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# Research Projects

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# Contents

# Abazov, Aniuar[1] (with Timur Natkhov[2]): Cultural Transmission and Health: The Effect of Russian Settlers on Life Expectancy in the Caucasus Region

*Abstract: Across countries, income per capita is highly correlated with health, as measured by life expectancy or a number of other indicators. Within countries, there is also a correlation between people's health and income. However, Russian Federation presents an interesting exception to this rule – there is no correlation between income per capita and life expectancy across 83 Russian regions. The lack of correlation is mainly due to the presence of several outliers – regions located in the southern part of European Russia (North Caucasus) with high life expectancy and low income per capita. In a cross section of the North Caucasus municipalities there is even negative correlation between income and life expectancy – poorer districts enjoy much higher life expectancy than the richer ones. We explain this puzzle by historical patterns of cultural diffusion and assimilation. We combine historical data on Russian settlements, literacy of settlers and indigenous population form 1897 census, and contemporary data on various measures of development, ethnic composition, life expectancy and alcohol consumption.*

## Introduction

Across countries, income per capita is highly correlated with health, as measured by life expectancy or a number of other indicators. Within countries, there is also a correlation between people's health and income (Weil, 2014, Figure 1).

However, Russian Federation presents an interesting exception to this rule – there is no correlation between income per capita and life expectancy across 83 Russian regions (Figure 2). The lack of correlation is mainly due to presence of several outliers – regions located in the southern part of European Russia (North Caucasus), which were colonized in late 19-th century.

In a cross section of the North Caucasus municipalities there is even negative correlation between income and life expectancy – poorer districts enjoy much higher life expectancy than the richer ones (Figure 3).

## Aim of the Project

The main goal in this research - to explain this puzzle by cultural diffusion of various practices, which affect health (mainly alcohol consumption) from the settlers to indigenous population. Despite the fact that Russian settlers had higher literacy rate and higher human capital at the time of colonization, they also brought with them a peculiar culture of strong alcohol consumption, which was mainly absent among indigenous population. The higher human capital of settlers resulted in higher income,

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and living standards among indigenous population in the regions of settlement (Natkhov, 2015). However, the peculiar culture of alcohol consumption was transmitted in same package with education, which resulted in the observed puzzling negative correlation between income and life expectancy.

## Methodology and Expected Results

We combine historical data on Russian settlements, literacy of settlers and indigenous population form 1897 census, and contemporary data on various measures of development, ethnic composition and life expectancy of the population. We show that across 195 municipal districts (*rayons*) of the North Caucasus region, places with higher share of Russian settlers in late 19-th century, today exhibit higher level of education, higher income, but also lower life expectancy and higher level of alcohol consumption. Our results a robust to various specifications.

## Related Researchers

Our work is related to a growing body of literature on the effects of cultural norms on economic behavior. In particular, the impact of cultural differences on long-run economic development (Nunn, 2012), the changes in norms as a result of external treatment (Nunn, Wantchenkon, 2011) and persistence of norms and institutions (Alesina, Guiliano, 2016).
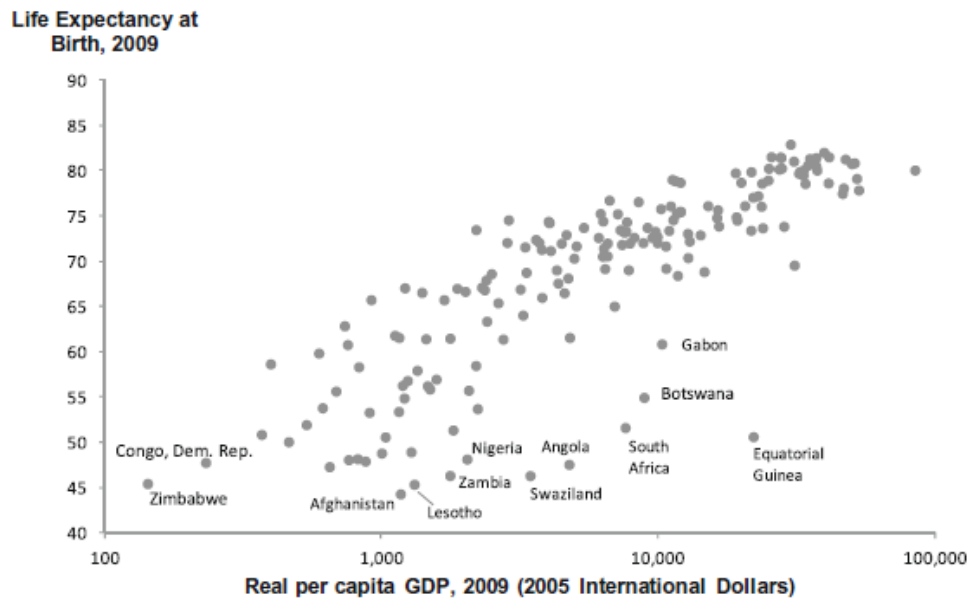


Figure 1. Income and life expectancy across countries.
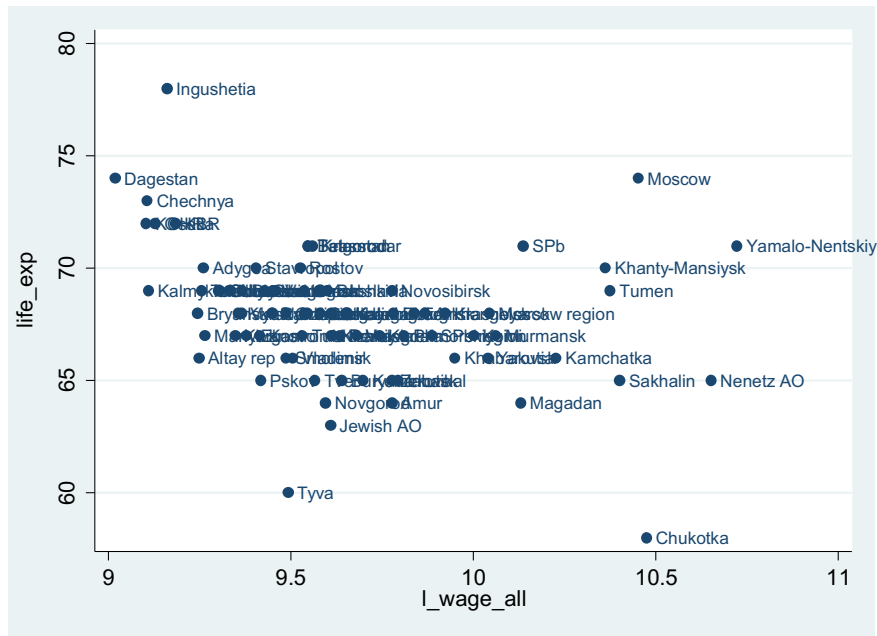
Figure 2. Life expectancy and income per capita in Russian regions



Figure 3. Life expectancy and income per capita in North Caucasus districts

## References

Alesina, Alberto and Paola Giuliano (2013). "Culture and Institutions." NBER Working Paper No. 19750.

Natkhov T. V. Colonization and development: the long-term effect of Russian settlement in the North Caucasus, 1890-2000s. Journal of Comparative Economics. 2015. Vol. 43. No. 1. P. 76-97.

Nunn Nathan, "Culture and the Historical Process," Economic History of Developing Regions, Vol. 27, Supplement 1, 2012, pp. 108-126.

Nunn Nathan, Wantchekon Leonard, 2011. The slave trade and the origins of mistrust in Africa. The American Economic Review 101 (7), 3221–3252.

Weil David N., 2014. "Health and Economic Growth," Handbook of Economic Growth,in: Handbook of Economic Growth, edition 1, volume 2, chapter 3, pages 623-682.

# Kolosova, Anna[1](with Viktor Rudakov[2]): The Impact of Job–Education Match on Graduate Salaries and Job Satisfaction

*Abstract: In the recent decades Russia has experienced the drastic massification of higher education: the share of 24-year-olds possessing a university degree rose from 30% in 2000 to 80% in 2015.What are the implications of such a steep rise on the graduates' labour market position? This paper seeks to explore whether recent Russian school-leavers succeed to find a job related to their degree field and what are the outcomes of education-occupation field mismatch in terms of salary and job satisfaction. Using the data from Russian Labour Force Survey and the National Survey of Graduate Employment, conducted in 2016, we analyze mismatch determinants and effects for graduates received their degree in 2010-2015. Preliminary results show that job-education horizontal mismatch, being widespread in Russia, has negative effects on graduate salaries and job satisfaction rates, indicating inefficiency of labour-market adjustment mechanism and observed difficulties with education-job transition among Russian graduates.*

## Introduction

The global trend towards increasing prevalence of higher education among young cohorts inevitably raises the question of its economic feasibility. Massive household and government expenditures on tertiary education imply subsequent utilization of accumulated human during employment period. From the 1960-s researchers have been actively investigating the impact of tertiary education on workforce labour market position. Applying different models, amongst which we can name Human Capital Theory (Becker, 1964; Mincer, 1974), Signaling Theory (Spence, 1973; Arrow, 1973), Job Competition Model (Thurow, 1975), Job Mismatch Theory (Jovanovich, 1979), and Assignment Model (Sattinger, 1993), scholars seek to explain heterogeneity between workers. Particular interest is payed to the role of higher degree diploma and its labour market outcomes.

Empirical evidence indicates that at least some part of school-leavers has jobs which are not properly related to their academic credentials. Most of the research investigating the job-education match, has focused on the level of education (Battu, Belfield, Sloane, 1999; Dolton, Vignoles, 2000; Hartog, 2000; Chevalier, 2003; Elias, Purcell, 2004; Walker, Zhu, 2005; McGuiness, 2006; Jones, Sloane, 2009; Green, Zhu, 2010; McGuiness, Sloane, 2011; Allen, Badillo-Amador, Velden, 2013; McGuinness, Bergin, Whelan, 2018) exploring the phenomena of over- and under-education. Nevertheless, vertical mismatch is not the only way to investigate the relevance of education to the job. Workers may be mismatched if the quantity of schooling is appropriate, but the degree field is not, and in the existing literature far less attention

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is paid to occupation-education field job mismatch (Wolbers, 2003; Grayson 2004; Garcia-Espejo and Ibanez 2005; Robst, 2007; Boudarbat, Chernoff, 2012).

Both vertical and horizontal mismatches are anticipated to have labour market outcomes. In terms of wage effects, overeducated workers are found to earns less than properly matched workers with the same amount of schooling, though this effects in absolute values outweighs the wage penalty associated with the undereducation (McGuinnes, 2006). Speaking about horizontally mismatched workers, their earnings penalty varies through degree field, yielding the highest values (up to 33%) for the degree fields characterized by least mismatch incidence, and vice versa (Robst, 2007). Nonetheless the wage outcomes are not the only dimension where mismatch effects can be manifested. Researches investigate labour-market position of mismatched school-leavers as well in terms of their occupational status, job satisfaction, job search activity and participation in on-the-job training (Allen, van Velden, 2001; Wolbers 2003; Jones, Sloane, 2009; Green, Zhu, 2010; McGuinnes, Sloane, 2011). Job satisfaction represents a quite important issue affecting worker's productivity. The mechanisms of influence are primarily through increasing occurrence of industrial sabotage, higher rates of absenteeism, turnover, and drug usage associated with higher level of job dissatisfaction (Berg, 1970; Quinn and Shepard, 1974; Mangione and Quinn, 1975; Quinn and Mandilovitch, 1975). In terms of explaining job satisfaction by job mismatches, previous studies mostly focused on overeducation aspect revealing strong connection (Tsang, Levin, 1985; Allen and Van der Velden, 2001; Pollman-Schult and Buchel, 2004; Maynard et al., 2006; Vaisey, 2006; and Green and McIntosh, 2007). However, few research papers investigated the relationship between horizontal mismatch and job satisfaction (Fricko, Beehr, 1992; Wolniak, Pascarella, 2005).

The Russian educational system is characterized by rather narrow degree fields representing the legacy of the soviet period. In the last decade it has been undergoing huge transformation, approaching the international educational standards, which involve widely defined educational fields and a wide range of skills acquired within such fields. However, it can be still described as one with the significant imbalance between the supply and the demand of graduates in breakdown by degree field, what, along with the massive government expenses on higher education, makes the question of effectiveness of the Russian educational system one of particular interest. The main research in the field of job mismatches investigates the extent of vertical mismatch (Gimpelson et al., 2009; Gimpelson et al., 2010); though the latter provides the estimates of horizontal mismatch, they refer only to workers whose level of acquired education equals required by the job one. Moreover, these estimates were made for the entire workforce. While the effects of job-education mismatch are most explicit amongst recent graduates, we suppose that the recent graduates' career choices can properly put the modern Russian labour market in the international context in terms of occupation-education field mismatch. Moreover, no attempts were made to establish the relationship between horizontal mismatch and job satisfaction for Russian graduates.

**Aim of the Project**

The project investigates the impact of mismatch between educational and occupational fields for Russian graduates at the early stage of their careers. In particular, this research project seeks to answer three questions: what are the determinants of job-education mismatch? What are the effects of job mismatches on the salaries of graduates? What are the effects of job mismatches on job satisfaction?

**Hypotheses and Methodology**

On the basis of the reviewed literature we can propose four hypotheses:

H1: the probability of match is higher for degree fields implying accumulation of more specific human capital;

H2: being mismatched implies wage penalty;

H3: the higher the probability of match, the less the wage penalty;

H4: being mismatched results in less job satisfaction.

In order to perform our research, we analyze data from the Russian Labour Force Survey and the National Survey of Graduate Employment, both conducted in 2016; the consolidated dataset contains vast information on socio-demographic, educational and employment characteristics of respondents. In the survey respondents were asked about the relation of their current work and their first work after graduation to their degree field: they were asked whether these jobs were related to the major with four possible answers: yes, rather yes, rather no, no. The former two and the latter two answers are combined with the purpose to receive dummy variable indicating being matched. In order to measure job satisfaction rates individuals were asked to answer whether they are satisfied with their current job with four possible answers: yes, rather yes, rather no, no.

To test our hypotheses, we apply regression analysis. Firstly, we examine the influence of various factors on the probability of being matched using logit regression (equation 1). Secondly, we estimate the effects of mismatch on graduate salaries using OLS regression for modified Mincerian equation, controlling for mismatch dummy and vectors of socio-demographic, educational and employment characteristics (equation 2). Finally, we analyze job-education match influence on job satisfaction, applying ordered logit regression holding job satisfaction as a dependent variable and controlling for mismatch dummy and vectors of socio-demographic, educational and employment characteristics (equation 3).

$$\Pr_{match} = \ \beta_0 + \beta_1 \cdot Dem + \beta_2 \cdot Educ + \ \beta_3 \cdot Emp + \varepsilon \qquad (1)$$

$$\ln(wage) = \ \beta_0 + \beta_1 \cdot Dem + \beta_2 \cdot Educ + \ \beta_3 \cdot Emp + \beta_4 \cdot Match + \varepsilon \qquad (2)$$

$$Satisfaction = \ \beta_0 + \beta_1 \cdot Dem + \beta_2 \cdot Educ + \ \beta_3 \cdot Emp + \beta_4 \cdot Match + \varepsilon \qquad (3)$$

Where:

$\Pr_{match}$ — probability of having job-education field match

Satisfaction — categorical variable indicating the degree of job satisfaction

$Dem$ — vector of socio-demographic characteristics

$Educ$ — vector of educational characteristics

$Emp$ — vector of employment characteristics

$Match$ — dummy variable indicating being matched

## Expected Results

This paper provides information on job-education field mismatch determinants and labour-market outcomes of such a mismatch for Russian graduates in their early careers in terms of wage and job satisfaction. Our results are in line with foreign studies, indicating higher match incidence among specific majors like health and computer sciences and lower incidence for majors providing general knowledge and skills — social sciences, agriculture and services. Coincidence of educational and job fields positively affects wages and increases probability of being satisfied with the job by 15-17%. The results of our research put Russian labour market in the international context in terms of horizontal mismatch and are helpful for refinement government policy in the field of higher education.

## References

Allen, J., & Van der Velden, R. (2001). Educational mismatches versus skill mismatches: effects on wages, job satisfaction, and on-the-job search. Oxford economic papers, 53(3), 434-452.

Allen, J. P., Badillo-Amador, L., & van der Velden, R. K. W. (2013). Wage effects of job-worker mismatches: Heterogeneous skills or institutional effects?.

Arrow, K. J. (1973). Higher education as a filter. Journal of public economics, 2(3), 193-216.

Battu, H., Belfield, C. R., & Sloane, P. J. (1999). Overeducation among graduates: a cohort view. Education economics, 7(1), 21-38.

Becker, G. (1964). Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education. New York: Columbia University Press.

Berg, I. (1970). Education for Jobs; The Great Training Robbery.

Boudarbat, B. Chernoff. V.(2009). The Determinants of Education-Job Match among Canadian University Graduates (No. 4513). Discussion Paper Series. IZA DP.

Boudarbat, B., & Chernoff, V. (2012). Education–job match among recent Canadian university graduates. Applied Economics Letters, 19(18), 1923-1926.

Chevalier, A. (2003). Measuring over-education. Economica, 70(279), 509-531.

Dolton, P., & Vignoles, A. (2000). The incidence and effects of overeducation in the UK graduate labour market. Economics of education review, 19(2), 179-198.

Elias, P., & Purcell, K. (2004). Is mass higher education working? Evidence from the labour market experiences of recent graduates. National Institute Economic Review, 190(1), 60-74.

Fricko, M. A. M., & BEEHR, T. (1992). A longitudinal investigation of interest congruence and gender concentration as predictors of job satisfaction. Personnel psychology, 45(1), 99-117.

Garcia-Espejo, I., & Ibanez, M. (2005). Educational-skill matches and labour achievements among graduates in Spain. European Sociological Review, 22(2), 141-156.

Grayson, J. P. (2004). Social dynamics, university experiences, and graduates' job outcomes. British Journal of Sociology of Education, 25(5), 609-627.

Green, F., & McIntosh, S. (2007). Is there a genuine under-utilization of skills amongst the over-qualified?. Applied economics, 39(4), 427-439.

Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. Oxford economic papers, 62(4), 740-763.

Hartog, J. (2000). Over-education and earnings: where are we, where should we go?. Economics of education review, 19(2), 131-147.

Jones, M. K., & Sloane, P. J. (2010). Disability and skill mismatch. Economic Record, 86, 101-114.

Jovanovic, B. (1979). Job Matching and the Theory of Turnover. Journal of Political Economy, 87(5), 972-990.

Mangione, T. W., & Quinn, R. P. (1975). Job satisfaction, counterproductive behavior, and drug use at work. Journal of applied psychology, 60(1), 114.

Maynard, D. C., Joseph, T. A., & Maynard, A. M. (2006). Underemployment, job attitudes, and turnover intentions. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 27(4), 509-536.

McGuinness, S. (2006). Overeducation in the labour market. Journal of economic surveys, 20(3), 387-418.

McGuinness, S., & Sloane, P. J. (2011). Labour market mismatch among UK graduates: An analysis using REFLEX data. Economics of Education Review, 30(1), 130-145.

McGuinness, S., Bergin, A., & Whelan, A. (2018). Overeducation in Europe: trends, convergence, and drivers. Oxford Economic Papers, 70(4), 994-1015.

Mincer, J. (1974). Schooling, Experience and Earnings. New York: Columbia University Press.

Pollmann-Schult, M., & Büchel, F. (2004). Career prospects of overeducated workers in West Germany. European Sociological Review, 20(4), 321-331.

Quinn, R. P., & Shepard, L. J. (1974). The 1972-73 quality of employment survey: descriptive statistics, with comparison data from the 1969-70 survey of working conditions: report to the Employment Standards Administration, US Department of Labor. Survey Research Center, Institute for Social Research, University of Michigan.

Quinn, R. P., & Mandilovitch, M. S. (1975). Education and job satisfaction: A questionable payoff (National Institute of Education Papers in Education and Work, Vol. 5). Washington, DC: National Institute of Education.

Robst, J. (2007). Education and job match: The relatedness of college major and work. Economics of Education Review, 26(4), 397-407.

Sattinger, M. (1993). Assignment models of the distribution of earnings. Journal of Economic Literature 31: 831–880.

Spence, M. (1973). Job market signalling. Quarterly Journal of Economics 87(3): 355–374.

Storen, L. A., & Arnesen, C. A. (2006, September). What promotes a successful utilization of competence in the labour market five years after graduation? Does vocational higher education result in a better match than academic generalist education. In European Research Network on Transition in Youth Workshop, Marseilles, France.

Thurow, L. C. (1975). Generating Inequality. New York: Basic Books.

Tsang, M. C., & Levin, H. M. (1985). The economics of overeducation. Economics of education review, 4(2), 93-104.

Vaisey, S. (2006). Education and its discontents: Overqualification in America, 1972–2002. Social Forces, 85(2), 835-864.

Walker, I., & Zhu, Y. (2008). The college wage premium and the expansion of higher education in the UK. Scandinavian Journal of Economics, 110(4), 695-709.

Wolbers, M. H. (2003). Job mismatches and their labour-market effects among school-leavers in Europe. European Sociological Review, 19(3), 249-266.

Wolniak, G. C., & Pascarella, E. T. (2005). The effects of college major and job field congruence on job satisfaction. Journal of Vocational Behavior, 67(2), 233-251.

Гимпельсон, В. Е., Капелюшников, Р. И., Карабчук, Т. С., Рыжикова, З. А., & Биляк, Т. А. (2009). Выбор профессии: чему учились и где пригодились? Экономический журнал Высшей школы экономики, 13(2).

Гимпельсон, В. Е., Капелюшников, Р. И., & Лукьянова, А. Л. (2010). Уровень образования российских работников: оптимальный, избыточный, недостаточный. Препринт WP3/2010/09.

Денисова, И. А., & Карцева, М. А. (2007). Преимущества инженерного образования: оценка отдачи на образовательные специальности в России. Прикладная эконометрика, (1).

# *Paquin, Johanna[1]:* Private Sector Development and Informal Institutional Change in Post-Communist South Caucasus – Comparative Institutional Analysis in Georgia and Armenia

***Abstract:*** *Institutions are one of the key factors that influence economic growth and development. The implication all too often drawn from this realization is that developing countries only need to adopt the right institutional framework in order to embark on the road to economic development. This, however, has failed time and again, showing that merely transplanting institutions that work well in other contexts is ineffective. One argument that has received increased attention in recent years is that formal institutions, their effectiveness and transformation are critically dependent on the informal institutions in a given context. The dynamics between formal and informal institutions can both strengthen and weaken each other's outcomes, implying that institutional reforms can only be successful if this embeddedness of formal institutions in informal rules, norms, and practices is adequately taken into account. The research project outlined here aims at providing a deeper understanding of the underlying dynamics between formal and informal institutions in the context of private sector development in Georgia and Armenia. The research project seeks to find out how certain constellations of formal and informal institutions affect the ability of the institutional framework to support small businesses and generate economic growth through private sector development.*

## Introduction and Aim of the Project

There is a general consensus that institutions are one of the key factors that influence economic development, and many even argue that they are the main reason for differences in economic development across countries (North et al. 2013; Acemoglu and Robinson 2012; Olson 2000). The implication all too often drawn from this realization is that developing countries only need to adopt the right institutional framework in order to embark on the road to economic development (World Bank 2000). However, time and again undertakings that have followed this logic have failed, pointing to the fact that merely transplanting institutions that work well in the so-called "Western" or "industrialized" countries is ineffective.

One possible explanation that has received increased attention in recent years and that is the central part of this research project is that formal institutions, their effectiveness and transformation are critically dependent on the informal institutions in a given context. Informal institutions (e.g. codes of conduct, norms of behavior, conventions) can shape human behavior as much as, if not more than, formal institutions (Williamson 2009). Furthermore, the dynamics between formal and informal institutions have been shown to be able to strengthen and weaken each other's outcomes (North 1997; Helmke and Levitsky 2004). This, in turn, implies that institutional reforms can only be successful if this embeddedness of formal institutions

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in informal rules, norms, and practices is adequately taken into account. Various arguments have been made about the mutual effects of formal and informal institutions, but these theories are still heavily debated, and the relationships often assumed rather than systematically tested (Aliyev 2014).

The research project outlined here aims at providing a deeper understanding of the underlying dynamics between formal and informal institutions in the context of private sector development in Georgia and Armenia. The research project seeks to find out how certain constellations of formal and informal institutions affect the ability of the institutional framework to support small businesses and generate economic growth through private sector development.


**Research Question and Expected Results**

The overall research question that this project tries to answer is defined as:

*How do the dynamics between informal and formal institutions affect private sector development in Georgia and Armenia?*

For the purpose of the research, the development of the private sector figures as the dependent variable, and the project seeks to find out, whether the dynamics between formal and informal institutions could be the independent variable. That is, private sector development is rather the outcome, whereas the actual dependent variable would be something like the configuration of the overall institutional framework. The underlying assumption is that there are certain institutions that are beneficial for entrepreneurship and small business development, and thus would automatically facilitate the development of the private sector. The dynamics between the formal and informal segments can then affect the quality of the overall institutional framework and thus its ability to produce favorable conditions for private sector development.

The working hypothesis will therefore be defined accordingly:

*Inconsistencies between formal and informal institutions in Armenia hinder the development of the private sector, whereas in Georgia, they complement and reinforce each other to support private sector development.*

The gap that this study seeks fill is a deeper understanding of what these inconsistencies can look like and how they can play out in practice. In order to provide answers, the project will try to uncover some of the dynamics between formal and informal institutions within three dimensions of the institutional environment that are generally considered crucially important for small businesses and entrepreneurs: (1) property rights, (2) loans and credit, and (3) the tax system.

Property rights are one of the most central institutions for small businesses and entrepreneurs. There is a wide consensus that secure property rights are positively correlated with growth and economic development (Williamson and Kerekes 2011; De Soto 2001). Protection of property rights includes freedom from bribery, extortion, racketeering and corruption – conditions still faced in many FSU countries (Smallbone and Welter 2009). Previous research suggests that formal property rights institutions in many FSU countries are only weakly established and enforced (Tonoyan et al. 2010;

Smallbone and Welter 2009). The second dimension is the access to credit. This is often considered a major constraint for businesses in developing countries. Smallbone and Welter (2009) argue, that in many FSU countries, banks are not willing to finance small businesses. In these cases, informal institutions can compensate for the deficiencies in formal market institutions. The third dimension is the tax system. Both tax rates and the administrative cost of tax compliance are often identified as the major constraints for businesses in developing countries around the world (Bruhn 2011). In transition countries in particular, "frequent changes in the tax system, combined with high tax levels, unpredictable behavior of state officials in applying tax regulations, and inadequate access to external capital" lead entrepreneurs to employ evasion strategies, reducing profits and tax payments to protect the capital base of their businesses (Smallbone and Welter 2009, p. 19).

## Cases

During the transition period, in former Soviet Union (FSU) countries various formal institutions have been exogenously imposed within a short time frame by political decision. However, it is often argued that informal institutions have not changed at the same pace to match the new formal institutional framework and economic agents often continue to think in terms of a previous economic logic (Tridico 2013; Grzymala-Busse 2010).

Georgia and Armenia have many things in common with regard to their history, geography, and culture. In the aftermath of the collapse of the Soviet Union, both countries began far-reaching political and economic reforms, restructuring institutions and transforming social norms. More recently, both countries have adopted radical strategies to transforming their institutional and regulatory environment – a strategy that has been labelled the 'guillotine approach' due to the radical nature of centralized change (Chaminade and Moskovko 2015).

Despite the many similarities between the two countries, as well as similar goals pursued and strategies adopted, Georgia has had significantly more success in transforming its formal institutional environment to support private sector development. Many indices and studies placate the country as a model case of successful transformation that over the past decade has achieved impressive growth, attracted foreign direct investments, and improved the business environment. Armenia, on the other hand seems to have trouble with reforming its institutional framework. The objective of strengthening the rule of law that is determined in the constitution, but contrasts reality in which the executive dominates the country, creating room for corruption and elite pacts (Bertelsmann Stiftung 2018). Powerful elites and oligarchic networks remain in control of the commodity-based industry through cartels and monopolies, restricting free trade and market-based competition (ibid.: 19).

## Methodology

The research project will consist of a comparative case study design using qualitative research methods. In order to draw comparisons, contexts with similar characteristics were chosen in line with Lijphart's most similar system design (Lijphart 1975). The case study research design includes both explanatory and exploratory elements in the sense that it seeks to explain the transformation processes of formal and informal institutions in a given context with already existing theories, and at the same time seeks to explore other possible mechanisms underlying these changes.

The methods of data collection will consist of stakeholder interviews and focus group discussions. For the stakeholder interviews, three main groups of stakeholders are identified. First, small businesses (business owners, managers, or entrepreneurs) are the main actors of concern. The interviews aim at understanding their use of informal institutions in their day-to-day business operations. Second, in order to provide insights into the mechanisms through which informal institutions affect formal institutions and institutional change, stakeholders on the policy-level will be interviewed. Relevant stakeholders could be politicians, consultants, or other persons with insights into the formal institutional framework involved in policy-making processes. And third, to close possible gaps in issues addressed, and bridge them with objective insights, independent experts will be interviewed as a third group. These could be researchers, development practitioners, or historians.

Semi-structured interviews will be conducted with the participants, roughly structured by the questions lined out in chapter 3, but allowing for a freely flowing conversation, the exploration of responses, and follow-up of spontaneously emerging issues (Hammett et al. 2015). Where possible, focus groups will be used to complement the one-on-one interviews, to gain group-level, socially grounded insights into business practices.

## References

Acemoglu, Daron; Robinson, James A. (2012): Why Nations Fail. The Origins of Power, Prosperity and Poverty. New York: Crown Publishers.

