Share of employed with HE	0.054 *** (0.011)	0.015 ** (0.004)	0.019*** (0.005)	0.016** (0.005)	0.017*** (0.005)
Share of commercial minerals extraction in GRP	0.006*** (0.001)	0.001 (0.001)	0.002** (0.001)	0.001 (0.001)	0.001. (0.000)
Share of industries in GRP	0.006*** (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Share of public sector in GRP	-0.028*** (0.003)	-0.018*** (0.001)	-0.018*** (0.001)	-0.019*** (0.001)	-0.019*** (0.001)
Efficiency DEA		0.097 * (0.049)	0.021 * (0.010)	0.076 * (0.038)	0.072 * (0.031)
Efficiency (DEA)standard deviation			0.321*** (0.057)		
Efficiency spatial lag				-0.021* (0.011)	
Growth spatial lag					3.432* (1.124)
Constant	-0.882*** (0.268)	-0.459** (0.137)	-0.193*** (0.013)	-0.453*** (0.141)	-0.469** (0.143)
Hansen-Sargan	0.389	0.355	0.432	0.417	0.501
AR(2)	0.432	0. 514	0.499	0.338	0.476
# of observations	308	308	308	308	308

Significance levels: *** p-value<0.001; ** p-value<0.01; * p-value<0.05; . p-value<0.1

The results presented in the Table 1 allow formulating the following conclusions. Firstly, we can observe that in all considered models elasticity coefficient of GRP growth by efficiency of regional higher education system is positive and statistically significant. Model 5 also suggests that current economic growth is positively related to the efficiency of regional HE system in previous period. Expectedly, rate of investment growth is positive and statistically significant, while the population growth rate has also positive coefficient but statistically significant values are observed only in the 1st, 2nd and 5th models.

The second conclusion is that there are positive spatial effects in rates of economic development, in other words, fast-growing regions tend to be located near the same regions with relatively high rates of economic development. However, it is not a case for spatial lag of efficiency of regional higher education system. In three models the elasticity coefficient of gross regional product growth rates by efficiency spatial lag is statistically significant and has negative sign, thus we failed to confirm hypothesis about existence of positive spillovers between regions (H2). Such results can be explained by the fact that regional higher education systems tend to compete with each other for the brightest students, academic staff and so on. Strong regional higher education system pump out resources from neighboring regions, so the rates of economic development in donor regions declines.

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Erakhtina, Aleksandra[1]*:* Herd Behavior in the Asset Markets

Abstract: *Patterns of herd behavior can be found in all areas of economic interaction between groups, single agents and their combinations. From all sciences, sociology and psychology are more familiar with this phenomenon. Existence of herding in financial markets has not been yet widely investigated. Possible presence of adjusting behavior on the asset market is already proven; however, it is proven only in terms of adjusting to the prevailing type of behavior on the market which is profitable (or more or less rational) [1]. This particular paper was conducted in order to distinguish and confirm presence of herd behavior, what was practically proven by the observed experimental results. This will initially provide necessary evidence to define its impact on financial markets and also to distinguish possibilities of its control. Factors creating the conditions for adjustment, such as the group pressure, uncertainty about agent`s own correctness, level of initial knowledge, market signals, agent`s risk aversion, differences in motives and expectations, and differences in belief restrictions were investigated during the experiment. Thus, the aim of the project is to help to analyze the impact of main changes introduced in the experimental design in comparison with the ordinary double auction market experiment.*

Introduction

In recent years, there has been much interest, both theoretical and empirical, in such phenomenon as herd behavior on financial markets. In this paper herd behavior is regarded as adjusting to the irrational type of behavior on the market. Herding can be described as a situation where individuals` personal information is pulverized by the influence of open information about the group decisions [4]. Witnesses of group influence in economic and financial decisions is connected with limited rationality: in a world of uncertainty, if we realize that our own judgments are mistaken then it may be reasonable to suppose that others are superiorly competent and ensue them. Adjusting may be a rapid decision-making instrument over which people replicate and imitate others` behavior. Sociological and psychological factors can also be important if standard impacts such as community pressure stimulate individuals to imitate the decisions of others even afore inconsistent presentive information and personal differences in gender, age and personality may modify this receptivity to social impact. The significance of personality features is consecutive with another economic analyses concentrating on the role of emotions and influence in economic and financial decision-making.

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In this paper asset market is taken as a field of analyzing the factors of herding and for proving its existence. Asset market is considered to be the main pattern of economic activity on financial markets and it is quite available for modeling. The experimental design is based on the trading procedure employed in the study of Williams and Smith (1984) [3]. It is an enhanced version of the PLAT0 computerized double-auction mechanism for commodity markets with speculators. All agents are able to switch between buying and selling modes. Only the highest requests to buy and the lowest offers to sell are displayed. Trading occurs over a sequence of 15 market periods, each lasting for 4 minutes. There is an asset and cash endowment given to the agent at the beginning of the sessions. The possible distribution of dividends for assets is also shown previously to each session. Market signals of medium asset prices are displayed during the periods. The main changes introduced in the experimental design are made in order to distinguish the existence of adjusting behavior and its possible reasons. Firstly, in 2 out of 4 experimental sessions we implement fake participants for each endowment class of agents (not less than 2 out of 3 or 4), selling their assets at one-third-times-lower prices. This line of behavior is considered to be irrational due to its absolute inability to gain any profit. Fake agents stick to that line of behavior during all the sessions and try to converge true agents to this particular line of behavior. Secondly, the forecasts of the lower (higher) mean prices for each round in 3rd and 4th sessions are shown in the end of each period in order to mislead true participants by false ones. Finally, true agents are divided by experienced (with knowledge background in Economics) and inexperienced (without any economical background) in order to identify the difference between the degree of adjustment examining this particular factor.

Aim of the Project

Theoretical object of this paper is the process of adjusting to the main line of behavior on the financial markets (in particular, on the asset market), while the subject is performed by the actual experimental results obtained during the sessions of testing. The main purpose of the issue is to distinguish and confirm presence of "herd instinct" – adjusting behavior of economic agents [2]. This will provide necessary evidence to define its impact on financial markets and also to distinguish possibilities of its control. The main objectives of the study correlated with the purpose of the work are: to prove the possibility of herd behavior in the asset market environment, to investigate the factors creating the conditions for adjustment and to determine those conditions; to reveal possible ways to control , manage and converge agents` behavior on the asset market in the direction desired.

Hypotheses and Methodology

The main hypothesis is the assumption that herd behavior may occur under the informational impact on asset markets, what thereby leads to irrationality which could be controlled. Informational base of research contains available literature on this subject, results of previous experiments concerning herd behavior and also results of simple asset market experiments.

The developed method (comparison of several experimental designs' results) helps to analyze the impact of main changes introduced in the experimental design in comparison with the ordinary double auction market experiment. The asset market experiment is based on the asset market "bubble" experiment by Smith, Suchanek, and Williams (1988) [3], but the fake participants are introduced in each session in order to put real ones out of countenance with their irrationality prevailing on the market. This way agents start to act similarly to each other, even if others' actions are not rational and reasonable. They get confused and start to doubt in their own actions and converge their actions to those, which are more used in the market, even if they do not correspond to reality. The occurring differences in agents' behavior with the introduction of fake participants and informational signals are considered to be the analyzing herd behavior and this way could be controlled by informational impact on economic agents.

Results

Group behavior or 'majority' is the most influencing factor of all considered above. All the agents adjusted and imitated the type of behavior that was prevailing on the market: in 1st session of the experienced agents and in the 3rd and 4th sessions of the fake agents. At the same time, one experienced agent in the 2nd session was not enough for others to adjust to his/her line of behavior (to convince about the true beliefs), even though his/her actions were more like the logical and profitable ones. Also the interesting fact is that even if inexperienced agents in the 2nd session didn't follow actions of the only experienced agent, they still didn't resist and agreed on his/her transactions, although that was not so profitable to them. It can be concluded that herd instinct follows only a group.

Informational background and level of knowledge is a significant factor, but it turned out that it has no protection from adjustment. For example, experienced agents managed to gain maximum profits through playing with less experienced agents, what is shown in the session 1. In addition, experienced agents sometimes didn't act at some periods due to their being confused and considering that their inactivity will bring back more, as in session 3. However, when the price on the market got even a little closer to the real one, they simply recognized the improvement of opportunity, so started to trade. The closer were the agents to the end of the session, the more prone they became. As for inexperienced agents, their

adjusting was absolute and complete: in the 1st session to the experienced agents prevailing and in the 4th session to the fake agents prevailing.

Accordingly, agents are able to start acting similarly to each other, even if others' actions are not rational and reasonable. The main reason is getting confused, as agents start to doubt in their own actions and converge their actions to those, which are more used in the market, even if they do not correspond to reality at all.

The developed experiment is necessary to be improved in terms of getting results which are clearer and easier to estimate. With all the changes to be implemented, this paper will give a possibility to reveal potential ways of control, managing, and converging agents` behavior on the asset market in the direction desired.

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Fatikhova, Adelia[1]*:* Reconsidering the Issue of the Company Towns in Russia

Abstract: *The issue of the company towns has been relevant for the past century; yet, in Russia such a problem became critical just in the past ten years. The case of Russia has been particularly complicated because of the number of company towns spread all over the Russia - nowadays there are 319 of them. Even though the Government has been paying close attention to the company towns since 2007, there are still some issues unresolved. This research proposal aims to reconsider the list of the company towns in order to keep only the «real» company towns that really need political measures. Also it suggests reconsideration of the current State policy devoted to the company towns in terms of principal-agent problem. The expected results may suggest that there are some changes need to be done in regards to the current policy towards company towns for its efficiency.*

Introduction

Over the history of the development of national economies many countries were building their economies by boosting industrial policy. Sometimes fostering the growth of specific resource-based industries needed extra labor; therefore people would start entire communities in order to maintain specific type of business – and this is how the company towns were usually created. However due to the scarcity of natural resources, eventually those communities were experiencing some sort of crisis – lack of recourses would force businesses to wind down, therefore people would have had to move and seek for job. Even though the majority of developed countries have successfully overcome that specific type of crisis over the past century, yet, emerging economies are still having this issue unresolved, and Russia is no exception [Crowley, 2015]. After the transition from closed to the open-market economy many of the Russian company towns were struggling, yet, the financial crisis of 2007 became the final straw.

At the same time before 2007 there were literally no talks about the future of the company towns. However, the famous case of Pikalyovo[2] started a long thread of discussions devoted to the endangerment of the future of the company towns; it also started a wave of consequent policies adopted by the Russian Government, which are still ongoing. Since 2007 and up to date the Russian Government compiles a list of the company towns all over the Russia, and currently there are 319 towns. Even

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[2] See https://sputniknews.com/business/20090604155170638/

though it may seem that the issue has been taken under control, there are still many questions arise among the expert community: are all of the company towns taken into consideration? Are there any more issues regarding the company towns that are missed? Is the Government taking proper measures towards the company towns? Are all of those measures actually needed?

Aim of the project

To reevaluate the existing list of the company towns and to reexamine the State policies adopted towards the company towns in terms of their effectiveness in Russia.

Hypothesis and Methodology

Hypothesis A. The existing list of officially declared company towns includes so called "non-company towns" (i.e. just regular towns), whereas there are other company towns, which are not recognized in the list.

Methodology. Firstly we analyze the dataset of 171 Russian towns (the number of towns with the population of more than 100K people). We build a regression using a set of the main socio-economic variables (including key asset investments, average salaries, out-migration, natural increase and natural decline, work force, crime, etc., and "company town" or "non-company town" as dummy variable) and run a model. If we find "company town"/"non-company town" variable significant, we then run a model of estimation of treatment policies using a wider range of dataset. After that we analyze all of the 1100 towns (with the adjustment to include the company towns as well) via the same set of independent variables from 2007 to 2016 (to take into account reaction to the 2007-09 and 2014-2016 crises) and investigate significance of being a "company town". If we find them significant, we understand that the existing list of company towns corresponds to the reality. If we don't find it significant, we manually analyze the number and the origin of the town-forming enterprises and then compare them to another element of the dataset (non-company town, with the similar socio-economic variables). If there is a core number of town-forming enterprises that are key to the towns' performance – then we find switching costs prohibitively high and that makes towns the "real company towns" that should be declared in the list and really need future State police treatment. If the switching costs are not prohibitively high, then we might need to reconsider the existing list of the company towns.

Hypothesis B. There is a trade-off between State policy privileges towards some company towns in exchange for voters support.

Methodology. There are a number of studies provide empirical evidence proving the election fraud in exchange for some benefits, those studies have also been

specifically focused on company towns[1]. Also, recently the State policy towards company towns has been quite contradictory: on the one hand, State is providing all types of privileges towards the company towns (including tax exemptions, lower interest rates and so on), on the other hand, all of these measures are being implemented via the Company Towns Development Fund[2], which is half state-owned organization. By building a logit-model (where dependent variable is "1" if there are special privileges for the town and "0" if there are not) and including the election results in the company towns into the set of independent variables, we investigate the strength of the election results in company towns' influence towards the privileges.

Expected Results

The existing list of the company towns includes towns which are not exactly "company towns" and leaves the towns which are not in the list – therefore the list suggested by the Government needs to be reevaluated;

There might be a trade-off between voter's support and giving a company town a status of "Advanced development territory", which provides additional privileges; if such a matter exists, there is no such a thing as "effective investments" to the company towns and all of the additional policies should be seized.

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Guillemin, François[1] (with Maria Semenova[2]): Transparency and Market Discipline: Evidence from the Russian Interbank Market

Abstract: *In this project, we investigate the role of voluntary bank disclosure in the interbank market. Using the data on 179 largest Russian banks over the period of 2004-2013, we test the sensitivity of interbank loans and deposits to bank transparency levels. We created different indices of disclosure to capture different aspect of bank communication. First, we show that larger but more risky banks – at least in terms of credit risk - behave more transparently and disclose more. Secondly, we are the first to provide evidence that the ability to attract funds in the interbank market is positively correlated with bank disclosure. This result is stable for various aspects of transparency such as disclosure of risk, financial performance, or board composition.*

Introduction

The banking sector is by nature rather opaque. Generally commercial banks collect deposits and use them to invest in more or less risky portfolio. Depositors and other investors are unaware of the risk taken by bank managers, and can only assess the result of such investment at the end of their deposit contract or investment contract. The reduction of the asymmetric information between managers and the various bank stakeholders has been the central piece of the modern banking regulation. Since the Basel II agreements of 2006, banks have mandatory rules forcing them to disclose information about their financial health. In addition to new capital requirement, the regulation was aimed at enhancing market discipline and the overall stability of the banking sector. In combination to mandatory rules, a set of voluntary action of transparency also exist and it is this nature of disclosure that interest us in this research project. Typical, mandatory disclosed information should not vary significantly across banks and therefore do not carry out enough interest.

Aim of the Project

The literature related to disclosure mostly investigate the effect of disclosure on the volatility of stock prices (Baumann and Nier, 2004), on cost of capital (Glennerster

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and Shin, 2008) or on bank's ability to attract depositors (Wu and Bowe, 2012). It mainly emphasizes the benefits of disclosure: transparent institutions enjoy lower costs of capital, suffer less from extreme volatility and attract more depositors. In this research project, we are aiming at analysing the nature of the relationship between the ability of Russian bank to attract interbank loans, risk and voluntary disclosure. To our knowledge, this project is the first to analyse such relationship. After creating indices of transparency which capture voluntary disclosure of Russian banks, we used individual quarterly data to assess its impact on the interbank sector. We analyse the relationship between disclosure by banks and their ability to attract the interbank loans and deposits for the period 2004-2013. Since the interbank market is mostly used to fulfil capital and liquidity requirements, the disclosure of information, allowing transparent banks to obtain more funds in the interbank market, may be considered as an important factor facilitating its access to liquidity. More importantly, we consider several components of transparency such as risk and risk management disclosure, financial performance disclosure, information on shareholders events, or board members information.

Hypotheses and Methodology

We used a two-step panel type regression. The first step consists of assessing the ability of disclosure variables to convey information about the risk of a bank. We based the first step estimation procedure through a random effect regression, testing the sensitivity of disclosure to lagged CAMEL type bank fundamentals such as capital adequacy (N1 capital ratio), asset quality (non-performing loan ratio, NPL), share of deposits in total liabilities, the share of loans in total asset, cost efficiency (in term of personnel) cost and ownership structure.

$$TR_{i,t} = \beta_i + \alpha.Efficiency_{i,t-1} + \gamma.NPL_{i,t-1} + \delta.DtoAsset_{i,t-1} + \rho.LoanToAsset_{i,t-1} + \lambda.Ownership_{i,t-1} + \epsilon_{i,t}$$

To measure the degree of voluntary disclosure of the operating banks, we compute a set of transparency sub-indexes to cover 6 different components such as ownership structures, corporate procedure, financial information, risk management and board information. We also aggregated individual sub-indices to identify effect of nonspecific, global, disclosure. The selected criteria are based on available information and using similarities to the Standard&Poors survey approach and are presented in the table 2. In total we have 30 items which relate to voluntary disclosure from a bank. The data was collected manually by web scrapping among the list of questions used in the S&P survey.

The second step of the regression analysis was used to determine the impact of the transparency, predicted by the first step, on the interbank loans and deposits. We

used a Blundell-Bond regression. This is model is commonly used in the literature and answers the potential risk of collinearity an endogeneity.

$$IBL_{i,t} = \beta_i + \alpha . IBL_{i,t-1} + \gamma . TRp_{i,t} + \rho . BF_{i,t-1} + \lambda . C_{i,t} + \epsilon_{i,t}$$

$IBL_{i,t}$ is composed of the sum of interbank loans no matter the maturity and interbank deposits divided by the total liabilities to account for the bank size. The vector of bank fundamentals $BF_{i,t-1}$ consists of a set of variables like CAMEL variables. The proxy vector of controls $C_{i,t}$ is composed of 3 dummy variables to consider the ownership structure and the systemic characteristics of a bank.

To conduct this project, we used data on 179 Russian banks, which accounts for almost 95% of the interbank market for the period 2004-2013.

Results

The core result of the project concerns the impact of a set of predicted transparency indicators on interbank loan and deposit positions. The result shows the most transparent banks are able to borrow more on the interbank market. The result is significantly and positively valid for the global transparency index. If we take into consideration individual components of the transparency index, we observe a strong stability of the result whichever the component considered. The strongest result concerns the corporate procedures disclosure. Clear corporate governance rules and procedures, comfort investors, and here creditors, in the ability of the bank to not default on interbank loans. Information disclosure about risk and the credibility of board members also provides similar incentives but with a scale of a third of the impact. Monitoring by other interbank participants, throughout the channel of transparency, appears evident in the regression. Interbank borrowers must appear more transparent to satisfy capital requirement, which is the main reason for smaller banks to participate in the interbank market. The result is important while combined with the result obtained in the first step. The combination is explained by the profit maximization problem of banks: to satisfy capital requirements, at the lower cost, bank managers decide to disclose information to reassure market participants.

