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PUBLIC BUREAUCRACY AND ENTREPRENEURSHIP

Evidence from Russia's Regions

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ABSTRACT

The paper examines government-business relationships by focusing on the effect of the organizational design of public bureaucracies on entrepreneurship in Russia. Using novel data from an expert survey on bureaucratic structures across a large sample of Russia's primary administrative units, we find that higher rates of merit-based employment to regional bureaucracies and lower rates of "at will" dismissals are positively associated with lower investment risk and higher entrepreneurship rates. This is conditional on a number of socio-economic factors, and robust to alternative specifications.

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Introduction

The idea that public bureaucracies have the utmost importance for sustained positive social outcomes is widely accepted. However, the question “What organizational forms underpin welfare-enhancing bureaucracy?” remains largely open. While some argue for the “above politics” type of public bureaucracy, such as those protected from day-to-day interference from politicians by civil service type legislation (Miller and Whitford 2016; Nistotskaya and Cingolani 2016), on the other side of the spectrum the proponents of New Public Management argue that welfare-enhancing public administration can and should replicate the logic of the market by fully aligning the preferences of public managers with those of their elected principals. This paper engages with this question by investigating the relationship between the meritocratic recruitment of the public bureaucracy and tenure protection,¹ on the one hand, and entrepreneurship, on the other. We hypothesize that there is a link between this organizational form of bureaucracy and entrepreneurship rates. By providing a degree of control over welfare-undermining (such as rent-seeking) preferences of politicians meritocratic bureaucracies facilitate confidence that the return from the effort and resources entrepreneurs invest in ventures will not fall victim to these morally hazardous motivations. We test this argument in a series of cross-sectional regressions in a large sample of Russia’s primary administrative units, utilizing original data from an expert survey on organizational design of public bureaucracies in Russia’s regions. The results lend support to the hypotheses, even when controlling for factors standing for alternative explanations, and are robust to alternative specifications.

Theoretical argument

Vibrant entrepreneurship is commonly seen as one of the key sources of economic development as it stimulates employment, innovation and productivity (Praag and Versloot 2007; Shumpeter 1934). Both international organizations, such as the World Bank, IMF and EU, and governments at all levels take actions to foster entrepreneurship (EC 2013; World Bank 2013). Yet, research reveals striking differences across countries (GEM 2014) and also sub-nationally (Nistotskaya et al 2015). According to the official data, in 2014 the number of officially registered small businesses varied across Russia’s regions to the extent of between 4 and 68 firms per 1,000 of the working age population, and the difference across regions in terms of the number of people working in small businesses was 6-fold (38 vs 6.5 percent of the all employed).

The entrepreneurship literature has traditionally focused on the characteristics of individuals, their networks of affiliation and the resources they command as the key causes of entrepreneurship (Terjesen et al

¹ Meritocratic recruitment refers to a system of admission to public bureaucracy, where important decisions about hiring are not under control of individual politicians, irrespective of whether it is done via formal exams or CV screenings, interviews and other similar techniques as opposed to the so-called “at will” or patronage systems where politicians are *de facto* unrestricted in their decisions concerned hiring bureaucratic personnel. Tenure protection refers to the absence of politically motivated dismissals of bureaucratic personnel.

2013). In addition to this, there is an emerging institutional strand of the entrepreneurship research that examines the effects of institutional environment on entrepreneurship, bringing to the fore such factors as the regulation of entry, access to capital and corruption (Aidis, Estrin and Mickiewicz 2008; Bjørnskov and Foss 2008; Klapper, Laeven and Rajan 2007; Stenholm, Acs and Wuebker 2013). Furthermore, several studies have shown the damaging impact of partial public administration on entrepreneurship rates (Nistotskaya et al 2015; Nistotskaya and Cingolani 2016), arguing that meritocratic selection to public bureaucracy and protection of bureaucratic tenure are a potential solution to the problem.

