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EXECUTIVE POLITICS AND GOVERNANCE

# ELITES, INSTITUTIONS AND THE QUALITY OF GOVERNMENT

Edited by CARL DAHLSTRÖM  
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# Elites, Institutions and the Quality of Government

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# 10

## Property Rights without Democracy: The Role of Elites' Rotation and Asset Ownership\*

*Leonid Polishchuk and Georgiy Syunyaev*

In democracies, economic institutions, including property rights, reflect the needs and preferences of various grassroots constituencies, whereas in autocracies institutions serve ruling elites. It is generally expected that unaccountable elites use their power to expropriate the rest of society and to do so they establish extractive institutions instead of inclusive ones that would be serving the society at large (Acemoglu and Robinson, 2012). Inclusive institutions are more likely to be observed in democracies, and this suggests a positive correlation between institutional and democratic quality.

While this prediction finds some support in data (Tabellini, 2008), the security of property rights and other key measures of institutional performance exhibit significant variations both within democracies and autocracies. In democracies such variations reflect tradition (Glaeser and Shleifer, 2002), political organization of the society (Olson, 1982), cultural traits (Tabellini, 2008) and so on. Highly uneven institutional quality across non-democracies is more intriguing. Glaeser et al. (2004) observe that some dictators implement pro-development policies for unspecified reasons. Besley and Kudamatsu (2008) show that growth rates differ more widely across autocracies than across democracies. Explanations of economically successful (and presumably institutionally sound) autocracies include institutionalized ruling parties (Gehlbach and Keefer, 2011), accountability to 'selectorates' (Besley and Kudamatsu, 2008), freer media (Egorov et al., 2009), fear of masses' unrest (Acemoglu and Robinson, 2006a) and so on.

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In this chapter, we discuss how institutional quality in autocracies is affected by two factors, one political and another economic. The political factor is a regime's stability, and the economic factor is ownership of economic assets by the ruling class. Both factors have been discussed in the literature, but the offered theories contradict each other and empirical evidence remains inconclusive. We review such literature and propose an integrated approach, which emphasizes complementarity of elites' rotation and asset ownership as ingredients of institutional quality in non-democracies.

The role of power change in autocracies was highlighted by Olson (1993), who proposed the famous 'stationary bandit' metaphor. Quick succession of autocrats turns them into 'roving bandits' ravaging their turfs, whereas a 'stationary bandit' has the incentive to supply peaceful order and other public goods as investments in his tax base. Such investments take time to recoup, and the length of tenure becomes a sorting factor separating 'roving bandits' from 'stationary' ones and hence affecting institutional quality.

The contrarian view that good governance requires rotation of rulers has a much longer pedigree going back to Pareto and even Aristotle. Aristotle's dictum 'to rule and be ruled in turn' motivated a stream of literature that argues that the rotation of autocratic rulers creates a dynamic version of otherwise absent checks and balances, and thus improves institutions. Such arguments are discussed in the next section, where they are contrasted with Olson's 'stationary bandit' logic and where we also review the available empirical evidence supporting each of these views.

We turn next to the impact of ruling elites' asset ownership on institutional quality in non-democracies. In contrast with polarized views on elites' rotation, there is a near consensus that elites' wealth sways their preferences from inclusive institutions to oligarchic ones (see e.g. Rajan and Zingales, 2004; Acemoglu and Robinson, 2012). Wealth of the ruling class therefore becomes another sorting factor affecting institutional outcomes. This factor, however, could work in the opposite direction, for example, when wealthy elites prevent excessive redistribution favored by the masses (Persson and Tabellini, 1994). In the same vein McGuire and Olson (1996) argue that an autocrat's ownership of market assets improves his institutional choices by increasing his sensitivity to the conditions in the private sector. The second section addresses this controversy.

In the third section we present a simple theory combining both of the above sorting factors, and show that they augment each other in upholding property rights in non-democracies. The key idea of the

theory is that inclusive institutions which protect property rights outside of the ruling elite group insure this group against expropriation after a power shift, and the value of such insurance increases in the size of assets owned by the group and in the likelihood of losing power. In the fourth and fifth sections we describe two empirical tests for the proposed theory, one using cross-country data, and the other using data from Russian regions. The sixth section concludes.