Bertelsmann Stiftung (2018): BTI 2018 Country Report — Armenia. Edited by Bertelsmann Stiftung. Gütersloh. Available online at https://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2018/pdf/BTI_2018_Armenia.pdf, checked on 1/17/2019.

Bruhn, Miriam (2011): Reforming Business Taxes : What is the Effect on Private Sector Development? Edited by World Bank. Washington DC (Viewpoint: Public Policy for the Private Sector, Note No. 330). Available online at https://openknowledge.worldbank.org/handle/10986/11053, checked on 3/12/2019.

Chaminade, Cristina; Moskovko, Maria (2015): Radical Institutional Change: Enabling the Transformation of Georgia's Innovation System. In Cornell University, INSEAD,

WIPO (Eds.): The Global Innovation Index 2015. Effective Innovation Policies for Development. Geneva: World Intellectual Property Organization, pp. 113–119.

De Soto, Hernando (2001): The Mystery of Capital. Why Capitalism Triumphs in the West and Fails Everywhere Else. London: Black swan.

Hammett, Daniel; Twyman, Chasca; Graham, Mark (2015): Research and Fieldwork in Development. Oxon, New York: Routledge.

Helmke, Gretchen; Levitsky, Steven (2004): Informal Institutions and Comparative Politics: A Research Agenda. In Perspectives on Politics 2 (4), pp. 725–740.

Lijphart, Arend (1975): The Comparable-Cases Strategy in Comparative Research. In Comparative Political Studies 8 (2), pp. 158–177. DOI: 10.1177/001041407500800203.

North, Douglass C. (1997): Institutional Changes. A framework of Analysis. In Voprosy Economiki 3, pp. 1–23. Available online at https://econwpa.ub.uni-muenchen.de/econ-wp/eh/papers/9412/9412001.pdf, checked on 3/11/2019.

North, Douglass C.; Wallis, John Joseph; Weingast, Barry R. (2013): Violence and Social Orders. A Conceptual Framework for Interpreting Recorded Human History. Cambridge: Cambridge University Press.

Olson, Mancur (2000): Big Bills Left on the Sidewalk: Why Some Nations Are Rich, and Others Poor. In Mancur Olson, Satu Kähköhnen (Eds.): A Not-so-dismal Science: Oxford University Press, pp. 37–60.

Smallbone, David; Welter, Friederike (Eds.) (2009): Entrepreneurship and Small Business Development in the Former Post-Socialist Economies. London: Routledge (Routledge studies in small business, 14).

Tonoyan, Vartuhí; Strohmeyer, Robert; Habib, Mohsin; Perlitz, Manfred (2010): Corruption and Entrepreneurship: How Formal and Informal Institutions Shape Small Firm Behavior in Transition and Mature Market Economies. In Entrepreneurship Theory and Practice 34 (5), pp. 803–831. DOI: 10.1111/j.1540-6520.2010.00394.x.

Williamson, Claudia R. (2009): Informal Institutions Rule: Institutional Arrangements and Economic Performance. In Public Choice 139 (3-4), pp. 371–387. DOI: 10.1007/s11127-009-9399-x.

Williamson, Claudia R.; Kerekes, Carrie B. (2011): Securing Private Property: Formal versus Informal Institutions. In The Journal of Law and Economics 54 (3), pp. 537–572. DOI: 10.1086/658493.

World Bank (2000): Reforming Public Institutions and Strengthening Governance. A World Bank Strategy. Edited by The World Bank. Washington D.C.

# *Vasilenok, Natalia[1] (with Timur Naatkhov[2]):* Technology Adoption in Agrarian Societies: The Volga Germans in Imperial Russia

***Abstract:*** *This paper examines the adoption of advanced agricultural technology in pre-industrial societies. We use the case of the spatially concentrated German minority in Saratov province of the late Imperial Russia as an empirical setting to test the "costly adoption" hypothesis, which predicts that the adoption of different types of technologies depends on the associated communication costs. We document significant concentric spatial pattern of technology adoption among Russian peasants regarding advanced agricultural equipment (heavy ploughs and fanning mills) and easily observable techniques (wheat production) in the areas located closer to the German settlements. Moreover, we show a significant rise in agricultural productivity measured by wheat yield per capita associated with heavy plough adoption. However, we do not find any evidence of the adoption of "know-how" requiring the transmission of non-codified knowledge – specifically, artisanal skills. Our findings suggest that the failure to adopt non-observable techniques from the technological frontier may be the key to the problem of catching-up economic growth.*

## Introduction

The adoption of innovative equipment, efficient techniques, and superior "know-how" from the technological frontier is a key ingredient to catch-up growth. In the discussion of the 20th century industrialization, Gerschenkron (1962) famously argued that backward economies could achieve rapid growth and possibly outperform advanced countries by adopting frontier technologies. However, more than a century after the Second Industrial revolution, there is no evidence of unconditional convergence for the world as a whole (Jones, 2016).

The explanation for the lack of convergence between developed and developing economies may lie in variation in the adoption costs associated with different types of technology. As put by Rogers (1962), technology consists of a "hardware" and a "software" components. The hardware of technology is a physical object or a tool. The software of technology represents disembodied knowledge which is necessary to produce, use, and maintain the "hardware" part of technology. Different technologies combine a hardware and a software in various proportions, which may substantially affect the easiness of its dissemination.

Whereas tools can be easily traded, the transfer of disembodied knowledge is usually associated with communication costs. These costs are particularly high if knowledge is non-codified or "tacit", and specific apprenticeship institutions might be required to facilitate its transmission (de la Croix et al., 2018). The prohibitively high costs of non-codified knowledge adoption may be a key to the inability of developing economies to take full advantage of the frontier "know-how". This leads us to the formulation of the

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"costly adoption" hypothesis, which predicts that success in adoption depends on the relative weights of the "hardware" and the "software" components of a technology. This hypothesis is especially relevant for pre-industrial era when the channels of technology transfer were limited to personal contacts and confined by geographic accessibility.

## Aim of the Project

In this paper, we examine adoption of agricultural technologies in pre-industrial societies. We use the case of the spatially concentrated German minority in Saratov province of the late Imperial Russia as an empirical setting to test the "costly adoption" hypothesis. This allows us to eliminate potential spillovers that might occur in the process of technology adoption trough modern means of communication. We show that the "hardware" of technology introduced by advanced minority was indeed successfully adopted by relatively backward majority and fostered a rise in the agricultural productivity. We also show that the "software" of technology was not subject to adoption.

We focus our analysis on a single province of the Russian Empire in the late 19th – early 20th 2 centuries. Saratov province was located in the south-east of European Russia on the right bank of the Volga river. Until the late 18th century, the province was a sparsely populated frontier acquired as a result of the southward expansion of the Russian Empire. By the beginning of the 20th century it transformed into a densely populated region, part of the large black-earth area, which produced a bulk of agricultural output of the Empire.

Between 1764-1767, Saratov province experienced a large inflow of German migrants attracted by a state-sponsored settlement policy. The German colonists to the Volga region helped to modernize the backward agricultural sector by introducing numerous innovations regarding wheat production and flour milling, tobacco culture, and small-scale manufacturing (Koch, 2010). However, the colonies existed as German enclaves having separate legal status, their own administration, churches, and schools. Germans tended to minimize contacts with Russian peasants, and did not marry to Russians. This paper shows that the adoption of advanced technology might occur even if the bearers of advanced technology remain predominantly unassimilated and maintain little everyday contact with the surrounding population.

## Hypotheses and Methodology

In our analysis, we distinguish between three types of technology: equipment, observable techniques, and non-observable techniques. The adoption of equipment – manufacturing output – is realized through trade, and of observable techniques through imitation. Thus, the costs of the adoption of both equipment and observable techniques rise in geographic distance. We expect these technologies to spread concentrically around the initial location. In contrast, the adoption of non-observable techniques is a function of communication costs, which beside geographical proximity

include such factors as cultural distance or language differences. If these factors differ sharply between groups, geographic proximity will be of less importance to the adoption of technology.

To test the "costly adoption" hypothesis, we constructed a unique dataset on agricultural equipment, population composition, and economic prosperity in Saratov province at the highly disaggregated township (volost) level using various published and archival sources. To our knowledge, the sources we rely on have not been employed for econometric analysis before. Since our goal is to document variation in the adoption of advanced technology among the Russian majority, we exclude German townships from our sample. Calculating distances to the centroid of the German colonies for each Russian township in the sample, we can estimate the spatial pattern of technology adoption controlling for the widest range of geographic, development, and population covariates.

Our analysis takes advantage of three particularly appealing features of the empirical setting. First, Saratov province was a relatively small and geographically homogeneous region. This allows as to rule out almost all environmental factors that might account for the variation in the outcome variables. Second, in Saratov province, several ethnic and religious groups cohabited in close proximity to each other for a considerable amount of time (about a century and a half) and displayed a similar occupational structure being employed in the traditional agricultural sector. This enables us to hold constant many social and institutional factors that might also contribute to the variation in the outcome variables. Third, the spatial distribution of the German population in the Volga region was highly persistent. There was no population movement of the German colonists within Saratov province: in 1913, Germans resided in the same townships as in 1769 (Kabuzan, 2003). This lets us to consider the German migration as a "treatment" in a unique natural experiment.

## Expected Results

We document the adoption of advanced agricultural equipment (heavy ploughs and fanning mills) and observable techniques (wheat production) in the areas located closer to the German settlements. Moving 50 km closer to German settlements increases the number of heavy ploughs per 100 households by 20, the number of fanning mills per 100 households by 12, and the percentage of wheat crops by 14 percentage points. Moreover, we show a significant rise in agricultural productivity measured as wheat yield per capita associated with the higher rate of heavy plough adoption. However, exactly as the "costly adoption" hypothesis predicts, we do not find any evidence of the adoption of non-observable technology – specifically, artisanal skills – among the local population.

# References

Gerschenkron, Alexander, "Economic backwardness in historical perspective: a book of essays," Technical Report, Belknap Press of Harvard University Press Cambridge, MA 1962.

Jones, Charles I, "The facts of economic growth," in "Handbook of macroeconomics," Vol. 2, Elsevier, 2016, pp. 3–69.

de la Croix, David, Matthias Doepke, and Joel Mokyr, "Clans, Guilds, and Markets: Apprenticeship Institutions and Growth in the Preindustrial Economy," The Quarterly Journal of Economics, 2018, 133 (1), 1–70.

Kabuzan, V.M., Narody Rossii v XVIII veke: Chislennost i ehtnicheskij sostav [Peoples of Russia in the XVII century: population and ethnic composition], Nauka, 1990.

Koch, Fred C, The Volga Germans: in Russia and the Americas, from 1763 to the present, Penn State Press, 2010.

# Feoktistova, Kseniia [1] (with Zhuravskaya Tatiana [2]): Institute of Private Land Ownership: Effects of Privatization (on the Example of the Implementation of the State Program "Far Eastern Hectare")

*Abstract: The title of the study "The Institute of Land Property: The Effects of Privatization on the example of the implementation of the "FE-Hectar" program, is a theoretical description of the process of forming the institution of land ownership, which is currently under the influence of the DV-Hectar state program. The problem is that despite the large number of works on land privatization, the DV-Hectar program is virtually unprecedented for the Far East, respectively, and there is no understanding of what results it will lead to. The main research question is how does the method of obtaining land ownership affect the efficiency of its use? As a result, it is planned to falsify the hypothesis that publicly available privatization (the only criterion for participation in the DV-Hectar program is the citizenship of the Russian Federation) is a factor reducing the effectiveness of its use. The land gets into use, and then presumably the property of people for whom it does not represent the greatest value, since the distribution does not take place through a market mechanism. In an empirical study, a survey of program participants is planned, as well as interviews with recipients of land plots, state structures, mediators in registration, neighbors next to which plots were drawn up. Analysis of the relations arising in the process of privatization will allow us to create a complete picture of the emerging institution of ownership, which consists of formal and informal rules and the daily routines of people. These methods, as well as the assessment of economic activity in the areas received, will allow studying the motives, incentives and economic behavior of the participants of the DV-Hectar program and answer the question posed.*

## Problem

The development of the Far East is a priority area of Russia, within which, from 2016, the Far Eastern Hectare program, unprecedented for the Russian Federation, was launched. This program is a right of every citizen of the Russian Federation to receive a land plot up to 1 hectare for free. The program involves broad privatization, which will inevitably have an impact on the formation of the land ownership institution in the region. Many scientific papers are devoted to the specifics of privatized land in the post-Soviet space. However, the practical implementation of the process of forming the institution of property in modern contexts, taking into account regional features, has not been practically studied. Thus, the problem that will be covered in this work is the existing gaps of knowledge, in particular its economic aspect.

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Around the emerging formal and informal property relations (which constitute the emerging institution) many questions arise. For example, the mechanism of transfer of property rights to program participants is still unknown for sure, since the stated five-year program term has not expired, at the end of which, subject to certain conditions, the land must be transferred to new owners. Under these conditions, the question arises of the (in)efficient use of the land granted for use. It turns out that for five years, the participants must invest their resources in the land that does not belong to them. In addition, the very fact of "free" contradicts the basic principles of the new institutional economic theory, which assigns an important role to the state in the specification of property rights. The whole point of the specification is to provide the necessary conditions for the acquisition of property rights by those who value them above, as well as those who are able to derive maximum benefit from them. In the case of "FE-Hectar", the land falls into the hands of those people who is the first managed to fill out an application, rather than those who would derive maximum benefit from it.

Thus, the problem of research: the lack of scientific understanding of how privatization affects the formation of the land ownership institute in the Far East. (Will this be a factor reducing the potential effectiveness of the use of Far Eastern land?)

### Research Question

How does the way of obtaining land ownership (purchase / privatization) affect the efficiency of its use?

### Tasks

1. Identification of the main motives and incentives for applicants to participate in the "FE-Hectar" program

2. Determining the degree of readiness of program participants to invest in a dedicated area (planned (or actual) construction time and investment amount). In particular, only those land plots that have been selected for the purpose "Individual Housing Construction" will be considered. (There are 4 more, including agriculture, subsistence farming, and so on).

3. Comparison of the data obtained in paragraphs 2 with similar indicators of land owners who are not participating in the program. (This is the most difficult question I cannot answer yet. How to measure land use efficiency for "Individual Housing Construction"?)

4. Assessment of differences in the efficiency of land use, depending on the way of obtaining property rights. The study of motives and incentives for the development of the land, which can explain the data obtained in the previous paragraph, using interview and case-study methods.

Object: Far Eastern Hectare Program

Subject: the motives and incentives of the participants of the "FE-Hectar"program, which characterize their economic behavior in the process of (un)developing the acquired land plots.

On the basis of personal communication with those who filled out an application for receiving a hectare, the experience shared on the Internet and forums, as well as an interview with participants in the "FE-Hectar" program, the following hypotheses arise:

Hypothesis 1. The incentive for a significant proportion of applicants to participate in the program is the unobstructed at first glance possibility of obtaining a free plot of land (That is, prior to the existence of the program, the applicants didn't have any need for a land, its real development).

Hypothesis 2. As a result of the system of redistribution of allocated municipal and federal land within the framework of the "FE-Hectar" program, the land plots given out fall into use (with a further potential transfer into ownership) to people for whom the usefulness of this land is not maximum. That is, the existing procedure for the allocation of land does not take into account the degree of utility to the participants, expressed in the willingness to pay for the plot.

Hypothesis 3. Motivation for the development of program participants is lower in comparison with people purchasing real estate on market terms. Accordingly, this creates conditions of the lower terms of development and the smaller the size of investments.

To confirm or refute these hypotheses, as well as to achieve the goal of the study, it is required:

1. Systematization of the foundations of the study of property rights and the effectiveness of its use in the framework of the new institutional economic theory.

2. To analyze the federal law on the Far Eastern Hectare and the regulatory framework dedicated to the institutions of property in Russia in order to find answers to questions arising in the process of program implementation.

3. To conduct a quantitative survey of applicants and recipients of land on the Far Eastern Hectare program to falsify the hypotheses put forward.

4. To study the motives, incentives and actions for the development of the land of participants in the "FE-Hectar" program through interviews, observation or case studies.

Namely:

1. Work with theoretical and empirical texts: the history of the formation of land ownership institutions in Russia, in particular the post-Soviet privatization; privatization experience in other countries.

2. On the basis of the available theoretical knowledge and analysis of 4 existing interviews with applicants and participants of the "FE-Hectar" program, the hypothesis of the study is proposed.

3. Compiling survey-based questions based on hypothesis and sampling.

4. Quantitative survey of applicants and recipients of land on the program Far Eastern Hectar (falsification of hypotheses).

5. Interviews with a part of the respondents for a detailed study of the motives and incentives for the exploration of land by the participants of the "FE-Hectar" program.

Selection of the survey:

For the survey, the snowball method was chosen, since there is a need to establish contact with a small specific population. Brilliant set – 73 thousand people (as of 01/02/2019). The survey is currently underway.

7. Analyze the data, draw conclusions with possible recommendations for improving the program. If necessary, bring the results to the Ministry of Development of the Far East and / or the Government. As a result of the study, it is expected to obtain a justification for the differences in the economic behavior of people mastering "Hectare" and people mastering land acquired in ownership other ways. It is planned that these will be both quantitative indicators (funds and time spent on the development of the site) and qualitative (interpretation of the interviews conducted, description of motives and incentives).

## References

*Acemoglu, D., Johnson S., Robinson, J.A.* Institutions as a Fundamental Cause of Long-Run Growth. In: P. Aghion and S.N. Durlauf, eds., Handbook of Economic Growth, 1A ed. Elsevier B.V, 2005. pp.385-472.

*Benson, B.* The enterprise of law: justice without the state // Pacific Research Institute for Public Policy San Francisco. 1990. 416 p.

*Besley, T., Ghatak, M.* Property rights and economic development. In: D. Rodrik and M. Rosenzweig, eds., Handbook of Development Economics, 1st ed. Elsevier.2009. pp.4525–4595.

*Carruthers, B. G., AriovichL.* The Sociology of Property Rights // Annu. Rev. Sociol. 2004. Vol. 57. Pp. 23-46

*Demsetz, H.* Toward a Theory of Property Rights// The American Economic Review, Vol. 57, No. 2, Papers and Proceedings of the Seventy-ninth Annual Meeting of the American Economic Association (May 1967). Pp. 347-359.

*Earl,e T.* Archeology, property, and prehistory// Annu. Rev. Anthropol. 2000. Vol. 29. Pp. 39-60.

*Engerman, S.L., Sokoloff K.L.* Factor Endowments, Inequality and Paths of Development Among New World Economies //National Bureau of Economic ResearchCambridge MA.NBER Working Paper 9259.2002. 55 p.

*Everest-Phillips, M.* The Myth of 'Secure Property Rights': Good Economics as Bad History and its Impact on International Development // Overseas Development Institute Working Paper.SPIRU Working Paper 23. London. 2008. 35 p. URLhttps://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/4251.pdf

Furubotn, E. and Richter, R., Institutions and Economic Theory: The Contribution of New Institutional Economics, Ann Arbor, University of Michigan Press. 1998

*Glaeser, E.L.* Do Institutions Cause Growth? // La Porta, R., Lopez-de-Silanes, F. Shleifer, A. Journal of Economic Growth, 9(3), 2004 pp.271–303.

URLhttps://scholar.harvard.edu/files/shleifer/files/do_institutions_cause_growth.pdf

*Greif, A.* Institutions and the path to the modern economy: lessons from medieval trade. Cambridge University Press, 2006. ISBN 978-0-521-48044-4.

*Schmid, A.* An Institutional Economics Perspective on Economic Growth // Michigan State University Paper, 2006. 25 p.

*North, D.C.* Institutions Matter. Economic History, 1994, no. 9411004.

*Ostrom, E.* An Agenda for the Study of Institutions // Public Choice. 1986. Vol. 48.Pp. 3-25.

# Kedar, Vishnu Shankarrao[1] (with Alwin D'souza [2]): What Role Institutions Play in Reducing the Transaction Costs in Vegetable Market? Evidence from India

***Abstract:*** *Can we empirically estimate the magnitude of transaction costs (TCs) incurred by farmers with participation in different modern agrifood retail chains (MFRC) and how the institutional intervention reduce the TCs? This study estimates the TCs incurred by farmers across different institutional arrangement of MFRC. The outcome variables (Information, bargaining and monitoring costs, TCs and Net Profits) were estimated using Propensity Score Matching (PCM) for reducing the selection bias.vWe found that, TCs are significantly higher for MFRC farmers as compared to Spot market. TCs accounted for 14.5% share in the total costs for chili and 13.8% for tomato in MFRC. Second looking at the breakup of TCs; monitoring cost accounted for 65.0% followed by negotiation costs, 28.7% and information costs, 6.3% respectively.*

## Introduction

The modern agrifood retail chains (MFRC) have recently attracted attention due to the growth in number store and sale of F&Vs in last two decades (Reardon et al. 2005). Existing literature has, in essence, captured the impact of participation of large farmers in MFRC. The studies have incorporated the impact of farmer's characteristics, land sizes, irrigation facilities, infrastructure access, credit access on farmers' income, productivity, employment and welfare (Schipmann & Qaim 2011; Mishra et al., 2018). However, the details of institutional arrangements between MFRC and farmers have not received significant attention in the existing studies (Kedar, 2018). The Institutional framework is responsible for creating an atmosphere for the emergence of MFRC in India.

The New Institutional Economics (NIE) framework provides a way in which market failures related to uncertainty; risk sharing and co-ordination failure in contracting is overcome. However, due to the lack of a proper legal system, enforcement mechanism, and awareness, institutions are not able to play a significant role in contract farming. Evidence from existing studies reveals that MFRC tends to behave opportunistically towards farmers (Allen, 2017; Escobal & Cavero, 2012). Farmers are exposed to risks through contracts mainly when the buyers are either monopsonist or oligoposolist (Sivramkrishna and Jyotishi, 2008).

Risks of an incomplete contract along with the lack of enforcement and asymmetric information creates an environment along for opportunistic behavior (Williamson,1979;

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Hobbs,1997). On the other hand, this imposes significant costs on the marginal and small farmers. These costs could be classified as information costs, bargaining costs and monitoring costs. Together these have been defined as TCs. According to Coase (1960), high TCs may result in inefficient allocation of resources. High TCs may make contracts expensive and infeasible for poor and marginal farmers. This may impact the adoption of contracts under MFRC and may explain the slow adoption rates particularly for emerging economies. The NIE provides tools through which barriers to fair contracting can be recognized.

Limited attempt made in the existing literature to measure the TCs incur by farmers due to lack of enforcement in the contract. The study attempt to see how the reduction in the opportunistic behavior and in the absence of asymmetric information leads to increase in farmers' income or reduction in the TCs. This study estimates the TCs incurred by farmers across different institutional arrangement of MFRC. We consider production contracts (PCs) and marketing contracts (MCs) as they are systematically different. PCs are characterized by fixed prices and provision of input supply whereas MCs are characterized by providing technical guidance on chemical and fertilizers and higher price compared to the traditional market. This study further measures the impact of TCs on profits and yield for different forms of MFRC (PCs and MCs) and on TMC.

**Objective**

This study empirically measures the TCs incurred by the farmers across different of MFRC arrangement. This study would help in implementing policies aimed at reducing TCs. This may provide directions to design a more favorable contract in order to increase adoption rates. This study contributes to the existing literature in the following way, first, this is first study to empirically measure the TCs for perishable crop. Second, the study analyzes the role of different institutional arrangement for reducing TCs incurred by the farmers.

**Empirical Framework, Method**

We used a utility maximization framework of growers who involved Chili farming. Expected utility depends upon the profits from the choice of the two different types of MFRC and TMC. Hotelling's Lemmma is used for deriving TCs. TCs are classified as information costs (ICs), bargaining costs (BCs) and monitoring costs (MCs) incurred by farmers with MFRC with PC, MC, and TMC participation. TCs are influenced by many factors such as participation in MFRC , price uncertainty, price discovery costs, product quality uncertainty, rejection rate, frequency of sale, lack of information on the reliability of the MFRC, as well as farm, and household characteristics. The outcome variables (ICs, BCs, MCs, TCs and Net Profits) were estimated using PCM.

PCM compares outcomes between only those MFRC ("Treated") and traditional ("Control") farmer that are similar in term of other observable characteristic (i.e., education, age), therefore, reducing the selection bias that would have been occur otherwise when the two groups are systematically different (Rao et al. 2010). The study applies NNM matching estimator which is an important and most commonly used method. The NNM method picks each treated unit (MFRC farmers) and searches for the control unit (TMC farmers) which has the closest propensity matching score. The main interesting feature of NNM is that all the treated units find a match (Mishra et al., 2018).

## Data Collection

The primary survey was conducted in 2017 from the Kolar Districts of Karnataka. Kolar district is known for having highest number MFRC and major Chili producing area. We interviewed 300 chili households with 100 each under MFRC with PC, MFRC with MC and TMC, respectively. Stratified sampling method applied for selected the farmers. The questionnaires were designed to obtain information on a wide range of potential TCs variables which incur due to opportunistic behavior, asymmetric information and asset specificity and price and grading standards uncertainty.

## Preliminary Results:

We found that, TCs are significantly higher for MFRC farmers as compared to TMC. TCs accounted for 14.5% share in the total costs for chili in the MFRC whereas in the TMC, the TCs were less than 5% in both the commodities. Most of the existing studies have neglected to capture the TCs and overestimated the benefits from MFRC. Second, looking at the breakup of TCs; monitoring cost accounted for 65% followed by negotiation costs, 28.7% and information costs, 6.3%, respectively. Third, in relatively perfect markets, in the absence of asymmetric information, the TCs reduce substantially by around 50% for PCs relative to TMC and 22% for MC. Fourth, the study found that when the MFRC fixed the crop price in advance, the TCs reduced by 35%. Further, the study revealed that with institutional intervention, and proper enforcement, the TCs would decrease by 32%. It intends to guide policymakers to remove the barriers which lead to high information cost, monitoring and bargaining costs. Removal of barriers is expected to reduce TCs and enhance marginal and small famer's incomes.

# References

Allen, D.W., 2015. The Coase Theorem: Coherent, Logical, and Not Disproved. *Journal of Institutional Economics*, 11(02), pp.379–390.

Coase, R., 1960. The problem of Social Cost. *Journal of Law and Economics*, 3, pp.1–44.

Escobal, J.A. & Cavero, D., 2012. Transaction Costs, Institutional Arrangements and Inequality Outcomes: Potato Marketing by Small Producers in Rural Peru. *World Development*, 40(2), pp.329–341.

Hobbs, J.E., 1997. Transaction Costs. *American Journal of Agricultural Economics*, 79(4), pp.1083–1095.

Kedar, V. (2018). Magnitude of Transaction Costs in Vegetable Markets? Empirical Findings from India. Retrieved from https://www.coase.org/2018bratislavaabstracts.htm#kedar

Mishra, A., Kumar, A., Joshi, P., & D'souza, A., 2018. Cooperatives, Contract Farming, and Farm Size: The Case of Tomato Producers in Nepal. *Agribusiness*, (June).

North, D., 1990. Institutions, Institutional Change, and Economic Performance, *Cambridge University Press*, Cambridge. Otsuka.

Rao, E.J.O., Brummer, B. & Qaim, M., 2010. Farmer Participation in Supermarket Channels , Production Technology and Technical Efficiency : The Case of Vegetables in Kenya 1. In *Agricultural & Applied Economics Association's 2010 AAEA, CAES & WAEA Joint Annual Meeting,*. Colorado.

Reardon, T., Berdegué, J. & Timmer, C.P., 2005. Supermarketization of The Emerging Markets of the Pacific Rim: Development and Trade Implications. *Journal of Food Distribution Research*, 36(1), pp.3–12.

Schipmann, C. & Qaim, M., 2011. Supply Chain Differentiation , Contract Agriculture , and Farmers ' Marketing Preferences : The Case of Sweet Pepper in Thailand. *Food Policy*, 36, pp.667–677.

Sivramkrishna, S. & Jyotishi, A., 2008. Monopsonistic Exploitation in Contract Farming: Articulating a Strategy for Grower Cooperation. *Journal of International Development*, 20(3), pp.280–296.

Williamson, O.E., 1979. Transaction-Cost Economics: The Governance of Contractual Relations. *The Journal of Law & Economics*, 22(2), pp.233–261.

# *Lacaza, Rutcher[1]:* Patterns of Transfers in the Philippines: An Analysis of Who Gives and Receives More

***Abstract:*** *This paper will investigate the patterns of private transfers in the Philippines using the Family Income Expenditure Survey (FIES) 2015. It will perform descriptive analysis on net transfers, using the identified determinants for a household to be either a net receiver or a net giver. It will also perform multiple regression analysis on transfers received and income to examine the motives for giving transfers. It will also use the binary logistic regression to estimate the probability that a characteristic is present given the values of explanatory variables. This study aims to provide evidence whether transfers in the Philippines are motivated by either altruism or strategic exchange. It is important to understand the nature of transfers, to ensure that government transfer programs are properly designed and targeted and to prevent the duplication of private safety nets already present among the non-poor.*

## Introduction

Private transfers are an important source of funds for households, especially in developing countries. They can transmit patterns of inequality across generations as public transfers do. According to The World Bank, private transfers involve transfers or exchanges between households of cash, food, clothing, informal loans, and assistance with work or child-care. Depending on their size, private transfers can affect household income and consumption, investments in human capital, fertility rate, and an individuals' savings and wealth.

Private transfers are usually extended because of either altruism or exchange. The altruistic explanation says and as postulated by Becker in his "Theory of Social Interactions" that households engage in transfer activities because they are inherently benevolent. Donors derive utility from helping others. The greater is the recipient's welfare shortfall, the more transfers he extends. A rise in the recipient's welfare level, on the other hand, means a decrease in the transfers that he receives. In other words, the donor correspondingly decreases the amount of transfers he gives for every rise in the recipient's wellbeing. That is, the increase recipient's welfare crowds-out the transfers he is supposed to receive.