The underlying logic of the argument is that economic development takes place when economic agents are certain that the return from the resources and efforts they invest will not become subject to partial treatment by government, including outright expropriation (Acemoglu and Robinson 2012; North and Weingast 1989). Economic development takes place when governments “encourage participation by the great mass of people in economic activities that make the best use of their talent and skills” by providing “a level playing field that gives them the opportunity to do so” (Acemoglu and Robinson 2012, 74, 76). Implicit to this literature is the idea that the main danger to economic development comes from politicians since governments, which are run by politicians, regulate economic activity (Knott and Miller 2006; Miller and Hammond 1994). This organizational feature of the state creates strong incentives for political elites to use the powers of the state and such resources that are associated with the regulation of the economy not in the interest of the society as a whole (general interest), but in the interest of their key constituencies (narrow interests) and/or for self-enrichment. Moreover, in every political system there is “mutually reinforcing public and private interest in rent-seeking” as “those with political power are pressured by lobbyists with ideas about how they can use political power to make money to benefit themselves while often harming the broader welfare of society and ignoring growth in the economy” (Knott and Miller 2008, 388). Unconstrained political elites are likely to use their powers to pursue morally hazardous interests with detrimental effect to entrepreneurship because “[T]he more likely it is that the sovereign will alter property rights for his or her own benefit [through, for instance, government extortion or favoritism], the lower the expected returns from investment and the lower in turn the incentive to invest” (North and Weingast 1989, 803). Political elites, however, have only limited physical capacity to implement their decisions and need to rely on individuals and organizations that makes political decisions reality – the public bureaucracy. When the public bureaucracy routinely acts in the interests of politicians’ relatives, friends or donors, the risk of political contingency of wealth creation is high, prompting entrepreneurs to reduce their entrepreneurial effort or even withdraw from entrepreneurial activity altogether. Numerous examples from the public procurement sphere, such as those from Russia (Mokrousova and Eremenko 2018) or Spain (Kassam 2014), where politicians often influence administrators to bend the procurement rules to the benefit of their preferred bidder, are particularly instructive in this respect.

If this argument is correct, then the fundamental question is: “How can political elites be constrained not to pursue morally hazardous incentives?” The literature offers two major solutions to what is known as the problem of “credible commitment”. The first one, following North and Weingast (1989), is the diffusion of power among several actors who check each other and prevent a predatory faction from abusing the power of the state, therefore encouraging investment, enterprise and exchange. This claim has found strong empirical support in research, including evidence from the Russian context (Frye 2004; Libman 2017).

The other prevalent solution is the delegation of relevant decision-making authority to an actor, who is insulated from political instability and the time-inconsistent preferences of politicians. The classic example of such insulation is central bank independence (CBI). As a large economics literature argues, CBI functions as an institutional device that denies political actors the opportunity to easily pursue their preferences, thereby enabling governments to overcome the expectation of investors that monetary policy will follow electoral or partisan preferences, therefore encouraging investment and growth (Alesina and Summers 1993; Arnone and Romelli 2013; Bodea and Hicks 2015).

The political science literature has further advanced this argument, suggesting that not only individual agencies (such as central banks), but the core of public bureaucracy should be insulated from day-to-day interference by individual politicians (Dahlström and Lapuente 2017; Knott and Miller 2006, 2008; Miller and Whitford 2016; Oliveros and Schuster 2017). As with independent central banks, the primary goal of insulation is to create a bureaucratic agent with preferences clearly different to those of the political principal, which will make the agent non-responsive to narrow, short-term or the openly rent-seeking interests of *individual* principals, yet sufficiently disciplined to follow agreed public policies. The primary way of achieving this goal is by limiting politicians’ power over making and breaking bureaucratic careers, specifically through such personnel management tools as meritocratic selection to bureaucratic employment (meritocratic recruitment) and protection from politically motivated dismissals (tenure protection), thereafter referred to as civil service. Compared to “at will” systems, in civil service systems a politician, who wants to induce high responsiveness from her bureaucratic subordinates, can neither claim the credit for hiring the bureaucrat, nor credibly threaten her with dismissal, and therefore bureaucrats are not incentivized to act upon the instructions of individual politicians. In other words, by protecting bureaucratic decision-making from day-to-day political influence, civil service reduces the risk of political moral hazard trickling down freely from the top political echelon of the government to its lower administrative divisions.²