In our case, other banks, participating to the interbank market, value such information by granting higher volume of interbank loans to the more transparent institutions. The preliminary results are presented in the table 1 below.

Overall, we show that voluntary disclosure is negatively related to bank credit risk. In other words, riskier banks are more transparent. This finding is important and sets in the same literature as Spargoli (2012) where banks are better off disclosing negative signal than remaining opaque, in a competitive environment. The second result is the core of our analysis. An increase in transparency levels, positively and

significantly increases the level of interbank loans and deposit attracted by a bank. The result is fundamental to answer the relative concern of liquidity on the interbank market and assess the importance of transparency as a tool to further enhance market discipline. This result is particularly innovative: we show that voluntary disclosure, when it convoys information on bank fundamentals, increase interbank borrowing capacities.

This article provides several contributions to the disclosure and market discipline literature. It contributes to the literature emphasizing the benefits of disclosure to access liquidity, such as Nier and Baumann (2006) or Akhigbe and Martin (2006))

It also contributes to the literature dedicated to the Russian banks emphasizing the need of transparency such as Karas, Schoors, and Lanine (2008).

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Appendix

Table 1 Dependent variable: interbank loan and deposit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Independent Variable: interbank loans and deposit						
TR_p	0.0151***						
	(0.0029)						
TR_Shareholder_p		0.0840***					
		(0.0153)					
TR_Corporate procedure_p			0.1954***				
			(0.0409)				
TR_Financial information_p				0.0336***			
				(0.0064)			
TR_Risk_p					0.0956***		
					(0.0191)		
TR_board_p						0.0985***	
						(0.0193)	
TR_B_p							0.0619***
							(0.0121)
L.IBL	0.7364***	0.7406***	0.7346***	0.7360***	0.7336***	0.7418***	0.7391***
	(0.0326)	(0.0322)	(0.0317)	(0.0321)	(0.0323)	(0.0327)	(0.0317)
Capital/Asset	-0.1330	-0.1535	-0.1059	-0.1409	-0.1223	-0.1466	-0.1366
	(0.1085)	(0.1095)	(0.1120)	(0.1112)	(0.1123)	(0.1085)	(0.1127)
Reserve Ratio	-0.0769**	-0.0556	-0.0836**	-0.0684*	-0.0783*	-0.0957**	-0.0779*
	(0.0388)	(0.0385)	(0.0414)	(0.0403)	(0.0416)	(0.0391)	(0.0399)
ROA	0.1519	0.2227*	0.0699	0.1369	0.1500	0.1376	0.1600
	(0.1156)	(0.1324)	(0.1035)	(0.1115)	(0.1152)	(0.1049)	(0.1156)
N3	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Asset	-0.0338***	-0.0306***	-0.0362***	-0.0353***	-0.0318***	-0.0313***	-0.0341***
	(0.0068)	(0.0060)	(0.0078)	(0.0071)	(0.0067)	(0.0066)	(0.0070)
Deposit to Asset	-0.1693***	-0.1784***	-0.1624***	-0.1613***	-0.1665***	-0.1797***	-0.1690***
	(0.0248)	(0.0255)	(0.0257)	(0.0245)	(0.0245)	(0.0263)	(0.0246)
Loan to Asset	0.1164***	0.1190***	0.1134***	0.1168***	0.1112***	0.1235***	0.1168***
	(0.0307)	(0.0308)	(0.0313)	(0.0309)	(0.0313)	(0.0314)	(0.0312)
State	0.0188	0.0393	0.0180	0.0141	0.0376	-0.0122	0.0179
	(0.0319)	(0.0306)	(0.0309)	(0.0323)	(0.0315)	(0.0320)	(0.0323)
Foreign	0.0038	0.0088	0.0066	-0.0074	-0.0094	0.0314***	0.0015
	(0.0142)	(0.0130)	(0.0139)	(0.0144)	(0.0160)	(0.0112)	(0.0138)
SyFi	-0.0331	-0.0261	-0.0302	-0.0294	-0.0301	-0.0313	-0.0265
	(0.0306)	(0.0281)	(0.0302)	(0.0295)	(0.0299)	(0.0290)	(0.0301)
pc1	0.0011**	0.0015***	0.0007	0.0011**	0.0002	0.0014***	0.0010**
	(0.0004)	(0.0005)	(0.0004)	(0.0004)	(0.0004)	(0.0005)	(0.0004)
Constant	0.5643***	0.5170***	0.5851***	0.5909***	0.5317***	0.5212***	0.6515***
	(0.1081)	(0.0953)	(0.1223)	(0.1152)	(0.1060)	(0.1048)	(0.1268)
Observations	4,235	4,235	4,235	4,235	4,235	4,235	4,235
Number of banks	176	176	176	176	176	176	176
chi2	3026	3068	2833	3215	3206	3077	3246

chi2p	0	0	0	0	0	0	0
sarganp	0	0	0	0	0	0	0
hansenp	1	1	1	1	1	1	1
ar1p	6.99e-11	0	1.26e-10	9.02e-11	7.04e-11	7.40e-11	6.76e-11
ar2p	0.204	0.195	0.199	0.216	0.216	0.174	0.203
j	741	741	741	741	741	741	741

Table 2 Transparency Index Composition

Component 1	Ownership and Group Structure
Q4	The identity of the largest shareholder
Q5	The number and identity of all shareholders holding more than 10%
Q11	Shareholding in the bank by individual senior managers
Q12	Shareholding in the bank by individual directors
Component 2	Corporate procedures
Q24	The existence of a review of last shareholders meeting (e.g., general presentation of voting results)
Q25	Detailed press releases covering last corporate events
Component 3	Financial information
Q27	The bank`s accounting policy
Q31	Annual financial statements according to an internationally recognized accounting standard (IFRS/U.S. GAAP) without notes
Q32	Notes to annual financial statements according to IFRS/U.S. GAAP
Q33	An independent auditors` report with regard to annual financial statements according to IFRS/U.S. GAAP
Q36	Disclosure of related-party transactions (RPTs): sales to/purchases from, payables to/receivables from related parties
Q37	Transactions with the companies with the same group
Q40	Interim financial statements according to an internationally recognized accounting standard (IFRS/U.S. GAAP)
Q41	Notes to such financial statements
Q42	Whether these financial statements are audited or at least reviewed
Q49	Whether the audit firm is a top-tier auditor
Q61	Indicators of concentration (industry, client/shareholder, insider, and so on)
Component 4	Operational information
Q66	Analysis of the bank`s risks (list of risks, their description, and the way they may affect the bank)
Q67	Risk management policy
Component 5	Board and Management Information
Q82	The list of board members (names/titles)
Q96	The list of senior managers not on the board of directors
Q97	The background of senior managers
Component 6	Board and committee structures and procedures
Q149	Majority of board is external
Q151	Board chairman is external
Q152	Board includes external members with relevant industry experience
Q153	Board includes external members with expertise in finance/audit
Q154	Board includes external members, except for executives of the bank, with expertise in strategic management
Q155	At least half of the board members possess expertise in these spheres
Q156	Existence of audit committee

Makhkamov, Temur[1]*:* Improving the Mechanisms of Corporate Governance Transparency in Joint-stock Companies in Uzbekistan

Abstract: *The purpose of this paper is to improve the methodological foundations of transparent corporate governance by examining the impact of different variables of corporate governance, including disclosure, to firm performance and to develop mechanisms for effective corporate governance of Joint-stock companies in Uzbekistan. Employing the data from Uzbek Joint - stock companies, we seek to find a statistically significant interaction between corporate disclosures and firm performance among the sample firms. Return on Assets and Return on Equity are used as proxies to measure firm performance. This is the first of its kind in the country that considers the impact of corporate governance and disclosure on firm performance.*

Introduction

In the verge of globalization and increased competition, companies seek resources to fuel their competitiveness and profitability both in local and international financial markets, where they rely on capital markets to finance their investment opportunities. Providers of financial resources in capital markets, however, are attracted to transparent and efficient corporate governance system, because it diminishes the level of agency problems, decreases moral hazard, and adverse selection problems that may result in many business organizations. There are two main reasons why agency problems arise; first, the separation of ownership and management (Jensen and Meckling, 1976), second, conflicts of interest between controlling and minority shareholders (Bebchuk and Weisbach, 2010), where self-interested managers (controlling shareholders) act against the best interests of shareholders (non-controlling shareholders). Agency theory suggests that shareholders may reduce agency problems by encouraging corporate governance mechanisms (Jensen and Meckling, 1976).

According to Shleifer and Vishny (1997), corporate governance deals with protection of shareholders from expropriation by managers. La Porta et al. (1999) and Dharwadkar et al. (2000) mention protection of minority shareholders from controlling shareholders. In addition, concentrated ownership, coupled with ineffective external governance mechanisms, leads to frequent conflicts between controlling and minority shareholders (Morck et al., 1988).

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Corporate governance regulations are usually introduced as a remedy to particular scandals that lead to massive losses of shareholders' money, because of managers seeking their own benefits in expense of shareholders. Thus, the theoretical intention of fulfilling with corporate governance regulations, for example, the UK Combined Code on Corporate Governance (2003) provisions, is to alleviate agency costs and improve corporate performance. This is consistent with agency theory as described in Fama and Jensen (1983) and Jensen (1986).Managerial signaling theory also specifies that complying with the code of corporate governance serves as a primary signal to capital markets that the management follows better governance structure. This results in an increased demand for stocks by investors, which will rise stock prices and the shareholders' wealth (Beiner et al., 2006; La Porta et al., 2002). It is thus expected that companies, which adopt recommendations of the Governance Code, are likely to enhance their corporate performance. Well-designed corporate governance structures help ease such issues and therefore contribute to high firm value (e.g., Bhagat and Bolton, 2008; Dahya et al., 2008; Gompers et al., 2003; Klapper and Love, 2004). For example, issuance of the Cadbury Report in 1992, which recommends the adoption of some internal monitoring mechanisms to promote shareholder interests, led to increase in corporate governance (Conyon and Mallin,1997) and (Peasnell et al., 1998), and the number of firms which follow good corporate governance practices (Weir & Laing, 2000 and Weir et al., 2002) .

Information disclosure and transparency takes place among the most vital characteristics of corporate governance (Hope & Thomsan, 2008; Okpara, 2011; Parum, 2005; Spira & Page, 2010). The corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company (OECD, 2004). The public perception about the company's stocks directly depends on the quality of information disclosure practiced by the company, the more thorough, truthful, and trustworthy is the disclosed information, the better will be the public opinion of the company's trading stocks (Barako, Hancock, & Izan, 2006). Good corporate governance serves as one of the most essential criteria for investors when making an investment decisions (Barako et al., 2006). It is also of very high importance for potential investors, that company releases accurate and reliable information on timely manner. With the aim of attracting more investors, companies try to show that they are following the practices of good corporate governance by providing detailed, accurate and reliable information in their reports.

Aim of the Project

The aim of the research is to improve the methodological foundations of transparent corporate governance and to develop mechanisms for effective corporate governance of Joint-stock companies in Uzbekistan.

Hypotheses and Methodology

Hypotheses

H1: Higher information disclosure improves the performance of joint-stock companies in Uzbekistan

H2: High ownership concentration improves the performance of joint-stock companies in Uzbekistan

H3: There is a negative relationship between board size and the performance of joint-stock companies in Uzbekistan

H4: There is a positive relationship between female board members and the performance of joint-stock companies in Uzbekistan.

H5: Larger share of state ownership improves the performance of joint-stock companies in Uzbekistan

H6: Independent directors will contribute positively to a firm's performance.

Methodology

The financial data that will be used in this study will be collected from the annual reports of 191 listed in Uzbek Stock Exchange "Tashkent" joint-stock companies from 2007 to 2017. The corporate governance data will be obtained through companies` official websites and by requesting information from companies` management. The panel approach will be used for data analysis. Two types of variables will be used in this study. Independent variables will be used to measure the corporate governance whereas dependent variables will be used as a proxy to firm performance. The table below provides the description of variables used in this study.

Independent	Definition
Inf_disc_index	Information disclosure index will be a weighted average of different disclosure variables such as, reporting according to IFRS, using the services of one of the big four auditing firms, ratification of the auditing firm in the general meeting of shareholders
Concen	Ownership concentration is proxied by the percentage of stock ownership by top shareholder
State_own	State ownership is the percentage of shares owned by the Uzbek state
B_size	Total number of board members
B_ind	Number of independent members in the board

B_fem	Number of female members in the board
Dependent	Definition
ROA	Return on assets, calculated as the ratio of net income to total assets
ROE	Return on equity, calculated as the ratio of net income to total shareholders` equity

The econometric model that will be used in the study is as follows.

$Y_t = \beta_0 + \beta F_{it} + e_{it}$ ..... (1)

In the above model, Y represents dependent variable that is firm performance. The subscript t is used to denote the time series nature of the data. β_0 is constant term in the proposed regression model. β denotes the coefficient of explanatory variable that is corporate governance mechanism in this case. F_{it} represents explanatory variables and e_{it} correspond to error term. Two important financial ratios ROA and ROE are used in this study as a measure the firm performance. By substituting the variables employed in this study into the econometric model, the following equation emerges.

$PERF = \beta_0 + \beta_1$ Inf_disc_index$+ \beta_2$ Concen$+ \beta_3$ State_own$+\beta_4$ BSIZE$+ \beta_5$ B-Ind$+ \beta 6$ B_fem$+ e_{it}$ ..... (2)

Expected Results

We are expecting that information disclosure, ownership concentration, board independence and the number of females in the board will have a positive effect of firm performance, while variables like state ownership and board size will be negatively related with the performance of the joint-stock companies in Uzbekistan.

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Oiner, Anna[1]*:* A Spatial Econometric Approach to Modelling Russian Regional Economic Growth

Abstract: *This paper investigates the determinants of economic growth of the Russian regions over the period of 2004-2015. The empirical modelling we chose aims to account for spatial correlation under model uncertainty. Thus models in our study include a spatial lag while explanatory variables are selected using Bayesian model averaging. The application of this methodology is new for the Russian regional data on economic growth during the period of 2004-2015. Therefore, our study fills an important gap in the existing literature on regional economics. This kind of thorough study of economic growth is crucial when shaping the regional policy that ensures stable and geographically balanced growth.*

Introduction

The economic growth of the Russian Federation in the past ten years was not only below that of BRICS counterparts but of developed countries as well (according to Rosstat calculations). It means that Russia is not narrowing the gap that divides it from the world economic leaders, on the contrary it is securing its place at the end. In terms of macroeconomic theory, it implies that the process of convergence predicted by the neoclassical theory of economic growth does not hold. As a result, the reasons for quite moderate growth rates of Russian economy pose a problem worth studying.

As many distinguished scholars stated, including R. Barro and X. Sala-i-Martin (2004), when it comes to verifying a theoretical model of economic growth the framework allows for different functional forms of an empirical model creating the possibility of quite controversial results. Moreover, the situation is further complicated by the fact that theoretical growth models are not always mutually exclusive meaning that the empirical evidence proving the validity of one theory does not necessarily invalidate another theory (Brock and Durlauf 2001).

Uncertainty about the specification of an empirical model, called 'model uncertainty', is one of the problems that arises when modelling of economic growth is concerned. When it comes to finding the explanation of economic growth of regions in addition to the problem of model uncertainty the researchers face yet another problem – the need to account for spatial spillovers. The research proved not only the existence of spatial correlation between the regions of the same country

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but that it is stronger at a regional level than at cross-country level (see e.g. Rey and Montouri 1999).

One of the answers to the problem of model uncertainty is Bayesian Model Averaging (BMA). The technique firstly implicitly introduced by Leamer (1978) gained its well-deserved attention only in the late nineties when the computational technology allowed to implement this approach (Hoeting et al. 1999). As a result, a number of works applying BMA technique to the study of economic growth exist today. For instance, BMA is used in the work of Fernandez et al (2001) who prove the superiority of BMA approach to a single model when explaining the differences in economic growth in different countries.

To the problem of spatial spillovers the solution is using spatial econometrics models. BMA application for spatial econometrics was created by LeSage and Parent (2007). They also used BMA to investigate the knowledge spillovers in EU regions (LeSage and Parent 2008).

Although the whole field of spatial econometrics existed for almost forty years BMA approach received a relatively small attention and is yet to gain popularity (Anselin 2010). The latest works concentrate mostly on cross-country data or the data for EU (Cuaresma et al. 2014). Russian regional economic growth has never been studied using BMA and spatial econometric models simultaneously.

Aim of the Project

In the present paper we aim to explain economic growth of the Russian regions over the period of 2004-2015. Firstly, we analyse what economic, demographic and social indicators observed in the region could attribute to its economic success or failure. Secondly, keeping in mind that the Russian regions influence each other we search for the explanation of regional growth not only within region's borders but outside of it as well. This influence can be both positive and negative. On the one hand, economic growth in one region could contribute to the growth of its neighbours, e.g. through technological spillovers. On the other hand, the competition between regions could lead to the negative spatial correlation, e.g. due to the migration forces. In our study we investigate these spatial connections to enrich our understanding of factors that drive economic growth.

This paper focuses on empirical research solely and does not aim to develop any new theoretical framework. The empirical research we conduct is not based on a particular theoretical growth model but tries to incorporate various factors that tend to be included in various growth models to define the productive potential of an economy. These factors are empirical proxies for labour, capital, human capital and technology. The selection of explanatory variables is based on Bayesian model

averaging. We study the GDP growth rate of the Russian regions over the period of 2004-2015 as it allows us to observe the variables in dynamics and make insightful comparisons.

Although the study of economic growth itself is somewhat established in the field of spatial econometrics the use of Bayesian model averaging in this field is relatively new, especially on the Russian regional data. Accordingly, our study of regional economic growth aims to offer an incisive account of the economic, social and demographic factors that are key for regional development. Overall, combined with traditional spatial econometric approach the correct identification of these factors is essential for policymakers as it ensures that the regional policies target the right objectives without stimulating the growth of the region at the expense of its neighbours.