## Importance of (not) being stationary

In autocracies and nominal democracies protection of property rights and other key institutions are at the discretion of the rulers and as such are *endogenous*, reflecting rulers' preferences and whatever restrictions on their actions still exist. Such de facto restrictions often differ from nominal ones which can be sidestepped or ignored with impunity and which are uncorrelated across non-democratic regimes with institutional outcomes (Glaeser et al., 2004). Other factors, such as regime tenure, could be more salient for institutional quality.

According to the abovementioned 'stationary bandit' theory, longer stay in power increases the attractiveness of good institutions for an autocrat. As explained by Olson (1993), a 'stationary bandit' refrains from excessive expropriation to maintain his tax base for future use (see also Svensson, 1998; Bourguignon and Verdier, 2012). Put differently, a 'stationary bandit' internalizes a dynamic externality since he is interested in maximizing the total expropriation (properly discounted) over an extended period of time. Long stay in power thus averts a dynamic 'tragedy of the commons'; indeed, Olson saw the economic advantages of a 'stationary banditry' in the prevention of 'uncoordinated competitive theft' by a quick succession of 'roving bandits'.<sup>1</sup>

Put differently, a 'stationary bandit' can make a credible commitment to secure property rights. By honoring promises to private investors, a 'stationary bandit' preserves his reputation, which becomes a valuable asset over a sufficiently long period of time. Low turnover of rulers reduces the 'political discount rate' and therefore, according to the Folk Theorem, protection of property rights becomes incentive-compatible (Besley and Ghatak, 2010) and preferable to full expropriation which was the dominant strategy in a one-shot game played by a 'roving bandit'.

Do stable autocracies actually deliver better institutions than unstable ones? Political instability adversely affects economic growth (Alesina et al., 1996; Aisen and Veiga, 2013), but this could be caused, apart from damaged institutions, by losses and disruptions inevitable in almost any government change. As for institutional quality per se,

Svensson (1998) shows that political stability improves institutions, but this conclusion is obtained for democracies and autocracies combined. Besley and Ghatak (2010) maintain that more entrenched autocracies tend to have less-protected property rights, and recent collapses of ossified autocracies in the Arab world triggered by economic failures agree with this conclusion. Still, Holcombe and Boudreaux (2013) show that across autocracies longer tenure could be associated with higher institutional quality.<sup>2</sup>

Some authors claim that the association between regime stability and the quality of institutions could be non-monotonic. According to Acemoglu and Robinson (2006b), fully stable and highly unstable regimes have stronger propensity to undertake modernization than those in the middle. Campante et al. (2009), on the other hand, describe a U-shaped relationship between government turnover and corruption.

A more recent stream of research maintains that government rotation in autocracies is a blessing, rather than a curse. According to Besley and Kudamatsu (2008), in more economically successful autocracies average tenure of rulers is shorter because of the ability of 'selectorates' to better discipline their leaders. More common explanations do not invoke elites' accountability to their constituencies, but rather point out to dynamic externalities whereby good institutional choices are rewarded after a future power shift.<sup>3</sup>

Such path dependency could be upheld as a Coasean bargain among different elite groups which agree to follow a certain course of action and achieve a Pareto-improvement over the 'default point' of non-cooperation. Static versions of a 'political Coase theorem' are usually unfeasible because in the absence of checks and balances political agreements lack credibility (Acemoglu, 2003). Government rotation offers a solution to the credible commitment problem, whereby defectors are punished when successive elite groups take power. Cooperative outcomes are efficient subgame-perfect equilibria (Dixit et al., 2000), that is, Pareto-optima over all subgame-perfect equilibria such that every party is not worse-off than in the case of non-cooperation. Cooperative equilibria are sustained when elite groups expect power shifts and, due to risk aversion, want to smooth out their payoffs over the ebbs and flows of political fortune. Hence incumbents limit expropriation, rationally expecting that successor regimes will return the favor.

The strength of such incentives increases in rulers' rotation rates. Acemoglu et al. (2011) show that distortions in Pareto-optimal equilibria caused by the inability to credibly commit to future policies are reduced by more frequent power changes.

Path dependency could also be due to 'stickiness' of institutions, when they exhibit significant inertia and institutional changes can only be incremental (North, 1990). Possible reasons for institutional inertia include bounded rationality; re-negotiations of institutional change among stakeholders; complementarity between institutions; stable expectations, norms and customs and so on (Polishchuk and Syunyaev, 2015). When institutions are sticky, an incumbent ruler who protects property rights (e.g. by respecting the independence of the judiciary or by otherwise maintaining legal capacity – see Besley and Persson, 2011) expects that such protection would carry on and be available to him after losing power.