² Some scholars note that civil service restrictions on personnel management by politicians may also attenuate incentives for opportunistic behavior by bureaucrats to the detriment of the society as a whole (Johnson and Libecap 1994; Maranto 1998; Ujhelyi 2014). Yet others argue that this bureaucratic moral hazard is controlled through 1) deferred compensation that induce long-term perspective, counterbalancing the corrupt temptation; 2) legal rules and procedures that prescribe routine behaviors and therefore prevent abuses; 3) transparency requirements and 4) the disciplining powers of professional norms and standards and accountability to peers (Dahlström and Lapuente 2017; Knott and Miller 2006; Miller 2000). Having acknowledged that there are some contradictions inherent in civil service, we therefore argue for a general positive relationship between merit bureaucracies, regulatory quality and entrepreneurship.

Nistotskaya and Cingolani (2016) apply this argument to entrepreneurship by arguing that entrepreneurs and investors are capable of “measuring” the level of bureaucratic responsiveness to politicians and interpreting the reduced responsiveness, induced by civil service, as a signal that the risk of political contingency of wealth creation is relatively low. This in turn facilitates entrepreneurs’ positive assessment of the expected utility from entrepreneurship and encourages them to continue entrepreneurial effort by establishing new ventures and expanding existing ones.

To summarize, if “at will” personnel systems align the preferences of bureaucratic agents with those of their political principals, civil service makes public managers “transparently *not* the agents of key political figures” (Knott and Miller 2006, 229). The presence of public bureaucracies that are visibly not a private resource of politicians is recognized by entrepreneurs and investors, and will positively influence their complex assessment of the opportunity for and feasibility of a business venture, and their calculations on the expected utility from business venturing. Therefore, testable propositions arising from this argument are:

H1: all other things being equal, polities with higher levels of meritocratic recruitment in public bureaucracy experience higher entrepreneurship rates than polities where this feature is institutionalized to a lesser extent.

H2: all other things being equal, polities with higher levels of tenure protection in public bureaucracy experience higher entrepreneurship rates than polities where this feature is institutionalized to a lesser extent.

Research strategy, data and method

We test our hypotheses in the empirical milieu of Russia’s subnational governance. Russia is known for, on the one hand, a high risk of political extortion of business (Gans-Morse 2012) and as an “extreme version of crony capitalism” (Krugman 2014; see also Reuters 2014- 2015; The Economist 2014), which leads to rather low levels of entrepreneurial activity in international perspective (Aidis, Estrin and Mickiewicz 2008; GEM 2013, 24-25). On the other hand, the subnational level exhibits a great variation in entrepreneurship rates: the difference in the number of officially registered small businesses, between the best and worst performing regions, is 17-fold. A similar picture is observed with regard to foreign direct investments, firm performance, economic growth, and many other socio-economic indicators.

Explaining variation in socio-economic indicators across Russia’s regions, the current literature focuses on the existing remarkable cross-regional variation in institutional quality (Aidis, Estrin and Mickiewicz 2008; Libman 2012, 2017; Pyle 2011 among others). A small subset of this literature explores the links between the quantity (Brown, Earle and Gehlbach 2009; Libman 2012) or quality of regional public bureaucracy (Kuzmina, Volchkova and Zueva 2014; Nistotskaya 2009), on the one hand, and socio-economic outcomes on the other.

This paper contributes to the small subset of the empirical literature on the effects of public bureaucracy by exploring a probable underlying source of the variation of bureaucratic quality – its organizational design.