Hypotheses and Methodology

The basic empirical model for economic growth that is widely used in the relevant literature can be denoted as follows:

$$D_{y_t} = F(y_{t-1}, h_{t-1}, \dots),$$

where $y_{t-1}$is initial per capita GDP, h_{t-1} is initial human capital per person, the omitted variables comprise an array of control and environmental influences (Barro and Sala-i-Martin 2004).

In accordance to the spatial econometric approach to account for spatial correlation between regions a spatial lag has to be introduced into the model. It is implemented through a spatial weights matrix W that describes spatial relations between regions. In our study we use an inverse-distance matrix. The inverse-distance matrix attributes a spatial dependence through measuring the geographical distance between regions. Each element of this matrix is denoted as $w_{ij} = 1/d_{ij}$, where d is the distance measured by the length of the road between the corresponding regions' capital cities.

Spatial econometric models allow to incorporate a spatial lag into the basic linear regression to the dependent variable, independent variables and/or error terms. The specification that is used in our paper is called Spatial Durbin Model (SDM) and implies the addition of both spatially lagged independent variables and the dependent variable.

As a result, the final empirical model has the following functional form (LeSage and Pace 2010):

$$y = \rho W y + \alpha i_n + X\beta + WX\gamma + \epsilon,$$

$\epsilon \sim N(0, \sigma^2 I_n)$,

where y is the growth rate of GDP per capita and X is an array of independent variables. The explanatory variables X that we included in our study are selected as to reflect the various drivers for economic growth and can be categorized as follows.

Factor variables (the variables that are proxy for the factors in neoclassical growth model): logarithm of GDP per capita, population growth rate, investment to GDP ratio.

Human capital: the share of workers with higher education in the workforce, life expectancy at birth, the share of urban population in total population.

Technology: the number of patents issued.

Structure of the economy: sectoral shares in GDP, the share of government subsidies in total subsidies.

Other socio-economic variables that denote the current state of the economy: population density, the share of export and import in GDP, inflation rate and the risk index.

All the data that was used in our study was collected from the Rosstat (www.gks.ru) with the exception of the risk index which is annually calculated by a business magazine called Expert (https://raexpert.ru/ratings/regions).

As previously mentioned, the methodology we use to find the best model specification (the set of explanatory variables that explain the dependent variable the best and therefore, should be included into the model) is Bayesian model averaging.

The hypotheses we test are as follows:

Economic growth in one region of Russia drives the growth of its neighbours.

The connections between Russian regions are different for the different groups of regions.

Expected Results

We anticipate that the results of our study would give additional information to what factors could be attributable to economic growth in the Russian regions. We will compare them with the ones given by the 'traditional' approaches in spatial econometrics: the factors significance and the calculations of direct and indirect effects. We can expect the results of our methodology not to be of a complete controversy and to contradict the existing results of regional economics. Therefore,

we expect to find the positive spatial correlation between the Russian regions and the pivotal role of factors related to human capital.

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Rezyapova, Anna[1] (with Fuad Aleskerov[2]): Econometric Models of International Migration 1990-2015: Education and Conflicts Impact

Abstract: *We study the determinants of contemporary migration flows between the countries of the world. The impact of distance between countries, population, economic and cultural characteristics of countries is already extensively studied in contemporary literature. We propose panel data regression models with new determinants of international migration and refugee flows between countries of the world and from Middle East and North Africa (MENA) region to 28 countries of the European Union (EU) for 1990-2015 period. Noteworthy results are the following. The increase of the share of elder population leads to the increase of bilateral migration flow, which is higher than impact of GDP and diaspora. Education at origin reduces the effect of diaspora. Population density in turn reduces migration flows. For the sample of migration from MENA to EU these effects are even stronger. Conflicts impact positively international migration for MENA - EU migration.*

Introduction

International migration becomes recently the issue of high importance. International migrant population grows faster, than the population worldwide. There were 258 million international migrants worldwide or 3,4 per cent of the global population in 2017 [1]. International migration is a huge power of globalization and it brings a lot of opportunities to migrants and their destination and origin societies. It is crucial to understand the driving forces and factors that influence the international movements of people too overcome all the challenges of this issue and implement corresponding migration policy.

Aim of the Project

The paper studies the determinants of contemporary migration flows between the countries of the world. Existing literature on econometric models of international migration extensively studies the impact of distance between countries, population, economic and cultural characteristics of origin and destination countries [2-5]. Our work contributes to these studies in the following way. First, it proposes two models

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with new determinants of international migration and refugee flows between 170 countries of the world for 1990-2015 period. Second, another model analyzes migration from 13 developing countries of MENA (Middle East and North Africa) region to 28 countries of the European Union (EU) from 2001 to 2015.

Hypothesis and Methodology

All models are estimated by panel data regressions using unique dataset of international migration and refugee flows collected from international organizations [6-9]. The estimation of the regression equation is based on the gravity model of intercountry flows [10]. The data for explanatory variables include the following groups of indicators: GDP per capita, intercountry distances, the estimates of education level, political rights index, share of elderly population, population density and magnitude of conflicts.

Results

The first model apart from conventional factors (diaspora, GDP of origin and destination country and common language) explores the impact of share of elder population and population density in receiving country and joint influence of diaspora and education level in origin country. The share of elder population and population density are supposed to impact international migration flows by stimulating countries to apply relevant migration policy. Specifically, higher share of elder people will lead to stimulating migration policy, while high population density should motivate country's government to restrict the inflow of migrants. The education is modeled in interaction with diaspora for the following reason. It is supposed that strong pull effect of diaspora should be lower for countries with higher level of education and higher for other countries.

In the second model the political rights in origin country are considered in line with the core factors. Violation of political rights in origin country is supposed to increase outflows of its citizens. The international migration from Middle East countries to European Union is modelled with the same factors, as the first model complemented with the level of conflicts in origin countries.

Noteworthy results of the models are the following. Significant positive influence of diaspora, GDP of destination and common language is confirmed in each model. Moreover, it is shown that an increase of the share of elder population will lead to the increase of bilateral migration flow, which is higher than impact of GDP and diaspora. Population density in turn reduces migration flows. For the sample of migration from MENA to EU these effects are even stronger. Conflicts impact positively international migration for MENA - EU migration.

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Rodionova, Yulia[1]: Public Procurement as an Instrument of Support for Industrial Enterprises after the 2008–2009 Financial Crisis

Abstract: *The main objective of the study is to assess the effects of government's purchases on firm dynamics after the 2008 – 2009 financial crisis. Using the survey database of the 1950 Russian manufacturing firms combined with the publicly available financial data, we shall also examine the impact of public procurement contracts as an instrument used by the State for indirect support combined with traditional measures for direct support. First of all, we suggest that the precise impact will depend on the internal characteristics of the enterprise (size, age, ownership structure). In particular, the positive effect is more likely to be observed in small organizations, since those will begin investing in new technologies and human capital and improving their reputation. Given the assumption for the "system of exchanges" between the State and a business, we could also expect that for the firms which have systematically assisted the authorities, as well as members of business associations, this positive effect will be weaker. On the other hand, in the model of «state capture», we won't get any positive effect of government purchases. Moreover, we strongly believe that that the effect will be positively associated with the quality of the institutional environment in the region.*

Introduction

Public Procurement is one of the main contemporary mechanisms by which states and businesses interact. Government purchases are used throughout the world as an indirect mechanism of achieving important government objectives such as stimulating small- and medium-sized business development and introducing innovation (Aschhoff, Sofka, 2009; Rolfstam, 2009; Uyarra, Flanagan, 2010). However, there is an ongoing debate on how effective these policies are.

In the current conditions of intensive development and improvement of public procurement regulations, there is a need to assess the quality of regulation of public procurement system and its effectiveness not only at the stage of admission and participation, but also after winning government contracts (ex-post). The effectiveness of government purchases, as an instrument of support for industrial enterprises, is especially relevant in Russia and beyond its borders after the 2008 –

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2009 financial crisis, resulting in a precipitous fall in production, an urgent need for large-scale business support and stimulation of public demand.

Aim of the Project

In this work our interest lies in estimating the effect of winning a governmental contract on firm dynamics and behaviour (growth rates, access to foreign markets, share of investments, etc.) in short and long-term periods. Notwithstanding the importance of assessing the effectiveness of the current procurement policy, there are quite limited numbers of empirical studies on public procurement and its influence on behaviour of enterprises in Russia that rely on micro-level data. To fill this gap, throughout the study we have focused our attention on the impact of public procurement contracts as a means used by the State for indirect support of enterprises.

Hypotheses and Methodology

This approach enabled us to formulate the following hypotheses:

Hypothesis 1: The precise impact of public procurement contracts will depend on the internal characteristics of the enterprise (size, age, ownership structure, etc.). In particular, the observation is more likely to be directed at newly-emerging and small organizations as those shall commence investments into new technologies, organizational and human capital, as well as will focus on augmenting their market reputation[1].

Hypothesis 2: Basing on the consideration of the "system of exchanges" between the State and a business, for the firms that have systematically assisted the authorities, as well as members of business associations, the positive effect of government orders shall be weaker. At the same time, in the model of «state capture», we won't get any positive effect of government purchases[2].

Hypothesis 3: The Russian regions differ in terms of conditions for doing business as a consequence of the different quality of institutions, characteristics of business, political elites and the specifics of their behaviour, the infrastructure's state, etc. Therefore, we also believe that the effect of the State order will be associated positively with the quality of the institutional environment in the region (the level of corruption, the democratisation index, the investment potential, etc.)

[1] See for example Jofre-Bonet, Pesendorfer (2003), Tiererova (2013), Arkolakis et al. (2014), describing the process of «learning-by-doing»

[2] See for example Frye (2002), Yakovlev, Govorun (2011) on the model the "system of exchanges" between the State and a business and Hellman, Jones, Kaufmann (2000), Zhuravskaya, Yakovlev (2009) on the model of «state capture»

The analysis is based on a survey of 1950 manufacturing enterprises conducted across 60 Russian regions in 2014. This survey covers a wide spectrum of characteristics of different firms during 2011-2013, including: size, year of establishment, ownership structure, participation in business associations, etc. This information enables to consider many firms' characteristics that are not publicly available. We also added external financial and public procurement data from open sources during 2010-2016. Other financial information about firms was collected from Ruslana[1] and Spark-Interfax[2].

The revenue growth after having received the governmental contracts is considered as a dependent variable. All independent variables used to construct the models and to test the hypotheses put forward will be divided into two groups: the characteristics of firms (number of employees, year of establishment, characteristics of business owners (presence of the state among owners, refusal to disclose owners, participation of foreigners in property), participation in business associations, assistance to regional and / or local authorities, dummy variables of political connections (state, federal support, regional support, local support); variables characterising the region in which the firm is located (control variables for the type of settlement, investment risk index of the region, domestic corruption index in the region, democratisation index).

The public contract load of firms during the year will be measured as the ratio of total public contracts volume to fixed tangible assets. Moreover, we plan to construct a factor variable showing the stability of public procurement relations between firms and public organizations during the period 2010-2016. As political connection measure we will use several indicators: partial-state ownership and help from federal, regional, and local authorities.

Expected Results

Despite the significant contribution to the development of public procurement theory in Russia, all previous studies focused on the characteristics of enterprises at the stage of access to the public procurement system, as well as their behaviour whilst participating in public procurement procedures (ex-ante). Empirical studies on the analysis of the impact of public procurement on the dynamics and development of enterprises are limited to only one work (Ferraz S., Finan F., Szerman D., 2015). However, in their study, the authors discuss mainly the effects of government purchases on the firm's growth, based on public procurement data from 2004 to 2010 in Brazil. The main awaited results of our study are expected to broaden the existing body of knowledge and determine the impact of public

[1] https://ruslana.bvdep.com/
[2] http://www.spark-interfax.ru/

procurement contracts on various performance indicators, as well as the strategy and behaviour of enterprises.

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Rubin, Alexander[1] (with Leonid Polishchuk[2] and Igor Shagalov[3]):

Making Democracy Work: A Case of Moscow Residents

Abstract: *We study connection between the apolitical social capital and civic culture of Moscow residents. Apolitical social capital, in our study, is the way how residents manage their apartment houses. They may choose in-house type of management or outsource it to private or public (by default) company. In-house implies higher level of social capital. They also may choose the way of accumulating individual payments for future overhaul. In the latter case, residents may use, by default, a common pool fund run by government, or open a special account and keep control in their own hands. All these activities require collective will of the most of residents living in a house, and, therefore, the result depends on the stock of social capital. We measure civic culture by the votes for Moscow activists during the major election campaign in 2013 and municipal election campaign in 2017. We find that civic culture strongly affects apolitical social capital. We also find that pro-social way of management amplifies the effect of civic culture.*

Introduction

We study connection between apolitical social capital and civic culture in Moscow city, Russia. Apolitical social capital, in our study, is the way how residents manage their apartment houses. They may choose in-house type of management or outsource it to private or public (by default) company.

Currently, Russian Residential Code (*Zhilishchny Kodeks*) allows four different forms of management. One is called residential building cooperative (*Zhilishno-stroitelny kooperativ, ZhSK*). It comes from Soviet times when people financed construction of their future apartment house and now manage it by themselves.

Another one is relatively new, introduced in the mid-2000s and called *TSZh (Tovarishchestvo sobstvennikov zhylya).* It's a form when a community of residents manage their apartment house by themselves. This form may be chosen regardless of the prehistory of a house.

The last two forms imply outsourcing management functions to private and public companies. Private company should be chosen by a community of residents and public company is chosen by default. Therefore, different forms correspond to different stock of social capital.

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Besides the form of management, residents also may choose the way of accumulating individual payments for future overhaul. Commitment to pay for future overhaul had been introduced into Residential code in 2015. Residents may use, by default, a common pool fund run by government, or open a special account and keep control in their own hands. In latter case, it requires collective will of the most of residents living in a house, and, therefore, the result also depends on the stock of social capital.

In sum, we measure social capital not by asking direct question about trust, sense of responsibility and readiness to sacrifice time and money for some common good. Rather we measure social capital by its specific outcomes in communal and residential sphere.

In our project, we relate the stock of a social capital to civic culture. By civic culture, we mean set of norms and values which make people appreciate democracy, rule of law, rights, and freedoms. Higher stock of civic culture means that people are more confident that they can exercise their political rights and can change can affect the performance of their governments. Civic culture can also be considered as a specific form of social capital as much as it implies political accountability and voice.

We measure civic culture by the number of votes for oppositional candidate Alexei Navalny during the major election campaign in 2013 and by the number of votes for Moscow activists during municipal election campaign in 2017.

Aim of the Project

The aim of the project is to contribute in literature by further development the ideas started by Putnam *et al.* (1993) on social capital and its role for local governance in Italy. We plan to contribute in the way described in the introduction and other parts of this proposal. We plan to publish a paper (series of papers) on the topic, *i.e.* on interconnections of apolitical social capital and civic culture.

Hypotheses and Methodology

We have the following hypotheses.

Civic culture will strongly affect apolitical social capital.

"Pro-social" way of management will amplify the effect of civic culture.

Russian government is unsuccessful in separating political and apolitical activities.

Apolitical social capital is a complement to civic culture.

The data on houses come from the site reformagkh.ru. It is developed and supported by Russian state-owned corporation *Fund for reforming of communal and residential economy.* The following data are available:

address (therefore we can relate a house a local electoral commission, to a municipal and administrative district)

year of construction;

number of flats, floors, and total area;

form of management;

form of accumulation of payments for future overhaul.

The data on voting come from local electoral commissions which encompass several houses each. The following data are available:

total number of voters;

turnout;

number of votes for candidates.

We also use population survey data for municipal districts. We obtain total population, average educational level, infrastructure, social subsidies, etc.

The data are enough to estimate correlations between different types of social capital and civic culture. We also expect that timing of the data will allow us to draw some conclusions about causal effects. We have the following sequence of events:

exogenous introduction of a possibility to choose a form of management in mid-2000s;

major elections in 2013. Alexei Navalny was allowed to participate due to exogenous and voluntary decision of incumbent Sergei Sobyanin and president Vladimir Putin. Sobyanin's victory would have demonstrated true sincere support of its politics;

amendments to Residential Code on accumulation of payments for overhaul in 2015;

municipal election in 2017.

This timing potentially allows us to instrument our measures of social capital and civic culture and study causal effects.

Current and Expected Results

Up to now we have results presented in the Table 1. We estimated logit regression for probability of forming special account with a set of controls and dummies on different types of management.

Table 1. Regression results for logit model.

VARIABLES	*GBU*	*ZHSK*	*TSZH*	*UK*	All
Votes for Navalny	0.1041***	0.0843***	0.0787***	0.1054***	0.0482***
	(0.0085)	(0.0087)	(0.0088)	(0.0085)	(0.0092)
Age of house	-0.0199***	-0.0197***	-0.0138***	-0.0202***	-0.0121***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0010)
Avg level of education	0.2362**	0.2509**	0.3158***	0.2383**	0.3335***
	(0.0977)	(0.1003)	(0.1007)	(0.0976)	(0.1046)
Log of population	0.0359	-0.0477	0.0684	0.0441	-0.0504
	(0.0456)	(0.0465)	(0.0477)	(0.0461)	(0.0487)
Eastern AD[1]	-0.1501**	-0.3078***	-0.0228	-0.1442**	-0.2005**
	(0.0728)	(0.0746)	(0.0756)	(0.0729)	(0.0780)
Western AD	0.4651***	0.3856***	0.5281***	0.4525***	0.4897***
	(0.0741)	(0.0760)	(0.0784)	(0.0749)	(0.0817)
Notrhern AD	-0.1269*	-0.2295***	0.0145	-0.1077	-0.1334*
	(0.0739)	(0.0754)	(0.0771)	(0.0745)	(0.0795)
Notrh-Eastern AD	-1.1904***	-1.5291***	-1.1438***	-1.2034***	-1.4883***
	(0.0962)	(0.1011)	(0.1011)	(0.0965)	(0.1067)
North-Western AD	-1.1005***	-1.2545***	-1.0741***	-1.1306***	-1.1812***
	(0.0962)	(0.0998)	(0.1029)	(0.0971)	(0.1070)
South-Eastern AD	0.6147***	0.5126***	0.7661***	0.6017***	0.7046***
	(0.0810)	(0.0826)	(0.0839)	(0.0812)	(0.0865)
South-Western AD	-0.9780***	-1.2097***	-0.8699***	-1.0108***	-1.0475***
	(0.0880)	(0.0921)	(0.0924)	(0.0889)	(0.0983)
Southern AD	-0.2456***	-0.5485***	-0.1571*	-0.2776***	-0.4198***
	(0.0864)	(0.0904)	(0.0899)	(0.0871)	(0.0958)
ZhSK		2.5244***			2.7721***
		(0.0799)			(0.0817)
TSZh			2.9489***		3.2704***
			(0.1119)		(0.1142)
UK				-0.1215***	0.2891***
				(0.0459)	(0.0478)
Constant	-3.4125***	-2.3769***	-4.5414***	-3.4854***	-3.2070***
	(0.8567)	(0.8737)	(0.8849)	(0.8581)	(0.9103)
	25,155	24,989	24,989	24,989	24,989

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Using coefficients between dummies and pairwise tests for significance in difference we also can order types of management according to their pro-social level (Table 2).