On the other side, exchange motivated transfers predict a positive relation between private transfers and the recipient's welfare. Because donors expect something in return (Bernheim, Shleifer and Summers, 1985), the donor is willing to give more when he sees that the recipient has greater capacity to give in return. Hence, no occurrence of crowding out.

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**Aim of the Project**

Studying private transfers is important for safety-net policies because it provides economic benefits as public services do. This paper will investigate the patterns of private transfers in the Philippines using the latest Family Income Expenditure Survey (FIES) 2015. Moreover, it will seek to identify the determinants for a household to be either a net receiver or a net giver. It will also determine the motives for giving transfers in the Philippines, whether altruistically motivated or not. It is important to understand the nature of transfers, to ensure that public transfer programs are sufficient, properly targeted and minimizes adverse behavior such as crowding out of private transfers. If effective, public transfers can play an important role in addressing current income disparities as well as intergenerational transmission of inequities.

**Methodology**

This study will use the latest (2015) Family Income and Expenditures Survey (FIES), conducted by the Philippine government's National Statistics Office (NSO). FIES is the country's main source of detailed income and expenditure data of families including transfers both in kind and in cash, conducted every three years.

The variables net receiver and net giver – subject of this study – are determined by computing the net transfer (subtracting total gifts from total receipts). The *receipts* are defined as the sum of cash received from abroad, cash received from domestic sources, total gifts received and inheritance. While *gifts* are defined as the sum of contributions and donations to church and other religious institutions, contributions and donations to other institutions, gifts and contributions to others, and gifts and assistance to private individuals outside the family. Both in kind and in cash transfers are considered in the analysis. If a household's receipts is greater than its gifts (positive net transfer), then that household is a net receiver. If the household's receipts is less than its gifts (negative net transfer) then that household is a net giver. Households who have net transfer equal to zero such as households whose gifts and receipts are equal and those households who never give and receive transfers are not included in the analysis.

Using the FIES, this paper will perform descriptive analysis on net transfers received, using the following correlates: age, sex, marital status, employment status and educational attainment of the household head, and also size, location, pre-transfer income and the number of employed members of household. This paper will also use multiple regression to know the motives for transfers by using gross transfers received as the dependent variable. Finally, this paper used the binary logistic regression to estimate the probability that a characteristic is present given the values of explanatory variables. The response variable is whether a household is a net receiver or a net giver.

## Hypotheses Testing

$H_0$: The odds of a household being a net receiver does not depend on the following households head's characteristics such as his/her:

    a. age;
    b. sex;
    c. marital status;
    d. employment status
    e. educational attainment of the household heads,

$H_0$: The odds of a household being a net receiver does not depend on the following household's characteristics such as:

    a. size;
    b. location;
    c. pre-transfer income; and the
    d. number of employed members of the households.

$H_0$: There is no significant relationship between gross receipts and the pre-transfer income of households.

## Expected Results

This paper is expected to provide the proportion of households in the Philippines involved in private transfers as well as their biggest sources of receipts and gifts. In addition, this study will determine households that are net receivers and net givers. It will also identify household characteristics which can significantly determine the odds of a household to be either a net receiver or net giver. Initially, the household characteristics considered are the following: age, sex, marital status, employment status and educational attainment of the household heads, as well as size, location, pre-transfer income and the number of employed members of the households. The results will be supported by the results of the previous studies. In addition, by regressing gross receipts on (pre-transfer) income across income groups while controlling for other household characteristics, this paper will provide evidence whether transfers in the Philippines are motivated by either altruism or strategic exchange (giving conditional on receiving). If they are a decreasing function of income or wealth, this would suggest that transfers are motivated by altruism. Altruism means private transfers can help equalize the distribution of income. Households with lower income give less but receive more, while those with higher income give more but receive less from the other households.

**References**

Bagsao, L. (2004). Who Helps Whom? Do the Poor Need the Government? An Analysis of Private Inter-Household Transfers as a Safety Net in the Philippines. *9th National Convention on Statistics*, (p. 5 & 7). Makati City, Philippines.

Becker, G. ". (1974). A Theory of Social Interactions. *Journal of Political Economy 82*, 1063-1094.

Bernheim, B.D., Shleifer, A. and Summers, L.H. (1985) The Strategic Bequest Motive. Journal of Political Economy, 93, 1045-1076.

Cox, D., & Jimenez, E. (1996). Private Transfers and the Effectiveness of Public Income Redistribution in the Philippines. *(In Van De Walle and Nead, Public Spending and the Poor)*, Chapter 12.

Cox, D., B.E., H., & Jimenez, E. (2004, August). How Responsive are Private Transfer to Income: Evidence from a Laissez Faire Economy. *Journal of Public Economics*, 2193-2219.

# *Li, Jing*[1]*:* Look Up or Down With or Without "A Finger On": The Effect of Degree of Democracy on Fiscal Management in Grassroots China

**Abstract:** *The study of how fiscal management is affected by degree of grassroots democracy in authoritarian regime has received relatively little scholarly attention yet is important for understanding interactions between politics and economics. With data from a national survey of communities, households and individuals in China, it is found that villages without upper authorities' "fingers (approving lists of candidates for elections) on" are more likely to raise/get less fiscal revenue, whereas spend more via more borrowing. Specifically, they get less transfer payment from above and levy less from villagers. However they provide more money for public service and economic investment, and are more exposed to potential debt crisis. Also they intervene less in households' income. More support for productive investment and less intervention means more pro-market economy. Instrumental variable and Difference-in-Difference will be designed to address endogeneity concern. Incentives to get support from "up" or "down" and visibility of fiscal arrangements for different supporters is suggested as potential causal mechanisms. Robustness checks will be done employing data for elections and political participations, attitudes towards government and social issues, and some economic choices. This research will also contribute to the literature on determinants of public goods provision and levies.*

## Introduction

This project takes advantage of grassroots democracy in China as a natural experiment seeking to explore relationship of politics (specifically degree of democracy) with fiscal management and resource allocation, and to develop theory for potential mechanisms, using a national survey data of communities, households and individuals.

Since late 1980s China has introduced elections at the village level. In 1998 Law for Organization of Village Committee was enacted. Until 2010, when a revised version of the rural election law was written, almost all villages started elections. Interestingly, there are still differences in elections among villages. The one I am interested in here is the degree of democracy, i.e. how much the election is interfered by upper government (supervised democracy). In the survey it is represented by the question "In the last election, did the list of director candidates need to be approved by higher authorities". As is put by Huntington: "The most important political distinction among countries concerns not their form of government but their degree of government (1968, p. 1)", degree of grassroots democracy can be a blessed variation within the same culture to study interactions between political pattern and economic behavior. Foremost, public financial management is in the core of economic reactions. How elected government (committee) arranges finance and allocates resource exemplifies its accountability to some specific groups grounded on its incentive for winning politics. And this in turn

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will cause according economic outcomes. Furthermore, following Mani and Mukand (2007), "visibility effect" matters for governmental resource allocation. In this sense, it is necessary to distinguish between "visible" and "invisible" resource allocation to a specific group the government is accountable towards. The fiscal management variables include: total fiscal revenue, fiscal revenue from villagers, village's collective economy revenue, land/housing rental revenue, land requisition revenue, transfer payment, family planning fines, other revenue, total fiscal expenditure, administration expenditure, the amount distributed to villagers, public service spending, education investment, productive investment, collective economy investment, other expenditure and total debt.

This research will present that villages with supervised democracy are more accountable towards upper authorities than their counterparts. So supervised democracy has a positive and large effect on financial choices that are friendly visible for upper authorities—such as less debt and education investment, and unfriendly for villagers—such as more administration expenditure, less public service and productive investments, and moreover more intervention in individual economy—charging and distributing more to villagers. These may imply that higher degree of democracy under authoritarian regime unconsciously leads to more pro-market economy.

Contributions may be fourfold. First, this project establishes formal relationship between degree of grassroots democracy and fiscal management, which has not received adequate attention. There has been a large literature on effects of specific aspects of local democratic governance across countries (Bravo, Miquel, Qian and Yao, 2007). Also recent years witnessed the burgeoning emerging of study on the introduction of direct election at the village level in China, as well as public goods provision and financial revenue. However, no attention has been paid to degree of democracy nested inside the election process, let alone interaction between it and fiscal management.

Second, as implied above already, this project will complement the body of research on factors affecting public goods provision and levies.

Third, exploration into interactions between degree of democracy and public resource arrangement may shed faint light on politics-economics nexus beyond scope within one country or one single culture. It can show strengths and weaknesses of democracy with higher or lower degree.

Fourth, this research will improve upon previous empirical research by utilizing new data and more thorough checks for potential mechanisms. To my knowledge, the existing studies about grassroots democracy in China mostly rely on data before 2010, when the democratic procedures were far from formal or transparent. This new national data is in year 2014, and more checks can be done for years 2010, 2012 and 2016 currently, with year 2018 and 2022 in expectation. With this data, I am able to guard estimate of degree of democracy against potential biases coming from unobservable or blurry facts about informal and non-standard election systems.

**Aim of the Project**

This Project aims to show that different ways of organizing governments like degrees of democracy is an important determinant of governments' resources organizing ways and economic behavior patterns, such as public financial arrangements. And it can be further shown to be due to different incentives and visibilities of specific fiscal arrangements.

**Hypotheses and Methodology**

*General Hypothesis 1:* Village Committee with supervised democracy is more accountable to upper authority (looking up).

*General Hypothesis 2:* Village Committee chooses fiscal arrangement plans according to the visibility of a specific arrangement for whom it is accountable to.

*Synthetic Hypothesis 1:* Village Committee with supervised democracy is more likely to get more fiscal revenue through transfer payment from above and levy from villagers, to be more careful with debt and expenditures that are more visible for upper authority, and less willing to cut administration budget that is more visible for voters than upper authority.

*Synthetic Hypothesis 2:* Village Committee without supervised democracy is more likely to get less fiscal revenue due to lacking in both transfer payment and levies, whereas more tempted to borrow money to invest in areas that help local production and welfare, which are more visible for voters. But this contains more serious potential debt crisis issue. Also the committee makes more efforts to cut administration expenditure, but not so much as the existing literature show.

*Complementary Hypothesis 1:* Village Committee with supervised democracy intervened economy more directly.

*Complementary Hypothesis 2:* Villagers in villages without supervised democracy are likely to be more politically and economically active and satisfied.

*Methodology:*

This is an empirical research. Basic data is cross-sectional. OLS is used for baseline regressions.

Considering possibilities that more developed economy or stronger fiscal capacity may result in tighter connection with upper authority, or special unobserved characteristics at the village level may lead to both pro-market style of fiscal management and more democratic elections—such as local tradition of liberalism or higher level of entrepreneurship of local leaders etc., concern about endogeneity has to be addressed. I will employ geographical characteristics that affect decision of controlling villages by upper authorities as instrumental variables. Also, at the end of 2018, latest version of election law extended term of office from 3 years to 5 years. This will affect the two groups of democracies distinctly. With expected data of next rounds in 2018 and 2022 (every four years for community level survey and two years

for households and individuals), DID design can be implemented to prove the causal relationship more convictively.

Panel data of communities combined with households and individuals will be employed to further reveal potential mechanisms and do robustness checks. Promising variables include those related to politics participation, attitudes towards government and social issues, and some economic choices etc.


**Expected Results**

Dependent variables (on a per capita basis) with positive coefficients of explanatory variable (1 for with supervised democracy, and 0 for the opposite): total fiscal revenue, share of total fiscal revenue in GDP, (share of) fiscal revenue from villagers, land requisition revenue, village's collective economy revenue, land/housing rental revenue, (share of) transfer payment, (share of) family planning fines, (share of) other revenue, total fiscal expenditure, administration expenditure, amount distributed to villagers, education investment, and other expenditure.

## References

Acemoglu, Daron and James Robinson, "Persistence of power, elites, and institutions," Amer- ican Economic Review, 2008, 98 (1), 267–293.

Acemoglu, Daron, Suresh Naidu, Pascual Restrepo, and James A. Robinson, "Democracy does cause growth," Journal of Political Economy, 2019 127:1, 47-100.

Bäck, Hanna and Hadenius Axel, "Democracy and state capacity: Exploring a j-shaped relationship," Governance, 2008, 21(1), 1–24.

Betz, Timm, Scott J. Cook, and Florian M. Hollenbach, "Spatial Interdependence and Instrumental Variable Models," SocArXiv. October 17. 2017. doi:10.31235/osf.io/pgrcu.

Boix, Carles, Michael Miller, and Sebastian Rosato, "A Complete Data Set of Political Regimes, 1800–2007," Comparative Political Studies 46, no. 12 (December 2013): 1523–54.

Bardhan, Pranab and Dilip Mookherjee, "Decentralization, Corruption and Government Ac- countability: An Overview," in Susan Rose-Ackerman, ed., International Handbook of the Eco- nomics of Corruption, Northampton, MA: Edward Elgar Co, 2006.

Barro, Robert, "The Control of Politicians: An Economic Model," Public Choice, 1973, 14, 19–42.

Barro, Robert J., "Democracy and Growth," Journal of Economic Growth, 1996, 1 (1), 1–27.

Bernstein, Thomas P. and Xiaobo Lu, Taxation without Representation in Contemporary Rural China, New York, NY: Cambridge University Press, 2003.

Besley, Timothy, Principled Agents: Motivation and Incentives in Politics, Oxford: Oxford Uni- versity Press, 2006.

—and Anne Case, "Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits," Quarterly Journal of Economics, 1995, 110 (3), 769–798.

—and Stephen Coate, "Elected Versus Appointed Regulators: Theory and Evidence," Journal of the European Economic Association, 2003, 1 (5), 1176–1206. K2 by H1.

Birney, Mayling, "Can local elections contribute to democratic progress in authoritarian regimes?" PhD dissertation, Yale University 2007.

Björkman, Martina and Jakob Svensson, "Power to the People: Evidence from a Randomized Field Experiment on Community-Based Monitoring in Uganda," Quarterly Journal of Economics, 2009.

Brandt, Loren and Matthew A. Turner, "The usefulness of imperfect elections: The case of village elections in rural China," Economics & Politics, 2007, 19 (3), 453–480.

—and Scott Rozelle, and Matthew A. Turner, "Local government behavior and property right formation in rural China," Journal of Institutional and Theoretical Economics, 2004.

Banerjee, Abhijit V., Selvan Kumar, Rohini Pande, and Felix Su, "Do Informed Voters Make Better Choices? Experimental Evidence from Urban India," Working Paper, MIT Working Paper 2010.

Boudriga, Abdelkader and Wafa Ghardallou, "Democracy and Financial development: Does the Institutional Quality Matter," PSU Working Paper 2012.

Che, Jiahua and Yingyi Qian, "Insecure Property Rights and Government Ownership of Firms," Quarterly Journal of Economics, 1998, 113 (2), 467–496.

DalBó, Ernesto and Martin Rossi, "Term Length and Political Performance," NBER Working Paper 14511, 2008.

D'Arcy, Michelle and Marina Nistotskaya, "State Capacity, Democracy and Public Goods Provision: Theory and Empirical Evidence," Prepared for presentation at "The Quality of Government and the Performance of Democracies" conference, Gothenburg, May 20-22, 2014.

de Janvry, Alain, Frederico Finan, and Elisabeth Sadoulet, "Local Electoral Incentives and Decentralized Program Performance," Working Paper 16635, NBER 2010.

Downs, Anthony, "An Economic Theory of Political Action in a Democracy," Journal of Political Economy, 1957, 65 (2), 135–150.

Foster, Andrew D. and Mark R. Rosenzweig, "Democratization and the Distribution of Local Public Goods in a Poor Rural Economy," Brown University Working Paper, 2004, 1–51.

Gan, Li, Lixin Colin Xu, and Yang Yao, "Local Elections and Consumption Insurance: Evidence from Chinese Villages," World Bank Policy Research Working Paper 4205, 2007, 1–28.

Gan, Li, Lixin Colin Xu, and Yang Yao, "Risk Sharing and Local Elections: Evidence from Chinese Villages," Economics of Transition, 2012, 20(3), 521-547.

Gandhi, Jennifer and Ellen Lust-Okar, "Elections Under Authoritarianism," Annual Review of Political Science, 2009, 12 (1), 403–422.

Gervasoni, Carlos, "A Rentier Theory of Subnational Regimes: Fiscal Federalism, Democracy, and Authoritarianism in the Argentine Provinces." World Politics, 2010, 62(2): 302–40.

Guo, Xiaolin, "Land expropriation and rural conflicts in China," China Quarterly, 2001, (166), 422–439.

Guo, Zhenglin and Thomas Bernstein, "The impact of elections on the village structure of power: the relations between the village committees and the party branches," Journal of Contemporary China, 2004, 13 (39), 257–275.

Jacoby, Hanan G., Guo Li, and Scott Rozelle, "Hazards of Expropriation: Tenure Insecurity and Investment in Rural China," American Economic Review, 2001, 93 (5), 1420–1447.

Keefer, Philip and Stuti Khemani, "Democracy, Public Expenditures, and the Poor," World Bank Policy Research Working Paper, 2003, No. 3164. Available at SSRN: https://ssrn.com/abstract=636583

Kelliher, Daniel, "The Chinese debate over village self-government," The China Journal, 1997, 63–86.

Kennedy, John J., Scott Rozelle, and Yaojiang Shi, "Elected leaders and collective land: Farmers' evaluation of village leaders' performance in rural China," Journal of Chinese Political Science, 2004.

Landry, Pierre, Deborah Davis, and Shiru Wang, "Elections in Rural China: Competition Without Parties," Comparative Political Studies, 2010, 43 (6), 763–790.

Luo, Renfu, Linxiu Zhang, Jikun Huang, and Scott Rozelle, "Elections, Fiscal Reform and Public Goods Provision in Rural China," Working Paper, 2007, Freeman Spogli Institute for Interna- tional Studies, Stanford University.

Mani, Anandi and Sharun Mukand, "Democracy, visibility and public good provision," Journal of Development Economics, 2007, 83(2), 506-529.

Mobarak, Ahmed Mushfiq, "Democracy, Volatility, and Economic Development," The Review of Economics and Statistics, 2005, 87 (2), 348–361.

Martinez-Bravo, Monica, Gerard Padró-i-Miquel, Nancy Qian and Yang Yao, "Do Local Elections in Non-Democracies Increase Accountability? Evidence from Rural China," NBER Working Papers 16948, 2011.

Mu, Ren and Xiaobo Zhang, "The Role of Elected and Appointed Village Leaders in the Al- location of Public Resources: Evidence from a Low-Income Region in China," Working Paper, IFPRI Working Paper.

Mulligan, Casey B., Ricard Gil, and Xavier Sala i Martin, "Do Democracies Have Different Public Policies than Nondemocracies?," Journal of Economic Perspectives, 2004, 18(1), 51–74.

O'Brien, Kevin J., "Understanding China's Grassroots Elections," GRASSROOTS ELECTIONS IN CHINA, Kevin J. O'Brien and Suisheng Zhao, eds., 2011, xi-xvi. Available at SSRN: https://ssrn.com/abstract=1617460

O'Brien, Kevin and Lianjiang Li, Rightful Resistance in Rural China, New York, NY: Cambridge University Press, 2006.

O'Brien, Kevin J., "Implementing Political Reform in China's Villages," Australian Journal of Chinese Affairs, 1994, (32), 33 – 59.

—and Lianjiang Li, "The Struggle over Village Elections," in Merle Goldman and Roderick MacFarquhar, eds., The paradox of China's post-Mao reforms, Cambridge, MA: Harvard University Press, 1999.

Oi, Jean and Scott Rozelle, "Elections and power: The locus of decision-making in Chinese villages," The China Quarterly, 2000, 162, 513–539.

Padro-i-Miquel, Gerard and Nancy Qian, "Making Democracy Work: Culture, Social Capital and Elections in China," Working Papers, 2015, id:6619, eSocialSciences.

Pande, Rohini, "Can Mandated Political Representation Provide Disadvantaged Minorities Policy Influence? Theory and Evidence from India," American Economic Review, 2003, 93 (4), 1132–1151.

Pang, Xiaopeng and Scott Rozelle, "A Vote of Confidence? Voting Protocol and Participation in China's Village Elections," Freeman Spogli Institute for International Studies, Stanford University, 2006.

Rozelle, Scott and Guo Li, "Village leaders and land-rights formation in China," American Economic Review, 1998, 88 (2), 433–438.

—and Richard Boisvert, "Quantifying Chinese village leaders' multiple objectives," Journal of Comparative Economics, 1994, 18 (1), 25–45.

Stasavage, David, "Democracy and education spending in Africa," American Journal of Political Science, 2005, 49(2): 343–358.

Shen, Yan and Yang Yao, "Does grassroots democracy reduce income inequality in China?," Journal of Public Economics, 2008, 1–17.

Tsai, Lily L., "Accountability without Democracy: Solidary Groups and Public Goods Provision in Rural China," New York, NY: Cambridge University Press, 2007.

Unger, Jonathan, "The transformation of rural China," Asia and the Pacific, Cambridge, MA: M.E. Sharpe, 2002.

Wang, Shuna and Yang Yao, "Grassroots Democracy and Local Governance: Evidence from Rural China," World Development, 2007, 29(10), 1635-1649.

Yao, Yang, "A Chinese Way of Democratization?," China: An International Journal, 2010, 8(2), 330-345.

Yao, Yang, "Village Elections, Accountability, and Income Distribution in Rural China," China & World Economy, 2006, 14(6), 20-38.

Xu, Yiqing, and Yang Yao, "Informal Institutions, Collective Action, and Public Investment in Rural China," American Political Science Review, 2015, 109(2), 371-391.

Zhang, Xiaobo, Shenggen Fan, Linxiu Zhang, and Jikun Huang, "Local governance and public goods provision in rural China," Journal of Public Economics, 2004, 88, 2857–2871.

# *Markhaichuk, Maria[1]:* Intellectual Capital as a Basis for Innovative Development

**Abstract:** *The purpose of this project is to investigate the link between intellectual capital and innovative development on the example of Russian regions. The study is based on the data on 85 Russian regions for the 2013-2016 years from Unified Interdepartmental Information and Statistical System (EMISS) and Federal State Statistics Service of the Russian Federation. We plan to employ panel regressions with random or fixed effects to estimate impact of intellectual capital, VAIC and their components on the indicators of regional innovative development. We expect, that regression analysis will confirm the significant and positive impact of intellectual capital, VAIC, and their components on the indicators of innovative development of Russian regions. The study results can be used by state bodies in the formation of innovative development strategies for future periods and in the development of measures to achieve the targets of the current strategy.*

## Introduction

In the light of the recent external political challenges, an increase in the efficiency of Russia's innovative activity is one of the necessary conditions to transit to a new economic policy focused on accelerating socio-economic development, on technological renovation and knowledge economy (Fedotova et al., 2016).

There is a demand to develop and implement new methods for the formation of innovative strategies and the management of the innovative process (Kudryavtseva and Shinkevich, 2015).

The maintenance of the efficient transition to the knowledge-based economy is stated in the Concept of the long-term socio-economic development of the Russian Federation until 2020, while the transfer of the Russian economy to the innovative path of development is the goal of the Strategy of innovative development of the Russian Federation until 2020. However, the researchers note the impossibility of achieving the goals of the Strategy in the appropriate time (Rudakov and Akhmetova, 2017).

Since innovations essentially draw upon deployed knowledge, finding association between innovation on the one hand and various aspects of intellectual capital (IC) and knowledge flows on the other hand is interesting (Nguyen, 2018).

Recent studies are devoted to the measurement of regional IC (Nitkiewicz et al., 2014, Trequattrini et al., 2018), including regional IC in the Russian Federation (Kireeva and Galiakhmetov, 2015, Kotenkova and Korablev, 2014, Markhaichuk and Zhuckovskaya, 2019, Tsertseil and Ordov, 2017), as well as to the investigation of the relationship between IC, its components and innovative activity, potential and development

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(Fedotova et al., 2016, Echebarria and Barrutia, 2013, Leitner, 2015, Panshin and Tobien, 2016, Santos-Rodrigues et al., 2015).

However, in general, in all regions of the Russian Federation, the relationship between IC and innovative development has not yet been studied.


**Aim of the Project**

The aim of this project is to investigate the link between intellectual capital and innovative development on the example of Russian regions.


**Hypotheses and Methodology**

The following hypotheses are to be tested:

H1: IC and its components have positive impact on innovative development of Russian regions.

H2: VAIC and its components have positive impact on innovative development of Russian regions.

H3: IC and its components have positive impact on VAIC and its components.

The framework of this study was developed based on the three-component IC model (human, structural and relational capital) and the VAIC model (Fig. 1). We included the VAIC model in our study to complete the whole picture of RIC on the other level – organizations. The VAIC model is used mainly for direct evaluation of IC of specific companies, but it can be applied to study the value added of organizations at the regional level and assess its impact on the innovative development of regions.

Fig. 1: Theoretical framework
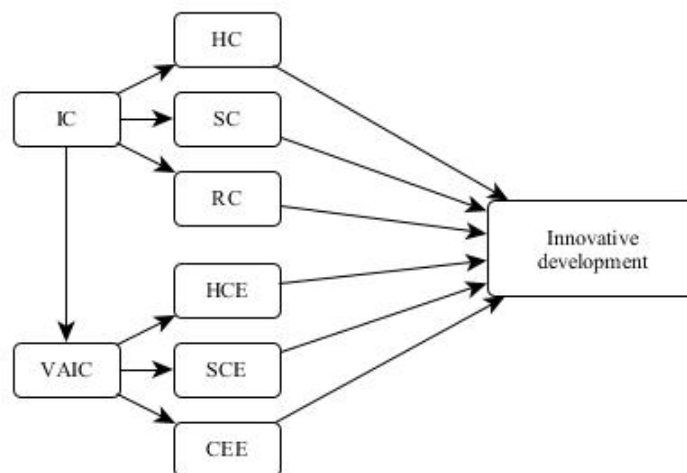


Source: author's elaboration

Based on available statistical data for Russian regions we formed a set of indicators characterizing the IC. The resulting set of indicators for assessing IC is presented in Table 1.

Tab. 1: Intellectual capital indicators within three-component IC model

| IC components | Variable | Variable description |
|---|---|---|
| Human capital (HC) | HC1 | Funding of higher education institutions |
| | HC2 | The share of the employed population aged from 25 to 64 years, who has higher education in the total number of employed population of this age group |
| | HC3 | Share of highly skilled workers in the total number of skilled workers |
| | HC4 | Graduation from postgraduate school with thesis defense |
| | HC5 | Employment rate |
| | HC6 | GRP per capita |
| | HC7 | Labor productivity index |
| | HC8 | The growth of high-performance workplaces |
| Structural capital (SC) | SC1 | Domestic costs of R&D |
| | SC2 | Share of domestic expenditures on R&D, as a percentage of gross regional product |
| | SC3 | Investments of organizations in technological innovations |
| | SC4 | Special costs associated with environmental innovation |
| | SC5 | The cost of technological innovation of small enterprises |
| | SC6 | Submission of applications by Russian applicants for state registration of intellectual activity results and means of individualization |
| | SC7 | Issue of patents and certificates for results of intellectual activity, means of individualization |
| | SC8 | Use of intellectual property |
| Relational capital (RC) | RC1 | Investments from abroad in fixed assets, including intellectual property and ICT |
| | RC2 | Number of export agreements |
| | RC3 | Number of import agreements |
| | RC4 | Technology export receipts under agreements with foreign countries (receipts from engineering services, R&D, know-how, patents for invention, utility models, industrial design, trademarks etc.) |

Source: author's elaboration

The Value Added Intellectual Coefficient estimation procedure is given below (Pulic, 2004):

$$VAIC = ICE + CEE \qquad (1)$$

ICE – intellectual capital efficiency is obtained by adding up the partial efficiencies of human and structural capital: ICE=HCE+SCE;

HCE – human capital efficiency: HCE = VA/HC;

SCE – structural capital efficiency: SCE = SC/VA;

CEE – capital employed efficiency: CEE = VA/CE;

VA – value added is calculated as the difference between total sales (OUT) and material costs (INPUT);

SC – structural capital: SC= VA – HC;

CE – capital employed: book value of the net assets.

According to Strategy of innovative development of the Russian Federation until 2020 monitored target indicators of innovation development that can be assessed at the regional level are:

1. Volume of innovative goods, works, services.

2. Share of innovative goods, works, services in the total volume of goods shipped, works performed, services provided by industrial production organizations.

3. Share of organizations implementing technological innovations in the total number of organizations surveyed.

4. Share of organizations implementing technological innovations in the total number of industrial production organizations.

We will use them as dependent variables Y1, Y2, Y3 and Y4 respectively.

We have collected data on 85 Russian regions for the 2013-2016 years from Unified Interdepartmental Information and Statistical System (EMISS) and Federal State Statistics Service of the Russian Federation. Panel regressions with random or fixed effects will be employed to estimate impact of intellectual capital, VAIC and their components on the indicators of regional innovative development.


**Results**

We expect that regression analysis will confirm significant and positive impact of intellectual capital, VAIC, and their components on the indicators of innovative development of Russian regions. Also, we expect to find out which components of intellectual capital and VAIC have the most significant influence on the innovative development of Russian regions.

If the hypotheses 1-3 will be confirmed, it can be argued that the focus on the development of IC will accelerate the innovative development of the regions of the Russian Federation.

The study results can be used by state bodies in the formation of innovative development strategies for future periods and in the development of measures to achieve the targets of the current strategy.

**References**

Echebarria, C., & Barrutia, J. M. (2013). Limits of social capital as a driver of innovation: an empirical analysis in the context of European regions. *Regional Studies*, 47(7), 1001-1017.