To test our hypotheses, we employ a measure of the meritocratization of bureaucracy and that of tenure protection from a large-scale online expert survey on the organizational structure of public bureaucracies in Russia's regions administered by the Quality of Government (QoG) Institute, University of Gothenburg in cooperation with Higher School of Economics (Moscow). The Russia's Regions QoG Expert Survey is based on the theoretical and methodological foundations of the reputable cross-country QoG Expert Survey (Dahlström et al 2015), but the survey's questions were adjusted to reflect the specificities of the Russian context. Thus, for instance, unlike the cross-country survey that focuses on public sector employees at large, the Russian survey concentrates exclusively on the bureaucratic personnel of the regional governments, and therefore numerous individuals on the state's payroll but outside the government departments and agencies (such as teachers, doctors and employees of the state-owned enterprises) are excluded. The majority of questions relate to the positions (legally labelled as "specialists" and "supporting specialists") constituting more than 75% of all personnel in the executive branch of the regional level of government (Nistotskaya 2014, 147). From a formal-legal point of view (Federal Law FZ-79), hiring, firing and promotion in these positions are governed by the principles of meritocracy – implying open contest entry to the bureaucracy – and security of tenure.

Carefully selected experts, primarily academics chosen for their region-specific publications, but also public administration practitioners, representatives of NGOs, political parties and media, were asked either to evaluate (on a 7-point scale) a number of statements or to provide unprompted quantitative assessments of *de facto* personnel management practices (as opposed to *de jure* rules) in the regional bureaucracies.³ The survey was conducted over the year 2014, inclusive of the recruitment stage, which involved the screening of about 3,000 potential experts. In total, 466 experts, who responded positively to the invitation to participate in the survey, were furnished with a link to the online questionnaire, formatted in Qualtrix. 336 experts started the survey and 311 completed it, giving an effective response rate of 66.7%. The answers provided by experts from the same region were pooled together. In this paper we use the data for 64 regions based on the evaluations of three or more experts. Nistotskaya, Khakhunova and Dahlström (2015) provide a detailed report on the questionnaire design, data collection and data summary, including the respondents' characteristics and evaluation of potential respondent perception bias.

The survey's questions of interest are: "When recruiting public sector employees, the skills and merits of the applicants decide who gets the job" and "When a new head of the regional executive is appointed/elected, how many (in percent) low to mid-level formally tenured personnel are fired and the posts filled by supporters of

³ The distinction between *de jure* and *de facto* personnel regimes is important as the mere passage of civil service legislation often involves no meaningful changes in the preexisting patronage practices (Lapuente and Nistotskaya 2009; Schuster 2017).

the new chief executive?” The former question captures the notion of meritocratic recruitment – a system of admission to public bureaucracy, where important decisions about hiring are not under the control of individual politicians. Experts were asked to indicate the extent to which this statement corresponds to reality in the region of their expertise on a pre-defined (1-7) scale.⁴ The resulting variable (MERIT) ranges from 2 to 6.25 and is available for 57 regions. With regard to the question on tenure protection, experts provided unprompted quantitative answers, suggesting that between 10 and 44 percent of formally tenured low to mid-level officials lose their job with the arrival of a new political head of the region. This indicator (TENURE) is available for 49 regions. In addition, by the method of principal component analysis, we created a single measure (CIVIL SERVICE) based on the reversed scores of MERIT and TENURE.

The main advantage of these indicators is that unlike other commonly used indicators of governance quality that are conceptually too close to measures of bureaucratic output (e.g. extent of corruptibility, regulatory burden), MERIT and TENURE capture organizational characteristics of bureaucracies, which are conceptually divorced from the notion of bureaucratic output.

Our dependent variable is the number of officially registered small businesses (SMBIZ, year 2014). SMBIZ comes from the National Institute for Entrepreneurship Studies, and is based on the quarterly data of the Federal State Statistics Service. We adjusted this measure by the number of the working age population to enable meaningful comparison across regions and ln-transformed it.

We conduct two analyses. First, we explore the impact of MERIT and TENURE on SMBIZ in a series of OLS regressions conditional on a number of variables of a socio-economic nature, as informed by the relevant literature. Second, we examine the effects of CIVIL SERVICE on entrepreneurship rates. A set of control variables is informed by the relevant literature. First of all, we control for the overarching measure of economic development – GRP per capita – and also the volume of foreign trade in regional economy. The socio-economic block of variables includes unemployment, which it is argued is one of the major drivers into self-employment (Bjørnskov and Foss 2008), and the share of urban population, as it has long been argued that the agglomeration effect of urban areas creates fertile conditions for business growth. Migration balance (difference between the number of arrived and departed individuals) and ethnic fragmentation (measured as a share of the non-Russian population in the total population of a region) tap into the sociology of entrepreneurship literature that underscores the importance of social capital and networks (Ensing and Robinson 2011; Hechavarria and Reynolds 2009). Next, differences in personality traits, such as attitudes towards risk, have long been recognized as one of the foremost explanatory factors for entrepreneurship (Frese and Gielnik 2014). In empirical analyses at the aggregate level (beyond individual) these psychological predispositions are