Table 2. Ordering of types of management.

[1] AD stands for administrative district – a group of municipal districts in Moscow.

Type	Coeff.	Tests p-values			
		GBU	*UK*	*ZhSK*	*TSZh*
GBU	-	-			
UK	0.29	0.00	-		
ZhSK	2.77	0.00	0.00	-	
TSZh	3.27	0.00	0.00	0.00	-

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Rudakov, Victor[1] (with Ilya Prakhov[2]): Gender Wage Gap in the Russian Academia

Abstract: *The study is devoted to the analysis of gender wage inequality among faculty of Russian universities and the determinants of the gender wage gap. The research is based on pooled cross-sectional data of MEMO annual survey of university faculty for 2006-2017. The analysis is carried out by calculation of dynamics of gender wage gap, estimation of Mincer equation-based regression for the determinants of wage gap and Oaxaca-Blinder wage gap decomposition. We found that gender wage gap in Russian academic sector during 2006-2017 has slightly increased from 14% in 2006 to 17% in 2017. However, it's below national level. The Oaxaca-Blinder wage gap decomposition for the total sample showed that 79% of wage gap can be attributed to differences in rank (position) and academic degree. The study shows that 'glass ceiling' exists on the Russian academic labor market, which means that male faculty is much more likely to get higher position in university hierarchy, administrative duties and earn more advanced degree, which brings high wage premium, while female faculty cannot overcome glass ceiling and employed on low or middle positions.*

Introduction

Gender wage gap exists in many countries, which is proven both by researchers and international organizations (OECD, International Labor Organization, World Bank, etc.) in their reports. Gender pay inequality can be observed not only in the private sector but in the public sector too, including higher education. HEIs are usually not profit-maximizing organizations and salaries are highly correlated with rank or position of faculty. Ongoing reforms in Russian higher education sector, including launching of «5-100» project and gradually introducing incentive contracts may affect faculty salaries and gender wage inequality.

Among most relevant theories for the purpose of the study is the human capital theory, which provides theoretical approach and empirical instruments to analysis of the determinants of wages (such as Mincer wage equation) as well as different discrimination theories, especially vertical discrimination theory as we analyze internal labor markets (Becker, 1964; Mincer, Polachek, 1974). The discrimination theory proponents use special term - glass ceiling, which describes unacknowledged barriers to advancement in a profession that prevent women from obtaining upper-

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level positions which become available for men only, while women keep bumping into a 'glass ceiling' or 'glass walls.' (Fig.1)

The majority of empirical studies proved the existence of gender wage gap in academia: male faculty earn 19-25% higher salaries than female counterparts (Barbezat, 2002; Perna, 2003 Barbezat, Hughes, 2005; Toutkoushian, et.al,2005; Umbach,2007; Blau, Kahn, 2017). Among the main determinants of gender wage gap, founded in these studies are inequality in rank or position distribution (glass ceiling) (Barbezat, 2002; Barbezat, Hughes, 2005; Ginther и Hayes (1999, 2003), type of university (Toutkoushian, et.al, 2005), higher research productivity of male faculty (Barbezat, 2002), segregation by the field of study (Umbach, 2007), lower mobility of female faculty (Blackaby, 2005).

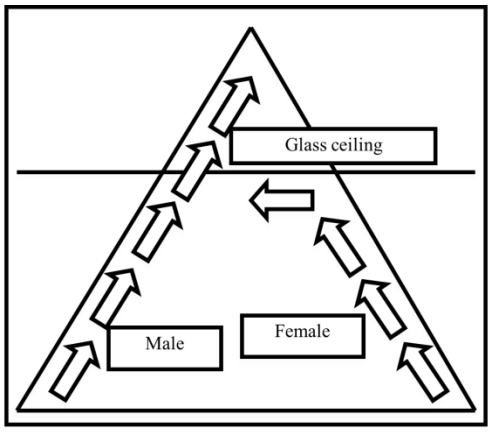

Figure 1. Glass ceiling discrimination

Aim of the Project

This paper analyses gender wage gap among faculty of Russian universities and determinants of gender pay inequality. The project aims to answer the following questions: Does gender wage gap exist in the Russian Academia? What are the determinants of gender pay inequality? Is gender wage gap a result of discrimination or are there other factors that can explain gender differences in pay to a great degree? In addition to empirical evaluation we are interested in explanation of the mechanisms and origins of gender inequality.

Hypotheses and Methodology

Our study is based on the Monitoring of Education Markets and Organizations 2006-2017 pooled cross-sectional data on faculty' salaries, career trajectories, professional practices and personal characteristics. The data includes more than 10,

000 observations and represents faculty of Russian universities on the national level.

Our empirical research was based on the existing methodology used in gender wage inequality research (Barbezat, 2002; Perna, 2003 Barbezat, Hughes, 2005; Blau, Kahn, 2017). First, men and women wage dynamics is compared to calculate the gender wage gap index. Similar calculations are performed for hourly wages. After that the we run OLS-regression based on Mincer wage equation for each year and for the total sample, which helps us to consider various characteristics that help explain wage disparities between men and women and calculate the wage 'premium' for gender. The Mincer equation-based regression implies empirical estimation of wage determinants with the logarithm of real wage used as dependent variable, and gender, position, academic degree, type of university, individual faculty's socio-demographic characteristics and labor market conditions as control variables (eq1).

$$Ln(W_i) = \beta_0 + \beta_1 \cdot G + \beta_2 \cdot S + \beta_3 \cdot G * S + \beta_4 \cdot E + \beta_5 \cdot E^2 + \beta_6 \cdot A + \beta_7 \cdot P + \beta_8 \cdot J + \beta_9 \cdot R + \beta_9 \cdot SD + \varepsilon \quad (1)$$

Where:

ln (W) – natural logarithm of monthly salary of university faculty

G– gender dummy variable

S- university status/quality dummy variable

E – seniority/professional experience/tenure

A –administrative duties

P- set of publication activity characteristics

T- set of job characteristics

R –region

SD – other socio-demographic characteristics

Finally, we ran the Oaxaca-Blinder decomposition for the wage gap to determine what share of the gap is defined by observable factors and what share cannot be explained otherwise and may therefore be attributed to discrimination (Oaxaca, 1973).

Preliminary Results

The gender wage gap during 2006-2017 has slightly increased from 14% in 2006 to 17% in 2017. Considering hourly wages reveals the same trends: men's average hourly wage exceeded that of women by 18%. However, gender wage gap at HEIs in Russia is below national average: according to the Federal State Statistics Service data, in the past five years women's average salary amounted to only 70% of men's average salary.

Descriptive analysis depicts that gender wage gap in the academia is explained by gender distribution in terms of position and seniority, academic degree, and professional experience (total and in teaching). In general, 14% of male faculty has the Doctor of Sciences degree (equivalent to Habilitation) and 51% have the Candidate of Sciences degree (equivalent to PhD) versus just 6% and 45% among female faculty respectively, while academic degree brings a considerable wage 'premium.' Men are more often employed in higher ranked positions (such as full professor, associate professor or senior research fellow, dean, vice-dean, chairs of department) than women (40% vs 27%). Women usually work as assistant professors, lecturers or assistants.

The results of regression analysis confirmed the results of preliminary analysis. However, controlled for position, academic degree and work experience, men's wage 'premium' over women decreases to 8%. Among the main factors which brings wage premium are the administrative position, administrative duties and advanced degree.

We found no gender differences in pay in universities of high quality (with highest ranking, special status, and universities- participants of Russian academic excellence project 5-100). This can be explained by the fact that in this universities female faculty have more administrative duties and can be promoted to relatively high positions. Female faculty of high-quality universities is more likely to be involved in research activities, which also brings wage premium.

The Oaxaca-Blinder wage gap decomposition for the total sample showed that 79% of wage gap can be attributed to differences in rank (position) and academic degree. So, 'glass ceiling' does exists on the Russian domestic labor markets, which means that men are more likely to achieve more advanced degree and to reach higher positions within academic hierarchy, while women settle for mid- and entry-level positions. However, university of high quality provides higher opportunities and better promotion for female faculty. Among the main limitations of our study is that we cannot distinguish between gender discrimination and female self-selection in lower ranked positions.

The value of the paper is determined by the following factors. Our study is the first which examines gender wage inequality among Russian university faculty. The

analysis confirmed the existence of gender wage gap in the Russian academia (16%), the study also reveals the problem of 'glass ceiling' in Russian HEIs. The specific value of paper is determined by the fact, the study depicts that gender wage inequality decreases with quality of university: salaries of the faculty of high-quality universities demonstrates more gender equality.

Wage inequality and discrimination are among the most important problems which are of importance for policy-makers. Our analysis shows that practices of the faculty remuneration and faculty promotion which are applied at universities of high quality can be used for the rest of universities in order to eliminate gender discrimination in academic sphere.

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Shibanova, Ekaterina[1]*:* Efficiency of the Universities Participating in Russian Excellence Initiative "Project 5-100"

Abstract: *The study is aimed at measuring the efficiency of the "Project 5-100" universities and the group of the higher education institutions comparable to them (using PSM) at the starting point of the project "5-100" but which were not the parts of the excellence initiative. Is the participation in the excellence initiative (particularly project "5-100") making universities more effective? The study answers this question by evaluating the dynamics of the efficiency of the universities using DEA technique and productivity indices using Malmquist index through 5-year period (2012-2016). The study contributes into the performance of the selected higher education institutions, participating in the excellence initiative and provides a combined methodology for measuring excellence initiative effects and efficiency. The findings can be considered as a useful source both for educational organizations and for governmental institutions while planning and administrating higher educational processes. The unique integration of various methodologies has made a great contribution to practical value of the research as these results could not have been obtained using one the techniques separately.*

Introduction

Excellence initiatives as the governments' programs that support leading national universities pursue diverse and ambitious goals. Generally, the states push universities that participate in these initiatives to become more visible agents at the international education and research arena, to improve dramatically their productivity in accordance with the objectives set by the governments (Lisyutkin, Froumin 2015; Salmi 2016).

Taking into account the lessons drawn from the Chinese excellence initiatives and inspired by their success, the Russian Federation has joined the group of the countries and initiated the so-called "Project 5-100" in 2012. The project is implemented to increase international competitiveness of the Russian universities among the world's leading research and educational centers. 15 universities were selected on a competitive basis and have been receiving additional funding at the first stage of the project implementation since 2013. The group of the "5-100 universities" was enlarged to 21 universities at the second stage of the project in 2015.

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The estimation of the efficiency of the universities that participated in the excellence initiative is challenging task at least for two reasons. Firstly, the real modernization of the university takes many years, at least eight to ten (Salmi, 2009, Salmi, 2012), and since most initiatives are implemented recently, it is difficult to determine whether the money was spent effectively or not.

Secondly, in different countries emphasis of the excellence policies is placed on different objectives and consequently performance indicators. Thus, the efficiency of the universities participating in such projects should be measured in accordance with the idea and the design of the excellence initiative.

Aim of the Project

The study is aimed at measuring the efficiency of the "5-100" universities and the group of the higher education institutions comparable to them at the starting point of the project "5-100" but which were not the parts of the excellence initiative. Is the participation in the excellence initiative (particularly project "5-100") making universities more effective?

The study includes pursuing the following objectives:

Single out the group of HEIs comparable to "5-100" universities at the starting point of the project "5-100" that are not the part of the excellence initiative.

Estimate the efficiency of universities participating in the Project "5-100" and the universities comparable to them through 5-year period (2012-2016).

Evaluate the dynamics of the efficiency of the universities using Malmquist index.

Hypotheses and Methodology

We expect to measure an observable effect of the policy implication due to managerial changes, observable trough efficiency change of participating universities. We must state, however, that due to the data availability we can only observe sort-run effects of a long-run policy.

The data comes from the Monitoring of the higher education institutions performance conducted by the Ministry of Education and Science of the Russian Federation. After implementing the limitations, set for the candidates by the government, we selected 125 universities for the final sample.

Propensity Score Matching

This methodology can be applied to calculate the 'average treatment effect on the treated' (ATT). For our topic of interest, the selection of universities as participants of the 5-100 program by the organizers of this program is the 'treatment', and selected universities are 'treated'. Matching entities from the treatment group with entities from the control group is needed to construct the substitute. To do this, a propensity score, which describes the probability of being in the treatment group for entities, must be calculated according to their characteristics with regard that only one type of treatment exists.

DEA and Malmquist Output Model

Output-oriented Data Envelopment Analysis (DEA) and Malmquist index of productivity will be used for the efficiency and productivity scores calculation. The Malmquist index decomposition provides an examination of both pure efficiency change and the technology change, i.e. the frontier shift.

The following list of variables can be proposed as inputs and outputs relying on policy design. Inputs: total income per faculty member, share of fixed assets less than 5 years old. Outputs: share of foreign faculty members, share of foreign students, number of citations of publications and number of publications in Scopus or Web of Science (including publications of branches, per academic staff), research expenditures per faculty member, dummy for inclusion into one of the worldwide university rankings (ARWU, THE, QS).

Results

Propensity Score Matching

A 1:1 selection was conducted to match each participating university with another specific one to prove that there is no structural differences effect in the program outcome and performance. The main finding is that the “average treatment effect on the treated” is equal to 156.76 as expressed in number of publications indexed in Web of Science and Scopus, meaning that in average universities participating in the excellence initiative resulted better in terms of this indicator.

Data Envelopment Analysis

One year before the starting year of the excellence initiative, in 2012, the participants surpassed the non-participants, 0.83 compared to 0.7 in average group efficiency score. In terms of our relative efficiency-measuring model, the participants remained in the leading position (0.9), compared to the non-participants (0.75). The efficiency indexes differ significantly among two groups by the end of the observed period ($p < 0.1$).

Malmquist index

Before the program, the means of indexes, including the total productivity, the efficiency change and the technical efficiency, did not vary significantly among two groups. Both the participants and the non-participants improved their performance over time (by 33% 11% respectively in terms of Malmquist index), the participants being the ones pushing the productivity frontier and being more efficient than the control group by 13%.

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Shipkova, Olga[1]*:* Difficulties of Choice in the Field of Education

Abstract: *One of the initial targets of the project is an identification of the difficulties, which students may have when choosing a master's program. Identification of the basic difficulties in making such decisions helps to adjust the direction of forming the decision-making competence in the field of education. We consider individual deviations from the ideal decision maker as difficulties of choice. We conduct the survey by means of the modified version of the questionnaire developed by I. Gati, which reveals the career decision-making difficulties (The Career Decision-Making Difficulties Questionnaire - CDDQ). We use it to solve the problem of difficulties type identification.*

Introduction

The decisions concerning education are quite uncertain and, thus, they include expenses and benefits which are carried in time. One makes them limited number of times. And they are subject to emotional tension and exclude the possibility of training on own mistakes. The choice with such a set of characteristics makes an example of decision-making process with a high degree of uncertainty. As a rule, such a choice is not reasonable enough and often does not consider the individual's long-term interests in respect of professional development. The application of heuristic procedures leads to systematic mistakes and results of such decisions deviate from the effective ones. Nevertheless, the quality of the made decisions in this field has essential impact on further vital and professional strategy of a person. The behavioral economics helps to find out why individuals make actions that lead to inefficient balance and support them during the extended period (Samson, 2015; Samson, 2017). The behavioral economics of education can form the theoretical base for heuristics identification that are used by bachelor's degree students when making a choice to identify shifts or mistakes which can become a consequence of their use.

Except the main approach by Kahneman-Tverski (Kahneman, 2012) whose key notions are the concepts of "heuristics and biases" there are alternative approaches. For instance, in his approach G. Gigerenzer (1991) emphasizes the importance of social and emotional determinants at a decision-making process. These factors promote heuristics formation and choice. Thus, heuristics make an intermediate link in an explanation of the observed behavior. Within such an approach, a person works not only in the conditions of limited cognitive abilities, but also with a limited tools kit.

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According to the normative theory of decision-making, the best decision is the one that best helps to achieve the decision maker's goals. These goals are represented by the individual's preferences with respect to the various attributes of the alternatives under consideration. A rational decision maker should choose the alternative with the highest utility, where the utility of each alternative is a function of the perceived gap between the individual's preferences and the alternative's characteristics in each of these attributes. Selection of the master program has specific for decisions in the field of education characteristics: 1) the number of potential alternatives is often fairly large; 2) there is an extensive amount of information available on each alternative; 3) a large number of aspects is required to adequately characterize the master program and the individual's preferences in a detailed and meaningful way; 4) uncertainty plays a major role with respect to both the individual's characteristics and the nature of alternatives (Gati et al, 1996).

In addition, analyzing real choice, it should be noted that individual decision makers may be irrational, reluctant to make decisions, not be able to do this and not be able to take the "right" decision. These individual deviations from the ideal decision maker are considered by us as difficulties of choice. Moreover, these difficulties can have two types of consequences: the first one is that an individual does not make any decision at all, and the second one is that a decision maker reaches a suboptimal solution.

Aim of the Project

The object of our research is decision-making process of the master program choice. The purpose of the present study is to demonstrate the relevance of focusing on the formation of the decision-making competence in the field of education through tools of behavioral economics, and to identify the basic difficulties in making such decisions, in order to adjust the direction of forming this competence. One of our initial targets is the problem of difficulties type identification, which students may have when choosing a master’s program.

Hypotheses and Methodology

In the first questionnaire, we ask the students to estimate the chosen field of study in ten-point scale to identify the deviation in the evaluation of the program utility. For comparison, our paper seeks to examine two different samples: the first one includes students of popular specialties and the second one consists of technical students (whose specialties are not highly demanded). Testable hypothesis implies the existence of wrong decisions when choosing specialties in both samples.

The first sample included 178 students of popular profiles associated with the economics, management, as well as public administration, from non-economics or management-specialized universities. The covered universities were Moscow State Regional University, Moscow State Pedagogical University, Moscow City Teacher Training University and D. Mendeleev University of Chemical Technology of Russia (non-technical students) (Shkodinskey & Shipkova, 2015).

The second sample covered 135 technical students from D. Mendeleev University of Chemical Technology of Russia. We investigated the specialties, which are core ones for the University.