Besley and Persson (2011) and Besley et al. (2012) assume that an incumbent ruler determines the extent to which institutions are cohesive (i.e. restrict redistribution to the ruling group from the rest of society; cohesion is a proxy for property rights protection). If today's institutional choices take effect in the next period, reflecting implementation lag (see also Svensson, 1998), equilibrium level of cohesion increases in the ruling elites' rotation. To support this conclusion empirically, Besley et al. (2012) show that 'random exit' of an authoritarian ruler due to death, sickness and other non-political reasons markedly increases the probability of reforms establishing checks and balances. This empirical strategy assumes that random exits cause political instability, making successors less confident about their hold on power and hence more amenable to putting restrictions on expropriation.

Polishchuk and Syunyaev (2015) arrive to a similar conclusion by positing that incumbent rulers form expectation about their political survival based on the recent history, and by relating the quality of property rights protection to the actual rate of power shifts over a preceding period (see also the model below in this chapter). They demonstrate that in non-democracies elites' rotation has positive and statistically significant impact on property rights.

## **To have or not to have**

Economic inequality is commonly viewed as an institutional spoiler. Keefer and Knack (2002) show that inequality is inversely related to the security of contractual and property rights and therefore impedes economic growth; Easterly (2007) proves that causality indeed runs from inequality to bad institutions.

Such causal link is usually explained by the polarization of institutional preferences observed in economically unequal societies.

Acemoglu and Robinson (2012) argue that ruling elites are opposed to inclusive institutions and expropriate the rest of society through extractive institutions. Such institutional choice can be explained by elites' position of power, but elites' wealth alone sways institutional preferences away from social optima. Murphy et al. (1993) point to an economy of scale that makes rent-seeking more appealing for wealthier individuals. For example, excessively high entry barriers are common in less democratic and more polarized nations (Djankov et al., 2002), where they prevent entry into the formal sector of small asset owners (De Soto, 2003) and enable wealthy elites to earn extra returns to their assets (Polishchuk, 2013). A similar logic explains the observed aversion of 'oligarchs' to secure property rights in Russia in the 1990s (Polishchuk and Savvateev, 2004), and more generally elites' preference to keep transition economies partially reformed since incomplete reforms expand opportunities for rent-seeking (Hellman, 1998). Rajan and Zingales (2004) similarly argue that when concentration of asset ownership is high, institutions of capitalism need to be 'protected from capitalists'.

McGuire and Olson (1996) observed a silver lining in the clouds of oligarchic economies: if an autocrat owns large productive assets, he is interested in an enabling institutional environment to make such assets more profitable. An autocrat who earns rent and market income (Bourguignon and Verdier, 2012) faces a tradeoff: as a rent income earner he is interested in extractive institutions, but as a market income earner he needs market-supporting institutions, including property rights. The second effect aligns the autocrat's interests with those of the rest of society, and its relative strength rises in asset ownership. When the share of the autocrat's assets reaches a certain threshold (which depends on production technology and could be relatively small), the autocrat's institutional choice becomes socially optimal.

This result does not assume democratic accountability of the ruler; it is driven entirely by his immediate self-interest. Such affinity of interests between ruling class and society is rarely observed in autocracies and never occurs over conventional public goods – since the elites are numerically insignificant, they prefer expropriation to the public good provision (Lizzeri and Persico, 2004). However in the case of public *production inputs* what matters is not the size of the elites but the size of assets that they own, and here elites' direct self-interest could indeed substitute for democratic accountability, improving institutional quality.

This optimistic logic is rarely corroborated by real-life autocracies where wealthy rulers often fail to supply enabling institutions for the private sector. Indeed, the logic makes an unrealistic implicit assumption of 'equal treatment' whereby rules of the game are the same for

the ruling class and everyone else. In reality rulers and their cronies enjoy vast privileges in accessing markets, resources, the justice system and so on. When asset ownership is combined with unchecked political power, it could exacerbate institutional distortions rather than mitigating them. Thus, an autocrat-turned-businessman could manipulate market prices to extract additional rent (Acemoglu, 2006). When assets of ruling elites are concentrated in resource industries, this further suppresses the provision of general-purpose public production inputs (Polishchuk, 2013).

However 'equal treatment' holds, at least somewhat, when an asset-owning autocrat loses power, in which case he needs public protection of property rights like everyone else, and the logic of McGuire and Olson is restored. This leads to the above-stated conjecture that elites' rotation and asset ownership jointly contribute to secure property rights. In the next section we present a simple model that makes this intuition precise.