Fedotova, M. A., Loseva, O. V., & Kontorovich, O. I. R. (2016). Monetary valuation of intellectual human capital in innovative activity. *Equilibrium-Quarterly Journal of Economics and Economic Policy*, 11(2), 369-385.

Kireeva, V., & Galiakhmetov, L. (2015). The assessment of the intellectual capital as a factor of investment attractiveness of the region. *22nd International Economic Conference of Sibiu 2015, Iecs 2015 Economic Prospects in the Context of Growing Global and Regional Interdependencies*, 27, 240-247.

Kotenkova, S., & Korablev, M. (2014). Evaluation of intellectual capital in regions of Volga Federal district of Russian Federation. *International Conference on Applied Economics (Icoae 2014)*, 14, 342-348.

Kudryavtseva, S., & Shinkevich, A. (2015). An institutional approach to intellectual capital in open innovation systems. *Innovation Management and Corporate Sustainability (Imacs 2015)*, 142-150.

Leitner, K. H. (2015). Intellectual capital, innovation, and performance: Empirical evidence from SMEs. *International Journal of Innovation Management*, 19(05).

Markhaichu, M., & Zhuckovskaya, I. (2019) The spread of the regional intellectual capital: the case of the Russian Federation. *Oeconomia Copernicana*, 10(1).

Nitkiewicz, T., Pachura, P., & Reid, N. (2014). An appraisal of regional intellectual capital performance using Data Envelopment Analysis. *Applied Geography*, 53, 246-257.

Nguyen, D. Q. (2018). The impact of intellectual capital and knowledge flows on incremental and radical innovation: Empirical findings from a transition economy of Vietnam. *Asia-Pacific Journal of Business Administration*, 10(2-3), 149-170.

Panshin, I., & Tobien, M. (2016). Assessment of influence of human capital quality on the innovative development of the territory. *Innovation Management, Entrepreneurship and Corporate Sustainability (Imecs 2016)*, 535-549.

Pulic, A. (2004). Intellectual capital – does it create or destroy value? *Measuring Business Excellence*, 8(1), 62–68.

Rudakov, D.V., & Akhmetova, G.Z. (2017). Management of intellectual and creative human capital as a condition for the formation of an innovative economy. *Management of Economic Systems: electronic scientific journal*, 8 (102).

Santos-Rodrigues, H., Fernandez-Jardon, C. M., & Dorrego, P. F. (2015). Relation between intellectual capital and the product process innovation. *International Journal of Knowledge-Based Development*, 6(1), 15-33.

Trequattrini, R., Lombardi, R., Lardo, A., & Cuozzo, B. (2018). The impact of entrepreneurial universities on regional growth: a local intellectual capital perspective. *Journal of the Knowledge Economy*, 9(1), 199-211.

Tsertseil, J. & Ordov, K. (2017). The role of Intellectual capital in the development of the regional cluster. *International Journal of Organizational Leadership*, 6(3), 416-424.

# *Pushkareva, Natalia [1]:* Losing Control: International Taxation in Era of Globalization

*Abstract: The Organization for Economic Coordination and Development estimates tax revenue losses associated with aggressive tax planning by multinationals at USD 100-240 billion annually which equals to 4-10% of global corporate income tax revenues. The OECD has been working on this problem for a number of years, however, to these day the organization seems to fail to address the fundamental problem underlining the issue: the international tax system being based on a paradigm of competition rather than cooperation. Such competition led to a "race to the bottom" in effective corporate tax rates, as a result of which many governments have problems with funding public services due to tax revenues shortages. In my research project I analyze opportunities for replacing the competition paradigm underlying international taxation with cooperation, which would reduce social-economic insecurities resulting from aggressive tax minimization. I study motivation of the actors involved and look at how differences in motivation preclude actors of the international tax field from effective cooperation in fighting aggressive tax planning practices of multinational corporations. I also explore alternative ways of funding services traditionally considered as "public", given the new welfare settlement.*

## Introduction

The international tax system in place until recently was created almost 80 years ago, in times when the economy was industrial and immobile. The international tax rules of that time reflected that, and then stayed in place for good eighty years, being applied to completely different economic reality. It took several international scandals, dozens of resonant press publications and even street protests for a change to happen.

Attention of the international community was drawn to shockingly small tax bills of multinational enterprises (MNEs) and to the fact that they, without breaking any laws at all, were capable to use "aggressive tax planning" techniques, structuring their business in a way that attracted less tax burden globally. To do so, they use differences in tax regimes of different jurisdictions to their advantage, maximizing available tax benefits and minimizing their total tax liability.

The Organization for Economic Coordination and Development (OECD) calls these practices used by MNEs Base Erosion and Profit Shifting (BEPS) and conservatively estimates tax revenue losses associated with them at USD 100-240 billion annually which equals to 4-10% of global corporate income tax revenues [0]. The OECD has been working on this problem for a number of years, and in 2013 it started the BEPS project aiming to prevent MNEs from tax dodging via implementation of the 15 BEPS

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Actions adjusting existing international tax system to the digital economy. The final reports for all the actions were delivered in 2015, and although they definitely had positive implications[1], many researchers criticized the OECD for failing to address the fundamental problem underlining the BEPS issue: the international tax system being based on a paradigm of competition rather than cooperation [0].

There is research proving that countries' tax policy choices are affected by other countries' decisions: for example, in 2008 article "Do Countries Compete Over Corporate Tax Rates?" Devereux et al. provide empirical evidence that the OECD member states set corporate tax rates in response to each other [0]. Heinemann et al. in their 2010 paper "Rate-Cutting Tax Reforms and Corporate Tax Competition in Europe" demonstrate that when a neighboring country decreases its corporate tax rate, European countries tend to drop their own rates even more [0]. This competition resulted in a race to the bottom, and subsequently in many European governments having issues with funding public services due to tax revenues shortages.

In a situation where some countries are clearly winning and others are clearly losing because of the BEPS, international cooperation on the issue is extremely hard to ensure, especially taking sovereignty concerns into account. However, such cooperation is a prerequisite for fighting international tax evasion effectively: as long as there exist jurisdictions offering generous tax privileges to international business, many companies would just move there, decreasing the tax revenues collected worldwide. The BEPS project was promoted by the OECD, an organization unifying "rich" developed countries that suffer from the BEPS problem most. However, cooperation of low-tax jurisdiction is absolutely necessary for project's success, otherwise its effect will stay rather limited[2]. Data seems to prove limited success of the BEPS project: only Amazon earned $11.4 bln profits in the US last year and paid 0 (zero) tax on it [0].

In my research project I will take a closer look at how decisions concerning international tax are made. International tax policy making involves multiple actors such as national administrations, civil servants, MNEs, international organizations, public policy advisors and more. I will examine how different factors (reputation, structure of remuneration, political concerns, etc.) impact willingness of these actors to cooperate and their decision making. In addition, I examine a possibility of using game theory mechanisms to align interests of the actors and make their cooperation more effective as well as other ways to nudge countries into collaboration. While the existing literature mentions necessity of cooperation in international taxation and in some cases tries to apply game theory to illustrate interaction between the actors, it does not take specificity of communication and actor's motivation in public policy field into account [0]. The ultimate question of my research is whether building such cooperation is feasible, and if not what alternative ways of funding public services

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[1] For example, Starbucks paid GBP 8.1m of UK corporation tax in 2015, which is almost equivalent to what the company paid in the country in fourteen previous years all together: https://www.theguardian.com/business/2015/dec/15/starbucks-pays-uk-corporation-tax-8-million-pounds

[2] e.g. Amazon, a giant online trading platform with a number of side businesses, tripled its UK profits last year and increased its turnover in the UK by 35%, but still managed to cut group's UK tax bill almost by half due to the BEPS: https://www.theguardian.com/technology/2018/aug/02/amazon-halved-uk-corporation-tax-bill-to-45m-last-year

could be available. The hypothesis is that differences in motivation of actors and thinking short-term preclude countries from fighting tax avoidance by MNEs successfully. For carrying out the project I plan to analyze available literature and data as well as interview actors involved in tax policy making. I also plan to apply game theory analysis to international tax competition.

In December 2018 Pascal Saint-Amans, a Director of the OECD Tax Administration Unit, admitted that the BEPS project was a "patchwork on leaking international tax system" and that the real work on fundamental international tax challenges is to start now [0][1]. It gives me hope that my research will is well-timed and may have a real impact.

## References

http://www.oecd.org/ctp/beps/governments-rapidly-dismantling-harmful-tax-incentives-worldwide-beps-project-driving-major-changes-to-international-tax-rules.htm

https://www.theguardian.com/business/2015/dec/15/starbucks-pays-uk-corporation-tax-8-million-pounds;

Yariv Brauner, What the BEPS, 16 Fla. Tax Rev. 55 (2014), http://scholarship.law.ufl.edu/facultypub/642;

Devereux, M. P., Lockwood, B. and Redoano, M. (2008) "Do countries compete over corporate tax rates?" Journal of Public Economics 92, pp. 1210-1235;

Heinemann, F., Overesch, M. and Rincke, J. (2010) "Rate-Cutting Tax Reforms and Corporate Tax Competition in Europe," Economics & Politics, 22, pp. 498–518;

https://www.theguardian.com/technology/2018/aug/02/amazon-halved-uk-corporation-tax-bill-to-45m-last-year;

Toby Rogers, Using Prisoner's Dilemma to Model Global Tax Competition // https://www.coursehero.com/file/33226294/Using-Prisoners-Dilemma-to-Model-Globalpdf/;

https://mobile.twitter.com/CraigInSA/status/1070980998131662848?fbclid=IwAR2m_zz359xLDbXBGslkmSrNxfHgcJWAgH9yFwzLQ--o6D-POEE3DDM2GFY;

http://fortune.com/2019/02/14/amazon-doesnt-pay-federal-taxes-2019/

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[1]https://mobile.twitter.com/CraigInSA/status/1070980998131662848?fbclid=IwAR2m_zz359xLDbXBGslkmSrNxfHgcJWAgH9yFwzLQ--o6D-POEE3DDM2GFY

# Akhmetbekov, Dias[1]: Effect of Political Repressions on Trust in Russia

**Abstract:** *Between 1930 and 1960 tens of millions of people were forcibly sent to the Stalinist camps. In the social sciences this historical event can be considered as a natural experiment. In our opinion, the social norms of prison life like "Do not trust, do not fear, do not ask" could spread to the next generations living in those regions in which the Gulag camps were located and it could be reflected in a lower level of trust in local authorities and the government generally.*

## Introduction

Between 1930 and 1960 tens of millions of people were forcibly sent to the Stalinist camps. In the social sciences this historical event can be considered as a natural experiment. In our opinion, the social norms of prison life like "Do not trust, do not fear, do not ask" could spread to the next generations living in those regions in which the Gulag camps were located and it could be reflected in a lower level of trust in local authorities and the government generally.

## Aim of the Project

Consequently, the main goal of our study is to test the hypothesis that in the territory where the Gulag camps used to be there was a transmission of such cultural values as distrust to the state from one generation to another.

## Hypotheses and Methodology

In order to test the hypothesis about the influence of the Gulag on the current level of trust in the regions, we should, first of all, sort and analyze all the available data that are in the Archives of the history of the Gulag (The international historical, educational, charitable and human rights society "Memorial") and also in the State Archives of the Russian Federation. In addition, the main sources of information on the level of trust and control variables are such databases as Life in Transition Survey, World Values Survey, European Social Survey, and Russian Longitudinal Monitoring Survey.

An approximate econometric model specification is as follows:

$$\ln Repressed_i = Z_i\alpha + R_i\beta + X_i\gamma + \varepsilon_i,$$

$$Trust_i = \ln Repressed_i\delta + R_i\theta + X_i\mu + \epsilon_i,$$

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where *Repressed$_i$* is the number of repressed in region *i*, *Z$_i$* is the instrumental variable, *R$_i$* is the dummy for region *i*, *X$_i$* is the vector of covariates (for example, the level of economic development), *Trust$_i$* is the level of trust in region *i*.

In order to obtain the first results in this study (not necessarily interpreted causally), it will be assumed that it matters only where the repressed were sent and not where they lived before the forced migration. Also, given that the majority of the repressed remained to work after being released in the same regions due to the strict regulation of migration by the Soviet authorities, I will assume that the prisoners remained in those regions where they served their sentences.

**Expected Results**

As it was said earlier I expect that the regions where Gulag camps were located show less trust to local authorities and the state. The main mechanism of transmission is the descendants of repressed who were most likely brought up with the conviction that the state machine is an absolute evil. Also, the possible mechanism can be the natives of the settlements where the camps were located.

As far as I know serious empirical research explaining the long-term consequences of repression in the countries of the former Soviet Union and interpreting the results causally does not exist. In my opinion, this work has a great practical value and can be very useful, first of all, for economic policy specialists since the problems of trust and social capital as it was shown by many researchers in the social sciences are directly related to economic and social issues of development of the region.

# References

Algan, Yann, and Pierre Cahuc, "Inherited Trust and Growth," American Economic Review , 100 (2010), 2060-2092

Algan, Y. & Cahuc, P. Trust and growth. Annual Review of Economics 5, 521–549 (2013)

Algan, Yann, and Pierre Cahuc. 2014. "Trust, Growth, and Well-Being: New Evidence and Policy Impli- cations." In Handbook of Economic Growth, Vol- ume 2A, edited by Philippe Aghion and Steven N. Durlauf, 49-120. Amsterdam and San Diego: Elsevier, North-Holla

Kapelko, Natalia and Andrei Markevich, "The Political Legacy of the Gulag Archipelago," Working Paper. Available at SSRN 2516635, 2014.

Levkin, Roman (2014) The effect of Stalin's deportations on distrust in central authority. Working Paper.

Nunn, Nathan and Leonard Wantchekon, "The Slave Trade and the Origins of Mistrust in Africa," American Economic Review, 2011, 101 (7), 3221–3252.

Rozenas, Arturas; Sebastian Schutte & Yuri M Zhukov (2017) The polit- ical legacy of violence: The long-term impact of Stalin's repression in Ukraine. *Journal of Politics*, 79(4): 1147–1161.

Toews, Herhard and Pierre-Louis Vézina, " Enemies of the People", Working Paper. 2018

Zhukov, Yuri M & Roya Talibova (2018) Stalin's terror and the long-term political effects of mass repression. Journal of Peace Research 55(2): 267–283.

# *Comincini, Laura*[1]: Central Bank Independence and Political Pressure – How to Design Institutions to Deter Political Pressure?

**Abstract:** *I model a game between the government and the central bank. The central bank decides between two states, has a preference for the low-inflation state, but could be pressured into the high-inflation state by the government. This simple model provides insights on the mechanisms of political pressure, and on how the design of institutions might be used to deter political pressure itself. Preliminary results indicate that a central bank is less likely to be pressured by the government if applying pressure becomes costlier, e.g. higher transparency and a free press. The central bank is less likely to give in to pressure if resisting to pressure becomes cheaper, e.g. higher political isolation. Finally, there might be a benefit in appointing a central banker who assigns a positive weight on output, as that would reduce the instances of disagreement between government and central bank.*

## Introduction

Alesina and Rosenthal (1995) reprise Grilli, Masciandaro, and Tabellini (1991) in distinguishing between two aspects of CBI: political and economic independence. Political independence is the ability of the central bank to set its policy objective without any interference from the government. Economic independence is the ability of the central bank to use instruments of monetary policy without restrictions. While most central banks now have legal economic independence, political independence is in most cases partial. Important things to consider in looking at the political independence of a central bank are whether the appointment of governor and/or board is controlled by the government, whether the participation of government officials is mandatory or government approval is required, or whether the role of the central bank is explicitly stated in the constitution (Grilli et al., 1991).

Nowadays most central banks have economic independence. Political independence, however, varies and is in general only partial. The fact that political CBI is not absolute clearly leaves the door open to political pressure: central banks are not perfectly isolated from governments. When their objectives clash, the government might try to sway the central bank to act in accordance with political preferences.

In recent months we have been observing repeated instances of President Trump pressuring the Federal Reserve. Trump has been very vocal in criticising the Fed interest rate hikes, to the point of describing the Fed as his "biggest threat", the biggest and only problem for the U.S. economy, and saying it does not have a feel for the markets. The Trump-Fed feud is amply discussed in the press (Wells, 2018; Condon, 2018b; Elliott, 2018; Fleming, 2018; Rushe, 2018; Mayeda and Dorning, 2018; Mohsin,

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2019; Fleming, 2019a; Fleming, 2019b; and Cassidy, 2019). Even the governor of the ECB is openly worried about President Trump pressuring the Fed: "Draghi, in Rare Move, Sounds Concern Over Feds Independence" by Look and Argitis (2019).

This is not an isolated incident. The Fed was pressured before: President Nixon pressured Governor Burns to lower interest rates in 1970–1972 in an effort to lower unemployment and get re-elected (Abrams, 2006). It is not an American-only issue either: the central banks of India, Turkey, Russia, Nigeria, South Africa, and Thailand have all been pressure in recent times (Condon, 2018a). At Davos 2018 the President of Argentina Macri was questioned on whether he had been pressuring the central bank to lower interest rates (Mander, 2018). The Governor of the Reserve Bank of India resigned in December 2018 after being pressured from the BJP government (Nag, 2018). The Italian populist-rightwing coalition government recently criticised the Bank of Italy for its involvement in the banking crisis. The move was extensively seen as a threat to the Bank's independence (Johnson, 2019).

Economics commentators have been vocal in ringing bells about the global trend of political pressure and the risks for central bank independence (El-Erian, 2016; Münchau, 2016; Münchau, 2017; Dizard, 2019; and Ward, 2019).

Empirical evidence provides some patterns when it comes to politically pressured central banks. Governments seem to have a preference for an ease in monetary policy. This is certainly true for the U.S. (Havrilesky, 1988 and Froyen, Havrilesky, and Waud, 1997), but Binder (2018) shows that it holds true for central banks at different levels of independence and from a very diverse set of countries. Binder (2018) also finds that political pressure is more likely to come from governments with left-wing/nationalist executives, few checks and balances, or weak electoral competition. Pressure coming from a left-wing government is in line with a preference for an ease in monetary policy, as that would match the party's political bias.

Fry (1998) notes that, for his sample of developing countries, it is not independence alone that protects a central bank from political pressure, but rather independence alongside competence. The two, in fact, are probably intertwined: Fry argues that "independence is gained in large part through competence and the ability to demonstrate it" (Fry, 1998; p. 525).

It is not only the perceived reliability and expertise of a central bank that isolates it from political pressure. As Grilli et al. (1991) imply, institutions play a key role. The way a central bank is designed, and the laws that regulate it, determine its quality, and how easy it is for the government to politically pressure the central bank. Many central banks get their mandate directly from the government (e.g. the Fed); some even need the government to ratify their decisions (e.g. the Bank of Italy in pre-euro times). Again, like Binder (2018) finds, a central bank designed to have few checks and balances will see an increase in the likelihood of being pressured.

**The Model**

Stochastic, two-period game with imperfect information. Elections are held at the end of the first period. The new period starts when the new government is in power. The government has the choice to pressure the central bank (to create an inflation surprise that will boost output) or to do nothing. The central bank normally prefers a policy of low inflation, but might be induced to switch to higher inflation if sufficiently pressured by the government.

This model follows the early literature on the interaction between the political system and the monetary authority, as described in the literature section. Specially, it joins elements from different political economics models. The government is modelled to have a partisan bias, like in Alesina's work (1987, 1988). The central bank follows the style of Barro and Gordon (1983), Persson and Tabellini (1990) or Gärtner (2000): choosing policy to minimise costs, subject to the behaviour of the private sector. Even when voters expect the central bank to create an inflationary surprise, the fact that wage contracts are signed before the election and that election results are always uncertain guarantees that the surprise is successful in boosting output.

Pressuring the central bank to deviate from their optimal policy is costly for the government. The cost represents the cost of effort, and/or the opportunity cost of pressuring the central bank rather than engaging in different activities. For example, a government might be called out from the media for their behaviour, like it is currently happening to Trump's administration in the U.S. or it happened to Argentina's Macri at Davos 2018.

The central bank faces a cost as well. When resisting pressure, the central bank faces the opportunity cost of having to spend time on signalling its resistance to the government, rather than engaging in its regular activities. We can see a concrete example of this in the Federal Reserve sending rather strong signals in response to President Trump's pressure (e.g. Guida, 2018).

I find that political pressure generates a positive inflation bias. There is no successful political pressure when the government's costs are high, or when the central bank's costs are low.


**Discussion**

Successful political pressure undoes the benefits of central bank independence. Over two decades ago the literature showed that leaving monetary policy to the government was creating an inflationary bias, and advocated for independent central banks. An independent central bank, with its credibility and its ability to commit to the announced monetary policy, would achieve lower inflation with no repercussions for real growth or employment in the long run. Now political pressure reintroduces that inflationary bias that CBI had eliminated.

Political pressure also makes the central bank less credible. To prove its commitment to low inflation the central bank has to show it is even willing to create a recession to achieve its goal. We can see an example of this in the recession the U.S. experienced in

the early 1980s: after President Nixon pressured Burns to lower interest rates, Volcker was forced to increase interest rates to slow down inflation. The economy contracted.

Political pressure is ultimately bad for the economy. As my model argues that there is no successful political pressure when the government's costs are high, or when the central bank's costs are low, the next step is to make it more expensive for the government to pressure, and cheaper for the central bank to resist.

How to make it more expensive for the government to pressure? By holding them accountable for it. A central bank transparent about being pressured and press inquisitive about political pressure attempts would make it more expensive for a government to pressure the central bank.

How to make it cheaper for the central bank to resist? I believe the answer lies in how the institution is designed. Specifically:

1. The central bank should be accountable for monetary policy in front of the government, but the government cannot be asked to ratify the central bank's decisions.

2. The role of the central bank should be explicitly stated in the constitution, not dictated by the government.

3. Governors should not be elected by members of a political party, and should have no political affiliations themselves.

4. Central bank should improve transparency by publishing the minutes of their meetings.

I will discuss these more in depth with a number of case studies.

## References

Abrams, B. A. (2006). How Richard Nixon Pressured Arthur Burns: Evidence from the Nixon Tapes. *Journal of Economic Perspectives* 20(4), 177–188.

Alesina, A. (1987). Macroeconomic Policy in a Two-Party System as a Repeated Game. *The Quarterly Journal of Economics* (August), 651–678.

Alesina, A. (1988). Macroeconomics and Politics. In *NBER Macroeconomics Annual* 3, pp. 13–62.

Alesina, A. and H. Rosenthal (1995). *Partisan Politics, Divided Government and the Economy*. Cambridge University Press.

Barro, R. J. and D. B. Gordon (1983). Rules, Discretion and Reputation in A Model of Monetary Policy. *Journal of Monetary Economics* 12, 101–121.

Binder, C. C. (2018). *Political Pressure on Central Banks*. Haverford College, Department of Economics, mimeo.

Cassidy, J. (2019, April 8). The High-Stakes Battle Between Donald Trump and the Federal Reserve. *The New Yorker.* Available at: https://www.newyorker.com/news/our-columnists/the-high-stakes-battle-between-donald-trump-and-the-fed

Condon, C. (2018a, December 10). Central Bank Independence. *Bloomberg*. Available at: https://www.bloomberg.com/quicktake/central-bank-independence

Condon, C. (2018a, December 17). A Timeline of Trump's Quotes on Powell and the Fed. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2018-12-17/all-the-trump-quotes-on-powell-as-attacks-on-fed-intensify

Dizard, J. (2019, April 5). Central bank independence is as dead as vaudeville. *Financial Times*. Available at: https://www.ft.com/content/6623d49d-9ba6-378b-8984-a4454bd21224?desktop=true&segmentId=7c8f09b9-9b61-4fbb-9430-9208a9e233c8#myft:notification:daily-email:content

El-Erian, M. (2016). Political Pressure Growing on Central Banks. *Bloomberg*. Available at: https://www.bloomberg.com/news/videos/2016-10-06/el-erian-political-pressure-growing-on-central-banks

Elliott, L. (2018, December 18). Trump heaps pressure on Federal Reserve over interest rate rise. *The Guardian*. Available at: https://www.theguardian.com/business/2018/dec/18/trump-heaps-pressure-on-the-federal-reserve-over-interest-rate-rise

Fleming, S. (2018, April 18). Trump interventions on Fed policy risk unsettling markets. *Financial Times*. Available at: https://www.ft.com/content/0728c88e-43d8-11e8-803a-295c97e6fd0b

Fleming, S. (2019a, April 5). Donald Trump calls for U-turn by Federal Reserve to stimulate economy. Financial Times. Available at: https://www.ft.com/content/7d100006-57b1-11e9-a3db-1fe89bedc16e?shareType=nongift

Fleming, S. (2019b, April 7). Donald Trump's demands add to Federal Reserve interest rate headaches. *Financial Times*. Available at: https://www.ft.com/content/b14c682e-5878-11e9-9dde-7aedca0a081a

Froyen, R. T., T. Havrilesky, and R. N. Waud (1997). The Asymmetric Effects of Political Pressure on U.S. Monetary Policy. *Journal of Macroeconomics* 19 (3), 471–493.

Fry, M. J. (1998). Assessing central bank independence in developing countries: do actions speak louder than words? *Oxford Economic Papers* 50(3), 512– 529.

Gärtner, M. (2000). Political macroeconomics: A survey of recent developments. *Journal of Economic Surveys* 14 (5), 527–561.

Grilli, V., D. Masciandaro, and G. Tabellini (1991). Political and Monetary Institutions and Public Financial Policies in the Industrial Countries. *Economic Policy* 6(13), 341–392.

Guida, V. (2018, July 20). How the Fed's Powell prepared for Trump's criticism. *Politico*. Available at: https://www.politico.com/story/2018/07/20/trump-federal-reserve-powell-criticism-702248

Havrilesky, T. (1988). Monetary Policy Signaling from the Administration to the Federal Reserve. *Journal of Money, Credit and Banking* 20(1), 83–101.

Johnson, M. (2019, March 29). Bank of Italy appoints insider to key role. Financial Times. Available at: https://www.ft.com/content/27689114-5224-11e9-9c76-bf4a0ce37d49

Look, C. and T. Argitis (2019, April 13). Draghi, in Rare Move, Sounds Concern Over Fed's Independence. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2019-04-13/draghi-in-rare-move-expresses-concern-over-fed-s-independence

Mander, B. (2018, January 31). Shift by Argentina's central bank rings alarm bells. *Financial Times*. Available at: https://www.ft.com/content/510d01fa-0660-11e8-9650-9c0ad2d7c5b5

Mayeda, A. and M. Dorning (2018). Trump Rips Fed as Economy's Only Problem; No Powell Mention. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2018-12-24/trump-blasts-federal-reserve-as-u-s-economy-s-only-problem

Mohsin, S. (2019, March 3). Trump Using Fed, Strong Dollar Complaints to Stir Voter Base. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2019-03-03/trump-using-fed-strong-dollar-complaints-to-stir-voter-base

Münchau, W. (2016, November 13). The End of the Era of Central Bank Independence. *Financial Times*. Available at: https://www.ft.com/content/8d52615e-a82a-11e6-8898-79a99e2a4de6

Münchau, W. (2017, February 19). Central Bank Independence is Losing Its Lustre. *Financial Times*. Available at: https://www.ft.com/content/6ed32b02-f526-11e6-95ee-f14e55513608

Nag, A. (2018, December 10). Why India Central Bank Chief Decided He'd Had Enough: QuickTake. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2018-12-10/why-india-central-bank-chief-decided-he-d-had-enough-quicktake

Persson, T. and G. Tabellini (1990). *Macroeconomic Policy, Credibility and Politics*. Chur, Switzerland: Harwood Academic Publishers GmbH.

Rushe, D. (2018, December 19). Federal Reserve raises interest rates despite pressure from Trump. *The Guardian*. Available at: https://www.theguardian.com/business/2018/dec/19/federal-reserve-interest-rates-raised-trump

Ward, J. (2019, April 8). Central Bank Independence Under Increasing Threat, Fitch Says. *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2019-04-08/central-bank-independence-under-increasing-threat-fitch-says

Wells, P. (2018, October 17). Trump describes Fed as his biggest threat. *Financial Times*. Available at: https://www.ft.com/content/798bbcae-d19c-11e8-a9f2-7574db66bcd5?segmentId=080b04f5-af92-ae6f-0513-095d44fb3577

# *Kuletskaya, Lada[1]:* Spatial Modelling of Voting Preferences in Russian Federation

*Abstract: This paper is dedicated to determine the set of economic and political factors that affected Russian State Duma and presidential election outcomes and offers spatial approach to model voting results at two data levels: for territorial election commissions and for regional election commissions. Based on our preliminary data analysis, we found that there are dependencies and patterns in voting for Vladimir Putin and Ksenia Sobchak in neighboring regions and, what is more, this dependency is stronger for voting in favor of Ksenia Sobchak. Our next steps will be compiling a set of economic and political factors based on Russian and foreign literature, then estimating spatial models on two data sets mentioned above, and present the results in scientific journal, like Post-Soviet affairs, Regional studies, Electoral Studies.*

## Introduction

In this study we are going to consider and estimate economic and political factors that had possible influence on the vote results in the Russian State Duma and presidential elections in the period from 2004 to 2018 years. Our aim is to find out connections among enterprise activities, durations in inflation, unemployment rate, opposition movements, etc. and preferences in voting, turnout in Russia at regional level.