In the first stage of the study, we asked the students from both samples to assess the expected (decision) utility and actual (experience) utility of the chosen field of study. In the second stage, we attempted to identify the difficulties of master program choice (including decision-making process itself). The survey was carried out in two ways: some respondents responded to the questionnaire, submitted on paper, the other ones - remotely via the formation of profiles in Google forms. Respondents were asked to evaluate a particular difficulty for the 9-point scale.

As the initial tool we use the questionnaire modified option developed by I. Gati (1996), which reveals the career decision-making difficulties (The Career Decision-Making Difficulties Questionnaire - CDDQ). We use it to solve the problem of difficulties type identification, which students may have when choosing a master program. The modification does not transform, but adjusts it to the peculiarities of the choice. Structurally, all difficulties are divided into two groups: 1) prior to beginning the process and 2) during the process. The first group includes four categories of difficulties related to lack of readiness: lack of motivation to engage in the decision process, general indecisiveness concerning all types of decision-making, dysfunctional myths (e.g., irrational expectations) about the process of decision-making and lack of knowledge about the steps involved in this process. The second group of difficulties related to the lack of information and inconsistent information: lack of information about self, lack of information about programs, lack of information about ways of obtaining additional information, unreliable information, internal conflicts, which include conflicts within the individual, and external conflicts, which include conflicts involving the influence of significant others. The use of this modified questionnaire in the pilot research allowed us to reveal concrete difficulties, which students face when choosing a master program. Moreover, such survey may be preceded by the distribution of students in groups for further work on the decision-making capacity building in the field of education with an emphasis on the identified difficulties.

Results

The first step of the survey revealed the difference between the assessment of expected (decision) and actual (experience) utility of the chosen field of study. For the sample of non-technical students, we obtained the following results: the utility has decreased by 20% and the average grade of specialty at the time of admission is 6.6 points (in 10-points scale). It should be noted the low level of assessment, which dispute the rationality of the choice. In the fourth year of study assessment level is reduced until 5.5 points. In addition, 90 % of respondents expressed a willingness and desire to receive additional specialty. For technical students the results of utility assessment decreasing are merely the same. The average grade of specialty at the time of admission is 7.3 points. In the fourth year of study assessment level is reduced until 5.8 points. It appears that the choice is not rational, and the study process reveals disappointment. Implemented a "wrong" choice begins to form further preferences of students (the self-herding effect, when the initial decision becomes a kind of reference point). They exist in the environment of the chosen specialty, because people do not accept significant changes in their lives due to risk aversion.

To identify the difficulties encountered by the students in the process of selection, we conduct the second step of the survey by means of the decision-making difficulties questionnaire. It is necessary to highlight that the respondents point to the critical importance of the decision made and the fear of making a mistake that will have implications for career and life success. Among the difficulties relating to the decision-making procedure, we received the highest assessment for the following positions: ignorance of the "first step" in seeking information and proper selection procedures; uncertainty about their preferences and interest, as well as a lack of understanding of how the program is right for the individual decision-maker; ignorance of the master program attributes which you should pay attention to while making a choice. In addition, such difficulties were also highly estimated as obtaining necessary information, in particular, on what alternatives are available and where they identify; how useful one or another master program, and that it will in the future; where to get accurate and up-to-date information about programs offered by universities.

To conclude, we will note that the results that we received are only the first step in the difficult and long research of process of the master’s program choice in order to identify possible ways to make such decisions results more effective either for students, the educational organizations or for the state in general. Moreover, we believe that the conceptual and methodological base of the behavioral economic theory is the most suitable for such researches successful realization.

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Spanke, Till[1]*:* The Role of Patron States in the State and Institution Building Pursuits of Territories with Limited Statehood. Case Study of Institutional Change and Reform in Abkhazia's Education and Public Sector

Abstract: *This paper utilises statistical analyses of 34 unrecognised states as well as interview data to examine the extent to which patron states shape institutional change and reform in unrecognised states. Particular emphasis will be placed on Abkhazia's education sector. This study argues that Abkhazia generally followed Western ideals of public sector institutions and achieved the most notable state building boost during a period of partial isolation in the 1990s when Russia initiated a CIS embargo on Abkhazia. In that period, Abkhazia formed governance institutions and provided basic public services, because of higher degrees of local ownership and continued informal channels with the north Caucasus. The provision of education services, however, had a low priority in Abkhaz politics in that period due to underfunding and the prioritisation of security concerns. The official recognition of Abkhazia and South Ossetia by Russia in 2008 presents a critical juncture, as Russia's existing power structures facilitated further international recognition, military and economic integration as well as detailed plans for state building and public service provisions.*

Introduction

Unrecognised states challenge basic assumptions of political and legal legitimacy, sovereignty and statehood in the international system. It is therefore not surprising that the theoretical and practical comprehension of state and institution building processes in territories with limited statehood remain underdeveloped. In recent years, researchers of unrecognised states directed their attention increasingly to state and institution building in these contested political entities. In-depth case studies of unrecognised states such as Somaliland (Richards 2014), Kosovo (Capussela 2014) and Transnistria (Blakkisrud & Kolstø 2013) exemplify the variations in state and institution building processes as well as the impact of patrons on unrecognised states. On the one hand, some unrecognised states built relatively successful state structures without the backing of a patron (i.e. Somaliland, Eritrea, Kurdistan), while others are largely dependent on the financial and political support of patrons to provide basic services such as education to its citizens (i.e. South Ossetia, Northern Cyprus). At the same time, the literature on unrecognised states does not agree on the concrete contribution and benefit of

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patron states and to what extent high levels of patron support may be unfavourable for the institutionalisation of unrecognised states.[1] This dubiety in terms of the patrons' role in the state building efforts of unrecognised states and the ambiguous effect of limited international recognition raises the question as to how far patrons (or the lack thereof) influence state and institution building efforts.[2]

Aim of the Project

The aim of this project is to uncover the extent to which patron states influence institutional reforms and change in territories with limited statehood. The research examines how wide and deep Russian foreign policies penetrate one specific public sector in Abkhazia's state and institution building quest and to what extent endogenous and exogenous factors shape Abkhazia's education sector since 1992.[3] This project, for example, analyses how Abkhaz authorities accumulated financial and human resources during a period of partial isolation in the 1990s and whether education reform was prioritised.

Hypotheses and Methodology

The theoretical understanding of unrecognised states and patron states yields two key hypotheses:

H1: Territories with limited statehood that lack a patron are less likely to have high degrees of state and institution building than those with a patron.

[1] Zartman (1995), for example, presents the risks of "effective foreign control" by patron states over unrecognised entities, which may result in the transformation into 'puppet states'. Caspersen (2009), on the other hand, argues that the external influence of patrons should not be overestimated and that endogenous factors play a significant role in the development of unrecognised states.

[2] This project builds on the definitions of Fukuyama (2004) and Kolstø and Blakkisrud (2008) by referring to state building as the formation and/or strengthening of state institutions including political/government institutions, public administration and economic structures in order to establish control and sustainable state functions. This Western and Weberian understanding of the state may not be applicable to state building developments in all de facto states. Work by Richards (2014) on state building in Somaliland, for example, uncovers a hybrid model of governance that combines 'Western' models of state building with indigenous models.

[3] The focus in this project lies on formal rather than non-formal education within the de facto Republic of Abkhazia. Formal education refers to "all those institutions in which teaching is regularly provided for students who are working toward the completion of a specific course of study." (Noah 1966: 2).

H2: Education reforms are not a priority in the institution building process of unrecognised states.

This project offers the results of a statistical analysis of a data set of 34 unrecognised states since 1945. This statistical analysis will be complemented with an in-depth case study analysis of institutional reform and change in Abkhazia's education and public sector. This project utilises the results from fieldwork in Georgia and the breakaway region of Abkhazia. The research interviews were conducted with state representatives, NGOs and international donors. In addition, primary sources including newspaper articles and agreements between Russia and Abkhazia as well as secondary material from Abkhazia were analysed.

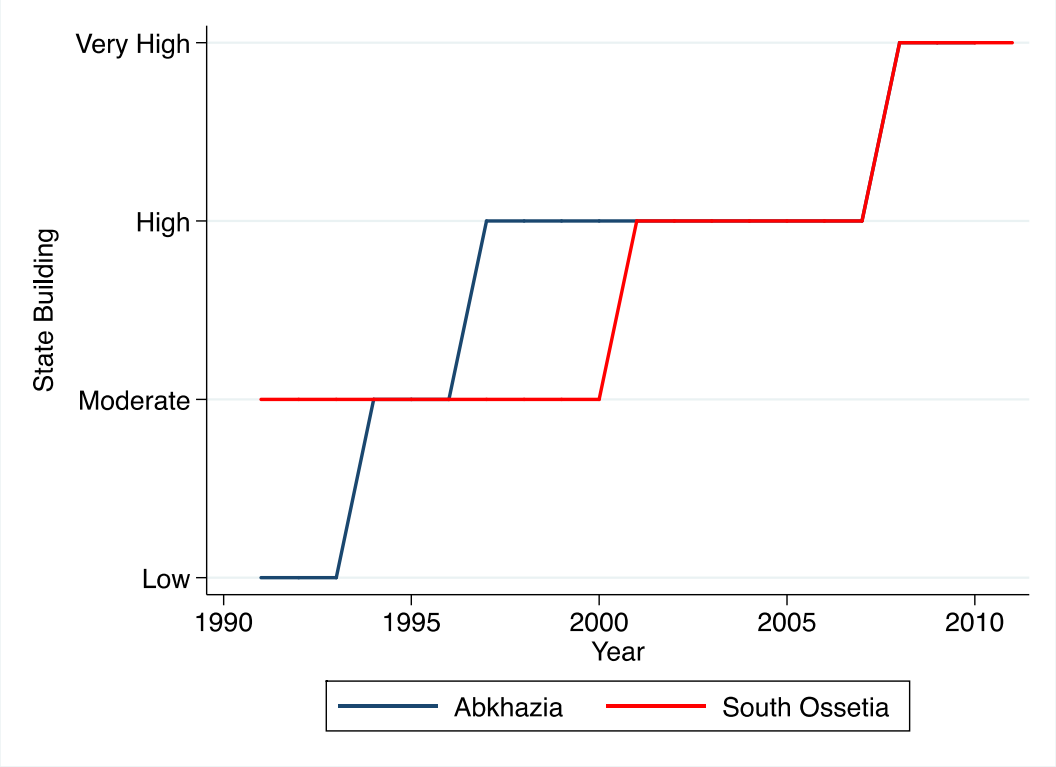
Results

The quantitative analysis of state and institution building processes in unrecognised states and the role of patrons uncovers that unrecognised states that have a patron state tend to have higher degrees of state building than de facto states without a patron. This trend is even clearer when the patron officially recognised the unrecognised state as an independent state. Moreover, the probabilities of higher degrees of state building increase when a patron state is present and even higher when this patron state is a great or regional power. In terms of institution building in unrecognised states, this research underscores the importance of patrons and particularly great or regional power patrons as well. If a patron state is present, the number of governance institutions increases by 3.23. If the patron is a great or regional power, it increases by 3.37. Furthermore, external political support in form of economic subsidies, humanitarian aid and investments as well as public administration expert assistance were identified as independent variables that enhance the number of governance institutions in unrecognised states.

The in-depth analysis of the Abkhaz institution building case demonstrates that Abkhazia achieved the most notable state and institution building boost during a period of partial isolation in the 1990s, because of higher degrees of local ownership and continued informal channels with the north Caucasus. This state building phase involved the formation of ministries, civilian governance, public administration, basic provisions of social services, border management as well as an extraction and redistribution system. The graph below (graph 1) shows that Abkhazia achieved high degrees of state building by 1997 within a period of six years. Most notably, this took place during a period when Russia initiated a Commonwealth of Independent States (CIS) embargo on Abkhazia in 1994 leaving Abkhazia largely internationally isolated. However, Abkhazia maintained informal channels with regional actors in the north Caucasus. The partial isolation of Abkhazia during the

CIS embargo between 1994 and 1999 benefited the state building process of Abkhazia, because the low degrees of linkages between Russia and Abkhazia in that period resulted in more self-reliance and a focus on local ownership. In addition, the continuation of informal channels between the north Caucasus and Abkhazia may have contributed to the state building development despite the international isolation.

Graph 1 Degrees of State Building in Abkhazia and South Ossetia from 1991 to 2011



Furthermore, the research draws four central conclusions from the analysis of the education dimension of Russian foreign policy and Abkhazia's education sector development. First, Russia's involvement in Abkhazia's education sector illustrates the albeit limited education dimension of Russian foreign policy under the umbrella of Russian humanitarian foreign policy. Russia provides significant financial contributions to Abkhazia's de facto state budget, which ultimately if indirectly pays for structural aspects of Abkhazia's education system. Extensive content reform of Abkhazia's schooling system, however, does not appear to be a primary concern for Russia. The education dimension of Russian foreign policy in Abkhazia appears to have the aspiration to sustain the basic level of public education provisions in the

unrecognised state and establish closer educational ties between Abkhazia and Russia.

Second, Abkhazia's position as an Autonomous Socialist Soviet Republic in the hierarchical structures of the Soviet Union's education system established two key historical legacies in the de facto Republic of Abkhazia: an institutional and a cultural standard legacy. As an Autonomous Socialist Soviet Republic, Abkhazia was guaranteed specific state institutions, schooling infrastructure and limited degree of autonomy regarding education provision. In terms of cultural standard, teachers in Abkhazia have utilised textbooks, curricula and teaching methods from the Soviet period. This project argues that Abkhazia was able to provide basic education provisions to its public after the dissolution of the Soviet Union, because of the institutional and cultural standard legacies of the Soviet Union.

Third, the period of partial isolation and the embargo meant that education reform had a low priority in Abkhaz politics. The lack of financial and human resources in addition to demolished schools from the 1992-1993 civil war generated a period of survival for many citizens, which placed education provision towards the bottom of the list of priorities. Nonetheless, education was regarded as a tool to achieve one of the de facto state's central interests namely nation building and the survival of the Abkhaz language. Finally, the de facto Abkhaz governments have passed minor content reforms of its education sector including new Abkhaz textbooks in the late 2000s, while teaching methods have remained largely the same. However, there have been attempts by kin states, international donors and NGOs to modernise Abkhazia's out-dated teaching methods. This was also the case in Abkhazia where the focus on national language was one of the few wide-ranging education policies in the 1990s.

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Stavtseva, Tatiana[1]*:* College Faculty as a Determinant of Student Academic Dishonesty

Abstract: *The study will be concentrated on an important problem of students' academic dishonesty typical for Russian higher education, though very poorly explored by domestic researchers, despite the fact that factors influencing students' cheating strongly correlate with the formal and informal institutions specific for each country. The research objective is to identify the responsibility of college faculty concerning students' cheating based on the costs and benefits model and on multi-level agency problem methodology in order to develop mechanisms for faculty to deter students from academic misconduct. As an empirical base there will be used data collected specially for the study as well as data collected and published by other researchers. The expected results are to help to work out the actual academic dishonesty management and prevention initiatives.*

Introduction

The terms *academic dishonesty, academic misconduct, cheating* are used to be synonymic throughout the issues and incorporate different types of fraudulence (in the classroom or outside), mostly based on G. Pavela (1978) conception: the intentional or attempted use of unauthorized materials at an examination, fabrication or invention of any information or citation, plagiarism, facilitation related to behaviors that assist other students in engaging in academic dishonesty. Some researchers differentiate up to ten forms of present academic dishonesty (Anashkina and Valyaeva, 2014).

Monitoring of education markets and organizations (MEMO) reported that over 70% of Russian students confessed of the facts of their academic dishonesty (Roshchina and Shmeleva, 2016). Empirical studies have shown that students' cheating is widespread and on the rise in colleges and universities around the world (Dodeen, 2012; Dusu et al., 2016; Ligi and Trasberg, 2014; Lin and Wen, 2007; Poorian et al., 2013; Roshchina, 2013, and others). The general consensus appears to be that academic misconduct has grown to epidemic proportions (Williams, 2005).

Being an important violation of academic integrity college student cheating has a range of negative effects. Regarding the economic impact, academic dishonesty slows the economic development by reducing investments in education efficiency and quality of human capital (Sivak, 2006; Shmeleva, 2015). Pertaining to an

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education system, cheating diminishes the reputation of universities, undermining reliability of evaluation processes and public trust in education, falsifying signals for employment or for further study, also external effects of cheating have an impact on competitiveness of non-cheating students and so on (Happel and Jennings, 2008; McCabe et al., 2012; Simkin and McLeod, 2009, and others). Furthermore, student academic dishonesty increases unethical workplace behavior (Eriksson and McGee, 2015, and others), becoming shadow economy school (Latova and Latov, 2007).

It is not surprising that recently cheating in the higher education sector has come to the attention of researchers (Kitcherova et al., 2013; Magnus et al., 2002; McCabe et al., 2001; Miranda and Freire, 2011; Radaev and Chirikov, 2006; Teixeira and Rocha, 2010; Wideman, 2008). Studies of academic misconduct committed on students represent survey of its prevalence rate in different countries, review of its diversity, analysis of the causes and explanatory factors, testing and recommendations of measures to prevent (Brimble and Stevenson-Clarke, 2005; Comas-Forgas and Sureda-Negre, 2010; Gertsen, 2013; Golunov, 2010; Sawicki, 2015; Simpson, 2016, and others).

A central focus of most of the surveys regarding the determinants of academic dishonesty was to explore the individual student characteristics (gender, school year, CDPA, other activities etc.) and contextual issues such as motivational factors e.g. perceived seriousness of cheating and peer involvement (Batool et al., 2011; Krawczyk, 2012; McCabe et al., 2006, and others) at the expense of neglecting the situational aspects of the educational environment that facilitate misconduct (Baker and Mechtel, 2014; Ledesma, 2011; Shmeleva, 2016, and others).

But whether students are entirely to blame for their fraud behavior? Looking at student dishonesty as an example of agency problem we can state that colleges create moral hazards, offering students inducements for deception, which are too often attributed to students' misconduct.

Aim of the Project

The purpose of this research is to build a theoretical model to determine student academic dishonesty factors expressed in terms of costs and benefits, to identify the responsibility of college faculty for students cheating expansion and to explore the mechanisms to be employed by college faculty to deter students from cheating.

Hypotheses and Methodology

Individual function of student cheating behavior can be constructed based on weighing of costs and benefits (direct and indirect) the size of which depends on the internal and external factors including education environment influence presented

by formal and informal institutions (assessment regimes, assessments design, severity of punishment, student communities sustainability established in study groups, the use of «honor codes», synchronized departmental effort (consistency of treatment), etc.).