## A model

Suppose that power rotates between  $n$  elite groups in periods  $t = 0, 1, 2, \dots$ , and we assume that power shifts occur randomly. Each period  $t$  could be politically stable with probability  $1 - \pi_0$  and politically unstable otherwise.<sup>4</sup> In the former case the incumbent group's hold on power continues into the next period  $t+1$ . In the case of instability the incumbent group has to compete with other  $n - 1$  groups on an equal footing to keep power in the period  $t+1$ , and each group wins such contest with the probability  $1/n$ . Therefore the effective probability of losing power, or ruling elites' rotation rate, equals  $\pi \equiv \pi_0 (n - 1)/n$ .<sup>5</sup>

The stock of production assets in the economy, normalized to unity, is owned by the elites and non-elite agents; the share of assets owned by the  $i$ -th elite group equals  $w_i \geq 0; \sum_i w_i \leq 1$ . A unit of production assets generates one unit of returns per period. The incumbent group  $i$  keeps the income generated by the assets that it owns and expropriates the share  $1 - \alpha_t$  of the income produced elsewhere in the economy;  $\alpha_t \in [0, 1]$  measures the protection of property rights in period  $t$ . The consumption of group  $i$  in period  $t$  thus equals  $w_i + (1 - \alpha_t)(1 - w_i)$ , while the consumptions of all other groups  $j \neq i$  equal  $\alpha_t w_j$  (to keep the model simple, we assume away savings and investments). All groups are of equal size and have the same concave one-period utility function  $U(z)$ .<sup>6</sup>

The political regime is autocratic, which means that institutional choices of a ruling elite group are driven solely by the maximization of the group's expected discounted utility. As in Svensson (1998) and Besley et al. (2012), institutions are assumed sticky, and the incumbent

group in period  $t$  sets institutions for the next period by selecting  $\alpha_{t+1}$ . In a Markov perfect equilibrium (where strategies depend only on the current state and disregard the history that has led to this state) the choice  $\alpha = \alpha_{t+1}$  of the group with wealth  $w = w_i$  solves the following problem:

$$\max_{\alpha \in [0,1]} [(1-\pi) U(w + (1-\alpha)(1-w)) + \pi U(\alpha w)] \quad (1)$$

Such problems are well-known in the insurance theory. Indeed, by refraining from full expropriation, that is, selecting  $\alpha > 0$ , the incumbent group buys a 'property insurance', and the forgone expropriation  $\alpha(1-w)$  can be considered as the 'insurance premium'. Intuitively, the amount of insurance (level of property rights protection) increases in the value  $w$  of the property<sup>7</sup> and in the likelihood  $\pi$  of the 'insured event', that is, power shift.

Whenever

$$\pi + w > 1 \quad (2)$$

the incumbent group opts for full protection of property rights  $\alpha^* = 1$ . Indeed, imperfect protection of property rights involves a 'lottery' with the expected value  $(1-\pi)(w + (1-\alpha)(1-w)) + \pi\alpha w = w + (1-\alpha)(1-\pi-w)$ . Under condition (2) this expected value is less than in the risk-free option  $\alpha = 1$ , and hence no risk-averse agent would be interested in such a lottery.

If  $\pi = 0$  and/or  $w = 0$ , full expropriation  $\alpha^* = 0$  obtains. This corresponds to the cases of either a 'stationary bandit' who does not need institutional insurance against power loss, or a 'roving bandit' with no property to insure. Otherwise there is an interior solution  $\alpha^* = \alpha^*(\pi, w) \in (0, 1)$  for which the following first-order condition holds:

$$\frac{U'(\alpha^*w + 1 - \alpha^*)}{U'(\alpha^*w)} = \frac{\pi w}{(1-\pi)(1-w)} \quad (3)$$

One can show that for any  $w > 0$  the equilibrium level of property right protection  $\alpha^*$  monotonically increases from zero to one in the elites' rotation rate in the range  $\pi \in [0, 1-w]$  and remains equal to 1 for  $\pi \geq 1-w$ . Similarly with mild additional assumptions (e.g. when relative risk aversion  $r(z) \equiv -\frac{zU''(z)}{U'(z)} \leq 1$ ), for any  $\pi > 0$  the equilibrium level of property rights  $\alpha^*$  monotonically increases from zero to one in elites' market assets size  $w \in [0, 1-\pi]$ , and remains equal to 1 for  $w > 1-\pi$ .