From the preliminary analysis, we suppose that mentioned below factors had possible impact on the elections in Russia:

⸺ GRP per capita, the level of wages, unemployment rate: the higher the GRP is, wages in the region are and the lower the unemployment rate is, the more voters will positively evaluate the actions of the current government and the head of state, and the more they will believe in justice of past presidential / parliamentary elections, that in turn will reflect on turnout and votes for president / political party currently in power;

⸺ The level of government's subsidies to the regions: subsidies can be proxy variable for state programs for increasing the level of wellbeing in the region, thus, the more the level of subsides is, the more positively the voters evaluate the current government and elections;

⸺ Inflation rate: a high inflation rate is often associated by voters as a negative fact, that the policy of the Central Bank of the country does not work effectively enough, consequently it can influence on votes for president / political party currently in power;

⸺ The presence of opposition headquarters and protest movements in the region: the effect of increasing protest movements, in our opinion, may be twofold: on the one hand, their growth of them may indicate a political freedom of citizens, and on the

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other hand, may indicate dissatisfaction of citizens with the system of power including electoral system.

In our research we are going to check our suggestions on two data levels: for territorial election commissions and for regional election commissions. The level of territorial election commissions is smaller than regional level and we assume that such analysis at micro level will significantly expand the practical application of spatial modeling and opportunities to highlight correct directions of possible influence factors. In addition, considering application of spatial modeling to the data, we are going to analyze how the factors in neighboring regions / territorial commissions influence to each other.

It is expected that this study will help to better understand how exactly the choice of a candidate in elections proceeds in the regions, how economic or political decisions and activities in any region will affect the results of voting in neighboring territorial election commissions and regions.


## Literature Review

In the scientific literature, there are many articles devoted to voting preferences and analysis of election results. Commonly, authors focus their analysis on new, unusual data or on the methods used, sometimes simultaneously on both.

For example, authors of the article (Cutts, Webber, Widdop, Johnston, & Pattie, 2014) confirmed the hypothesis about the existence of spatial dependence of the regions: if the financing of the political campaign takes place in some region $i$, it allows to attract a large number of voters in the neighboring with $i$ regions.

Authors of the next article (Kim, Elliott, & Wang, 2003) found that the higher the unemployment rate is in the region (at a given level of income), the more people in the region support Democrats than Republicans. At the same time, the opposite conclusion was made regarding the level of income: the higher the level of income is in the region (at a given level of unemployment), the more voters in this region support the Republicans.

The subject of the article (Coleman, 2018) were the results of the Russian Duma elections from 1993 to 2016 years. The authors considered the psychological theory that people in their preferences and actions are subject to public opinion, the authors called it "social conformity". As a result, social conformity is increasingly affecting the results of the vote, not only on parliamentary, but also on presidential elections in Russia.

We would like to highlight the articles where the method of spatial discontinuity design was used to solve research questions about voting results and preferences. We offer to focus on the paper (Keele & Titiunik, 2014), because the topic of this study is most similar to ours. The authors described spatial discontinuity design as a new approach to conduct the experiment, in which all regions are divided into control and experimental groups. This work helped a lot for the active development of the spatial discontinuity design method, for example authors of the paper (Skovron & Titiunik,

2015) described in detail the analysis and interpretation of this approach, its usage in Stata and R.

Based on the literature review, we would like to note a relatively small number of studies about Russian data analysis and, what is more, advanced methods of spatial econometrics have been applied mainly to foreign election data. In our study, we would like to analyze in detail the impact of economic and political factors on Russian elections, to determine which factors influenced stronger.


## Data and Methodology

Firstly, we are going to collect data from the website of the Central Election Commission (http://www.cikrf.ru, http://www.vybory.izbirkom.ru), about the results of the State Duma (in 2016, 2011, 2007) and presidential elections (in 2018, 2012, 2008, 2004). The data contains information about the proportion of votes for the nominated candidates and turnout at the level of territorial election commissions (hereinafter – TECs), and regional election commissions (hereinafter – RECs) in each of these years.

As for economic and political factors, the data for economic factors can be gathered from Federal State Statistics Service (www.gks.ru) at the regional level for almost all mentioned in Introduction factors. As for TECs level, we can collect data for big enterprises from SPARK database and data for accommodation prices, that can be proxy variables for economic factors. From SPARK several criteria can be chosen for estimation: the number of employees (the larger the enterprise, the easier it is to exert influence through it), the presence of a share of state ownership (we imply that this can be a pressure channel for the current government) and financial success of the enterprise (as well as accommodation prices) can be a proxy for economic environment in the markets.

Moreover, currently we are in process of connecting TECs with the municipalities. After matching, for almost all mentioned in Introduction economic factors can be collected from the gks site for TECs too.

As for political factors, at this moment we considering Navalny opposition movements as the most influencing opposition party at the last elections, the data of headquarters can be gathered from his official site. We plan to analyze past opposition movements and add them in the spatial modeling.

In accordance with our research goal, we are going to spatial models for two data sets: first is where TEC is the unit of observation and the second is where REC is the unit of observation. The model be constructed as follows below:

$Y = X\beta + WX\theta + \varepsilon,$

*where Y – % of votes for a specific candidate or turnout, $X = X_1$, $X_2$ – economic and political characteristics of specific TEC / region i, $WX\theta$ - economic and political characteristics of neighboring TECs/ regions in relation to the TEC / region i, W is a neighborhood matrix between TECs / regions.*

As a result, we will achieve direct ($\frac{\partial Y_i}{\partial X_i}$) and indirect ($\frac{\partial Y_i}{\partial X_j}$) effects of political and economic factors of the TEC / region $i, j$ on the voting results in the TEC / region $i$.

**Preliminary Results**

In our research proposal, we want to discuss several findings from the analysis of the data set, where the unit of observation is TEC.

While we are collecting data from SPARK and gks, we estimated model simple model $Y = WY\gamma + \varepsilon$ in order to understand are there some dependences in voting preferences and turnout among regions or not. Thus, we took Moscow region and neighboring regions for analysis.

Firstly, we created several neighborhood matrixes of TECs:

— *matrix W1*: Moscow region's TECs and neighboring TECs from other regions
— *matrix W2*: Moscow region's TECs and neighboring TECs from Moscow
— *matrix W3*: Moscow region's TECs only

Next, we calculated Spearman coefficients for:

— *Votes for Putin, % in 2018 and W1/W2/W3 *Votes for Putin,%*
— *Votes for Sobchak, % in 2018 and W1/W2/W3 *Votes for Sobchak,%*

as we supposed that Vladimir Putin presents current policy regime and Ksenia Sobchak presents opposition.

The results are shown in Tables 1 and 2. The coefficients are significant at least at 5% of significance, and for Ksenia Sobchak the linear dependence between two variables is stronger (for all matrixes). This means that there are strong linear dependences among neighboring TECs, and votes for Vladimir Putin and Ksenia Sobchak are correlated among neighboring TECs.

*Table 1.* Spearman coefficients between *Votes for Putin, %* in 2018 and *W1/W2/W3 *Votes for Putin,% (Standard errors in parentheses *** p<0,01 ** p<0,05 * p <0,1)*

|  | **Coeff.** |
|---|---|
| *Votes for Putin, % in 2018* and *W1 *Votes for Putin,%* | 0,2196* |
| *Votes for Putin, % in 2018* and *W2 *Votes for Putin,%* | 0,2655** |
| *Votes for Putin, % in 2018* and *W3 *Votes for Putin,%* | 0,2829** |

*Table 2.* Spearman coefficients between *Votes for Sobchak, %* in 2018 and *W1/W2/W3 *Votes for Sobchak,% (Standard errors in parentheses *** p<0,01 ** p<0,05 * p <0,1)*

|  | **Coeff.** |
|---|---|
| *Votes for Sobchak, %* in 2018 and *W1 *Votes for Sobchak,%* | 0,679*** |
| *Votes for Sobchak, %* in 2018 and *W2 *Votes for Sobchak,%* | 0,6381*** |
| *Votes for Sobchak, %* in 2018 and *W3 *Votes for Sobchak,%* | 0,6381*** |

We also calculated Spearman coefficients between *Turnout in 2018[1], %* and *W1/W2/W3 *Turnout in 2018 ,%* and found no linear dependency in turnout among regions, as shown in Table 3.

*Table 3.* Spearman coefficients between *Turnout in 2018, %* and *W1/W2/W3 *Turnout in 2018 ,% (Standard errors in parentheses *** p<0,01 ** p<0,05 * p <0,1)*

|  | **Coeff.** |
|---|---|
| *Turnout in 2018, %* and *W1 *Turnout in 2018 ,%* | -0,086 |
| *Turnout in 2018, %* and *W2 *Turnout in 2018 ,%* | -0,057 |
| *Turnout in 2018, %* and *W3 *Turnout in 2018 ,%* | 0,446 |

In addition, we took a glimpse at distribution and number of Navalny headquarters in the period of 2018 presidential elections and found that they located across all country, however most part of them were in the eastern part of Russia, as presented in Picture 1.

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[1] Voter turnout (y) = Number of valid ballots / Number of voters on the electoral roll

*Picture 1.* Map of Navalny headquarters [1] created in a period of presidential elections in 2018
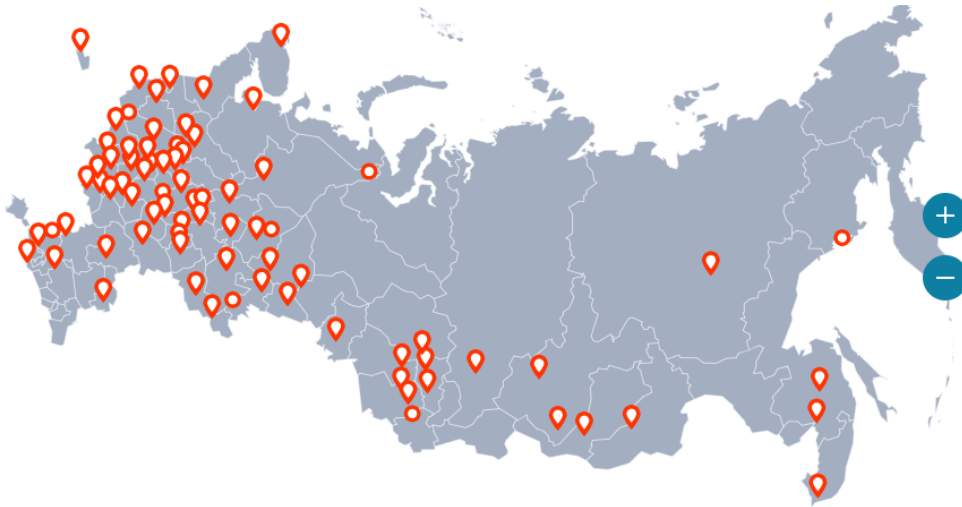


What is more, if we take a look at scatter graph between variables Votes for Putin, % in 2018 and W1 *Votes for Putin,% with marking of TEC with Navalny headquarter, we found that votes for Vladimir Putin were quite low in this particular TEC in comparison with the majority of TECs, as presented in Graph 1.

*Graph 1.* Linear spatial dependence between Votes for Putin, % in 2018 and W1 *Votes for Putin,%



[1] Data source: https://shtab.navalny.com/
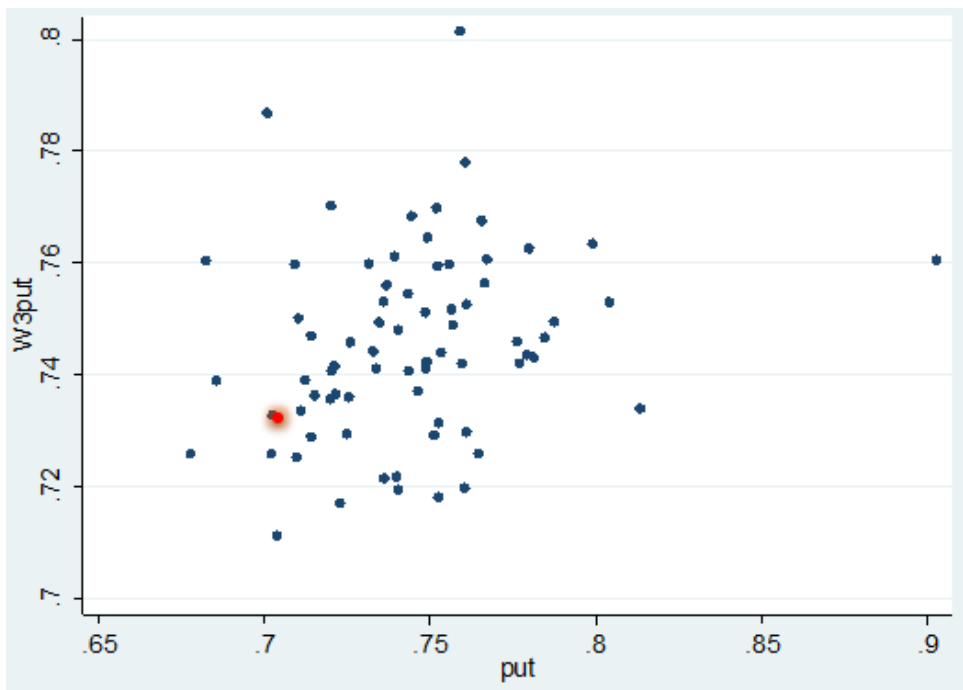
## Conclusion

As a result, it can be said that there are strong linear dependences and patterns in voting among neighboring regions. In our research we will focus on two data sets that were mentioned above and try to highlight several sets of economic and political factors that influenced votes on two different regional levels. We also will use the data of opposition parties and activities, prices for accommodation and data of large enterprises to identify how these aspects affected on elections. As a result, we will recognize what factors influenced more, define direct and indirect effects and confirm (or reject) hypothesis about spatial dependency in voting behavior for regions.

## References

Coleman, S. (2018). Voting and conformity : Russia , 1993 – 2016. *Mathematical Social Sciences*, *94*, 87–95. https://doi.org/10.1016/j.mathsocsci.2017.10.005

Cutts, D., Webber, D., Widdop, P., Johnston, R., & Pattie, C. (2014). With a little help from my neighbours : A spatial analysis of the impact of local campaigns at the 2010 British general election. *Electoral Studies*, *34*, 216–231. https://doi.org/10.1016/j.electstud.2013.12.001

Keele, L., & Titiunik, R. (2014). Geographic Boundaries as Regression Discontinuities. *Oxford University Press*, *23*(1), 127–155.

Kim, J., Elliott, E., & Wang, D. (2003). A spatial analysis of county-level outcomes in US Presidential elections : 1988 – 2000. *Electoral Studies*, *22*, 741–761. https://doi.org/10.1016/S0261-3794(02)00008-2

Skovron, C., & Titiunik, R. (2015). A Practical Guide to Regression Discontinuity Designs in Political Science, 1–47.

# *Samkov, Aleksei [1] (with Elena Podkolzina[2] and Michele Valsecchi[3]):* **Electoral Accountability of Local Politicians and Corruption in Public Procurement: Evidence from the Russian Federation**

***Abstract:*** *This paper estimates the effect of presence of popular mayoral elections in 207 largest cities of the Russian Federation on corruption in procurement procedures set by administrations of these cities. We assume that when a head of municipality is popularly elected (as opposed to elections by a local council of deputies), he has more incentives to fight corrupt activities. The latter is represented in indirect signals of corruption, such as lack of competitiveness of procurement procedures, which we measure by the number of bidders per lot and the price rebate. We expect to see a significant positive effect of presence of an elected mayor on number of bidders per lot and price rebate in procedures set by local administrations. In addition, we expect that the presence of a city-manager (head of local administration) as a different person will mitigate this effect. This paper underscores the importance of popular elections in reducing corruption in public procurement.*

## Introduction

Since the municipal reform in the Russian Federation came into force in 2006, the number of large cities with directly elected mayors started to decrease dramatically: it fell about 4 times by 2018 [1]. Citizens mostly oppose decisions of regional governments to cancel popular elections. For instance, when popular mayoral elections were cancelled in Yekaterinburg in 2018, about 10'000 people gathered on a meeting with a claim to keep them, yet their demands were ignored [2]. People are used to think that local elections are associated with representation and balancing the power, which explains their desire to elect mayors.

There are several theories why elections are held in authoritarian countries, such as Russia, and what are determining factors of their introduction or cancellation. Reuter et al. (2016) [1] proposed that the main reason why local elections take place in a non-democratic state is the possibility of cooptation of subnational elites who have access to political resources by allowing them to strengthen their power bases. However, our paper studies not the causes of popular elections in Russia, but their effects on corruption. It is a common wisdom in political science that elections, as a basis for democracy, is one of the instruments for maintaining the rule of law (Olson 1993 [3]). In line with this statement, we believe that local elections promote anti-corrupt activities, in particular those related to public procurement. Mayors who are popularly elected have reelection incentives (Ferraz and Finan 2011 [4], Valsecchi 2016 [5]) and greater overall responsibility for representation. Therefore, we analyze the effect of

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having popular elections on competitiveness of those public procurement procedures where administrations of respective cities served as customers. The idea of measuring corruption by indirect signals, such as number of bidders per lot and price rebate, was used in Coviello and Gagliarducci (2010) [6], who linked political savvy of mayors with greater tenure period to lower auction competitiveness in Italy.

We use a unique dataset on 220 largest cities of the Russian Federation (with the population more than 75000 people, according to 2010 Census), which were analyzed by Reuter et al. (2016), combining data from this paper with data from Central Election Commission website and other sources. For procurement, we use official data from zakupki.gov.ru website, collect data on contracts for administrations of these cities and transform it to the contract-procedure level. Therefore, we assign each contract with a mayor who was in power when the contract was signed, analyzing the effect of having this mayor been elected on number of bidders per lot and price rebate. We expect that this effect will be positive for both dependent variables.


**Aim of the Project**

The objective of this paper is to analyze the effect of presence of popular elections in Russian cities on corruption in procurement procedures set by administrations of corresponding cities. We believe that popularly elected mayors are associated with the lower level of corruption, which is measured by several indicators of competitiveness of procurement procedures.


**Hypothesis and Methodology**

We test the hypothesis that popularly elected heads of municipalities are associated with the lower level of corruption than those who were elected by a commission of local deputies. More formally,

*There is a statistically significant positive effect of having a popularly elected mayor at the time of contract signing on the number of bidders per lot and the price rebate for the winning lot in a corresponding procurement procedure of a tender set by a local administration of one of the analyzed cities.*


Price rebate is calculated as:

$$price\ rebate \equiv \frac{initial\ price - final\ price}{initial\ price}$$

The basic regression is the simple time-FE model on the contract-level:

$$y_{imt} = \beta_0 elected_{mt} + X'_{imt}\beta_1 + \phi_t + \varepsilon_{imt},$$

where $y_{imt}$ is one of either number of bidders or price rebate, $elected_{mt}$ is a dummy variable indicating whether the head of municipality $m$ who was in office at the moment of contract signing $t$ was elected popularly, $X'_{it}$ are mayors-specific and contract-specific observable controls and $\phi_t$ are time-fixed effects. The number of

observations is the total number of procurement contracts signed by administrations of cities from 2011 to 2018. However, in additional regressions I am going to separate data by cities where the city-manager is a different person from mayor and those where mayor also serves as a head of administration.

The main drawback of this approach is an endogeneity issue. The presence of elections is not assigned randomly among municipalities; therefore, the dependent variable may be explained by some unobserved characteristics that differ in municipalities with popular elections and without them, which, in its turn, may result in potential omitted variable bias.

Since regions (subjects) in Russia are quite heterogeneous, corruption may be explained by some unobservable characteristics, such as the composition of local council or the level of electoral fraud in the region. These characteristics may also affect the presence of local elections. Therefore, it may be helpful to introduce the region-level/city-level observables and city-fixed effects:

$$y_{it} = \beta_0 elected_{mt} + X'_{imt}\beta_1 + Z'_{mt}\beta_2 + \lambda_m + \phi_t + \varepsilon_{imt},$$

It is worth noting that $elected_{mrt}$ is not influenced by characteristics of the present mayor; it might be affected by characteristics of the previous mayor. However, we cannot control directly for the main variable that affects the presence of elections, which is mayor's margin of victory because it does not make any sense if that mayor was not popularly elected.

Another possible way to handle potential OVB is to introduce the 2SLS model, where $elected_{mt}$ is instrumented with previous mayor's margin of victory. Since we assume that current level of corruption does not affect the outcomes of elections for previous mayor, and his margin of victory explains the cancellation of popular elections (shown in Reuter al. (2016)), this variable is a valid instrument. Hence, we restrict the sample for municipalities which had popular elections for the previous mayor. First-stage regression is:

$$elected_{mt} = \alpha_0 prevmargin_{m(t-4)} + M'_{m(t-4)}\alpha_1 + \mu_{mt},$$

And the second-stage regression is:

$$y_{it} = \beta_0 \widehat{elected}_{mt} + X'_{imt}\beta_1 + Z'_{mt}\beta_2 + \lambda_m + \phi_t + \varepsilon_{imt}.$$

**Expected Results**

We expect to have a statistically significant positive effect of presence of popular elections on the number of bidders per lot and price rebate in procurement procedures. This effect should be more pronounced for cities where mayor is responsible for managing procurement for local administrations (i.e., where there is no city-manager).

Therefore, if our results satisfy our expectations, we will provide an empirical evidence for advantages of popular mayoral elections in reducing the level of corruption in local procurement.

## References

[1] O. J. Reuter, N. Buckley, A. Shubenkova and G. Garifullina, "*Local Elections in Authoritarian Regimes: An Elite-Based Theory with Evidence from Russian Mayoral Elections*," *Comparative Political Studies*, vol. 49(5), pp. 662–697, 2016.

[2] "Snesli bashnyu – ostavte vybory." *Meduza,* 2 Apr. 2018, https://meduza.io/feature/2018/04/02/snesli-bashnyu-ostavte-vybory.

[3] M. Olson, "Dictatorship, Democracy and Development," *The American Political Science Review,* vol. 87, No. 3, pp. 567-576, 1993.

[4] C. Ferraz and F. Finan. "Electoral Accountability and Corruption: Evidence from the Audits of Local Government," *American Economic Review*, vol. 101 (4), pp. 1274-1311, 2011.

[5] M. Valsecchi, "Corrupt Bureaucrats: The Response of Non-Elected Officials to Electoral Accountability," *Working Papers in Economics* 684, University of Gothenburg, Department of Economics, 2016.

[6] D. Coviello and S. Gagliarducci, "Tenure in Office and Public Procurement," *CEIS* Working Paper No. 179, 2010.

# *Serebrennikov, Dmitrii[1]:* **Forced Digitalization: Sociological Analysis of the Work of the Coordination System of Russian Emergency Services "Security City"**

**Abstract:** *The work is devoted to the study of the centers of monitoring and coordination of emergency services of the "Security City" system in the municipalities of Russia. For a number of reasons, municipal authorities are engaged in the construction of centers without legislative financial support from the region or the federal center. At the same time, the centers are involved in coordinating the actions of all emergency services of the city, and also (ideally) are engaged in monitoring the widespread security infrastructure in the city (using the CCTV and various sensors). Despite its important "Security City" is a "black box" and a space of unclear goals, which are determined directly at the level of the municipality. To understand how the centers work, research is supposed to be conducted in four cities using qualitative methods. Centers will be investigated from the point of view of the institutional structure in the paradigm of new institutionalism, which will allow understanding the general structure of their work and finding out the causes of local features in each case. The study is at the stage of collecting and analyzing the collected material.*

## Introduction

In 1960 the police of London installed the first public order observation camera in Trafalgar Square. Henceforward the countries of Western Europe and North America brought different technical security systems into play by law enforcers. Since the end of the 1990s, due to the development of the Internet and laptop computers, this growth has become truly rapid. Nevertheless, the effectiveness of such systems still raises questions in the criminological literature (eg. Willis et al. 2017)

In the second half of the 2000s, such systems began to appear in Russian regions. The discourse of digitalization and modernization was popular during the term of D. Medvedev. It created confidence among regional actors that such programs would receive support from the federal budget.

As a result, in 2014 the Russian government approved the governmental decree of construction and development of the hardware and software complex "Security city" (SC). Monitoring centers were envisaged as the main link in these systems. The monitoring center in the study refers to an institution which is to observe CCTV and various detectors in the city and coordinate the actions of all the main emergency services of the municipality (firefighters, police, ambulance, gas services, rescue services, maintenance crews, etc.). This study will analyze only the work of the centers with CCTV because video surveillance systems are one of the main elements of the SC systems in different cities.

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According to the governmental decree and other documents, municipalities had to implement the program at their own budget by 2018. The passing of the regulatory legal act was accompanied by conflicts of interests among various federal ministers, which delayed the process of creating common standards for the system. Regardless, municipalities remained in charge of its construction, and financial investment in the development of SC has steadily increased in recent years[1]. The explanation for this growth can serve as a confirmation of the theory of optimum enforcement of laws developed by Gary Becker. According to the theory, an improvement in the technology of catching a criminal leads to an increase in the optimal value of the probability of catching a criminal and a decrease in the optimal value of the severity of punishment for a crime. (Becker, 1968). Such systems seemed effective because they could reduce transaction costs in the interaction between the municipality (to which they belong) and emergency services.

But the short deadline for implementation and poor supervision by the federal center resulted in a diversity of models developed by the municipal monitoring centers. From the preliminary study, two main models can be extracted: private (in this case, SC is outsourced to private security companies or private emergency control centers) and municipal (by adopting existing emergency control centers in the municipality to the needs of SC centers). In practice the choice between the two models was often made on the spot and depended on municipal budget constraints. If such systems are to be developed in the future, a clear estimate of the effectiveness of various models would be required. However, in the absence of sufficient data it is difficult to develop clear criteria for choosing between different models, a problem that is exacerbated by the lack of studies on the economics of security and law enforcement on Russian material (the exception is eg. Vasilenok, Yarkin, 2018).

**The Aim of the Project**

Although the manifest goal of SC work is the provision of security and law enforcement, de facto it is a field of uncertainty in which the municipality as a principal has to conclude the most advantageous contract with an agent in order to create and implement the system. Due to the wide variety of models for constructing SC and the lack of data, it is not clear whether municipalities are achieving the stated objective of providing security as a valued public good.

The purpose of the study is to answer two questions: which model works more effectively to ensure security and how we can evaluate the efficacy of these centers in general? The study is in an exploratory stage in view of the absence of research and data. Therefore, such a broad statement of the question seems legitimate (Paneyakh, Titaev, Shklyaruk, 2018, 451).

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[1] According to sites clearspending.ru, zakupki.kontur.ru

**Hypotheses**

Hypothesis 1: According to expert estimates, the private model is more effective than the public (municipal) one because the cost of outsourcing is lower than the cost of maintaining such centers at municipal expense.

Hypothesis 2: The efficiency of the SC is higher in those municipalities where various systems of municipal security existed before its construction.

Hypothesis 3: In cases where, for some reason, the centers have links with regional rather than municipal authorities they will be more efficient (it is worth saying that SC is often linked with another system – "Number-112", which has a under the jurisdiction of regional authority).


**Methodology**

The study began in September 2018 and is ongoing. Despite the virtual absence of literature on measuring the effectiveness of a bureaucratic organization in providing security, there are a number of studies analyzing municipal monitoring centers in organizational studies and the new sociological institutionalism. Important work is devoted to the management and operation of smart cities in general and crime monitoring centers in particular (Batty 2015, Monahan 2007). Sarah Brayne 's article describes the results of her overt observation project at one of the most technically advanced police monitoring centers in America. It shows how the FBI and CIA technologies penetrate the work of the lower-level police, intensify discrimination against the poorest people and incentivizing new commercial stakeholders (Brayne 2017). At the same time, the author failed to find works that investigate such centers from an institutional point of view. Although Russian monitoring centers are an interesting case for such an analysis, particularly because they in charge of coordinating the activities of other organizations, institutional weakness forces them to adapt their organizational structure to external actors.

In the absence the research and data, this study relies on a qualitative approach. The effectiveness of centers is assessed on the basis of observable positive effects on the public good, resulting from the routinization of best practices implemented by a center`s workers.

The study was conducted in the frame of a multiple case-study in the municipalities in the Leningrad region. The sample is based on two criteria: 1) Whether the center is managed by a private firm or the municipality itself; 2) In the case of municipality managed centers, whether the center is directly subjected to the municipality or to regional authority. Based on these criteria, I develop a tripartite typology of cases.

The research is based on semi-structured interviews that address specific blocs of topics, and selective observation in monitoring centers. Expert interviews were also held with members of the IT community who participated in the construction of security systems. Additional material obtained from external sources enable me to assess several more cases. Finally, the author investigated regulatory documents pertaining to the security systems in question.

**Preliminary Results**

Currently, three cases have been investigated (one private, one municipal, and one associated with regional authorities). Twenty interviews were conducted with a total of twenty-five informants. Direct observation was carried out in the rooms where the center operators work (two sessions with a cumulative observation time of 2.5 hours). A large amount of internal documentation of the centers was collected as well as a large number of other sources.

From the point of view of police law enforcement, the centers proved ineffective, albeit for various reasons. Neither in the private nor in the regional center, the CCTV was not actually used (the difference was only in their cost). Despite the lower cost of outsourcing to private firms, the municipality nevertheless lacked the resources to control its work. In the regional-controlled public municipal center, managers considered the costs excessive and unjustified. At the same time, hypothesis 2 which predicted that efficiency would be greater where municipal security systems were in place before SC implementation, was not confirmed. Such systems existed in both the private and municipally owned SC cases, but did not affect the outcome in either one.

However, one municipal center in particular, adapted the monitoring system to provide another kind of public good, not predicted by the creators of SC: the systems was used to maintain a comfortable public environment (control over the cleaning of streets, garbage disposal, and maintaining basic order with the help of cameras). Data from other municipal centers confirm that this kind of organizational adaptation is not unique.