The faculty may be a determinant of student cheating (moral hazard) and it is in its' power to deter students from cheating (in the absence of transaction costs).

The complexity of multi-level agency problem hinders solving the academic dishonesty issues, but institutional changes in student knowledge evaluation are able to substantially reduce the moral hazard on the part of students as well as of professors.

Upon the framework of rational choice theory, we assume individuals act rationally and in their self-interest, a student's decision for or against cheating is connected to a process of weighing costs and benefits under specific conditions enabling fraud. To explain cheating behavior and to detect its most important influences (including college faculty factor) we are going to create a kind of adaptation of G. Becker's (1968) crime model to academic dishonesty consistent with the assumption of a relation between misconduct behavior and the perception of costs and benefits resulting from it. The capacity of this methodology to explain and predict cheating decisions has been demonstrated by several studies (Bunn et al., 1992; Mixon and Mixon, 1996; Ogilvie and Stewart, 2010; Sattler et al., 2013, and others). It is expected to expand the decision-making function by taking into account the incentive role of formal and informal institutions (including their sanctions abilities (Ellickson, 1991).

The faculty resource for student academic dishonesty reducing may be examined on the base of principal-agent model (Howell, 2009), which applicability to the survey of cooperative endeavor in higher education was demonstrated by E. Kiser (1999), A. Ortmann and R. Squire (1998), C. Howell (2009). We propose to consider students cheating as a bifacial form of moral hazard in a cascade of principal-agent relations (student, professor, university administration, regulatory authorities).

As an empirical base for this study we assume data collected by Monitoring ekonomiki obrazovaniya (Roshchina and Shmeleva, 2016) and the results of several domestic and foreign surveys. In addition, in order to measure the responsibility of college faculty for students cheating expansion we are going to collect some more specific information using qualitative and quantitative sociological methods of data collection (about 15 in-depth interviews followed by a questionnaire study). Also the above will be complimented with analyses of disciplines' study programs of the university.

Results and Expected Results

The adaptation of G. Becker's theory to the situation of academic misconduct with some extension of the model (Stavtseva T. I., 2017) proposes the following function formalization of prevention of j-student's academic fraud decision-making:

$$EU_j = q_j Y_j + y_j - p_j C_j - c_j < 0 , \quad (1)$$

where EU_j is j-student's individual function of the Expected Utility from academic dishonesty behavior,

q_j- j-student's successful fraud probability;

Y_j- j-student's payoff vector as a result of satisfactory fraud;

y_j- j-student's autonomous payoff vector (unaffected by fraud success);

p_j- j-student's punishment probability;

C_j- j-student's possible punishment costs vector;

c_j- j-student's fraud preparation and implementation costs vector (except for punishment costs).

Taking into account the vector nature of the model variables is required for more detailed analysis of academic fraud determinants and is due to complex nature of decision-making factors. In order to develop and confirm vector parameters of the model both qualitative and quantitative sociological methods might be required.

The generated model may become the explicit theoretical framework for future cheating studies and for development of academic misconduct management and prevention initiatives within higher education settings. It may allow:

to look at the faculty as a determinant of student academic dishonesty costs and benefits;

to explain mechanisms to be employed by college faculty to deter students from cheating (to improve the flow of information and particularly to narrow the gap of agents' interests);

to discover the restrictive frameworks to deter students from cheating only by and at the expense of college faculty.

The results of the survey will be presented through the series of articles, conferences reports, study manual for faculty.

The university formal institutions pertaining to student knowledge evaluation and faculty stimulation are intended to be developed.

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Talipova, Aminam[1]*:* Evaluation the reformation of the Exchange Gas Market in Russia as a New Price Indicator Instead of High and Low Price Borders on the Domestic Market

Abstract: *In August 2016, the FAS announced the beginning of the reform in mid-2017 on the domestic gas market. The essence of the agreements is the cancellation to regulate the exact lower level of prices of OJC Gazprom (hare and after Gazprom) against industrial consumers, the transition to the regulation of maximum prices, with the introduction of the opportunity for Gazprom to provide industrial consumers with discounts in comparison with the established maximum price. The aim is to give a quantitative assessment of possible gains and risks of reform in the domestic natural gas market. In what case can the transformations be accompanied by risks and losses for the national natural gas sector:*

(1) If the reform does not stimulate long-term sustainable competition in the domestic natural gas market;

(2) If the final consumers' winnings in the domestic market are below the losses of sellers in the domestic and external natural gas markets.

Will the reform be accompanied by total winnings, and if not, why depends on the strategic interaction of Gazprom with non-integrated (independent) market participants. The task of the paper is to quantify the likely gains and losses as a result of the implementation of the reform.

Introduction

According to the current legislation, after 2018 Russia should refuse to regulate wholesale gas prices and move to regulation of only transportation tariffs. Until 2018, it is supposed to use a formula that determines the gradual achievement of equal returns on gas supplies to the external and internal markets. In this regard, in early 2016, Russian Federal Antimonopoly Service (FAS) announced a pilot project to liberalize natural gas prices in the domestic market in three regions in 2017, which supposes the abolition of the lower boundary of the wholesale price of gas for industry, while prices for the households are supposed to stay constant. The reform, which is positioned by the FAS as the first stage of deregulation of the domestic gas market, should, therefore, lead to a decrease in gas prices across the country by an

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average of 5-10% according to FAS estimations[1]. In addition, since 2014, gas again began to be sold at Saint Petersburg Stock Exchange. The main argument of the FAS in favor of abolishing the lower price border of regulation is the difference between exchange and long-term contracts, which in some Russian regions reaches 10-12%. Consequently, exchange price for gas is suggested to become a new price indicator instead of high and low price borders[2]. The issues of fixing the exchange price as a new indicator of pricing cause rather contradictory opinions among the majority of experts today:

- More than 60% of all gas at the exchange is sold by the companies of OJC Gazprom, which indicates the possibility of price manipulation;
- The volumes of gas sold to the exchange are very small (do not exceed 3 billion cubic meters per month), while domestic gas consumption averages 450 billion cubic meters per year;
- The gas transportation system still remains to be the property of OJC Gazprom and, despite the non-discriminatory access, for the group of Gazprom companies, in fact, the transportation tariff remains inside the company, which makes the position of other producers unequal.

Aim of the Project

In this regard, the purpose of this paper is to study the domestic gas market in Russia and, in particular, the exchange gas market in the period from the beginning of 2017 to determine the appropriateness of using the exchange price as a price indicator and the transition to market deregulation.

In the paper, the gas market in Russia is supposed explored and, in particular, the exchange gas market which started operating again in 2014 after it was closed in 2008. In connection with its appearance, experts disagree about whether it will be able to become a price indicator in place of the existing regime for regulating the lower and upper border of prices. OJC Gazprom, the Russian gas monopolist, insists that the exchange price may become an indicator and price limits can be abolished.

Hypotheses and Methodology

Firstly, in the paper, the volatility of the gas market has been studied since the beginning of 2017 using the VaR (Value at Risk) model. The basic hypothesis accepted is that stock price can be assumed as the new indicator. The main result achieved is that all tests strengthen our hypothesis, that existing volatility and

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[2] Data from Saint-Petersburg Exchange. URL: http://spimex.com/markets/gas/results/index.php?dif=0

particularly with season trends looks suspicious with no evidence why that happens.

Secondly, we suggest to provide more tests and check other models (GARCH, M-GARCH etc.) to prove the gained result.

The treatment group selected is represented by all players on the Exchange market as all the data available. To isolate the effect of the treatment from confounding factors we will not intentionally include some factors which are available according to the data (the size of players, the number of the market the players are represented in, the number of regions where each player exists).

Currently, two volatility estimates are most popular: the standard deviation and VaR (Value-at-Risk). Both of them are usually interpreted as a risk and used in various techniques to justify investment decisions. As a rule, in the models that form the basis of the methods, volatility is considered as a fixed parameter, although in reality, its value changes with time. In most approaches [3,4,5] volatility is regarded as a stochastic quantity that has a specific property of clustering values by periods of "quiet" market behavior and the periods of its "excited" state, which makes it possible to talk about the possibility of predicting it. The problem of estimating volatility with the help of these models was not solved. Therefore, they were complicated and modified. At present, models for modeling volatility, except for ARCH and GARCH, are GARCH-M, AGARCH, AGARCH-M, EGARCH, EGARCH-M. The general form of these models can be found in [6,7]. This study starts from VaR model and supposed to be expanded with the use of other models as GARCH, M-GARCH.

Of all the listed market participants, the largest amount is generated by generating companies: 133 million cubic meters of gas or 64% of the total. But even so, the total volume of buyers of various industries is just over 200 million cubic meters of gas, which is absolutely insignificant with the size of the domestic market at more than 400 billion cubic meters. This volume also cannot be called essential for market manipulation opportunities. However, Gazprom may become a possible manipulator, since it has an overwhelming market volume in terms of liquidity indicators. However, a very important question arises here: how to determine whether the established price on the exchange is the object of manipulation? With what it is in this case to compare? As a rule, on world stock exchanges, if the deviation of the transaction price from the prevailing average price on the exchange exceeds the total volatility of this market segment over the past year, then such price may be subject to investigation by authorized bodies (for example, antimonopoly bodies). But when most of the deals are just for a participant who can manipulate the price, then any comparative possibilities disappear. On the other hand, it is possible to compare it with over-the-counter contracts, but here the question arises. And how well is the over-the-counter price of contracts justified so

that it can be compared with an exchange one? And how much, in this case, we allow the level of deviations from the over-the-counter price, so that the stock exchange is not perceived as manipulative. If we assume that the price of a well is economically justified, just like the transport tariff, then discounts remain for large buyers, with which it is possible to compare exchange prices. But the latter, in turn, discounts to the minimum regulated price of Gazprom, which again is a reason for doubting the validity of the price from which independent manufacturers and discounts are provided.

From this, we see a kind of vicious circle in which Gazprom can set a kind of "monopoly low" price on the exchange, the reasonableness of which can not be confirmed, and which in the case of comparison with the prices of independent producers, equal to Gazprom's minimum over-the-counter price, taking into account the average discount of 4 -5%, can say that they can provide large discounts equal to the difference between exchange and over-the-counter prices. However, it is clear that Gazprom can set such a price, based on its own production and technological characteristics (lower cost), rather than economically sound pricing calculations. In all cases, not only independent gas producers are losing, but also PJSC Gazprom, while winning (perhaps, but not the fact) in volumes. Below is an analysis of losses of PJSC Gazprom under the condition of the exchange price as an indicator of determining the price of the well or discounts on over-the-counter contracts.

Thus, with the launch of exchange trades on gas, it is no longer necessary to argue about discounts and more flexible tariffs: Gazprom and other market participants will now be able to sell gas on relatively equal terms. So, Gazprom has the technical ability to sell through the exchange up to 30 billion cubic meters of gas per year. However, it is unlikely that Gazprom will be allowed to sell as much gas through the exchange. In addition, gas trading on the exchange is conditioned by a number of restrictions: the total trading volume on the stock exchange cannot exceed 35 billion cubic meters per year, while Gazprom cannot sell more gas than all independent producers put together, that is, not more than 17.5 billion m. cube of gas per year. The last restriction, at least according to the Ministry of Energy, was introduced so that the monopolist could not manipulate the exchange price. And restrictions on exchange trades are introduced to preserve OTC trade, which by definition is absurd.

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Tiniakov, Daniil[1]*:* Institutional Opportunities of Citizens' Influence on Policy Process as a Factor of Regional Dynamics of Russian Reforms in 2000s

Abstract: *The project is dedicated to the issue of political factors of socio-economic reforms in hybrid regimes. Except of the authoritarian features, there are some (pseudo-)democratic institutions in these regimes. Some of them could provide citizens with the opportunity to influence processes of policy change. In my research, I will analyze the data from Russian regions of 2000s to explore how these institutions do affect the pace of socio-economic reforms. I also suggest that the impact of these institutions is highly correlated with the extent of public attention to a policy sphere. To test hypotheses I will apply regression analysis, time series and ANOVA. The expected result is a model reflecting the impact of institutions of citizens' influence on policy change processes. This model will be supplemented with qualitative data for clarification of causal mechanism.*

Introduction

Causes of socio-economic reforms successes are one of the key problems for political economy. The most popular arguments explain their failures with lack of credibility of commitments;[2] prevalence of non-cooperative behavior;[3] preferences of personal benefits over public good.[4] Yet, there is no understanding of why are these issues an obstacle on the way to a Pareto-efficient outcome.[5]

In the political science (and political economy), there are plenty of theories explaining the results of policy change. There are macro-theories connecting the pace of modernization with the type of political regime (e.g., the idea of

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authoritarian modernization by S. Huntington[1] and the inverse one by S. Lipset[2]). There are also a great number of concepts focusing on actors' preferences and behavior (e.g. downsian median voter,[3] veto-players by J. Tsebelis;[4] political business-cycle by W. Nordhaus,[5] e.a.). Nevertheless, these theories offer explanations that are well suited for democracies, but their usefulness is limited in the case of hybrid regimes with great diversity of institutional structure.[6]

The literature on hybrid regimes tends to perceive political institutions only as an instrument of the autocrats to secure their survival.[7] Policies themselves are seen as a mere by-product of political bargaining.[8] In my opinion, the works on Russian reforms are overly reductionist too: they consider almost only "authoritarian" side of the regime, frequently referring Russian modernization as purely authoritarian.[9]

For me, this reduction to authoritarian side seems weakly justified from both theoretical sight and empirical data. From the one hand, modern studies of hybrid regimes show that their institutionalization is not necessarily a zero-sum game of elites versus citizens.[10] From another hand, there was a situation of simultaneity dilemma in Russia of early 2000s.[11] This meant high level of uncertainty and

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incomplete information for political strategists. Therefore, it is hard to imagine an autocrat capable to implement policies fully strategically, following and knowing his rational interests.

Hence, the relation of hybrid political institutions and outcomes of socio-economic reforms is not a very frequent topic of studies. In the case of Russian reforms, the great part of literature misses the very *hybrid* nature of the regime, concentrating on one of its sides only.

Aim of the Project

Trying to identify the contribution of the "democratic" dimension of hybrid regimes to the dynamics of reforms, I put the question of *how the institutions, ensuring the possibility of citizens to influence the policy process, did affect the regional differences in the implementation pace of the Russian socio-economic reforms of the 2000s?*

In the forthcoming research, I will investigate the role of (pseudo-)democratic features of the hybrid regime in the process of policy change on the example of Russian reforms of 2000s.

Hypotheses and Methodology

I suggest hypotheses that answer this question on the basis of approaches of the rational choice theory, the new institutional theory (rational choice version) and concepts of hybrid regimes.

I suppose that actors will seek to pursue their interests at the lowest cost, while being limited by existing institutions. Proceeding from the point that socio-economic reforms imply transaction costs and costs associated with direct concessions for authoritarian elites, I believe that, ceteris paribus, authoritarian rulers are not interested in carrying out reforms. However, in some cases further non-implementation of reforms means potential dangers for elites associated with citizens' discontent.[1] In hybrid regimes, the institution of elections is an additional incentive to initiate reform processes. At the implementation stage, regional authorities, in turn, have little interest in carrying out reforms, inasmuch as this process also imposes costs on them. But the hybrid nature of the Russian regime and the federal structure of the state imply some potential for citizens to influence the policy process, which varies from region to region (not only direct participation:

Turns of history: Post-socialist transformations through the eyes of German researchers / Ed.-p.: P. Shtykov, S. Shvanits; sci. Ed. V. Gelman. M .; St.-Petersburg .: Letny Sad, 2003. No. 2. P. 6-22 (in Russian).

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public hearings, the involvement of experts, NGOs, but also indirect influence: through representative authorities, the media).

If these institutional opportunities of citizens' influence do function in the same way as in democracies, then it is possible to suggest two ways of how they could affect the dynamics of policy changes:

First, we can agree with L. Diamond that the inclusion of citizens in the decision-making process leads to socially useful choice[1]. In this case, we will expect that the reforms will be implemented more successfully in the regions with greater potential of citizens ' influence (H1).

Secondly, we can take into account the claims, according to which a large number of participants in the policy change process hinders its dynamics[2]. Then, on the contrary, there will be a faster pace of change in regions with relatively lesser possibilities of citizens' influence (H2).

Nevertheless, understanding the specifics of electoral authoritarianism[3], we would rather expect that the elites would use the vast number of political tools to exclude society from participation in the policy process. However, several studies[4] show that public focus on any issue significantly affects the equilibrium outcome in adoption and implementation of policy. I suppose also that public attention to a particular social problem actualizes the institutionally provided possibility for participation. From this perspective, I claim that (regardless the direction of relation) the potential possibility of citizens to influence the policy process in the region as a variable that explains the dynamics of changes will be statistically significant only if there is a great public attention to reform (H3).

For hypotheses testing, I will collect a database of regional statistics annually for the entire period of implementation of these reforms. The database will include indicators of citizens ' influence potential, success of reforms, public attention to them and necessary control variables (demography, GRP, etc.) There will be used data on land, banking, administrative, and educational reforms. This choice is made due to variation of regional dynamics in these cases and to opportunity to measure this variation through different ways of operationalization.

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My key variables are:

Reform's success (dependent var) = the efficacy of its dynamics, that is, the extent and the pace of measures of implementation comparatively with initial tasks;

Public attention to a reform (independent var) = the extent in which the society is interested in not-/reforming some policy sphere (can be measured using existing opinion polls);

Institutional opportunities for citizens to influence the policy process (independent var) = institutionally provided potential for citizens to affect the process of policies elaboration and implementation including indirect influence (e.g., through elections, media). It could be measured with help of existing indices (e.g. Index of regional political regimes) [1] or by constructing one.

Then, to test hypotheses 1 and 2, I will conduct a regression analysis for each of the reforms for the entire period.

To test hypothesis 3, I will construct regressions for each year of each of the reforms (dependent – success; independent – influence potential and controls). Then, I will conduct t-tests and analysis of variation inside each of the reforms and for all the reforms in general to understand how the relative popularity of reforms affects the statistical significance of the influence potential (the independent variable is a categorical variable reflecting the popularity of the reform in the i-th year, dependent - the statistical significance of the influence potential in regression for the i-th year).

It seems to be useful to supplement the model with qualitative methods to clarify the cause-effect relationship.

Expected Results

As a result of the research, I would like to propose a model that reflects how and under which conditions the institutionally provided opportunities for citizens to influence the policy process do affect the dynamics of socio-economic transformations in electoral authoritarianisms using the example of Russian reforms.