⁴ The validity and reliability of this approach to measuring meritocracy in the public administration is firmly established within the academic community as it has been used in several dozens of peer-reviewed publications.

often proxied by the educational level of the population under study (Misra et al 2014; Nistotskaya et al 2015; Stel, Storey and Thurik 2007). Following this literature, we use the share of people with university education in the labor force. Finally, the size of regional bureaucracy is controlled for through the number of personnel employed in the executive branch of the regional government, adjusted per 1,000 population (Size of bureaucracy). The inclusion of this variable is informed by the ongoing scholarly debate about the size of government. Some scholars hold that large governments increases corruption, rent-seeking and regulatory burden (Alesina and Angeletos 2005; Djankov et al 2002), which in turn negatively affect entrepreneurship. However, recently this notion was counterpoised by sound empirical evidence that larger bureaucracies provide a business-supportive institutional environment and are less corrupt (Brown, Earle and Gehlbach 2009)

Results

Tables 1 and 2 report the results of different model specifications, showing that the employed measure of meritocratic bureaucracy and tenure protection are consistently associated with higher rates of small business creation. Across all models the coefficients for the chosen indicators of bureaucratic structure are consistently significant at the 95% confidence level at least and signed as expected. One unit increase in MERIT is associated with about 1 percent increase in the number of small businesses per working population (Table 1). On its own MERIT explains about 8 percent of the variance in the dependent variable (Table 1 Model 1), while the fully specified model explains about 75 percent of SMBIZ. MERIT is robust to the introduction of control variables, however only GRPpc, migration and urban population enter consistently significant. Model 5 reports the inclusion of the size of bureaucracy variable, which enters statistically insignificant. Overall, the data lend strong support to H1 that stipulates a link between meritocratic recruitment and higher entrepreneurship rates.

With regard to TENURE, the overall picture is very consistent with that of the MERIT analysis (Table 2). TENURE is statistically significant across all models at the 95% level, and signed negatively as expected: the higher the levels of bureaucratic personnel dismissal at moments of political change (election/appointment of a new chief executive) the lower the small business rates. Compared to MERIT, the contribution of TENURE to entrepreneurship is smaller. The models fit the data well, explaining across the models between 20 and 80 percent of the variation in the dependent variable. Overall, the results are supportive of H2.

We re-ran the analysis using the values of 1st principal component (CIVIL SERVICE) from MERIT and TENURE (reversed) values as the main explanatory variable. Table 3 reports the results of the conditional association of CIVIL SERVICE with SMBIZ. The coefficient of the primary interest enters consistently significant at the 99% level, and is signed as expected: the more a region's public bureaucracy approximates the civil service organizational design, the higher the number of registered small business. In this analysis GRPpc, foreign trade, migration and urbanization enter significantly and the direction of their impact is as expected. The coefficient

for the size of bureaucracy enters not significant. The data fits the models well, explaining about 80 percent of the variation in the investment risk in the fully specified model (Model 5). Overall, the propositions that meritocratically recruited and tenure-protected public bureaucracies are associated with higher entrepreneurship rates finds strong support in the data.

Discussion and conclusion

Having bridged an established argument from political economy, i.e. that the threat of political moral hazard can be alleviated through the insulation of the core of public bureaucracy from day-to-day interference by individual politicians, with the entrepreneurship literature, we have argued that the institutionalization of public bureaucracies that are manifestly not a private resource of politicians has a positive impact on entrepreneurs' complex assessments of the opportunity and feasibility of a startup, and their calculations of the expected utility from business venturing. In other words, civil service is the most pro-entrepreneurship form of the organization of public bureaucracy, and therefore higher institutionalization of meritocratic recruitment and security of tenure will be associated with higher comparative rates of business venturing (H1 and H2).