Therefore elites' rotation indeed improves the protection of property rights – provided that elites themselves are property owners. Elites'

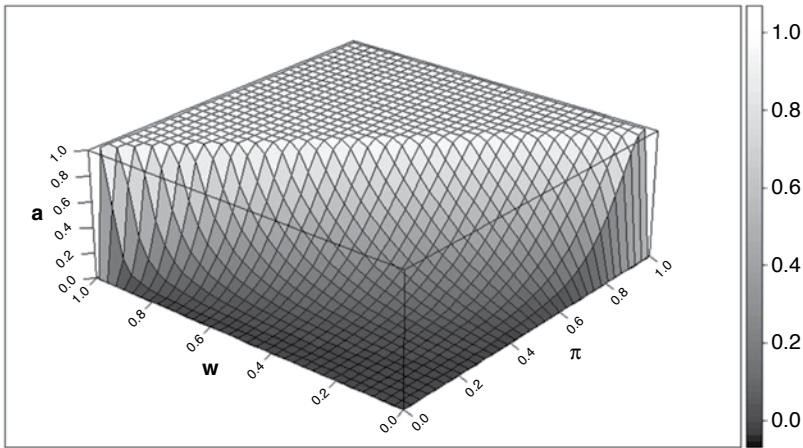


Figure 10.1 Security of property rights in relation to elites' rotation and asset ownership

asset ownership has the same effect – in agreement with McGuire and Olson (1996), but with an important caveat that the regime is *not* of a stationary bandit type. This is the first indication that elites' rotation and resource ownership are complements as factors of institutional quality – none of these factors alone has such effect. Further evidence of complementarity can be obtained from inspection of cross-partial derivatives of  $\alpha^*(\pi, w)$ ; for example, for a Cobb-Douglas specification  $U(z) = z^{1-\beta}$ ,  $\beta \in (0, 1)$  one has  $(\partial^2 \ln \alpha^*) / \partial \pi \partial w > 0$ . Figure 10.1 illustrates the dependence of equilibrium property rights protection on elites' rotation and asset ownership for  $\beta = 1/2$ . The figure shows that with no elites' rotation ( $\pi = 0$ ) or with no asset ownership ( $w = 0$ ) property rights are completely unprotected ( $\alpha = 0$ ). Otherwise an increase of property rights protection in one of these factors grows steeper when the other factor takes higher values. The 'plateau' on the figure corresponds to condition (2) with full protection of property rights.

In the following sections we support the above conclusions empirically for countries of the world and for Russian regions.

### Cross-country analysis

To investigate the impact of ruling elites' rotation and asset ownership for national institutions, we used a panel of 110 countries for the period from 2000 through 2009.<sup>8</sup> Our dependent variable measuring institutional quality was the principal component of indexes of property



rights protection and judicial independence<sup>9</sup> from the Fraser Institute's Economic Freedom of the World dataset (Gwartney et al., 2012). Unlike other property rights measures which reflect subjective judgments of outside experts conducting cross-country comparisons, this measure relies solely on surveys of businesspeople who have first-hand experience with respective national institutions.

The first independent variable – elites' rotation – was measured as the average number of exits of 'veto players' (Tsebelis, 2002; the only veto player in autocracies is the chief executive) over a twenty-year period prior to the observation year (Database of Political Institutions [Beck et al., 2001] served as a data source). This measure differs from the regime durability (tenure) used in a number of other studies (Campante et al., 2009; Holcombe and Boudreaux, 2013) – what we need is a *hazard rate of exit* which forms expectations of a power shift and cannot be predicted by the incumbent's tenure up to date.

Another independent variable – elites' asset ownership – is more difficult to measure since rulers' possessions are opaque, especially in autocracies. We use two independently derived proxies which produce consistent results. The first proxy is general economic inequality measured by the Gini coefficients from the UNU-WIDER World Income Inequality database (Solt, 2009). This proxy is justified by the assumption that ruling elites belong to the wealthiest part of the society, and by high correlation between inequality and wealth concentration (Leigh, 2007). The second proxy is the chief executive's stay in power (tenure) by the observation year; it is based on the assumption that autocrats amass their wealth through embezzlement and grand corruption, and this process takes time which therefore becomes a wealth correlate. The required data is available from the Democracy and Dictatorship revisited (DD) dataset (Cheibub et al., 2010).