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Vasilenok, Natalia[1]*:* Provision of Security and Quality of Institutions: Empirical Evidence from Russian Regions

Abstract: *In the present paper, the influence of institutional quality on provision of security has been examined. When provided by state, security is a public good. When provided by private actors, security is a private good that may entail negative externality of the crime redistribution towards less protected victims. The ongoing debate attempts to discover whether private and public provision of security are substitutes or complements. Surprisingly enough, the institutional quality has not been often taken into account in the previous research on provision of security. The main hypothesis developed in the present paper suggests that the institutional quality shapes the relationship between private and public provision of security. Weaker institutions lead to substitutability between private and public provision of security, whereas stronger institutions are expected to produce complementarity. The empirical analysis in this paper exploits a panel data set for 76 regions of Russia over 2009-2015. The techniques used are fixed-effects regression analysis and 2SLS estimation. The preliminary results favor the hypothesized relationship.*

Introduction

The maintenance of security is usually considered as one of the primary functions of state. Policies of security provision involve increasing police force, developing technologies of investigation and apprehension, and strengthening penalties. These policies are supposed to bring about *the deterrence effect* that makes criminal activities less attractive than legal employment. Since no one can be excluded from consumption of deterrence produced by government, security can be interpreted as a *public good*.

Security might be also consumed privately if an individual considers the level of security established by government as insufficient and resorts to private security services. However, private consumption of security might redistribute criminal activities from more protected to more vulnerable targets, whereas the total crime rate would remain constant. This negative externality is called *the diversion effect*, and implies conceiving of security as *a private good*.

The intersection of the effects – the deterrence effect and the diversion effect – draws special attention to the relationship between public and private provision of security (Clements 2003; Ehrlich 1981; Guha 2013; Helsley and Strange 2005; Hylton 1996). The empirical evidence on the interaction between public and private

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provision of security suggests that correlation is negative (Cheung 2008; Vollaard and Koning 2009), positive (D'Alessio, Eitle, and Stolzenberg 2005) or insignificant (Meltzer 2011).

In the present paper, I examine what factors affect demand for privately provided security under poorly performing institutions. The main hypothesis of the paper attributes the relationship between publicly and privately provided security to the quality of institutions. More precisely, I hypothesize that the quality of institutions determines whether publicly and privately provided security are complements or substitutes. Under weaker institutions, privately provided security is a substitute for publicly provided security. Under stronger institutions, privately provided security is a complement for publicly provided security.

Aim of the Research

There are two major perspectives on the relationship between public and private provision of public goods. Those perspectives exemplified by the works of Bergstrom, Blume, and Varian (1986) and Epple and Romano (1996) might be described as the substitutability and complementarity hypotheses respectively. According to the substitutability hypothesis, public provision of public goods "crowds out" private provision of public goods. On the other hand, the complementarity hypothesis asserts that public and private provision of pubic goods reinforce each other and bring about the highest level of public goods consumption.

Under both substitutability and complementarity hypotheses it has been assumed that a government is a benevolent government aimed at maximization of the level of public goods provision. This is by no means true under a rent-seeking government, when a part of tax yield is redistributed to the autocrat's rent. Surprisingly, the literature that accounts for institutional variation when provision of security is examined is rather scarce. The aim of this paper is to fill the gap and to examine the effect of the institutional quality on the relationship between private and public provision of security.

My focus on Russia has been motivated by two reasons. First, in Russia, the overall rent-seeking institutional environment contains huge variation in quality of regional institutions. This provides a unique opportunity to explore if the institutional quality indeed shapes the interaction between public and private provision of security. Second, the predictions of the economic model of crime have not been numerously tested on the Russian data[1]. Private provision of security has been

[1] The examples are Andrienko (2005), Hauner et al. (2012), Ivaschenko et al. (2012), and Vasilenok and Yarkin (2018).

examined even rarely. If it was, the research was mainly focused on private provision of security by organized crime in the period of transition to market economy (Frye and Zhuravskaya 2000; Varese 2001; Volkov 2002) and considered the use of violence in business relations. In the 2000s, the substantial decrease in reliance on illegal provision of security and increase in demand for legal institutions of property rights protection has been documented by Gans-Morse (2017). Nevertheless, the demand for privately provided security is still high. However, the research on legal private provision of security in Russia is rare.

Hypotheses and Methodology

Hypotheses

The institutional quality determines how successfully state controls negative externalities and provides public goods. Hence, the institutional quality may affect the private investment in security both directly and indirectly. The direct influence may be exerted through reduction of uncertainty and transaction costs in the economic interactions. It may be expected that the indirect influence of the institutional quality shapes the relationship between public and private provision of security. Effective externalities correction could mitigate the diversion effect and enhance the deterrence effect produced by private security provision. Therefore, the following hypotheses could be set up.

H1. The influence of the institutional quality on private provision of security is mediated by public provision of security.

H2. Under weak institutions, private provision of security is a substitute for public provision of security. Increase in the institutional quality moderates the negative association between public and private provision of security, i.e. negative effect decreases in absolute values.

Methodology

The empirical analysis in this paper exploits a panel data set for 76 regions of Russia over 2009-2015[1]. The set of fixed effects regressions has been estimated. As a dependent variable, which measures *private provision of security*, the revenue of the private security industry has been used.

As a measure for *institutional quality*, the Russian Regional Investment Risk Rating by RA Expert rating agency has been employed. The higher values of the variable

[1] Data are missed for the Chechen Republic, Jewish Autonomous Oblast, the Kabardino-Balkar Republic, the Karachay-Cherkess Republic, Nenets Autonomous Okrug, the Republic of Dagestan, and the Republic of North Ossetia-Alania.

indicate the higher risk, and, therefore, the lower quality of institutions. *Public provision of security* has been measured as the multiplication of the number of employers in agencies for internal affairs and public security maintenance by the average wage in public security sector. The income share acquired by the top 20% of the population is considered as a main measure for *income inequality*. The other covariates include crime rate, natural resources tax revenue in the regional budget per capita, the federal budget transfers in regional budget revenues per capita, the logarithm of gross regional product per capita, and male unemployment.

The key hypothesis of the paper suggests that the effect of public security provision on private provision of security differs depending on the level of the institutional quality. The most natural way to test this hypothesis is to include the interaction term between the measures of the institutional quality and public security provision in the regression equation.

The main methodological challenge that has been encountered by scholars in economics of crime is the simultaneity bias. In the specification where private provision of security is the dependent variable, both crime rate and public provision of security might be a potential source for simultaneity.

Most of the strategies of identifying the causal effect of the deterrence variables employed in the previous research relied on the fact that in the USA police is financed by the budgets of the states. For example, Levitt (1997) instrumented changes in police force with the electoral cycles, and Lin (2009) used changes in the sales tax rate set. The same identification strategy would have not been valid for Russia. Since 2012, when the defederalization reform had been implemented, police has been directly financed from the federal budget.

It can be suggested that money allocation among regional police bodies has been based on the network of interpersonal connections. In this research, I use the distance from the administrative center of the federal district to the center of a given region as the instrumental variable for public provision of security. The distance variable has been calculated using the QGIS software. Since the instrumental variable is time-invariant, and the data I use is the panel dataset, I interact the instrumental variable with the set of year-dummies to produce temporal variation. The same strategy was used in Angrist and Krueger (1991).

Preliminary Results

Table 1 presents the results of estimation of the fixed effects models with regional fixed effects. The initial variables have been standardized in order to obtain standardized regression coefficients. The only variable that has not been transformed is investment risk since it is measured in an ordered scale.

Standardization affects interpretation of raw coefficients of the variables that form part of interaction terms. The raw coefficients show the effect of a variable when another variable that form part of the interaction equals to the mean. However, the raw coefficient of public provision of security should not be interpreted in the same way, since investment risk has not been standardized and never takes value of zero. The seventh column in each table contains coefficients of the model re-estimated when Moscow that was found to be an influential observation has been excluded. In this model, the signs and significance of coefficients have not been dramatically affected by exclusion of Moscow.

The results show that both public provision of security and the interaction term between public provision of security and the institutional quality are robust and significant. The interaction has negative sign. This means that decrease in the institutional quality, or increase in investment risk, decreases the effect of public provision on security. When the effect of public provision of security is positive and public and private provision of security are complements, decrease in institutional quality makes the relationship between public and private provision of security less complementary. On the contrary, when the effect of public provision of security is negative and public and private provision of security are substitutes, decrease in institutional quality strengthens the substitutability between security providers.

Table 1 reports calculations of the marginal effect of public expenditure on security given that investment risk takes values of 5, 42, and 79, which indicate low investment risk, average investment risk, and high investment risk respectively. Those values represent the 0.05, 0.5, and 0.95 quantiles respectively. Low values of investment risk produce positive yet insignificant effect of public provision of security on private provision of security, whereas high values of investment risk entail negative and significant effect of public provision of security on private provision of security. On average values of investment risk the effect of public provision of security on private provision of security substantially does not differ from zero. There findings favor the hypothesis of the research and suggest that the institutional quality may be the factor that shapes the relationship between publicly and privately provided security.

When the public security variable is instrumented, the direction of the effect of public investment in security on private investment in security does not change. However, the specification where the interaction term between public provision of security and institutional quality is included contains two endogenous variables, public provision of security and the interaction term. The chosen instruments appear to be strong and exogenous for public provision of security, whereas they are less relevant for the interaction term. This could indicate the need for other instruments. Nevertheless, the hypothesized relationships hold.

Table 1. Fixed-effects estimation

	Dependent variable:						
	Revenue of Private Security Sector Per Capita						
	-1	-2	-3	-4	-5	-6	-7
Public Expenditure on Security	0.229***	0.161***	0.160***	0.065**	0.209**	0.114	0.164*
	(0.039)	(0.045)	(0.045)	(0.032)	(0.087)	(0.092)	(0.089)
Income Inequality	-0.472**	-0.487**	-0.492**	-0.259***	-0.263***	-0.208***	-0.157***
	(0.212)	(0.212)	(0.212)	(0.061)	(0.061)	(0.057)	(0.042)
Income Inequality Sq				-0.181***	-0.186***	-0.194***	-0.127***
				(0.067)	(0.067)	(0.069)	(0.037)
Crime Rate (Log)		-0.155***	-0.159***	-0.137***	-0.121***	-0.058	-0.081**
		(0.036)	(0.036)	(0.035)	(0.036)	(0.042)	(0.038)
Investment Risk			-0.002**	-0.001	-0.002*	-0.002*	-0.002**
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GRP PC (Log)						0.169**	0.098*
						(0.072)	(0.058)
Natural Resources Tax						0.064***	0.072***
						(0.025)	(0.025)
Budget Transfers						-0.064	-0.131
						(0.160)	(0.160)
Male Unemployment						-0.008	0.019
						(0.026)	(0.016)
Public Expenditure on Security Int. Investment Risk					-0.003**	-0.003**	-0.003*
					(0.002)	(0.001)	(0.001)
Observations	479	479	479	479	479	479	472
R^2	0.227	0.242	0.245	0.465	0.479	0.493	0.293
Adjusted R^2	0.081	0.096	0.098	0.359	0.375	0.385	0.142
F Statistic	59.119***	42.666***	32.513***	69.419***	61.033***	38.361***	16.089***

Note: *p<0.1; **p<0.05; ***p<0.01

Heteroskedasticity robust standard errors are reported in the parentheses. Standardized coefficients are reported except for investment risk. The column 7 contains the estimates of the model where Moscow has been excluded as the influential observation.

Table 2: Marginal effect of public security provision on private security provision by levels of investment risk

	Low investment risk Investment risk = 5	Average investment risk Investment risk = 42	High investment risk Investment risk = 79
2009	Vologda Oblast	Arkhangelsk Oblast	Kostroma Oblast
2010	Tula Oblast	Stavropol Krai	Tuva Republic
2011	Rostov Oblast	Ryazan Oblast	Tuva Republic
2012	Kaliningrad Oblast	Republic of Bashkortostan	Karachay-Cherkess Republic
2013	Komi Republic	Jewish Autonomous Oblast	Volgograd Oblast
2014	Voronezh Oblast	Tula Oblast	Kostroma Oblast
2015	Leningrad Oblast	Kursk Oblast	Republic of Dagestan
Marginal effect	0.1 (0.15)	-0.006 (0.907)	-0.113* (0.077)

Note: p-values in parentheses

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Vaskin, Ilya[1]*:* Institutional Non-Coercive Mechanisms of the Iranian Political Regime Stabilization in 2009-2011

Abstract: Despite the effect of the Arab Spring, the number of protests in Iran in 2011-2013 was relatively small regarding to the Green Movement of 2009-2010. That is why there is a problem of reveling of the mechanisms of the Iranian political regime stabilization during the period. The purpose of the research is the analysis of institutional non-coercive mechanisms those were aimed to decrease the benefits from the participation of the protests. The research is based on statistics, media, and legal source. It allows to explain the logic of competitive authoritarian regime learning and to illustrate how institutional reforms satisfy an inquiry for democracy.

Introduction

A number of political shocks happened in the Muslim World during the Arabs Spring of 2011-2013. These shocks had significant impact on the other parts of world; they also linked to the Occupy Movement, particularly the first event in the chain: Occupy Wall Street of 2011 [Kerton 2012]. In addition, the Arabs Spring had harbingers: protests in Oslo, Norway in 2009, and a mass protest movement in Iran in 2009-2010.

The paper is focused on the Iranian case. The massive protest movement against electoral fraud and a victory of the conservative candidate Mahmoud Ahmadinejad covered Tehran and other large Iranian cities in 2009-2010. The movement, called "Green Movement", was an important actor in the Iranian politics until 2010, when it broke down due to a number of internal and external reasons [Sundquist 2013]. However, there were no massive protest movement against political regime in Iran during the Arab Spring. The most massive act of protest during the Arab Spring was in Tehran in the February 14 of 2011, and the number of participants was approximately 10000, which is significantly less than a number of protesters during the period of 2009-2011: the number of the protests during some events had been reached a million of people.

Aim of the Project

Given these facts, my main research question addresses the discrepancy raises a problem of what institutional mechanisms had been used by Iranian political regime

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to limit activity of the political opposition in Iran? Such question could be divided by two parts: 1) observe the changes by the regime (if any) to address the protests; 2) what coercive and non-coercive institutional mechanisms[1] had been used by Iranian political regime to limit activity of the political opposition in Iran?

Controlling for the changes performed by the regime, the focus of the paper is an analysis of the non-coercive institutional mechanisms, which have been used by the Iranian political regime in 2009-2011 to keep its own political stability. In such period we aim to disentangle the regime`s institutional changes that decreased the protest activity in Iran from the coercive and not coercive actions implemented (during the Arab Spring of 2011-2013).

Hypothesis and Methodology

The methodology is based on a mixture of the collective action theory [Hardin 2013; Ostrom 2009] and the theory of autocratic survival [Gandhi 2008].

The collective action theory is based on an assumption that people take part in collective actions only if the benefits from the participation are bigger than costs. Thus, regarding to the case of Iran, the theory argues that the political regime had been to decrease benefits and increase costs of the participation in the protests. The limited reform providing is a way to decrease benefits from the participation in protests as it devoid of meaning of the actions.

The autocratic survival theory proposes three strategies for autocratic regimes for interaction with political opposition: cooperation, co-optation, and turmoil. These strategies` probability depends on the power of opposition regarding to the situation within a political regime. Cooperation is a strategy that used in political regimes with a weak opposition, so a dictator uses the strategy for cooperation of some segments within a society. Dictators use a co-optation when an opposition is relatively strong. However, in the case they are supposed to do a more valuable exchange of resources with opposition. Finally, in a case of turmoil strategy a relatively powerful opposition rejects a dictator`s offer.

These theories could be mixed in the following way: the three strategies of an authoritarian regime focused on the different combinations of an increase of the costs and of decrease of the benefits from the participation in protests events. On the one hand, cooperation and cooptation mostly based on the decrease of the benefits from the participation in the events regarding to the more active inclusion

[1] Due to the absence of the clearly articulated definition of an institutional mechanism in a literature, the following definition, based on the definition of an institution by James March and Johan Olsen [March, Olsen, 2006: 3], and the definition of a mechanism by Illari and Williamson: entities and activities in the frame of institute those are responsible for the connection and interaction of rules with an environment [2012: 120]

of an opposition in policymaking, the main difference in the degree of an opposition involvement in the policymaking. On the other hand, the turmoil strategy focused on the increase of the costs from the participation in the protest events by suppressive policy, the persecution of opposition politics, and so on.

The hypothesis of the research is the following: the key policy of the Iranian regime at the earlier stages of the Green Movement (2009) was cooptation, it had been moved to turmoil in 2010 (a transit from a decrease of benefits to increase of the costs from the participation).

The data is media, sites of authorities, political opposition, as well as legal documents and statistics. The analysis will show what measures were deployed by Iranian political regime to decrease benefits from the participation in protests by a matching of a public inquiry and a policy provided by the regime. The statistics will be analyzed descriptively: how changed key indicators of social policy similar to scholarships were changed. The legal documents, news, sites of authorities and the opposition will be used for extracting data directly about the changes: who proposed, what changes, and how they are supposed to be implemented. The assumed policies are a social policy, an electoral policy, a media policy. The results of the analysis should show how the changing of the policies reduced benefits from the participation in the mass protests events relying on the normative changes (law, proclamations) and positive changes (the changes could be traced using the statistical data). For example, a limitation of restrictions for an independent media registration could decrease benefits from the participation in protests, as people may have an access to a relatively free media. Otherwise, increase of penalties and a period of compulsory labor for the participation in protests could increase costs of participation in protests, as it leads to a more severe punishment for the same action.

Expected Results

The expected results of the research allow to explain the logic of the competitive authoritarian regimes learning. The case will show how institutional non-coercive mechanisms as empowerment of being elected or a, a limitation of restrictions for an independent media registration limit ongoing protests and prevent the following ones and at least partially answer the question about how competitive authoritarian regimes study, and what do they study during the events those threat them. In addition, the results are supposed to show how competitive authoritarian regimes decrease benefits from the mass protests participation, and what a range of policies the regimes use to achieve it.