These propositions find strong support in the data: controlling for a set of theoretically-informed controls, cross-sectional analyses suggested that, on average, those of Russia's regions in which public bureaucracies are organized on the principles of meritocratic entry and tenure-protection are associated with higher rates of entrepreneurship as compared to those regions where politicians hire and fire bureaucratic personnel at will. Similar findings emerge when we employ the values from the 1st principal component for MERIT and TENURE as our key independent variable, enabling us to draw a general conclusion that Russia's regions where politicians' hands are tied with regard to appointments and dismissals of bureaucratic personnel exhibit higher entrepreneurship rates, compared to the regions where such discretion is high.

The contribution of this paper is two-fold. First, it contributes to the literature by offering new empirical evidence to the idea that the "above politics" type of public bureaucracy is an effective response to political hazard. Second, it makes an important empirical contribution by introducing into the scientific circulation novel data on the organizational design of public bureaucracies in Russia's regions.

Several caveats have to be acknowledged and these lead directly to new research avenues. Theory-wise, the limitations of civil service have to be given a systematic theoretical treatment. In the absence of close political oversight, what constrains bureaucrats from the abuse of the power of their office? The cross-sectional nature of our data also invites a number of caveats, the most major of which is about the directionality of the found association. Although a causality that runs from institutions to economic development is currently a paradigmatic argument (Acemoglu and Robinson 2012), there are also voices claiming the opposite (Dang 2013), and future research is required to clarify this important issue. The problem of omitted variable(s) is also potentially important, and the hypotheses should be further tested with alternative measurements for the key predictors and with the

inclusion of individual-level data. Furthermore, interactive effects between bureaucratic features with other institutional features may further nuance the findings.

This paper reinforces the message of previous research on the link between public bureaucracy and entrepreneurship that suggests that as long as political elites can use public bureaucracies as their private resource, the number of individuals turning to business will be below some natural limits determined by individual and environmental factors. Taking into consideration the fact that in most of Russia's regions merit is not a rule of the game, one of the policy implications arising from this research is that civil service reform, understood as meritocratic recruitment and tenure protection in practice, should be made part of entrepreneurship-promoting efforts by national government.

TABLES AND FIGURES

TABLE 1, (MERITOCRATIC RECRUITMENT TO REGIONAL BUREAUCRACY AND ENTREPRENEURSHIP)

VARIABLES	(1)	(2)	(3)	(4)	(5)
MERIT	0.126** (0.057)	0.121*** (0.040)	0.082** (0.038)	0.086** (0.036)	0.089** (0.036)
GDPpc, ln		0.680*** (0.093)	0.408*** (0.117)	0.364*** (0.117)	0.329*** (0.121)
Foreign trade		-0.001 (0.001)	-0.001 (0.001)	-0.002* (0.000)	-0.002** (0.000)
Unemployment			-0.000 (0.007)	-0.002 (0.008)	-0.008 (0.010)
Urban population			0.015*** (0.004)	0.014*** (0.004)	0.014*** (0.005)
Migration balance				0.002*** (0.001)	0.002*** (0.001)
Ethnic fragmentation				0.000 (0.002)	0.000 (0.002)
University education				0.001 (0.009)	0.001 (0.009)
Size of bureaucracy					0.086 (0.075)
Constant	2.521*** (0.227)	-5.859*** (1.151)	-3.352** (1.379)	-2.778* (1.421)	-2.463* (1.443)
Observations	57	57	57	55	55
R-squared	0.082	0.577	0.667	0.731	0.739

Note: OLS estimates with standard errors in parentheses and p-values *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variable: the number of officially registered firms per 1,000 working population (2014, ln-transformed). MERIT: higher values stand for deeper institutionalization of merit-based recruitment to public bureaucracy.