The answer to the question of why such goal displacement occurs (from the detection and reduction of crimes with the help of new technical systems to providing a comfortable public space) should be sought in institutionalized "security" myths (Meyer & Rowan, 1977) and institutional isomorphism (DiMaggio & Powell, 1983). In all cases, the leadership and managers of the SC centers are former military men who seek to build the SC work in a military fashion (discipline, order enforcement, and so on). Where centers are closely related to municipalities (not subordinated to regional authorities or hostage to business interests), a special system of incentives (primarily status ones for former military men) helps promote the public good (the creation of a safe public space that can also reduce crime) (Wilson & Kelling, 1982).

In summary, preliminary results show that an attempt to use SC for police law enforcement has been unsuccessful thus far, but that it has nevertheless had positive effects for the public. However, these results need to be thoroughly checked with the help of both qualitative and quantitative studies.

## References

Batty, Michael. (2015). *"A Perspective on City Dashboards."* Regional Studies, Regional Science 2 (1): 29–32.

Becker G. (1968). Crime and punishment: An economic approach. Journal of Political Economy, Vol. 78, No. 2, pp. 169—217.

Brayne, S. (2017). Big Data Surveillance: The Case of Policing. *American Sociological Review*, *82*(5), 977–1008.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 147-160.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American journal of sociology*, *83*(2), 340-363

Monahan, T. (2007). "*'War Rooms' of the Street: Surveillance Practices in Transportation Control Centers.*" The Communication Review 10 (4): 367–89.

Paneyakh E., Titaev K., Shklyaruk M. (2018). Criminal case trajectory: institutional analysis [Traektorija ugolovnogo dela: institucional'nyj analiz]. Izdatel'stvo Evropejskogo universiteta v Sankt-Pereburge. (In Russian)

Vasilenok, N. A., & Yarkin, A. M. (2018). Who is in charge of security? Division of labor between public and private security producers. VOPROSY ECONOMIKI, 3. (In Russian)

Wilson, J. Q., & Kelling, G. L. (1982). Broken windows. *Atlantic monthly*, *249*(3), 29-38.

Willis, M., E. Taylor, M. Leese, and A. Gannoni. (2017). *"Police Detainee Perspectives on CCTV. Trends and Issues."* Crime and Criminal Justice 538: 1–14.

# Shagbazian, Gegam[1] (with Paola Valbonesi[2] and Riccardo Camboni[3]): The Effect of Set-Aside Auctions on Firm's Growth

*Abstract: Small and Medium Enterprises (SMEs) play a main role in most economies,and supporting SMEs is an important aim of modern governments. In different countries, one way to support SMEs has been to organize preferential treatment in the form of set-aside auctions in public procurement. Since 2006, a SMEs' preferential program has been implemented in the Russian Federation. Such a program was recently updated in 2013: accordingly, all public buyers have to award at least 15 percent of their annual contracts (in monetary terms) to small business (SB) suppliers through set-aside auctions (SA). Only SBs can participate in such auctions. In this paper I address the following question: What are the effects on a firm's growth by set-aside auctions supporting small businesses entry in public procurement? For the analysis I will exploit an original database of sealed-bid and e-auctions for granulated sugar in Russia, awarded in the period 2011-2013. The database contains information about 38,245 contracts, and it is matched with a firm-level database which contains financial information of 2,017 winners.*

## Introduction

In the USA, the first affirmative actions to support small businesses (SBs) were adopted in 1953. The Small Business Act of July 30, 1953, states to "aid, counsel, assist and protect, insofar as is possible, the interests of small business concerns". One of the targets of the Act was to provide SBs a "fair proportion" of government contracts. More recently, in the United States, the federal government aims to allocate at least 23 percent of its roughly $500 billion in annual contracts to SBs (Athey et al., 2013). Similarly, 50.1 percent of government contracts was targeted to SMEs in 2007 in Japan (Nakabayashi, 2013). Developing countries are no exception. Similar programs were enacted in South Africa, Brazil, India, and in the Russian Federation (RF). In the RF, a first program was implemented in 2006 and prescribed to place from 10 to 20 percent of public procurement contracts on set-aside auctions (SA) for SBs. This requirement was specified in the Federal Law 94FZ (in use from 2006 to 2013). This rule was changed in 2014: since then, at least 15 percent of government purchases have to be reserved for SBs.

Despite the importance of such programs, the analysis on their impact on firms dynamic is lacking. Mainly, empirical literature has focused on potential losses or benefits of preferential programs for government.

Nakabayashi (2013), exploiting a data set of 15020 procurement contracts of civil engineering projects from 2007 to 2009 in Japan, found that without the presence of set-aside program, about 40 percent of SBs would leave the market. He developed a model of auction with entry based on a two-stage game. In the first-stage, potential

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bidders take the decision to entry the auction, and in the second stage the contract is awarded using a first-score auction. The game relies on the assumptions that entry is sequential, each potential bidder has a unit capacity constraint, and every potential bidder must pay a fixed entry costs. The empirical analysis consists of three steps. At the first step, the bidders' conductivities was identified from the observed scoring bids using a nonparametric estimation. Then, the quantitative relationship between firm size and exante expected payoffs in the auction was identified. Finally, the relationship between expected payoffs and firm size was used to extrapolate the payoffs from procurement contracts within the framework of the theoretical entry model. The entry model predicts how many SBs would drop out of the market if set-aside program will be closed. In such a situation, SBs will encounter extra competition from large firms, and 40 percent of SBs will leave the market.

A similar research question was explored by Ferraz, Finan and Szerman (2016). These authors estimate the effect of public contracts awarding on SMEs' growth. For this purpose, they use a large data set that brings together matched employer-employee data for all formal firms in Brazil with the complete database of federal government procurement contracts for the period of 2005 to 2010. As a variable to measure firm growth, they used changes in the number of employees over the quarter. Dealing with the endogeneity problem, they develop a new research design where they use firms that lose a "close auction" as a counterfactual for firms that win a close auction. Their main findings is that winning at least one public procurement contract in a given quarter increases firm growth by a 2.2 percent over the quarter, and such recorded growth is faster for younger firms.

Similarly to Ferraz et al (2016), I aim to analyse firms' growth as related to their participation and winning in procurement auctions. Differently from them, I move to specifically investigate the effect of a preferential program in the form of set-aside (SA) public procurement auction on firms' growth. The previous study by Ferraz et al. (2016) analyzed the effect of the aggregate demand shock that comes from the government on firm growth, while I focus on the impact of the demand allocated through SA auctions exclusively for SBs on a large dataset on public procurement for granulated sugar in the Russian Federation.


**Aim of the Project**

To investigate the effects on a firm's growth by set-aside auctions supporting small businesses entry in public procurement. More particularly, the question can be addressed as follows: Whether SA is an effective tool to foster SMEs' growth?


**Hypotheses and Methodology**

I assume that the reduced-form equation for the growth of firms can be represented as:

$$y_{it} = \beta_0 + \beta_1 SA_{it} + \beta_2 G_{it} + X_{it}\gamma + \varepsilon it \qquad (1)$$

where $y$ is the firm growth in period $t$, $SA_{it}$ is the demand faced by the firm winning one or more set-aside auctions in period $t$, i.e. the log of sales from SA ; $G_{it}$ is the log of contracts from government in monetary terms awarded through not set-aside in year $t$; $X_{it}$ is the matrix of firm specific control variables that includes age, location, log of sales to the private sector; the error term $\varepsilon_{it}$ is composed of a fixed firm-level and time changing unobservable characteristics, regional fixed-effects, and unobservable shock to firm growth.

In this setting, the OLS estimator will yield biased and inconsistent results. This could be because, first, the winning of an auction can be correlated with the unobservable characteristics of the firm. For instance, it is plausible to assume that more productive firms are more likely to win auctions. The next source of endogeneity is the demand from the private sector, as it was described in the paper by Ferraz et al.(2016). If private sector demand has a positive dynamic, then it will displace public contracts and,vice versa, if there is a negative demand shocks then it will induce firms to participate more in government auctions.

To deal with endogeneity I propose an econometric model using an instrumental variable, and, a selection model.

## Expected Results

Demand from the set-aside auctions can positively affect SBs through different channels. First, SBs have additional demand allocated through SA. Second, young firms may use SA as a tool to enter into the market and build reputation. Finally, firms winning a SA will gain experience and will benefit from learning mechanisms, i.e. they will better understand the auction procedure, bidding behaviour, and the product demand. The overall effect is expected to foster firm's growth and to be different by the firms' age and performance. It is reasonable to assume that for young firms the effect will be more pronounced, as well as for firms with the lowest financial indicators.

## References

Athey, S., Coey, D., and Levin, J. (2013). Set-asides and subsidies in auctions.American Economic Journal: Microeconomics, 5(1), 1-27.

Nakabayashi, J. (2013). Small business set-asides in procurement auctions: An empirical analysis. Journal of Public Economics, 100, 28-44.

Ferraz, C., Finan, F., and Szerman, D. (2015). Procuring firm growth: the effects of government purchases on firm dynamics (No. w21219). National Bureau of Economic Research.

# *Abalmasova, Ekaterina*[1] *(with* Tommaso Agasisti[2], Ekaterina Shibanova[3], Aleksei Egorov[4]*):* Introduction of Performance-Based Funding in Higher Education: You Win a Few, You Lose a Few

*Abstract: In most countries experiencing the structural transformation of higher education system one of the crucial goals is to tie up the amount of public funding of universities with their performance. The aim of this research is to analyze the Russian context of performance-based funding reform and to verify how the introduction of the new funding mechanism affects the redistribution of the public higher education funding. The data comes from the Monitoring for HEIs performance and covers the period from 2012/2013 to 2016/2017 academic years. Applying time series correlation-based clustering algorithm and providing ANOVA-tests, groups of universities with different patterns of public funding were distinguished and qualitatively described in terms of performance. As a result, the group of universities who started obtaining more public funding was proved to demonstrate higher performance rather than other groups of universities. At the same time, those universities who started getting less money from the government do not differ significantly in terms of performance from the universities whose public funding did not change during 4 years.*

## Introduction and Research Question

Over the last decades in most countries experiencing structural transformation of higher education system one of the crucial goals is to tie up the amount of public funding of universities with their performance (Jongbloed & Vossensteyn, 2016; Jongbloed et al., 2018; Lepori, et al., 2007). In Russia implementation of performance-based funding mechanisms to universities under Ministry of Education and Science (MoES) authority started in 2015. Since then, largest part of public funding (at least 60%; 35,5% of total funding of public universities) is defined with accordance to number of publicly funded places and standard cost per publicly funded place in previous periods. Both of them are determined by multi-factor formulas which is based on performance indicators:

— Average national entrance exam score (average USE score);

— Number of publications in journals indexed by Web of Science and Scopus per 100 units of academic staff;

— R&D incomes from extra-budgetary sources, total R&D incomes and total incomes per 1 unit of academic staff;

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— Share of foreign students (in full-time equivalent);

— The ratio of the average monthly salary of the university's academic staff to the regional average monthly salary.

Given the fact that overall net public funding of universities has been diminishing by 26,9 percent during last 5 years universities have to compete for scarce financial resources by improving performance indicators. As a result, after implementation of the new financing distribution mechanism some universities "won" and started gaining more money from the government while others – "lost".

The *aim* of the study is to analyze the resource effect: how does the increase in the amount of funds distributed based on the performance of the universities affect their performance in subsequent periods? It's also crucial to distinguish groups of universities with different trends of public funding and qualitatively describe them in terms of performance.

The basic *hypothesis* is that obtaining more money from government positively affects performance of universities and results in higher growth rates of main performance indicators used in formula.

**Data and Methodology**

The data on performance indicators of universities comes from the monitoring for HEIs' performance and covers the period from 2014/2015 to 2017/2018 academic years[1]. We base our analysis on the performance indicators as the government uses them within the performance-based funding formula. The information on public funding from 2015 to 2018 financial years is available only for the universities governed by the Ministry of Education and Science (MoES), thus, our sample will be limited to 214 universities, but nevertheless, it will be representative in terms of Russian higher education system because it covers almost 60% of student body in Russia.

Research design can be divided into two stages. First step is devoted to distinguish groups of universities with accordance to their performance-based funding trend. If since 2015 a university started gaining more public funding from year to year it is considered as a *winner*. On the contrary, if a university obtained less performance-based funding than in previous periods it is called a *loser*. There are also universities with unstable funding trend called *"no trend"* universities. Differentiating between funding trends is provided by the use of time series cluster analysis (Vilar and Montero, 2014). The idea of this technique is to estimate dissimilarity measures of each two universities' trends and then apply k-means clustering algorithm to them.

As a second step, resource effect is estimated. Under assumption, that policy intervention is gaining more money from the government from year to year i.e. treatment of interest is being a *winner,* difference-in-differences approach is implemented. According to the graphical analysis, trends of performance indicators of

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[1] URL: http://indicators.miccedu.ru/monitoring/?m=vpo

our interest were parallel before introduction the reform, but became unparalleled after. Assuming that in the absence of treatment the outcome variables would have followed the same trend in treated and control groups, difference-in-difference estimation might be provided. However, since selection for the treatment is non-random and determined by absolute values of performance indicators in pre-treatment period (performance-based multi-factor formulas), common trend assumption does not hold. To obtain unbiased estimate of average treatment effect on treated (ATT), semiparametric difference-in-differences estimator developed by Abadie (2005) is used. This technique firstly weights changes of outcome variables between baseline and follow-ups based on their propensity scores which are approximated semiparametrically by the use of series logit estimator (Hirano et al., 2003) and secondly compare these weighted changes across treated and control groups. An attempt to take into account the fact that treatment effect might varies with share of performance-based funding (indicating level of dependence from the government) through controlling for performance-based funding share was also made.

**Preliminary Results and Discussion**

Cluster analysis of public funding patterns allows to distinguish three groups of universities. The first group of universities demonstrates positive trends in public financing after performance-based funding reform happened and positive growth rates in 2018 with response to 2015. That is why the name of the group is *winners*. This group consists of 60 universities, most of which are with high ratio of engineering and technical sciences in the portfolio of universities' educational programs. The second group in contrast shows diminishing trends and negative growth rates and is called *losers*. It contains 96 universities. Share of universities with high ratio of social sciences in the portfolio of universities' educational programs in *losers* is the highest among three groups. There is also the third group of 58 universities without significant dynamics in public funding during 2015-2018 called *others*. ANOVA tests after cluster analysis show statistical significant difference between performance indicators' means of the first group (*winners*) and other two groups (*losers* and *others*). In other words, Average performance of *winners* significantly higher from performance of *losers* and *others*, while there is no significant difference in average performance of *losers* and *others*.

The DID estimation shows that the introduction of performance-based funding scheme had positive effects on almost all performance indicators included in performance-based funding formula. Thus, despite initially the reform was aimed at increasing of accountability and transparency in public funds allocation, it led to performance improvements as well. The design of the reform formed competitive environment and additional incentives for universities to improve their performance indicators, because amount of public funding was tied to performance indicators. However, the mechanism behind this effect may lead to negative side effects. Particularly, the redistribution of public funding across universities may consequently led to the polarization of higher education system in terms of performance level. Universities with higher performance obtain more money and thus, more resources to manage and

to convert it into greater outputs. Low-performing universities, on the contrary, receive less resources and may have no chance to invest in the development and improve performance in the future periods.

The results also suggest that average treatment effect decreases with the increase of performance-based funding share in total income of the university. The possible explanation behind this finding is that share of non-public funding, i.e. the ability of university to attract external funding, can be considered as a proxy for the quality of universities' management. On average, the share of non-public funding in leading Russian universities is 2-3 times higher than the average across all public universities. Additional amount of public money given to the university with high-quality management (university with high share of money from non-public sources) may lead to greater increase in output level because of more efficient use of this money.

## References

Abadie, A. (2005). Semiparametric difference-in-differences estimators. *Review of Economic Studies, 72*(1), 1-19.

Jongbloed, B., & Vossensteyn, H. (2016). University funding and student funding: international comparisons. *Oxford review of economic policy, 32*(4), 576-595.

Jongbloed, B., Kaiser, F., van Vught, F., & Westerheijden, D. F. (2018). Performance agreements in higher education: a new approach to higher education funding. *In European higher education area: The impact of past and future policies*, 671-687.

Hirano, K., Imbens, G. W., & Ridder, G. (2003). Efficient estimation of average treatment effects using the estimated propensity score. *Econometrica*, *71*(4), 1161-1189.

Lepori, B., Benninghoff, M., Jongbloed, B., Salerno, C., & Slipersaeter, S. (2007). Changing models and patterns of higher education funding: some empirical evidence. *Universities and strategic knowledge creation. Cheltenham: Edward Elgar*, 85-111.

Vilar J. A., Montero P. (2014). TSclust: An R Package for Time Series Clustering. J*ournal of Statistical Software, 62*(1).

Monitoring for HEIs' performance: URL: http://indicators.miccedu.ru/monitoring/?m=vpo

# Avdeev, Stanislav[1]: Spatial Analysis of International Collaborations in Higher Education Research

**Abstract:** *This paper acknowledges there is a growing trend of joint publications within the field of higher education. In particular, we focus on patterns of scientific collaborations between and within different regions. This study combines a spatial analysis and metrics of social network analysis to observe changing patterns of geographical and linguistical proximity of countries. The purpose of this study is to explore how collaborative patterns are changing in higher education core journals across different countries. In this study, spatial scientometrics is applied as a framework to explore the changing geographical patterns in higher education research. This study identifies key patterns of international collaborations within the higher education community.*

## Introduction

This paper acknowledges there is a growing trend of joint international publications across disciplines and among countries (Adams 2012, Adams 2013). Joint publication is a paper coauthored by two or more authors from different countries. There are many reasons to seek international collaborators: exchange research ideas and competencies, share data and methods (as well as high costs of equipment). Nevertheless, collaboration is seen as a social interaction driven by institutional factors rather than pure rational strategy of maximizing research productivity (Bozeman et al. 2001). Geographical distance is an important factor of the formation of research teams from different countries (Hoekman 2010).

The field of higher education research is a fragmented community of researchers from various disciplines with different types of undergraduate degrees, theoretical approaches and methodologies they use (Yokoyama 2016). Higher education journals are mostly considered to be the peak achievement and final word in the community of higher education researchers. Peer-reviewed journals are the essential collaboration and communication platforms for scientists, policy makers and professionals where research and significant findings can be presented. Therefore, using bibliometric data from journals allow us to evaluate research activities of higher education scientists.

This study combines a spatial analysis and social network analysis to observe changing patterns of geographical and linguistical proximity of countries. The purpose of this study is to explore how collaborative patterns are changing in higher education core journals across different countries. In particular, we focus on patterns of scientific collaborations between and within different regions. It is highlighting the importance of relationships in research production and especially those between researchers from established and emerging higher education communities.

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**Data and Methodology**

In this study spatial scientometrics is applied as a framework to explore the geographical patterns in higher education research (Hoekman 2010). The overall data set covers 1414 articles and reviews from 24 selected journals from Scopus from the period 1978 – 2017 which have at least two coauthors from different countries. Data analysis was performed using the R language and RStudio software.

To explore international collaborations the spatial structure of research collaboration is modelled in analogy to Newton's law of universal gravitation (Tinbergen 1962, Hoekman 2010). The model states that the gravitational force between two entities is dependent on their masses and the distance between them:

$$I_{ij} = \frac{MASS_i^2 MASS_j^2}{DISTANCE_{ij}^4}$$

Taking a double log of the given gravity model it can be estimated using linear regression:

$$\ln I_{ij} = a_1 + a_2 \ln MASS_i + a_3 \ln MASS_j + a_4 \ln DISTANCE_{ij}$$

$a_2, a_3 > 0; \ a_4 < 0$

We include a dummy for the countries that are members of the European Union to test whether these countries are more inclined to collaborate with each other. Moreover, we include a dummy for the countries that share a common language:

$$\ln I_{ij} = a_1 + a_2 \ln MASS_i + a_3 \ln MASS_j + a_4 \ln DISTANCE_{ij} + a_5 COMLANG_{ij} + a_6 EU_{ij} + \varepsilon$$

*Hypothesis:* Affinities between countries in terms of geography and language have a strong association with the configuration of international scientific collaborations in the field of higher education.


**Preliminary Findings**

The preliminary findings indicate that the percentage of articles produced by a single author is decreasing across all countries, while certain journals remain preferable to publishing "home grown" papers (more often US-oriented journals). As a result, the proportion of joint papers has grown dramatically from 27% in 1978 to 74% in 2017.

The results of the analysis reveal a slight rise of international collaborations over the past 40 years. In 1978, the share of output in international collaborations was approximately 4%, increasing to 14% in 2017. The rise in total annual output for each country is due to domestic collaborations. However, the percentage of publications with international co-authorship for Northern and Western Europe, Hong Kong and China (and to a lesser extent the US, UK and Australia) has significantly increased over the last 40 years.

Using spatial scientometrics and network analysis key communities of higher education researchers are identified. In particular, Northern and Western Europe as

well as North America and Australasia are found to produce the majority of all papers, including those with international co-authorship.

This study shows that international collaborations occur mostly within groups of countries, such as Western Europe, North America, Australasia, as well as a small number of Asian countries. As a result of regionalization of the higher education community, the field remains national-oriented with few international collaborations between and within world regions.

## Significance

This study identifies key patterns of collaborations within the higher education community. The study comprehensively examines the output of leading higher education journals and identifies significant differences and recent changes in the field of higher education.

## References

Adams, J. (2012). Collaborations: The rise of research networks. *Nature*, *490*(7420), 335–336. https://doi.org/10.1038/490335a

Adams, J. (2013). International collaboration research Nature. *Nature*, *497*, 557–560.

Ahrweiler, P., & Keane, M. T. (2013). Innovation networks. *Mind and Society*, *12*(1), 73–90. https://doi.org/10.1007/s11299-013-0123-7

Altbach, P. (2016) Global Perspectives on Higher Education. Baltimore: The Johns Hopkins University Press.

Boschma, R., Heimeriks, G., & Balland, P. A. (2014). Scientific knowledge dynamics and relatedness in biotech cities. *Research Policy*, *43*(1), 107–114. https://doi.org/10.1016/j.respol.2013.07.009

Choi, S. (2012). Core-periphery, new clusters, or rising stars?: International scientific collaboration among "advanced" countries in the era of globalization. *Scientometrics*, *90*(1), 25–41. https://doi.org/10.1007/s11192-011-0509-4

Frenken, K., Hardeman, S., & Hoekman, J. (2009). Spatial scientometrics: Towards a cumulative research program. *Journal of Informetrics*, *3*(3), 222–232. https://doi.org/10.1016/j.joi.2009.03.005

Frenken, K., & Hoekman, J. (2014). Spatial Scientometrics and Scholarly Impact: A Review of Recent Studies, Tools, and Methods. *Measuring Scholarly Impact*, (April), 127–146. https://doi.org/10.1007/978-3-319-10377-8_6

Hoekman, J., Frenken, K., & Tijssen, R. J. W. (2010). Research collaboration at a distance: Changing spatial patterns of scientific collaboration within Europe. *Research Policy*, *39*(5), 662–673. https://doi.org/10.1016/j.respol.2010.01.012

Hoekman, J., Frenken, K., & van Oort, F. (2009). The geography of collaborative knowledge production in Europe. *Annals of Regional Science*, *43*(3 SPEC. ISS.), 721–

738. https://doi.org/10.1007/s00168-008-0252-9

Jung, J., & Horta, H. (2013). Higher Education Research in Asia: A Publication and Co-Publication Analysis. *Higher Education Quarterly*, *67*(4), 398–419. https://doi.org/10.1111/hequ.12015

Kosmützky, A., & Krücken, G. (2014). Growth or steady state? A bibliometric focus on international comparative higher education research. *Higher Education*, *67*(4), 457–472. https://doi.org/10.1007/s10734-013-9694-9

Kuzhabekova, A., Hendel, D. D., & Chapman, D. W. (2015). Mapping Global Research on International Higher Education. *Research in Higher Education*, *56*(8), 861–882. https://doi.org/10.1007/s11162-015-9371-1

Leydesdorff, L., & Wagner, C. S. (2008). International collaboration in science and the formation of a core group. Journal of Informetrics, 2(4), 317–325. https://doi.org/10.1016/j.joi.2008.07.003

Sarfatti, V. R. (2008). *Jarno Hoekman, Koen Frenken, Frank van Oort Collaboration networks as carriers of knowledge spillovers: Evidence from EU27 regions.* (September).

Scherngell, T. (2013). *The Geography of Networks and R&amp;D Collaborations.* https://doi.org/10.1007/978-3-319-02699-2

Waltman, L., Tijssen, R. J. W., & Eck, N. J. van. (2011). Globalisation of science in kilometres. *Journal of Informetrics*, *5*(4), 574–582. https://doi.org/10.1016/j.joi.2011.05.003

Wildavsky, B. (2010). The great brain race: How global universities are reshaping the world. Princeton, NJ, US: Princeton University Press.

Yokoyama, K. (2016). Reflections on the Field of Higher Education: time, space and sub-fields. *European Journal of Education*, *51*(4), 550–563. https://doi.org/10.1111/ejed.12197

# Ghasemi, Mojtaba[1] (with Mohammad Roshan[2]): Academic Promotion at Iranian Universities: An Economic Approach

***Abstract:*** *The compensation and academic reappointment and promotion of faculty members at universities, as the most important input in both education and research, has always been a central issue at universities worldwide. Likewise, Iranian universities have their own academic promotion guidelines publicized by Ministry of Science, Researches and Technology. The last version of this guidelines was publicized in 2016. Assuming that faculty members are rational agents, they respond to incentives structure of this guidelines. An economic analysis of their behavior indicates that they don't have enough incentive to publish their own research in refereed internationally recognized journals or present it at well-known international conferences even if they are capable to do such a research. Furthermore, ceteris paribus, they prefer not to teach to undergraduate students. Rather, in a corner solution they prefer to publish in Persian journals nationwide, to participate in national conferences and to invest more in teaching at graduate levels. This can decrease the quality of teaching to undergraduates and has also excluded Iranian scholars from international academic atmosphere. At the same time, implicit requirement of having international publication by promotion committees at universities and little common knowledge about internationally referred journals by both promotion committee and faculty members, has made Iranian scholars a very attractive target for predatory journals.*

## Introduction

Faculty members are the most important input in both teaching and research at universities. Thus, their recruitment, reappointment and promotion have been a central and important policy issue at universities worldwide. Indeed, there are publicized guidelines at universities applicable to recruitment, reappointment and promotion which are indeed institutions that indicate the rule of the game in Douglas North's jargon. Likewise, there are such institutions at Iranian universities. However, in this paper, we only focus on academic promotion process at Iranian Universities. Basically, the analysis of promotion behavior of Iranian scholars is at the center of this study.

Let's start with the guideline itself. There are some features in academic promotion at Iranian universities which seems to be both exceptional and odd in comparison to other countries. First, the promotion process is regulated by a central planner, the Ministry of Science, Research and Technology. In other words, there is a unique promotion guideline applicable to all universities and research institutes nationwide for promotion evaluation of their faculty members. Second, surprisingly all fields of study from different fields of engineering to chemistry, art, Economics, law and etc. Surprisingly, all of them are evaluated by the same guidelines. Thus it can be claimed

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that there is comparatively an extremely concentrated system of evaluation for academic promotion at Iranian universities. Indeed, there isn't any kind of independence for faculties and departments in promotion evaluation process. This is the central planner who indicates the rules of the game, "promotion game". Universities only enforce the rules through committees including their own advanced faculty members.

Beside above-mentioned features, back to content of this guideline, there is still some other odd aspects which are worthy to mention. The guideline includes different parts which indicate score to different activities that a faculty member expects to do. In a nutshell, teaching and research are two main activities that have been bolded in the guideline. As a matter of fact, a considerable part of publicized guideline has been devoted to the regulating research from paper and book publication to attendance in conferences. For instance, the regulator has given score to paper publication which functions like a price by sending signal to scholars for their scared resource allocation similar to production behavior of firms and their reaction to prices. From this point of view, this guideline can be considered as a system of prices. Regarding the central planning feature of promotion evaluation, here the market structure looks like a monopsony with numerous suppliers (faculty members) and a single buyer (the Ministry of science who has indicated the price and features of the goods that she wants to have.

The most important and oddest aspect of this part of guideline is the scores given to paper publication in different journals. Surprisingly, the maximum given score to a paper published in the internationally very well-known journals (e.g. American Economic Review in Economics or Harvard Law Review in Law) is 7 while publishing a paper in a domestic journal which its instruction language is Persian can bring 5 score for the author. From microeconomic theories, we know that economic agents (Here faculty members) are rational and what is important in their own scarce resource allocation is relative prices (here relative scores) not absolute ones. For promoting from assistant professorship to associate professorship it is required to have 120 scores that most of it must collect from doing research.

During almost last decade, it has been implicitly emphasized by promotion committees for that getting higher ranks is required to publish in internationally referred journals. A mix of relatively very low price for publication in internationally well-known journals and few common knowledge concerning these journals has made Iranian scholars a very attractive target for predatory journals. This seems one of the unintended consequences of this guideline that we try to delve more into it in this study.


**Aim of the Project**

This paper purports to analyze the promotion behavior of faculty members using microeconomic tools to shed light on the effects of the above-mentioned guideline in both micro and macro levels. Considering that faculty members are rational agents

with scarce resources who try to promote as fast as it's possible, we apply microeconomic models to delve into the following questions:

— How will faculty members react to the incentive structure of the promotion guideline?

— What will be the equilibrium of optimization behavior of faculty members?

— [ What are the effects of these optimized behaviors on macro level? Are there any unintended consequences?

**Hypotheses and Methodology**

As mentioned, we apply microeconomic tools to show how the incentive structure given in guideline will affect faculties' promotion behavior. After giving an explanation concerning promotion behavior and prediction about resource allocation in this process, we will document our results by collecting data through referring to the curriculums of some selected sample of faculty members in Iranian universities, specifically from social sciences, arts and humanities faculties to see how our predictions fit with real data. The collected data will be analyzed by econometric methods for testing some of the following hypotheses.