Our key control variable is the level of democracy (Institutionalized Democracy Index from the Polity IV database; Marshall and Jaggers, 2012), since the effect that we expect to observe should be pronounced only in polities where property rights are endogenous, that is, in autocracies and feeble democracies. Other controls which according to earlier literature are expected to affect institutional quality are GDP per capita, level of education, population and oil and natural gas rent (La Porta et al., 1999; Glaeser et al., 2004; Mehlum et al., 2006).<sup>10</sup>

In a baseline panel regression of property rights on government turnover the latter is statistically insignificant (Table 10.1, Column 1), which is consistent with contradictory views in the preceding literature of the

Table 10.1 Government rotation and protection of property rights

Sample	Property rights				Non-democracy score > 2	Non-democracy score ≤ 2
	Full sample					
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
Turnover	0.469 [0.76]	5.392*** [1.58]	4.345*** [1.41]	4.226*** [1.35]	2.061* [1.07]	-0.78 [0.74]
Turnover <sup>2</sup>		-15.50*** [4.01]	-13.15*** [3.74]	-13.51*** [3.43]		
Non-democracy score					-0.06 [0.04]	-0.06 [0.06]
ln(GDP)				1.097*** [0.315]	0.746** [0.37]	1.502*** [0.41]
School Enrollment			-0.001 [0.00]	-0.001 [0.00]	-0.002 [0.00]	-0.001 [0.01]
ln(Population)			0.351 [0.58]	1.062 [0.655]	0.534 [1.22]	2.214** [1.02]
Natural resources			-0.003 [0.00]	-0.006 [0.00]	-0.003 [0.01]	-0.012 [0.01]
Observations	962	962	840	840	275	527
Number of countries	110	110	102	102	44	61
R <sup>2</sup> -within	0.435	0.453	0.474	0.497	0.479	0.509

\*p-value &lt; 0.1, \*\*p-value &lt; 0.05, \*\*\*p-value &lt; 0.01

Source: Polishchuk and Syunyaev, 2015

role of ruling elites' rotation in institutional quality (first section of the chapter). However once a quadratic term is added to the regression, a highly significant and robust inverted U-shaped association between government turnover and property rights transpires (Columns 2–4). The ascending branch of the parabola is populated largely by non-democracies (country-years with democracy score below the median), where government turnover is on an average lower than in strong democracies. One can therefore expect that for a subsample of non-democracies the coefficient of government turnover in a linear regression will be positive and significant. According to Column 5, this is indeed the case. For the residual subsample of stronger democracies, this coefficient is negative and insignificant (Column 6).

The estimation in Column 5 is also in agreement with the hypothesis that elites' rotation and asset ownership are complements in upholding property rights in autocracies. Indeed, wealthy ruling elites are common, if not typical, for non-democracies – in our sample the correlation between the democracy score and the Gini coefficient is  $-0.31$ . To test the above complementarity directly we subdivided the subsamples of more- and less-democratic countries into quarter-samples with lower and higher inequality using as a divide the Gini value of 0.4, and estimated fixed effect linear regressions of property rights on elites' rotation. Estimation results are presented in Table 10.2. For the quarter-sample of non-democracies with a high level of inequality (and presumably wealthier ruling elites) the coefficient of interest is positive and highly significant (Column 1). For non-democracies with lower inequality the coefficient is still positive, but 50 percent smaller and statistically insignificant (Column 2). This is in agreement with the complementarity between elites' rotation and asset ownership. For the remaining two

Table 10.2 Property rights, turnover and economic inequality

Sample	Property rights			
	Non-democracy score > 2		Non-democracy score ≤ 2	
	Inequality > 0.40	Inequality ≤ 0.40	Inequality > 0.40	Inequality ≤ 0.40
Dependent Variable	(1)	(2)	(3)	(4)
Turnover	3.029*** [0.93]	1.370 [3.28]	-0.051 [1.24]	-1.100 [0.92]
School enrollment	-0.005* [0.00]	0.008 [0.01]	0.000 [0.01]	-0.002 [0.01]
ln(population)	0.511 [1.36]	3.622*** [1.10]	-0.081 [1.88]	1.037 [1.68]
ln(GDP)	0.778 [0.53]	1.140** [0.45]	0.358 [0.56]	1.823*** [0.50]
Natural resources	-0.013 [0.01]	-0.012 [0.01]	-0.002 [0.01]	-0.032*** [0.01]
Observations	131	112	163	364
Number of countries	23	22	22	41
R <sup>2</sup> -within	0.597	0.634	0.661	0.483

\* p-value < 0.1, \*\* p-value < 0.05, \*\*\* p-value < 0.01

Source: Polishchuk and Syunyaev, 2015

quarter-samples there is no significant association between government turnover and property rights (Columns 3 and 4). These estimations pass standard endogeneity tests (not reported here), which address the concern that our results could be driven by reverse casualty.