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Veterinarov, Viktor[1]*:* Estimation of Ethnic Discrimination Effects in the Real Estate Rent Market

Abstract: *The main goal of this research is the quantitative measurement of ethnic discrimination effects in the real estate rent market in Russia. The Russian market has unique research potential due to its lack of barriers or regulation against public discriminative performance. Therefore, while comparable papers in other countries need to use field experiments or high quality special databases with names of market agents, Russia gives an opportunity to observe discrimination directly, in an explicit form. This research uses a database of 100.000 rental ads to investigate the price of prejudice for agents who use discriminative language. We find that the price of prejudice significantly depends on the density of discriminative agents in the administrative division. If discrimination is rare, it incurs a price. However, if discrimination is common in a district, the cost of prejudice is low, and there could even be financial benefits from discrimination.*

Introduction

This research evaluates the price of prejudice in the real estate rent market in Russia. The price of prejudice refers to the costs which are incurred by people who ethnically discriminate others. The magnitude of the costs depends on the environment in which people interact.

The Russian real estate rent market provides a unique opportunity to estimate ethnic discrimination. Most Russians do not pay much mind to their discriminative performance, because there are no serious penalties for ethnic discrimination. Therefore, there is an opportunity to observe and identify discriminative agents by observing their own descriptions of their flats, rather than by conducting a field experiment or by processing databases and analyzing agents' names, which could give information about their nationality. Discrimination in a flat ad affects the landlord's performance, depending on discrimination density in the area.

It should be noted that there is no information about the real discrimination level. All measurements depend on a proxy which underestimates the discrimination level, which is the reason why we evaluate prices and listing time, and not directly discrimination.

Another crucial point is the separation of taste discrimination from statistical discrimination, because taste discrimination is more robust to the costs incurred.

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The roles of taste and statistical discriminations are a controversial issue. They should be separated, but an explanation of their ratio is required.

Aim of the Project

The main goal is the estimation of the effects of ethnic discrimination in the rent market by measuring the price of prejudice on the level of administrative districts: differences in prices and listing time. A vital component of the study is considering the degree of competitiveness in the rent market in each district in relation with both the ratio of discriminative agents in the administrative division and the migration factor.

Hypotheses and Methodology

Hypotheses

I expect that there are prohibitive costs of discriminative performance in districts with a low density of ethnic discrimination among the population. The lower the discrimination density in the administrative division, the higher the price of prejudice is, because discriminative agents limit the demand for their own flats in a competitive market. Conversely, districts with a prominent level of discriminative performance in their population are characterized by a negligible, but still statistically significant, penalty for ethnic discrimination or even benefits for it.

The same issue is expected in listing times. The areas with a low discrimination density are characterized by a long listing time for discriminative agents. At the same time, the more discrimination in a district, the shorter the listing time for those who discriminate.

Methodology

I collected a full database (more than 100.000 observations) of accommodation ads with their rent prices, listing time, addresses, main characteristics of flats and descriptions. It was collected from CIAN (the biggest Russian property ad website) via web scraping. After collecting the data, the main task was a semantic analysis of the flat descriptions. I created an exhaustive codifier of possible ethnically discriminative words. This information provides an opportunity to construct a binary proxy of discrimination. Then, other data from the characteristics of the flats was transformed into an appropriate format to serve as control variables. Importantly, the addresses of the flats were geocoded into coordinates and matched with the administrative divisions where they are located. This is needed for further

estimation of the discrimination density in each district and the coefficient of the price of ethnic discrimination on the administrative level.

$$Price = \hat{\alpha} + \hat{\gamma} Districts + \hat{\beta} DistrictsDiscrimination + \hat{\mu} OtherControlVariables + \varepsilon$$

The price is a dependent variable in our regression. There are also many control variables from characteristics of flats and two large groups of special binary variables. The first group contains control variables for administrative divisions, while the second group controls the products of the discrimination proxy and each district.

Using OLS with robust errors, we compute coefficients associated with the products of discrimination proxy in each district. These can now be compared to the ratio (density) of discrimination in each administrative division.

$$\hat{\beta} = \hat{\tau} DistrictsDiscriminationRatio + \varepsilon$$

Using this simple model with coefficients as a dependent variable, we can estimate how the price of prejudice changes with a growth of the discrimination density. Then we can also compare the results with the migration ratio for each region.

$$Listing = \hat{\alpha} + \hat{\gamma} Districts + \hat{\beta} DistrictsDiscrimination + \hat{\mu} OtherControlVariables + \varepsilon$$

The same model can be used to estimate listing time.

Results

Ethnic discrimination significantly affects the price of rent. There are high negative coefficients associated with the discrimination proxy in districts with low level of discrimination. At the same time, coefficients are near zero or are high in administrative divisions with a significant level of discrimination. This level of ethnic discrimination is common in Moscow and St. Petersburg outside the city centres, however in other large (1m+) cities such a density is not reached, so these effects are insignificant.

Expected results

The estimations which were done for prices need to be repeated with listing time. It is expected that listing time also depends on discrimination density, so that low discriminative performance in a district is related with a longer listing time for discriminative agents. Vice versa, listing time is expected to be the same as average or shorter for discriminative agents in areas where the discrimination level is high.

It is necessary to investigate the role of migration. It is expected that regions with more migrants are characterized by a higher level of discrimination.

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Zabolotskiy, Vladimir [1] (with Ekaterina Borisova[2] and Alexey Zakharov[3]): The Effect of Acquired Language on Economic Behavior

Abstract: *The effect of language on economic behavior, despite not being fully explored, has been supported by evidence to some extent. Thus, according to Chen (2013), languages in which the future and the present are not separated strictly in terms of grammar induce more future-oriented behavior compared to languages in which these rules are stricter. We intend to study whether this effect holds for acquired language as well. This, if proven, will provide a stronger evidence for the original hypothesis as it will leave cultural parameters linked to language out of consideration because they will no longer be inherent through individual's cultural background or any other channel. In order to test this hypothesis, we designed an incentivized experiment on a sample of graduating students of Moscow State University of Linguistics, whose assignment to language departments is mostly exogenous. We believe, that gaining more insight into the language effect on patience is valuable as it allows to broaden knowledge on how human behavior is organized, and hence apply these insights to policies which involve intertemporal choices.*

Introduction

The dispute on whether languages we speak are determined by our cognition, or the rearward induction is true, has arisen in Economics not so long ago, although linguistic matters have been already discussed by almost every discipline which has something to do with human behavior and decision-making.

Such an interest may be explained by a failure that neoclassical models of human behavior embraced. Based on merely realistic assumptions, that models are not as precise in predicting human decisions as we need them to be, which resulted in Institutional and Behavioral Economics taking over the mainstream. However, the more research was conducted in order to explain behavioral biases, including both experimental and empirical studies, the more evidence was gained that there are inexplicable discrepancies, even inside homogenous samples. Language may be amongst the variables capable of explaining that heterogeneity.

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One of the first to revise language as a determinant of cognition and hence behavior was Wilhelm von Humboldt. He manifested that Indo-European languages (i.e. English) are superior to the other, which may explain their native speakers' dominance; the way person speaks affects the way she speaks and perceives reality, determines her values and abilities in a certain key. The evidence for these claims was found in the 20th century and since this hypothesis is mostly referred to as Sapir-Whorf hypothesis after its "reinventors" (see Sapir (1951) and Whorf (1956)), or as Linguistic relativity hypothesis.[1]

The hypothesis exists in two versions, the strong and the weak. The strong one is considered unrealistic[2] as it postulates that two persons speaking different languages are not able to communicate, whilst the weak one remained in linguistics and anthropology. The weak Sapir-Whorf hypotheses states that language affects consciousness and perception (but not determines) in a way somehow similar to the way proposed by Ludwig Wittgenstein: anything exists only if it may be *named;* any objects may be distinguished between only if they may be appealed to in linguistically different ways.[3] Hence, the more detailed and precise the language is the more detailed is the perception of its speakers, the more things they are capable of "thinking of".

The study of the language effects on economics behavior may be fruitful despite seeming obscure. The better understanding of human behavior we obtain, the more precise our predictions may be in view of linguistic differences. That is to be especially helpful in "nudge" policies as their efficiency may depend on how they are perceived, which, in turn, is affected by the features of language.

In this paper, we intend to examine whether acquired language affects behavior, particularly saving and risk-taking behavior, which is in line with Chen's and Sutter's studies, discussed in Section 2. We believe that such research has never been conducted before as mentioned studies avoid the question of acquired language effect on economic behavior due to implausibility of acquired language parameters being measured in settings applied.

This research proposal is organized as follows. This section is an introductory one and its main purpose is to provide background that stands behind the following parts. Section 2 provides a general review of the previous studies on economic behavior affected by linguistic features, especially considering Linguistic saving hypothesis alongside Foreign language hypothesis. Sections 3 to 5 provide further research methodology, hypothesis and expected results.

[1] Koerner (1992)
[2] Sapir (1951)
[3] Wittgenstein (1921)

The language in Economics is not yet fully explored field of study. However, it is vast as there are many aspects to study, from the economic perspective of language evolution, to the language effect on economic behavior. The most complete and up-to-date review of Economics and Language is provided in the same-title book by Ginsburgh and Weber (2016).

Language is mostly referred to as a variable, reflecting culture, social capital, and values. Tabellini (2008) provides evidence that language is interconnected to culture and, hence, institutional outcomes obtained. This research shows that linguistic features, i.e. T-V distinction and pronouns drop, correlate with generalized morality measured by trust and respect (based on WVS data). These features reflect several institutional features. T-V distinction (for example, *ты* & *Вы* distinction in Russian) is often thought of as related to hierarchy and vertical distance between people whilst being talking to each other; whereas a possibility for pronoun being dropped may be interpreted as a language being more informal, with less horizontal distance. The main finding is that countries speaking languages forbidding pronoun drop or that do not have T-V distinction appear to have better institutions, namely better government. These results are complemented by Abdurazokzoda (2016).

Pronoun rules is a powerful instrument of language codification and parameters mentioned above are not the only ones that may affect economic performance. Research conducted by Givaty, Troiano (2011, 2012) suggests that more precise gender specification in pronouns use results in higher levels of gender discrimination. Thus, authors show that countries which use languages with higher gender specification degree tend to have longer maternity leaves, which may be interpreted as higher gender discrimination. Similar effects are found by Prewitt-Freilino et al. (2012) and Mavisakalyan (2015).

The study essential to ours is the one by Chen (2013). It proposes so-called Linguistic saving hypothesis (LSH). The hypothesis is based upon a fact that languages approach future time differently in terms of grammatical constructions. Thus, languages may be separated into strong FTR (future time reference), which distinguish between future and present times, and weak FTR languages, which do not. According to this hypothesis, speakers of s-FTR languages tend to be less future-oriented, as they perceive future as something more distant and vague. Due to analysis provided, countries where most of population speaks w-FTR languages save significantly more and care more about their health. These results are robust, and control for cultural variables does not significantly change the coefficients. However, Chen's study lacks persuasiveness a little as the analysis is mostly intercountry. That means that some implicit parameters may be missing and that is why results in the effect of language are so significant.

The study, complementary to Chen's one, is the experimental one conducted by Sutter et al. (2015). Authors conducted several incentivized time preferences

elicitation experiments with a sample of primary schoolers. The reason to choose such a sample was that young children are less likely to be biased because of not being acquainted with interest rates, as they do not interact with banks or other financial organizations. Another merit of the sample was its eminent homogeneity: the only discrepancy between subsamples was language (either w-FTR German or s-FTR Italian). The series of experiments on this sample show that w-FTR native speakers are *ceteris paribus* more patient; bilinguals' patience appeared to be somewhere between.

Another hypothesis, known as Foreign language hypothesis (FLH), may also be useful for our further research. According to it, reading or speaking in foreign involves slow thinking system whereas doing it in native does not. Hence, one's behavior becomes less affected. The recent studies (Keysar et al. 2012 a, b, Hadjichristidis et al., 2015) provide evidence that judgement about risks and benefits shifts to less affected when information is presented in foreign.

Aim of the Project

Our further research is about to consider whether not only native language's features affect economic behavior but acquired language's as well. Due to Sutter et al. (2015) bilingual children's patience level is between the levels of those who speak only s-FTR or w-FTR. We believe, that similar effect may take place in case of acquired language if person is to some extent placed into another linguistic environment.

Hypothesis and Methodology

Our hypothesis is that studying w-FTR language increases patience and decreases discount factor.

The study is to be an incentivized experiment, conducted on a sample of linguistics students, who are mostly exogenously assigned to studying languages with different FTR features. This will provide us with highly homogeneous sample and eliminate most of probable biases which appear in intercountry analysis.

As to elicit participants' preferences, we provide them with four tasks. Tasks 1, 2 are standard intertemporal preferences elicitation 'money early or later' tasks,[1] in which participants have to choose between two alternatives in a series of questions. Task 3 is a standard lottery risk elicitation task; Task 4 is the "Bomb" risk elicitation task.[2] We also provide a questionnaire from which some important demographical

[1] Cohen et al. (2013)
[2] Crosetto, Filippin (2012)

information as well as Big-Five[1] psychological traits is to be derived as these are connected to economic behavior,[2] especially to risk-taking and intertemporal choice.[3]

Expected Results

We expect, that those whose acquired language is w-FTR are to be more patient and future-oriented compared to those who are studying s-FTR language. Also, we expect to find interconnections between time preferences, risk-taking behavior, academic performance, and personality traits.

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Zinchenko, Daria[1]*:* Educational Assortative Mating and Its Impact on Income Inequality in Russia

Abstract: *This paper evaluates the rate of educational assortative mating and its impact on income inequality in Russia. We use data from the Russian Longitudinal Monitoring Survey - Higher School of Economics (RLMS-HSE) for 1995–2015. Our findings suggest that the Russian marriage market is characterized by positive assortative mating at all levels of education. It means that marriages occur among individuals with the same level of education more frequently than it would be expected under random matching with respect to education. The level of educational assortative mating has not changed in the last two decades: the observed decline is statistically insignificant. The lack of a strong trend of assortative mating can be explained by substantial heterogeneity in developments across education sub-groups. Assortative mating has been declining over time for university graduates, whereas individuals with low level of education had growing incentives to sort themselves into educationally homogeneous marriages. Changes in assortative mating had little effect on the level of household income inequality. The effect has been increasing over time but still remains below the estimates obtained for developed countries. If marriages were formed randomly across time the counterfactual Gini for couples' incomes would be lower than the actual one on average by 1.3%. The effect has been stronger and inequality-enhancing at the top of the distribution. At the same time, educational assortative mating had neutral or even equalizing for couples at the bottom of the distribution. Economic shocks were found to amplify the effect of assortative mating on inequality in both parts of the distribution.*

Introduction

Socio-cultural modernization and economic reforms, which began in the 1990s, affected profoundly on mating behavior and the sphere of family relations. The consequences of these transformations in terms of the assortative mating, i.e. in terms of the composition of families in the context of the similarities and differences of the spouses' characteristics, remain underinvestigated.

Aim of the Project

In this paper, we will focus on the one characteristic – educational level of spouses, and consider what changes have occurred over the past decade in the structure of

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Russian families at the level of educational attainment of husbands and wives, and how these changes have affected the distribution of household incomes.

Hypotheses and Methodology

The economic foundations of people mating behavior analysis went any further at the works of Garry Becker, who proposed the first formal models describing the nonrandom sampling of marriage partners [Becker, 1973, 1974]. Becker's theory does not give a straight answer to the question of what the nature of educational assortative mating is. Therefore this question should be investigated by empirical analysis.

This paper studies the structure and dynamics of educational assortative mating and its impact on income inequality in Russia during the period 1995-2015. The research methodology of this paper follows [Eika et al., 2014]. The study aims to link several stylized facts: rapid expansion of higher education, changes in family arrangements, and the rise in household income inequality. The paper concentrates on the following research hypothesis: positive educational assortative mating matters most for the distribution of income inequality.

In this study we use the data from RLMS-HSE data for twenty years from 1995 to 2015. The data from the RLMS-HSE are appropriate for this kind of analysis, since they are representative at the national level and contain information on wide range of socio-economic (education attainment, employment, wages, incomes) and demographic (age, gender, marital status, etc.) characteristics of individuals. We employ household questionnaires to identify the married couples including cohabiting couples. Other information of personal characteristics and incomes comes from individual questionnaires. The data contains unique family and personal identifiers that allow us to match spouses. We impose very few restrictions on the sample. The sample includes all couples in which both spouses are elder than 18 (the official minimal marriage age in Russia). No upper age limit is applied. In each year under consideration, we exclude couples with missing information on age, gender, or education[1].

We start with a detailed assessment of the pattern of educational assortative mating contrasting different concepts of marital sorting used in previous research. We demonstrate the importance of control for changes in educational attainment of men and women since the mid-1990s. Our preferred measure of marital sorting between education levels i and j is the observed probability that a person with

[1] When analyzing income inequality we also exclude couples with missing information on incomes and those with suspiciously large incomes.

education level *i* is married to a spouse with education level *j*, relative to the probability under random matching with respect to education.

After evaluating the degree of assortative mating, we measure the contribution of changes in educational assortative mating to changes in income inequality. Our income measure is based on self-reported individual incomes, which is crosschecked and refined using the information on wages, income from self-employment, and non-market incomes. We measure household income by summing the individual incomes of the spouses.

The semiparametric decomposition method proposed by DiNardo, Fortin, and Lemieux (1996) is adopted to quantify the contribution of various factors to household income inequality. This approach generates income distributions under various counterfactual scenarios. We begin by comparing the time trends in actual household income inequality and under a counterfactual scenario when the marriage pattern is random in terms of education. We present the results for various inequality measures (the Gini coefficient and the decile ratios) to illustrate how assortative mating affects different parts of the distribution.

Then we turn to a more complicated analytical exercise comparing the relative importance of changes in educational assortative mating with contributions of changes in educational composition and in returns to education. We fix the distribution of one factor at a base year allowing the other factors to vary over time[1].

Results

Our findings suggest that the Russian marriage market is characterized by positive assortative mating[2] at all levels of education. However, the time trends are heterogeneous and vary across educational groups. Positive assortative mating has been declining for university graduates. In 1995, men and women with higher education were three times as likely to be married to a spouse with the same degree, compared to the counterfactual situation where spouses were randomly matched with respect to education. By 2015, this ratio dropped to 2:1. At the same time there has been an increase in the incidence of positive assortative mating among the low educated. In 1995, Russians with primary and incomplete secondary education were 2.9 times more likely to be married to a spouse with low education compared to the probability of random mating; in 2015, they were 3.3 times as likely. These results may reflect the changes in the incentives to sort into internally

[1] This part of the research is in progress.

[2] Positive assortative mating is the situation when marriages occur, first and foremost, among individuals with similar characteristics. If individuals fail to find a mate similar to themselves, they choose an individual with other values of the characteristic.

homogenous marriages. To explore the evolution of marital sorting in detail, we present the trends for different age groups. Assortative mating leads to an increase in household income inequality in all years.

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