Regarding given scores (prices) in the guideline for both teaching in different levels (undergraduate and graduate) and doing research, we have following hypothesis:

— Considering the costs and benefits (given scores in the guideline) of doing a remarkable research which is publishable in internationally well-recognized journals and presentable at international conferences, it is non-optimal to allocate resources for doing such a research even if there is capability for doing such a research. Indeed, there is a corner solution in research behavior towards publishing in domestic journals and attendance in domestic conferences in optimal promotion behavior. This has enlarged the market for domestic journals and conferences. Then, one unintended consequence is that Iranian scholars have been excluded from international academic atmosphere which sounds to be a big miss in such an easily and cheaply communicable world. (*the Exclusion Hypothesis*)

— Everything to be the same, there is less incentive to give lecture at undergraduate level in promotion optimization process. Considering expected benefits (scores) of teaching at graduate levels, advanced faculty members prefer to give lectures at this level. Indeed, teaching at graduate level not only have higher scores in the guideline (direct effect) but also increases the likelihood of mentoring students and having publication with their collaboration which is very common in Iranian style of scholarship (indirect effect). If so, this will have detrimental effects on teaching quality at undergraduate level and will restrain university from reaching to creation an acceptable level of human capital formation that is vital factor in economic development. (*Cheap Lecture Hypothesis*)

## Expected (Preliminary) Results

Based on collected data from official webpage of more than 500 Iranian scholars from different universities (Social Sciences and Humanities faculties) we found that:

—  A remarkable part of their curriculums have been devoted to the publication in domestic journals (Persian Journals) and attendance in domestic conferences. Publication in an internationally well-recognized journal is an exception if there is any at all. This confirms the anticipated corner solution and the exclusion hypothesis.

—  Based on empirical results, there is a significantly negative relationship between ranks of faculty members with their teaching load at undergraduate level. High rank professors tend to give lecture at graduate level. This tendency is even higher for associate professors who are attempting to promote to full professorship rank. This finding also confirms the cheap lecture hypothesis and detrimental effects of the guideline on the quality of teaching at Iranian universities.

—  A survey of 10 predatory journals shows that Iranian scholars are among attractive targets for predatory journals. One-third of published papers in these journals belongs to Iranian scholars.

## References (selected):

Schrodet & et al (2003). An Examination of Academic Mentoring Behaviors and New Faculty Members' Satisfaction with Socialization and Tenure and Promotion Processes. *Communication Education*. Vol 52, No 1.

Haskell, R (1997. Academic Freedom, Promotion, Reappointment, Tenure and The Administrative Use of Student Evaluation of Faculty (SEF). *Education policy Analysis Archives, vol 5, No 21.*

Manchester & et al (2013). Is the Clock Still Ticking? Aa Evaluation of the Consequences of Stopping the Tenure Clock. *ILRReveiw 66(1).*

Parker, J (2008). Comparing Research and Teaching in University Promotion Criteria. *Higher Education Quarterly. 62(1).*

Mareva Sabatier. Does Productivity Decline after Promotion? The Case of French Academia. *Oxford Bulletin of Economics and Statistics, Wiley, 2012, 74 (6), pp.886-902. <hal-00825985>*

# *Nasekina, Elvira[1]:* **The Structure and Dynamics of the Incentive Contract in Academia**

**Abstract:** *The article discusses the concept of incentive contract and features of the contract design in Russian higher education institutions (HEIs) during the current reforms in academia. According to the goal of the increase of competitiveness of education and science in Russia, it is necessary to develop efficient schemes of faculty remuneration because they may create proper incentives for research productivity. According to the previous studies and the data of the Monitoring of education markets and organizations, structural differences in the salary structure in universities of various types (NRUs, '5-100' and other) are explored both in statics and dynamics.*

## Introduction

The higher education system in Russia is included in the process of transformation to a knowledge economy as a response to global trends of globalization and internationalization of higher education throughout the world. The main players (agents) of this transformation are universities and university professors involved in global scientific networks. The quality of research and teaching directly contribute to the educational and economic growth through the increase in research productivity. One of the mechanisms of achieving such goals is the establishment of efficient schemes of the incentives and remuneration for university professors and researchers.

In the last decade the Russian higher education sector is expanding major reforms aimed at the increase in the research productivity. For example, since 2008, a number of Russian universities have received the status of National Research Universities (NRU) in order to combine high standards of teaching and research. In addition, in 2012 the Ministry of Education and Science of Russia launched the Russian Excellence Academic Project '5-100', aimed at maintaining the competitiveness of leading Russian universities among the world's largest research centers. Moreover, another purpose of this program is to increase the prestige of Russian higher education.

Such institutional transformation of the Russian higher education system is linked with the enhancement of human resources in the academic sector. Maintaining this goal is not possible without introduction of incentive mechanisms at the faculty level. These mechanisms which influence the motivation of academic staff can be divided into non-financial (reputational) and financial (various incentive schemes of remuneration, merit pay). In this paper we analyze financial mechanisms (reward schemes) which are used in the design of incentive contract in the Russian higher education, and their impact on the academic productivity of university staff.

An incentive contract is a contract which determines the level of remuneration depending on the target indicators of the institution. According to agency theory

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(Baker 1992; Weitzman 1980), an incentive contract aimed at solving the problem of opportunistic or unfair behavior of an agent arising from the difference in the goals of the employee (agent) and the head of the organization (principal). The introduction of incentive contracts in universities with special status (NRU) and without status was employed approximately at the same time, but there are differences in the contract structure. Therefore it is necessary to determine how this structure changes in dynamics and how this affects the productivity of teaching staff and the efficiency of universities.

The paper is organized as follows. In the first section the incentive contract is defined as an institutional mechanism to struggle with the opportunistic behavior in the context of information asymmetry. After, the features and schemes of the incentive contract in higher education are analyzed within the current Russian reforms. In the second section according to the previous studies and the data of the Monitoring of education markets and organizations, an analytical model of the distribution, structure, features and schemes of the incentive contract by type of university developed. In the third section we make conclusion by discussing the results, their implications, and directions for further research.

**The Aim of This Study** is to analyze incentive schemes of remuneration for university staff in different types of HEIs in Russia.

## Methodology and Hypotheses

An analytical model of differences in the structure of the incentive contract in universities of various types (with a special status and with no status) in statics and dynamics will be developed based on the data of the Monitoring of education markets and organizations. According to the previous studies and the data from the results of surveys of heads of the Russian HEIs and teaching staff a hypothesis about the variability of incentive reward schemes was formulated: an incentive contract is most common in universities with a special status, where publication activity and the number of articles in high-quality international scientific journals are one of the key indicators of academic productivity of teaching stuff. At the same time, reward schemes in universities with no status, although solving local tasks of the increase of faculty pay, do not pursue a global aim of the increase of the competitiveness of the Russian academic sector.

## Expected Results

The analytical model of the distribution, structure, features and schemes of the incentive contract by type of university will lead to the conclusion about implementation of the incentive contract and an impact of different incentive schemes on the research productivity and academic salary.

**References**

Adcroft A., Willis R. The (un) intended outcome of public sector performance measurement //International journal of public sector management. – 2005. – T. 18. – №. 5. – C. 386-400.

Altbach P. G. (ed.). Paying the professoriate: A global comparison of compensation and contracts. – Routledge, 2012.

Androushchak G. V., Poldin O., Yudkevich M. Peer effects in exogenously formed university student groups //Higher School of Economics Research Paper No. WP BRP. – 2012. – T. 3.

Androushchak G., Poldin O., Yudkevich M. Role of peers in student academic achievement in exogenously formed university groups //Educational Studies. – 2013. – T. 39. – №. 5. – C. 568-581.

Baker G. P. Incentive contracts and performance measurement //Journal of political Economy. – 1992. – T. 100. – №. 3. – C. 598-614.

Becker G.S. Investment in Human Capital: A Theoretical Analysis // The Journal of Political Economy. – 1962. - Vol. 70. No 5. – P. 9–49.

Becker G.S. Human Capital. New York: Columbia University // Press for the National Bureau of Economic Research. – 1964.

Bloom M., Milkovich G. T. Relationships among risk, incentive pay, and organizational performance //Academy of Management journal. – 1998. – T. 41. – №. 3. – C. 283-297.

Bratsberg B., Ragan Jr J. F., Warren J. T. Negative returns to seniority: New evidence in academic markets //ILR Review. – 2003. – T. 56. – №. 2. – C. 306-323.

Brown, P., Lauder, H., Ashton, D., Yingje, W., & Vincent-Lancrin, S. (2008). Education, globalisation and the future of the knowledge economy. European Educational Research Journal, 7(2), 131–156.

Botelho A., Pinto L. C. Students' Expectations of the Economic Returns to College Education: Results of a Controlled Experiment // Economics of Education Review. – 2004. - Vol. 23. No 6. - P. 645–653.

Burgess S., Ratto M. The role of incentives in the public sector: Issues and evidence //Oxford review of economic policy. – 2003. – T. 19. – №. 2. – C. 285-300.

Burks S., Carpenter J., Goette L. Performance pay and worker cooperation: Evidence from an artefactual field experiment //Journal of Economic Behavior & Organization. – 2009. – T. 70. – №. 3. – C. 458-469.

Cornelissen T., Heywood J. S., Jirjahn U. Performance pay, risk attitudes and job satisfaction //Labour Economics. – 2011. – T. 18. – №. 2. – C. 229-239.

Cutler T., Waine B. Rewarding better teachers? Performance related pay in schools //Educational management & administration. – 1999. – T. 27. – №. 1. – C. 55-70.

Diamond A.M. What is a Citation Worth? // Th e Journal of Human Resources. 1986. Vol. 21. No. 2. P. 200–215.

Dixit A. Power of incentives in private versus public organizations //The American Economic Review. – 1997. – T. 87. – №. 2. – C. 378-382.

Dohmen T., Falk A. Performance pay and multidimensional sorting: Productivity, preferences, and gender //American Economic Review. – 2011. – T. 101. – №. 2. – C. 556-90.

Fairweather J.S. Faculty Reward Structures: Toward Institutional and Professional Homogenization // Research in Higher Education. 1993. Vol. 34. No. 5. P. 603–623.

Green C., Heywood J. S. Does performance pay increase job satisfaction? //Economica. – 2008. – T. 75. – №. 300. – C. 710-728.

Gomez-Mejia L.R., Balkin D.B. Determinants of Faculty Pay: An Agency Theory Perspective // The Academy of Management Journal. 1992. Vol. 35. No. 5. P. 921–955.

Heywood J. S., Wei X. Performance pay and job satisfaction //Journal of Industrial relations. – 2006. – T. 48. – №. 4. – C. 523-540.

Holmstrom B., Milgrom P. Multitask principal-agent analyses: Incentive contracts, asset ownership, and job design //JL Econ. & Org. – 1991. – T. 7. – C. 24.

Ivakhnyuk I. Brain drain from Russia: in search for a solution //Brain Drain or Brain Gain–A Global Dilemma. – 2006.

Katz D.A. Faculty Salaries, Promotions, and Productivity at a Large University // Th e American Economic Review. 1973. Vol. 63. No. 3. P. 469–477.

Kogan M., Teichler U. Key challenges to the academic profession (Werkstattberichte, Vol. 65) //Kassel: International Centre for Higher Education Research Kassel. – 2007.

Laffont J. J., Martimort D. The theory of incentives: the principal-agent model. – Princeton university press, 2009.

Lazear E. P. Performance pay and productivity //American Economic Review. – 2000. – T. 90. – №. 5. – C. 1346-1361.

Marginson S. Higher education in the global knowledge economy //Procedia-Social and Behavioral Sciences. – 2010. – T. 2. – №. 5. – C. 6962-6980.

Melguizo T., Strober M. H. Faculty salaries and the maximization of prestige //Research in Higher education. – 2007. – T. 48. – №. 6. – C. 633-668.

Milkovich G. T., Wigdor A. K. Pay for performance: Evaluating performance appraisal and merit pay. – National Academy Press, 1991.

Moore W. J., Newman R. J., Turnbull G. K. Do academic salaries decline with seniority? //Journal of Labor Economics. – 1998. – T. 16. – №. 2. – C. 352-366.

Podgursky M. J., Springer M. G. Teacher performance pay: A review //Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management. – 2007. – T. 26. – №. 4. – C. 909-950.

Prakhov I. The determinants of academic salaries in Russia //Higher Education. – 2019. – T. 77. – №. 5. – C. 777-797.

Prakhov I., Rudakov V. The Determinants of Faculty Pay in Russian Universities: Incentive Contracts //Higher School of Economics Research Paper No. WP BRP. – 2018. – T. 47.

Propper C., Wilson D. The use and usefulness of performance measures in the public sector //Oxford review of economic policy. – 2003. – T. 19. – №. 2. – C. 250-267.

Ransom M. R. Seniority and monopsony in the academic labor market //The American Economic Review. – 1993. – C. 221-233.

Schultz T.W. Investment in Human Capital // The American Economic Review. – 1961. - Vol. 1. No 2. - P. 1–17.

Siegfried J. J., White K. J. Financial rewards to research and teaching: A case study of academic economists //The American Economic Review. – 1973. – T. 63. – №. 2. – C. 309-315.

Speckbacher G. The economics of performance management in nonprofit organizations //Nonprofit management and leadership. – 2003. – T. 13. – №. 3. – C. 267-281.

Speckbacher G. The use of incentives in nonprofit organizations //Nonprofit and Voluntary Sector Quarterly. – 2013. – T. 42. – №. 5. – C. 1006-1025.

Teichler U., Arimoto A., Cummings W. K. The changing academic profession //Dordrecht etc: Springer. – 2013.

Tirole J. The Internal Organization of Government // Oxford Economic Papers, Vol. 46, 1994, pp. 1-29.

Tuckman H.P., Hagemann R.P. An Analysis of the Reward Structure in Two Disciplines // Th e Journal of Higher Education. 1976. Vol. 47. No. 4. P. 447–464.

Tuckman H.P., Leahey J. What Is an Article Worth? // Th e Journal of Political Economy. 1975. Vol. 83. No. 5. P. 951–968.

Van Puyvelde S. et al. The governance of nonprofit organizations: Integrating agency theory with stakeholder and stewardship theories //Nonprofit and voluntary sector quarterly. – 2012. – T. 41. – №. 3. – C. 431-451.

Webbink D., Hartog J. Can Students Predict Starting Salaries? Yes! // Economics of Education Review. – 2004. - Vol. 23. No 2. - P. 103–113.

Weitzman M. L. Efficient incentive contracts //The Quarterly Journal of Economics. – 1980. – T. 94. – №. 4. – C. 719-730.

Winston G. C. Subsidies, hierarchy and peers: The awkward economics of higher education //Journal of economic perspectives. – 1999. – T. 13. – №. 1. – C. 13-36.

Winston G., Zimmerman D. Peer effects in higher education //College choices: The economics of where to go, when to go, and how to pay for it. – University of Chicago Press, 2004. – C. 395-424.

# Eeckhout, Tom[1] (with Koen Schoors[2], Leonid Polishchuk[3], Timur Natkhov[4], Kevin Hoefman[5]): An Analysis of Corruption Based on Administrative Data

**Abstract:** *By studying the issuance of license plates in an administrative data, we find evidence and measures of corruption. After constructing a regional corruption index based on these measures we examine the effect on economic outcomes such economic growth or human capital. The advantages of these new corruption measures are: they are based on objective measurement; they use large amounts of data, which means new dimensions can effectively be studied.*

## State of the Art

An estimate by the World Economic Forum (2012) puts the global cost of corruption at 2.6 trillion dollar, which accounts for 5% of the world GDP. This figure is even bigger for Russia, where in 2005 the cost of corruption was estimated to be about 300 billion dollars, or nearly a third of Russian GDP (Financial Times, 2005). Unfortunately, Russia is not an exception, since a majority of the global population lives in a country with a serious corruption problem (Transparency International, 2016).

In fact, these three figures belie the ease of estimating the impact and scope of corruption. Corruption, commonly defined as the misuse of public office for private gain (The World Bank, 1997), is of an illicit nature and therefore rarely shows up in official figures. Additionally, definitions of corruption vary greatly. Correspondingly, a great variety of methods to measure corruption exists.

The most commonly used methods to measure corruption are flawed (Urra, 2007). These methods are (1) surveys, (2) expert assessments and (3) media coverage of corruption scandals (Sampford, 2006). Corruption measurement flaws are grouped by Urra (2007) in three classes: the Perception Problem, the Error Problem and the Utility Problem.

To counter some of these problems, researchers have recently started employing administrative data to establish objective measures of corruption. A first example is the study by Fisman and Miguel (2007), who analyzed parking tickets of diplomatic license plates in New York to link corruption to cultural norms in the country of origin and enforcement in the country of residence (the US). A second example is Mironov and Zhuravskaya (2011), who use banking transactions data to show links between public procurement corruption and shadow campaign financing in Russia.

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We build on this rather new method of measuring corruption objectively by using administrative data from the Russian traffic police.

Due to the pervasiveness of corruption in developing countries, its effects on economic outcomes has been studied extensively (Mauro, 1995); (Mo, 2001) and (Shleifer and Vishny,1993). The two main directions are: (1) greasing the wheels of bureaucracy and (2) comparably negative effects as a tax or worse; see for example Méon and Khalid (2005). Channels for a negative impact of corruption often run through lower FDI, human capital accumulation and provision of public goods. Finally, the negative impact of corruption on road safety is also of interest for this research proposal (Anbarci et al., 2006).

## Aim

1.    Construct an **objective measure of corruption** by using one specific case of corruption. Identify the variation in willingness to engage in bribery among the regional administrations.

2.    Estimate the economic **costs of corruption** by using these novel measures. The direct costs of police corruption include detrimental effects on road safety and crime, higher car insurance premiums and lower trust of citizens in the police. Since police in Russia is organized at the regional level, the police corruption measures could reflect general corruption attitudes of the regional administrations. Therefore we will estimate the effect of police corruption, using it as a proxy of general corruption of the regional administration, on broader potential economic costs of corruption such as lower FDI, human capital accumulation, schooling performance and GDP per capita growth.

## Methodology

### Setting

In countless countries around the world, there are people who prefer to have a personalized license plate. In quite a few of these countries, such as the UK, these plates are sold for raising extra tax revenue. In Russia as well, special license plates are popular. They became very frequent during the '90's when (western) cars also became a very important status symbol. In spite of the demand for special license plates, the Russian government did not organize a legal way of acquiring special plates. So they became a source of bribes for police officers. These plates follow the standard pattern of letters and digits of license plates 'LDDDLL-region code', but the specific combination of characters is somehow valuable to the car owner. Examples of popular combinations are 'E001KX-77' or 'K777KK-77'. In 2013, transfers of plates between citizens were made indirectly possible (Russian Interior Ministry, 2013). These exchanges created a secondary market in vanity plates and provide us now with an idea of the size of the market for vanity plates in Russia. To conclude, officially Russian license plates follow a uniform distribution, but in fact special combinations of characters are acquired by bribing police officers.

Therefore, corruption is defined here as the probable incidence of bribery in acquiring a vanity plate.

**Model**

The empirical approach is motivated by a simple observation one can make in everyday Moscow traffic: vanity plates are frequent but concentrated within a set of western luxury cars. An illustration of this phenomenon is shown in Figure 1. We see two main reasons for this: (1) the cost of a plate relative to your wealth and (2) the limited signaling quality of the plate by itself. People that observe a cheap car with a vanity plate are likely to assume that the plate was acquired by random allocation instead of spending wealth, hence the limited quality of the signal. A luxurious car will then complement and enforce the wealth signal of the vanity plate. See also Eeckhout (2017) for a basic theoretical model for this signal quality channel. Obviously, in the absence of corruption, no different plate number distribution should exist for luxury cars. As a consequence, the study of vanity plate corruption is done by focusing on its correlation with luxury cars.
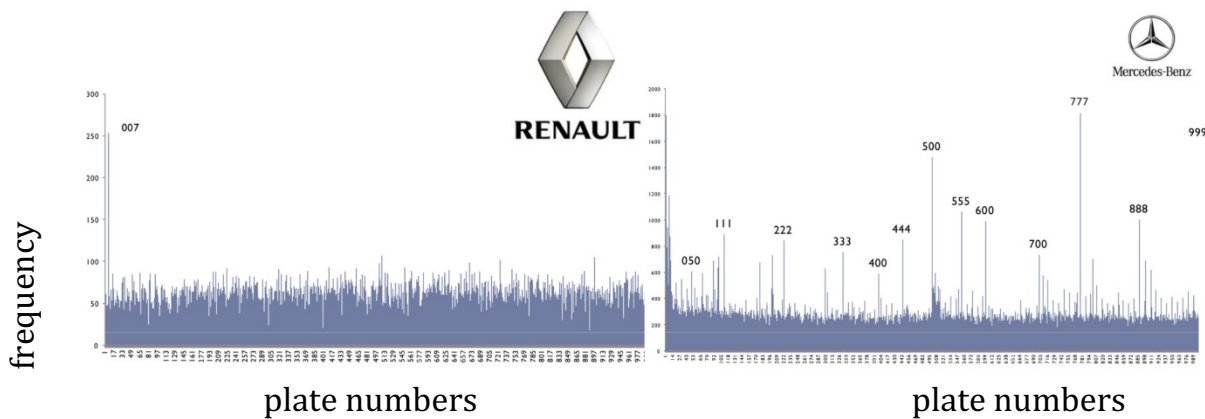


Figure 1: Frequencies of plate numbers form a relatively uniform distribution for non-luxury car brands (Renault), but special plates are much more prevalent for luxury brands (Mercedes).

**Main Dataset: License Plates Data**

The main dataset is a collection of administrative transaction databases of the Main Directorate for Road Safety of the Ministry of Internal Affairs of Russia (abbreviated GIBDD). The registration data covers 44 Russian regions, ranges from 1990 to 2012 and contains over 90 million unique observations. A second dataset contains traffic violations and traffic accidents (also from GIBDD).

**Estimations**

The main variables in this project are the variables capturing luxury cars (*lux*) or capturing vanity plates (*van*). *lux* is defined in three different ways: (1) By using the European car class segmentation, (2) by using an official list of luxury cars from the

Russian government and (3) by using the brand names of western luxury cars. The *van* variable is defined as a license plate of which the numbers qualify as vanity numbers. Vanity numbers by itself are defined in two ways: (1) By using the price information from the on-line secondary market in vanity plates that started after the 2013 change in law. (2) By comparing group statistics like mean engine power or mean weight for groups with equal plate numbers. In all regressions below: **lux**$_i$ = 1 if $i$ relates to a luxury car and = 0 otherwise; **van**$_i$ = 1 if $i$ relates to a vanity plate and = 0 otherwise.

## WP1: Objectively measuring corruption

*Description:* **Measuring police corruption**: The extra probability luxury car owners have of receiving a vanity plate is a 'flow' measure of the selling of vanity plates. Therefore, by interacting the luxury variable with regional dummies represent regional flow estimates. These flows are a result of both demand and supply for these plates. In order to distill supply from these regional flow measures we control for regional drivers of demand. Important drivers should be (i) regional income per capita, (ii) regional inequality and (iii) regional taste for vanity. Since some letter combinations of plates are associated with political connections, plate letters dummies are included. To control for time trends, time effects are also included.

*Expected Results:* We expect the coefficients to relate to regional police corruption levels and will use these coefficients in the next stages.

## WP2: Estimating the costs of corruption

*Description:* **Estimating costs of police corruption:** The estimates from WP1 measure local police corruption. Regions with more police corruption theoretically have less enforcement of the traffic code and therefore have worse traffic outcomes. We use aggregate regional traffic outcome data from Rosstat to test this hypothesis. Another possibility is to use car insurance premiums. Important controls such as road quality and population density are included.

*Expected Results:* Regions with more police corruption should experience worse traffic outcomes.

*Description:* **Estimating costs of administrative corruption:** Russian police is organized to a large ex-tent at the regional level, as well as large parts of the administration. Since regional governments control corruption in both, regional police corruption might be a good proxy for regional corruption of the administration. We will test this by estimating the effects of our earlier constructed police corruption measures on several regional socio-economic outcomes.

*Expected Results:* Regions with more administrative corruption should experience less FDI, investment, human capital and potentially less regional GDP growth.

## References

Anbarci, N., Escaleras, M., and Register, C. (2006). Traffic fatalities and public sector corruption. *Kyklos*, 59:327–344.

Braguinsky, S., Mityakov, S., and Liscovich, A. (2014). Direct estimation of hidden earnings: Evidence from Russian administrative data. *The Journal of Law and Economics*, 57(2):281–319.

Eeckhout, T. (2017). An analysis of corruption in Russia: Based on evidence from license plates.

Financial Times (2005). Bribery in Russia up tenfold to dollars 316bn in four years.

Fisman, R. and Miguel, E. (2007). Corruption, norms, and legal enforcement: Evidence from diplomatic parking tickets. *Journal of Political economy*, 115(6):1020–1048.

Government of the Russian Federa on (2008). О государственной регистрации автомототранспортных средств и других видов самоходной техники на территории Российской Федерации. 26/07/2008 N.562.

Hauk, E. and Saez-Martin, M. (2002). On the cultural transmission of corrup on. *Journal of EconomicTheory*, 107(2):311–335.

Kaufmann, D. and Kraay, A. (2007). On measuring governance: framing issues for debate.

Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, 110:681–712.

Mironov, M. and Zhuravskaya, E. (2011). Corruption in procurement and shadow campaign financing: evidence from Russia. In *ISNIE Annual Conference*.

Mo, P. H. (2001). Corruption and economic growth. *Journal of Comparative Economics*, 29:66–79.

Méon, P.-G. and Khalid, S. (2005). Does corruption grease or sand the wheels of growth? *PublicChoice*,122:69–97.

Russian Interior Ministry (2013). On approval of the administrative regulations of the ministry of internal affairs of the Russian federation for the provision of public services for the registration of motor vehicles and their trailers.

Sampford, C. (2006). *Measuring corruption*. Ashgate.

Shleifer, A. and Vishny, R. W. (1993). Corruption. *The Quarterly Journal of Economics*, 108:599–617. Spolaore, E. and Wacziarg, R. (2013). How deep are the roots of economic development? *Journal of Economic Literature*, 51(2):325–69.

The World Bank (1997). Helping countries combat corruption: The role of the world bank.

Transparency International (2016). Corruption Perception Index 2016 - Transparency International.

Urra, F.-J. (2007). Assessing corruption an analytical review of corruption measurement and its problems:

Perception, error and utility. *Edmund A. Walsh School of Foreign Service (May)*: 1–20.

World Economic Forum (2012). Network of global agenda councils 2011-2012 report.

# Kashin, Dmitrii[1](with Elena Shadrina[2]): Public Procurement as a Mechanism of SME Support

**Abstract:** *The study aims to analyze the efficiency of small and medium enterprises (SME's) state support through the public procurement system of the Russian Federation. We consider a continuous sample of 720 contracting authorities (CA) from 40 Russian regions in 2017 (44-FL and 223-FL). We try to identify and evaluate the determinants of CA's economy – the difference between the initial (maximum) price of the contract and the actual price. As a result we prove that carrying out special procurement procedures only for SME's increases the economy of CA's in comparison with the procedures in which all other types of companies participate. This research can be used to adjust the implementation of state policy and to improve the system of public procurement in Russia.*

## Introduction

Small and medium enterprises (SME's) play an essential role in social and economic development of any country. SME's perform the most crucial functions for the national economies: it supports the competitive environment, creates jobs, opposes monopoly and introduces innovations. Nowadays Russia has more than 6 million small and medium enterprises, whose activities account for 25% of the country's GDP (in Europe this contribution into GDP by SMEs is 50-60%).

In modern Russia small and medium enterprises support has become one of the most pivotal areas of economic policy. State support programmes for small and medium enterprises include measures aimed at limiting administrative pressure and reducing fiscal burdens on SME's, simplifying the registration and licensing, concessional lending and improving access of small business to procurement of goods, works, services for public and municipal needs and to procurement for the needs of companies with state participation. Today, the public procurement system is estimated at around 7.08 trillion roubles (97 billion euros), which accounts for 7.6% of the GDP of the Russian Federation. The volume of the procurement market of enterprises working under 223-FL is estimated at 27.03 trillion roubles (370 billion euros), which is 29.3% of the Russian Federation's GDP. All the facts described indicate that the public procurement system is an important tool for developing the potential of small and medium enterprises.

In modern Russia, government decrees are issued annually, SME preferences are changing rapidly and the degree of involvement of small and medium enterprises in the country's economic processes is growing every day. There arises the problem of assessing the appropriateness (efficiency) of the state policy. Does the introduction of these measures (procedures designed only for SME's participation) improve position

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of SME's in the Russian Federation and accelerates the growth rate of the economy by attracting new players to the public procurement market? Is the number of current and planned preferences for SME's sufficient to achieve the stated objectives of the government? Is the "quota for participation" for SME's a restriction or a mechanism that stimulates competition? This study will try to answer the questions posed.

## Theoretical Background

Questions about development and functioning of small and medium enterprises in various economic conditions were investigated by Russian and foreign authors. A small enterprise is not like as the large one. On the contrary, it is an independent economic subject with certain advantages and disadvantages [Evalenko, 2003]. Moreover, in the modern economy, SME's are one of the most important elements of market economic system.

According to the Federal Law No. 209-FL "The Development of Small and Medium Enterprises in the Russian Federation", which was issued on January 1, 2008, small and medium enterprises are companies in which the average number of employees for the past year does not exceed 250 people [Federal Law No. 209-FL]. In literature there is a large number of disputes regarding the values of this indicator, which can vary depending on the region, industry, employee system in different companies [Balsevich, Pivovarova, 2012]. Nevertheless, many researchers consider this criterion to be objective and attribute to it some advantages, such as transparency (complexity in manipulation), inflationary independence and accessibility [Kutenkov, 2010].