TABLE 2, (TENURE PROTECTION AND ENTREPRENEURSHIP)

	(1)	(2)	(3)	(4)	(5)
VARIABLES					
TENURE	-0.028*** (0.008)	-0.015** (0.006)	-0.012** (0.005)	-0.012** (0.005)	-0.013** (0.005)
GDPpc, ln		0.830*** (0.131)	0.368** (0.149)	0.192 (0.158)	0.213 (0.162)
Foreign trade		-0.002* (0.001)	-0.002** (0.001)	-0.002 (0.001)	-0.002 (0.001)
Unemployment			0.005 (0.008)	-0.002 (0.009)	0.002 (0.011)
Urban population			0.024*** (0.005)	0.023*** (0.005)	0.023*** (0.005)
Migration balance				0.002*** (0.001)	0.002** (0.001)
Ethnic fragmentation				0.001 (0.003)	0.001 (0.003)
Univerity education				-0.011 (0.010)	-0.010 (0.010)
Size of bureaucracy					-0.055 (0.076)
Constant	3.530*** (0.176)	-6.937*** (1.651)	-2.997* (1.737)	-0.432 (1.934)	-0.625 (1.963)
Observations	49	49	49	48	48
R-squared	0.206	0.591	0.750	0.796	0.798

Note: OLS estimates with standard errors in parentheses and p-values *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variable: the number of officially registered firms per 1,000 working population (2014, ln-transformed). TENURE: higher values stand for higher politically motivated turnover among the rank-and-file bureaucrats.

TABLE 3, (1st PRINCIPAL COMPONENT AND ENTREPRENEURSHIP)

	(1)	(2)	(3)	(4)	(5)
VARIABLES					
CIVIL SERVICE	0.203***	0.132***	0.102***	0.106***	0.108***
	(0.060)	(0.038)	(0.035)	(0.035)	(0.036)
GDPpc, ln		0.808***	0.552***	0.406**	0.421**
		(0.103)	(0.138)	(0.150)	(0.155)
Foreign trade		-0.002**	-0.002***	-0.002**	-0.002**
		(0.001)	(0.001)	(0.001)	(0.001)
Unemployment			0.008	-0.002	0.001
			(0.007)	(0.008)	(0.010)
Urban population			0.017***	0.019***	0.019***
			(0.005)	(0.005)	(0.005)
Migration balance				0.001**	0.001*
				(0.001)	(0.001)
Ethnic fragmentation				0.003	0.003
				(0.002)	(0.002)
Higher education				-0.004	-0.004
				(0.009)	(0.009)
Size of bureaucracy					-0.041
					(0.081)
Constant	3.007***	-6.947***	-4.975***	-3.214*	-3.356*
	(0.063)	(1.271)	(1.570)	(1.799)	(1.841)
Observations	43	43	43	43	43
R-squared	0.220	0.714	0.788	0.821	0.822

Note: OLS estimates with standard errors in parentheses and p-values *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variable: the number of officially registered firms per 1,000 working population (2014, ln-transformed). PC1: values for 1st component from MERIT and TENUE (reversed), higher values stand for deeper institutionalization of merit tenure-protected public bureaucracies.

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APPENDIX

Appendix A: Description of Variables and Sources

SMBIZ: number of registered small business normalized by the number of working population. The term “small business” refers to the legal entities that operate at the end of the accounting year (including those temporarily suspend their business activities for a period not exceeding 2 years), with the average number of employees up to one hundred and revenue from sales of goods or services in the preceding year no more than 400 million rubles (excluding value added tax). Year: 2014. Source: Rosstat.

GRPpc: gross regional product per capita, roubles, ln-transformed. Year: 2013. Source: Rosstat.

Foreign trade: foreign trade turnover, billion US dollars. Year: 2014. Source: Rosstat.

Unemployment: unemployment rate as per International Labor Organization methodology, percent. Year: 2013. Source: Rosstat.

Urban population: share of urban population as of January 1, percent. Year: 2014. Source: Rosstat

Migration balance: net migration rate per 10,000 population. The net migration rate is the ratio of net migration to the average annual number of resident population. Year: 2014. Source: Rosstat.

Higher education: share of working age population with higher education, percent (survey-based estimates). Year: 2014. Source: Rosstat.

Size of bureaucracy: number of the employees in the regional executive branch of authority per 1,000 population. Year: 2013. Source: Rosstat.