In this study small and medium companies are examined through the mechanism of public procurement, which makes it necessary to describe this system in RF. Current laws in the public procurement system of the Russian Federation are divided into two parts: laws related to procurement for state and municipal organisations and laws, regulating the procurement of certain types of legal entities. In the first part the main law is the Federal Law No. 44-FL "On the Contract System in the Procurement of Goods, Works, Services for the Provision of State and Municipal Needs". 44-FL includes the requirement that small business should be given a "quota" (purchases only from the SME's) not less than 15% of the total annual volume of the CA's purchases [Federal Law No. 44-FL]. The second part of public procurement system in Russia is regulated by the Federal Law No. 223-FL "On Procurement of Goods, Works, Services by Certain Types of Legal Entities". It determines that the annual volume of purchases from SME's should not be less than 10% of the aggregate annual volume of contracts [Federal Law No. 223-FL].

We need to mention that the mechanisms of small and medium enterprises support do not change depending on the law, but remain identical: 1) procedures involving only small and medium companies and 2) involving SME's as subcontractors. The main difference between two laws (44-FL and 223-FL) in terms of SME support is the size of the quota (in 223-FL it is at least 10%; in 44-FL it is at least 15%). To determine the appropriateness of this type of preferences, we need to turn to the data description and quantitative methods of analysis.

**Methodology**

State policy aimed to support small and medium enterprises can be investigated both from the position of contracting authorities and from the position of suppliers. In this study, the policy is evaluated from the position of contracting authorities both for 44-FL and 223-FL using economic and mathematical methods.

In this research we will use the indicator of "savings" of contracting authorities when they carry out different procurement procedures. This savings may be represented as the difference between the initial price of the contract and the actual price, expressed in percentages:

$$\text{Rebate}_{ij} = \frac{\text{Reserve price}_{ij} - \text{Actual price}_{ij}}{\text{Reserve price}_{ij}} * 100, \qquad (1)$$

where:        $\text{Rebate}_{ij}$ – the economy for the i-th contracting authority in the j-th bidding procedure;

$\text{Reserve price}_{ij}$ – the initial (maximum) price of the contract, set by the i-th contracting authority in the j-th procurement procedure;

$\text{Actual price}_{ij}$ – the actual price that was obtained in the procurement procedure by i-th supplier in the j-th procedure.

Having calculated this parameter for CA's, it will be possible to evaluate their benefits from constructing procedures only for SME's. If the economy from the procedures for SME's exceed the savings from all other procedures, it will be possible to conclude that the current policy of small and medium enterprises support is efficient:

$$\text{Rebate}_{SA} \geq \text{Rebate}_{NSA}, \qquad (2)$$

where: $\text{Rebate}_{SA}$ – savings for CA's in procedures only for small and medium companies;

$\text{Rebate}_{NSA}$ – savings for CA's in other procedures ($\text{Rebate}_{NSA} = 1 - \text{Rebate}_{SA}$).

We should mention that the savings of CA's could depend on a large number of factors (in addition to the variable that controls preferences for SME's). The economic model will be as:

$$\text{Rebate} = f\,(\text{Regional factors, CA factors, Contract factors}), \qquad (3)$$

where: Regional factors – characteristics of RF regions;

CA factors — characteristics of CA's;

Contract factors – characteristics of bidding procedures.

We will consider a continuous sample of 720 contracting authorities (CA) from 40 Russian regions in 2017 (44-FL and 223-FL). Evaluating this model by econometric methods we may answer if the state support policy is efficient or it is needed to change preferences for SME's.

**Expected Results of the Research**

Summarizing the preceding facts, we should note that current policy of the Russian Government aimed at supporting small and medium enterprises through the public procurement mechanisms should be efficient under both 44-FL and 223-FL. This assertion will be verified by mathematical and statistical methods during the research.

This research can be used by both contracting authorities and suppliers, as well as by other organizations in the public procurement market. CA's will be able to assess their own benefits and costs of conducting procedures for SME's and adjust their purchasing policies. Suppliers, in particular small and medium enterprises, will be able to assess the level of competition in procurement procedures in which they participate and evaluate their internal capabilities, taking into account the identified factors in the research. The results can also be used to adjust the policy implementation and to improve the framework of public procurement, both in the sphere of regulation of 44-FL and 223-FL.

**References**

Balsevich A.A., Pivovarova S.G. Regional Differences in Relative Prices of State Contracts: the Role of Information Transparency // Issues of State and Municipal Management. 2012. No 2. P. 97-111.

Evanenko M.L. Regional Refraction of General Problems of Small Business Development in Russia / / Russian Economic Journal. 2003. No 2. P. 60-73.

Federal Law No. 209-FL, July 24, 2007 (amended on December 28, 2013) "The Development of Small and Medium Enterprises in the Russian Federation".

Federal Law No. 223-FL, July 7, 2011 "On the Procurement of Goods, Works, Services by Certain Types of Legal Entities".

Federal Law No. 44-FL, April 5, 2013 "On the Contract System in the Sphere of Procurement of Goods, Works, Services for Ensuring State and Municipal Needs" (with amendment and addendum from 01.01.2015).

Kutenkov V. Problems of Determining the Legal Status of Small and Medium Enterprises under the Current Legislation of the Russian Federation // Jurisprudence. 2010. No 2.

# *Koroleva, Polina [1]:* Vertical Relations in Search Markets

***Abstract:*** *The competition in market where consumer search costs are important is well understood and explained by models that have been proved empirically. However, the situation of price discrimination in markets with search frictions is poorly studied. The price discrimination on the wholesale level of vertical relations can be found on many markets. It is therefore important to provide a working model for the prompt provision of convincing advice to the government on support and legislation in such markets.A possible problem that may arise is the widespread assumption of models in the field of research of vertical relations in search markets about out-of-equilibrium consumer beliefs. The present work is devoted to the studying of vertical relations in markets where search is important. The present paper is going to compare two extreme cases: passive beliefs and symmetric beliefs. We also derive results for the case of passive beliefs, but when consumers blame only high-cost retailer on deviation from equilibrium prices. We expect higher competition among retailers compared to the case of passive beliefs, when consumers blame on deviation the closest retailer. Higher competition leads to increasing profit of manufacturer, worsening the welfare of consumers.*

## Introduction

The competition in market where consumer search costs are important is well understood and explained by models that have been proved empirically. For example, competition between gasoline stations or supermarkets is extremely dependent on consumer search costs. However, the situation of price discrimination in markets with search frictions is poorly studied. Garcia and Janssen (2017) explain the popularity of retail price discrimination in markets with costly consumer search with the help of their model. They prove a very strong result that even in the case of homogeneous retailers ex-ante the monopoly manufacturer has incentives to discriminate among them for encouraging competition in the final market. Indeed, the price discrimination at this level of vertical relations can be found in many markets (electronics, for example). It is therefore important to provide a working model for the prompt provision of convincing advice to the government on support and legislation in such markets. For example, Janssen and Reshidi (2018) show that there can be situations that legislations aiming to protect consumers can reduce the consumer surplus and total welfare in such markets. A possible problem that may arise is the widespread assumption inherent to consumer search models about out-of-equilibrium consumer beliefs.

The present work considers vertical relations in markets where search is important. First of all, we conduct a fairly complete review of literature in this field of study as a first part of the paper. This gives us a basis for developing the theoretical framework focusing on the price discrimination in the wholesale markets. Wholesale price discrimination can be profitable for manufacturer if he can commit himself. This result

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is shown for passive beliefs assumption: when consumers blame retailers for deviations from expected equilibrium prices [8]. Moreover, Janssen and Reshidi (2018) [6] specify the beliefs such that consumers blame for deviation the closest retailer when see the unexpected price. In our work we derive results for the case of passive beliefs, but when consumers blame only high-cost retailer on deviation from equilibrium prices. These assumptions about beliefs make sense, because by reducing price high-cost retailer can save more consumers with low search costs. Moreover, in a behavioral sense, when we see a price that we did not expect, we most likely think that the seller who was unlucky enough to have high wholesale prices is to blame. Thus, we argue that these beliefs reflect reality more than those considered by the authors [6]. We consider the case, when manufacturer can credibly commit himself for discrimination, as it is proved in the basic paper [6] that without commitment there is no equilibrium with different wholesale prices. We provide the comparison of the results for these two out-of-equilibrium beliefs analytically for search costs close to zero and numerically for other search costs. We expect higher competition among retailers compared to the case of passive beliefs, when consumers blame on deviation the closest retailer. Higher competition leads to increasing profit of manufacturer, worsening the welfare of consumers.

**Question:** How the equilibrium depends on alternative beliefs?

All conclusions in the articles on vertical relations in the search markets are based on the same assumption about the customers' out-of-equilibrium beliefs, with the caveats that there may be other options for beliefs. Why is it important? Since wholesale trade between a producer and his retailers is generally not observed for consumers, their beliefs concerning who should be accused of deviating from expected prices are crucial in determining wholesale and retail prices. A common assumption in the literature is that consumers blame only an individual retailer for a deviation from the expected equilibrium price. In the paper "Beliefs and Consumer Search in a Vertical Industry" by Janssen and Shelegia (2017) authors explain that the behavior of firms in markets with vertical relations cardinally depends on the consumers' out-of-equilibrium beliefs. And predictions based on the assumption in the context of vertical relationships are not robust in this sense. And because beliefs can have a profound effect on outcomes, in our work we would like to consider the out-of-equilibrium beliefs that can take place in life. We compare the results with standard beliefs in this field.

**Objectives of the Research**

— Study basic literature on consumer search in vertical industries: give a thorough review of key results.
— Provide relevance and practical usefulness of this study.
— Describe the model of wholesale price discrimination. Point out where the beliefs assumption is crucial.

—     Describe the equilibrium for alternative beliefs described above. Present closed-form solution for search costs close to zero. Numerically show comparative statics for uniform distribution of search costs and linear demand.

—     Describe the equilibrium for alternative passive beliefs: with blaming only high-cost retailer on deviation. Decide, how many retailers to consider (assume $N = 3$). Present closed-form solution for search costs close to zero. Numerically show comparative statics for uniform distribution of search costs and linear demand.

—     Compare with the case of passive beliefs when consumers blame the closest retailer for deviation. Highlight main results: similarities and differences.


**Hypotheses and Methodology**

We consider one manufacturer with zero costs of production who charges high and low wholesale prices $(w_h, w_l)$ to $N$ identical retailers. One retailer gets high price while $N - 1$ retailer gets low wholesale price[1]. In turn, retailers set final prices $(p_h, p_l)$ according to their costs, expected costs of neighbors and consumers demand. We assume that there are no other costs of production except payment to manufacturer. There is a unit mass of consumers with different search costs $s \sim G(s)$ $in$ $[0; \bar{s}]$, where $G(0) = 0$, $g(s) > 0$ $\forall$ $s$ $in$ $[0; \bar{s}]$ – density of search cost distribution. There is finite $M$: $-M < g'(s) < M$. Each consumer demands $D(p)$ units of good if they bye at price $p$. Demand function is well behaved (see [6] p. 5-6). For numerical examples the search cost distribution is uniform and the demand function of consumers is linear $D(p) = 1 - p$. Consumers do not know retail prices before searching, equal share of consumers visit each retailer at the first search. For given expected wholesale prices consumers search for retail prices.

We define out-of-equilibrium beliefs: consumers would always blame a high cost retailer for having deviated: if see $p_l$ => update beliefs => all other $p_l^*$. Old beliefs (OB) from Janssen and Reshidi (2018): consumers blame the closest retailer for deviation.

The model with profits of all market participants and the rule of decision-making of buyers can be found in [6]. The model is solved by the method of backward induction: first, the rule for consumers is determined when moving from one store to another. Then we maximize the profits of retailers who decide to deviate from the equilibrium price in the point of exact equilibrium prices. We get the reaction functions of retailers to each other. We solve the system and get the reaction of retailers to the wholesale prices of the manufacturer. The manufacturer maximizes its profit. In equilibrium with discrimination, it is really beneficial for him to assign different prices even to the similar retailers. Due to the complexity of the model, a general analytical solution can be obtained only for the upper boundary of the distribution of search costs close to zero. The numerical analysis for graphs is performed in the program Matlab.

*Hypothesis 1:* In the case of blaming only high-cost retailer for deviation and passive beliefs higher competition among retailers is expected compared to old beliefs.

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[1] The question of whether it is profitable to assign more than two different prices remains for further research. Moreover, it is advantageous to assign only one high price to maximize profits (see [8]).

We assume this is because with such beliefs, buyers will go shopping more than before. So retailers lose their market power and gets lower margins. Probably lower retail prices leads to higher demand of consumers, which is profitable for monopolistic manufacturer. Market power is transferred to the manufacturer, which gives him the opportunity to raise wholesale prices, which in turn leads to higher retail prices and lower consumer surplus.

*Hypothesis 2*: The manufacturer will get higher profit and consumers are worse off.

This result is important because the consumers' beliefs are committed to meaning to some extent.

**Expected results**

We provide an analytical solution[1] for the alternative passive beliefs and compare results with the old beliefs for close to zero search costs.



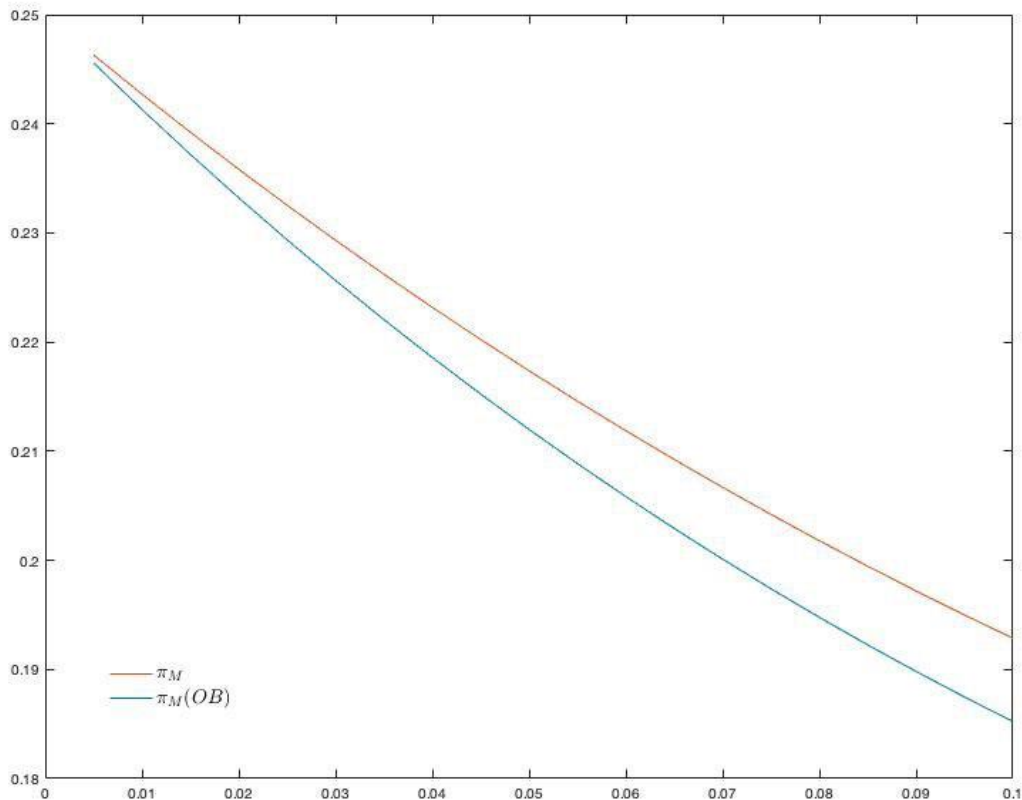Figure 1 Profit of manufacturer with old beliefs (OB) and new beliefs for different values of s_bar

What is intriguing, we found that there is higher price dispersion of retail prices with our out-of equilibrium beliefs than with the assumption of blaming the closest retailer for deviation. This phenomenon has yet to be explained. However, both types of

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[1] Proofs in the full text of the work, on request.

retailers get lower margins and, the manufacturer earns more profit. Thus, the hypothesis 1 and 2 (partly) are confirmed analytically and numerically (Figure 1, 2). As for consumers, we expect to show numerically that they are worse off.
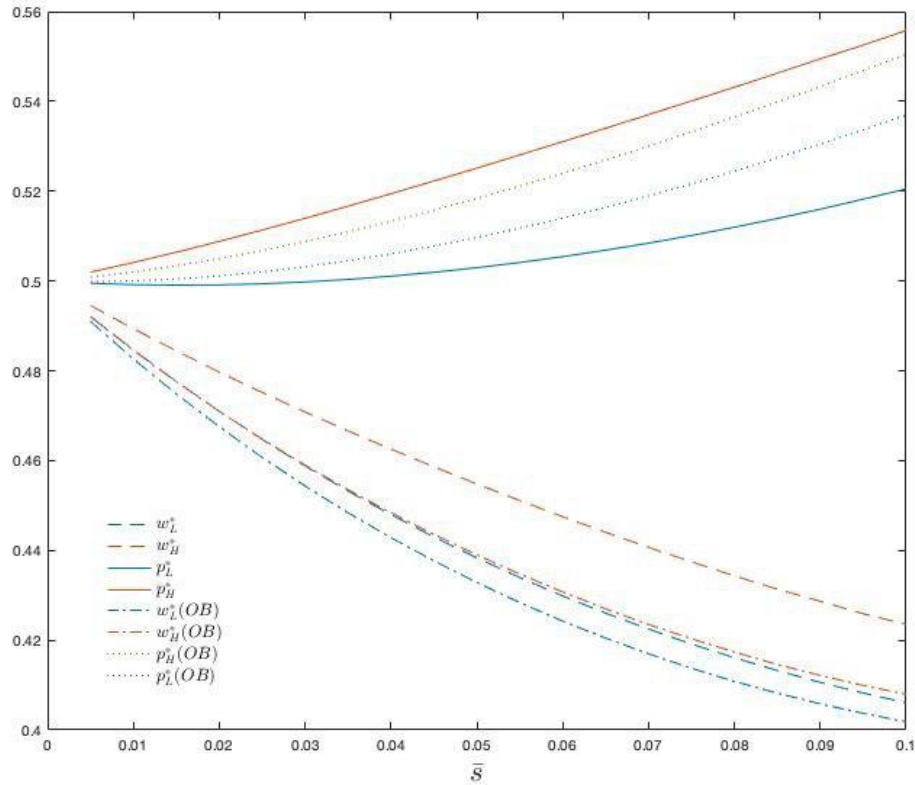


Figure 2 Prices of manufacturer and retailers for old beliefs (OB) and alternative beliefs

With our beliefs a monopolist manufacturer gets more profit. Thus, the conclusions of this work emphasize the interest of Antimonopoly committees to such market structures. The anticipated recommendation to the government is to take into account the features of vertical relations in search markets while issuing decrees.

The studies of vertical relations in markets where the search cost of consumers is important form a new and emerging field in economic theory. The present paper focuses on the way consumer beliefs affect the equilibrium outcome if discrimination at the manufacturer level is allowed. This work contributes to understanding how such markets work for better control and increasing efficiency in the economy.

# References

Anderson, S. P., & Renault, R. (2016). Firm pricing with consumer search.

Chandra, A., & Tappata, M. (2011). Consumer search and dynamic price dispersion: an application to gasoline markets. *The RAND Journal of Economics*, 42(4), 681-704.

Diamond, P. A. (1971). A model of price adjustment. *Journal of economic theory*, *3*(2), 156-168.

Garcia, D., Honda, J., & Janssen, M. (2017). The double diamond paradox. *American Economic Journal: Microeconomics*, *9*(3), 63-99.

Garcia, D., & Janssen, M. (2017). Retail channel management in consumer search markets. *International Journal of Industrial Organization*.

Janssen, M., & Reshidi, E. (2018). *Wholesale Price Discrimination and Recommended Retail Prices*. Working Paper, University of Vienna.

Janssen, M., & Shelegia, S. (2017). Beliefs and Consumer Search in a Vertical Industry.

Janssen, M., & Shelegia, S. (2015). Consumer search and double marginalization. *American Economic Review*, *105*(6), 1683-1710.

Lewis, M. S. (2011). Asymmetric price adjustment and consumer search: An examination of the retail gasoline market. Journal of Economics & Management Strategy, 20(2), 409-449.

Rothschild, M. (1978). Models of market organization with imperfect information: A survey. In Uncertainty in Economics (pp. 459-491).

Stahl, D. O. (1989). Oligopolistic pricing with sequential consumer search. *The American Economic Review*, 700-712.

Stigler, G. J. (1961). The economics of information. *Journal of political economy*, 69(3), 213-225.

Wolinsky, A. (1986). True monopolistic competition as a result of imperfect information. The Quarterly Journal of Economics, 101(3), 493-511.

# *Sidorova, Elena[1]:* Efficiency of the Russian System of Commercial Courts in Challenging Administrative Decisions

*Abstract: What influences institutional effectiveness of administrative law implementation considering tax, customs and antitrust law? This issue is of special importance for controversial cases considered in commercial courts. The process of administrative law implementation includes several stages and agents involved in making a final decision on a particular case. The system is highly influenced by the efficiency of application of legal and economic methodology by a judge during the judicial discussion. We measure the efficiency of the Russian system of commercial courts in challenging administrative decisions. This paper investigates the factors, affecting the efficiency of judges' performance while considering administrative cases. Using a unique dataset of commercial courts' decisions from 2008-2015 this paper empirically examines the determinants influencing the quality of judicial enforcement in administrative law investigations against Russian companies. The study reveals that the Russian judicial system, traditionally referring to countries of transitional stage of institutional development, has a number of features that distinguish it among other countries from a similar group. The evidence supports the conclusion that explanation of the quality of decision-making of judges is complex but refutes the widespread belief in the inability of judges to promote rule of law in transition economies.*

## Introduction

Administrative authorities' decisions are a part of institutional environment of markets, having a significant economic impact on the strategies of companies accused of breaking the administrative law. In Russia decisions on the violation of key legislation connected with business processes are made by the following authorized administrative bodies: the Federal Tax Service, the Federal Customs Service and the Federal Antimonopoly Service. The results of challenging such decisions in commercial courts2 have a significant impact on the business practices of companies and demonstrate the presence of potential errors of state bodies.

Effectiveness of the organization of the Russian system of commercial courts in challenging administrative decisions is determined by several factors. Those parameters include costs of the court proceedings; a number of instances in which a case was considered; the dynamics of changes in the performance results of the courts of first instance; influence of the decisions of the Supreme Court on the final decisions of the courts of first instance (including their quality and the analysis provided by the state bodies).

There are several peculiarities of the Russian judicial system in general and commercial courts in particular. First of all, the access for judiciary in Russia is easy

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[2] 'arbitrazh' courts (in Russian) or arbitration courts

and cheap. The database of commercial courts' decisions contains a fairly representative sample of administrative proceedings for any period. For example, there are over 7.3 million commercial decisions for the period of 2008-2015[1]. At the same time, low access costs are combined with the wide capabilities of the parties to provide the court with additional evidence that was not considered in the administrative process previously. Secondly, the judges considering claims to administrative bodies are not specialized in certain branches of law. It is also important that decisions of the highest court do not form mandatory rules for the application of legislation for lower courts. At the same time, the system of motivation of judges forms incentives for making decisions as quickly as possible.

The issue of assessing the quality of the institution of judicial control of public policy norms still remains insufficiently studied and is particularly relevant for Russia as a country with a transitional stage of institutional development in the context of intensive modernization of the legal environment. The issue of revising administrative decisions in commercial courts is especially relevant, since the judicial system affects:

standards for the implementation of administrative legislation;

costs of the law implementation;

costs of resolving disputes concerning administrative legal rules;

the behavior of administrative bodies and strategies of companies.

Decision-making of judges is one of the most important research questions in legal studies. Studies show that the decision of the judge in each individual case depends on a variety of factors beyond the limits of legal norms, including the career incentives of a judge and variations of individual characteristics of the parties of the proceeding.

This research contributes to the existing methodology pertaining to the measurement of the national customs, tax and competition policy implementation. Since Russia is likely to adopt a wide range of regulatory standards now and in the nearest future, the methodology requires modification and improvement in aspects of regulation.


**Aim of the Project**

The aim of this study is to assess the institutional effectiveness of the Russian system of commercial courts in the context of judicial decision-making process when challenging administrative decisions.

Therefore, we concentrate on providing a theoretical model of decision-making by judges in the courts of first instance, forming a database of decisions of Russian commercial courts in relation to court proceedings concerning violation of customs, tax and antitrust legislation; estimation of an empirical model based on the predictions of a theoretical one explaining the effectiveness of the organization of the Russian system of commercial courts in challenging administrative decisions; explaining the key features of the judicial decision-making process in relation to the practice of

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[1] Source: kad.arbitr.ru

forming standards of evidence and show their impact on the effectiveness of the case consideration by judges.

## Hypotheses and Methodology

The empirical part of the research is concerned with structural analysis of administrative court cases concerning tax, customs and antitrust law.

Sources of data for empirical analysis are:

Database derived from the Card File of commercial cases of the Federal Arbitration Court of the Russian Federation for the period 2008-2018[1].

Database of judges' biographies created on the basis of information about judges on the official websites of regional offices of commercial courts.

Database systems of professional analysis of markets and companies SPARK / FIRA-PRO as sources of information about the business activity of the accused companies.

Rating agency EXPERT RA (raexpert.ru) as a source of data on the investment attractiveness of regions and an assessment of their institutional potential.

A database is created for the purposes of the research and based on the sources described above by parsing of web pages and factor analysis.

As part of the empirical analysis, two types of models are used. The first one is the basic binary choice model, where the dependent variable is the quality indicator of the court decision. The second one is the two-step method for evaluating the binary choice of the probit model with the instrumental variable of the costs of the first instance, taking intro account regional, industrial and dynamic effects. From an econometric point of view, this leads to a higher quality of results from both the theoretical and mathematical background of the model.

A preliminary list of empirical hypotheses to be tested is as follows:

1. Judges' career incentives and their professional characteristics determine the effectiveness of decision making.

2. The complexity of the approach required to the analysis of an antitrust case increases the probability of a legal error.

3. Sanctions imposed are a signal of parties' incentives. The more difficult it is for the accused party to prove its position in a court, and the heavier the punishment, the higher the probability of a legal error.

4. There is a "learning-by-doing effect", determining the incentives of the parties and the quality of the proceedings.

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[1] Official website: kad.arbitr.ru

**Expected Results**

The results obtained during the current study are expected to be divided into several groups in accordance with the theoretical assumptions.

We assume that with the previously revealed researches, the decisions of judges whose specialization measured as the experience of dealing with cases of violations of a certain type of law, significantly differs from the decisions made by judges without that specialization. Moreover, we are going to estimate the effect of judicial career incentives on her/his performance. At the same time, we are going to show that the consideration of more complex cases has a more significant impact on reducing the probability of a legal error and, consequently, the effectiveness of the institution of judicial settlement of antitrust disputes. An empirical strategy of the research is also aimed at testing the hypothesis that the parties' experience in the commercial court processes' participation increases the efficiency of the judicial system in the context of customs, tax and antitrust policy enforcement. The expected result is that the higher the potential effect of imposed sanctions, the higher the incentives of the accused party to increase the resources spent on providing standards of evidence.

Thus, our additional task is to show that the Russian judicial system in the context of the application of customs, tax and antitrust policy, traditionally referring to countries with a transitional stage of institutions, has a number of features that distinguish it from other countries from a similar group.

# References

Baker, S., Mezzetti, C. . (2012). A theory of rational jurisprudence. *Journal of Political Economy, 120*(3), pp. 513-551.

Baye, M.R., Wright, J.D. (2011). Is Antitrust too Complicated for Generalis Judges? The Impact of Economic Complexity and Judicial Training on Appeals. *Journal of Law and Economics, 54*(1), pp. 1-24.

Burdina E. V., Petukhov N. A. (2018). Efficiency of the judicial resources' use and problems of the court system organization [Effektivnost' ispol'zovaniya sudebnykh resursov i problemy organizacii sudov]. E*conomic Policy [Ekonomicheskaya politika]*, 13(2). [in Russian]

Carree, M., Günster, A., Schinkel, M. P. (2010). European antitrust policy 1957–2004: an analysis of commission decisions. *Review of Industrial Organization, 36*(2), pp. 97-131.

Chopard, B., Marion, E. & Roussey, L. (2014). Appeals process, judicial errors and crime deterrence. *Working Paper*.

Daughety, A., & Reinganum, J. (2000). Appealing judgments. *RAND Journal of Economics,, 31*, pp. 502-525.

Dmitrova-Grajzl, V., Grajzl, P., Sustersic, J., Zaic, K. (2012). Court output, judicial staffing, and the demand for court services: evidence from Slovenian courts of first instance. *International review of law and economics, 32*(1), pp. 19-29.

Levy, G. (2005). Careerist judges and the appeals process. *RAND Journal of Economics, 36*, pp. 275-297.

Shavell, S. (2006). The appeals process and adjudicator incentives. *Journal of Legal Studies, 35*, pp. 1-29.

Shavell, S. (2010). On the design of the appeals process: The optimal use of discretionary review versus direct appeal. *Journal of Legal Studies, 39*, pp. 63-107.

Voigt S., Gutmann, J., & Feld, L.P. (2015). Economic growth and judicial independence, a dozen years on: cross-country evidence using an updated set of indicators. *European Journal of Political Economy, 38*, 197-211.

Volkov V., Dzmitryieva A. (2015). Recruitment patterns, gender, and professional subcultures of the judiciary in Russia. *International Journal of the Legal Profession, 22*(2), 166-192.

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