We now turn to another proxy of the autocrat's wealth, that is, his tenure. A short stay in power will likely be insufficient to expropriate assets massive enough to alter institutional choices. On the other hand, after many years in power the marginal contribution of yet another year to asset accumulation should be insignificant. Such non-linearity suggests the following empirical strategy: for an integer  $s = 1, 2, 3, \dots$  we introduce a dummy which equals one for a given country-year if the chief executive had been in power by at least  $s$  years, and zero otherwise. For each such dummy we estimate over the subsample of non-democracies a panel regression of property rights on elites' rotation, the dummy and the interaction of the above variables. For small  $s$  the coefficient of the interaction is small and insignificant, but it rises with  $s$  in magnitude and significance, peaks at  $s = 6$  and declines afterwards. Estimations for the 'saturation threshold'  $s = 6$  are reported in Table 10.3. The interaction

Table 10.3 Property rights, turnover, and incumbent's tenure

Dependent Variable		Property rights			
Turnover	2.888*** [1.153]	2.807*** [1.041]	1.618 [1.122]	1.372 [1.111]	1.859 [1.075]
Turnover*	2.924***	2.538***	2.950***	2.748***	2.200***
1(executive age in office > 6)	[1.043]	[0.728]	[0.822]	[0.816]	[0.745]
1(executive age in office > 6)	-0.190*	-0.178*	-0.207*	-0.186*	-0.194*
	[0.102]	[0.0925]	[0.107]	[0.106]	[0.114]
ln(GDP)		1.164** [0.457]	1.387*** [0.258]	1.429*** [0.217]	0.731* [0.426]
ln(population)			2.488*** [0.760]	2.859*** [0.764]	1.015 [1.110]
Natural resources				-0.008* [0.004]	-0.004 [0.005]
School enrollment					-0.003 [0.003]
Observations	298	298	298	297	242
Number of countries	46	46	46	46	40
R <sup>2</sup> -within	0.483	0.511	0.533	0.535	0.531

\*p-value < 0.1, \*\*p-value < 0.05, \*\*\*p-value < 0.01

Source: Polishchuk and Syunyaev, 2015

term in these regressions has a positive and highly significant coefficient, in agreement with the complementarity hypothesis.<sup>11</sup>

## **Russian governors and regional institutions**

Subnational comparative analysis has a number of advantages over cross-country studies, including better opportunities for causal inferences (Snyder, 2001). To test the hypothesis that ruling elites' rotation and asset ownership jointly improve endogenous institutions, one needs a country with a large number of subnational units where regional executives are not democratically accountable and have significant discretion over regional institutions. Such a country should also exhibit substantial variations in institutional quality and in both explanatory variables.

Over the last 10–15 years, Russia was meeting all of the above requirements. Until 2004, governors in its 80 plus regions were electable by popular vote, although regional elections lacked competition and transparency. In 2004, gubernatorial elections were cancelled and until 2012 governors were essentially federal appointees. Throughout that period, re-confirmations of governors for the next term in office were unrelated to social and economic conditions in their regions (Reuter and Robertson, 2012). In 2012 direct election of governors was brought back, but multiple restrictions and 'filters' sustained the non-democratic nature of regional political regimes.

Although far-reaching centralization of the Russian state since the turn of the century stripped *de jure* regional administrations of much of the earlier autonomy governors retained broad autonomy *de facto*, which was tolerated by the Kremlin on the conditions of political loyalty and demonstrated support to the regime at ballot boxes. As a result, Russia features a mosaic of institutional regimes of highly uneven quality (Baranov et al., 2015), and these institutions can be considered as largely endogenous.<sup>12</sup> Rotation of governors was also uneven – in some regions, they managed to keep office for a decade and longer, while in others they were replaced every two to three years. Finally, one could find among Russian governors both career bureaucrats with no known business interests, and businessmen-turned-politicians who control (often by proxy) major production assets.

For an alternative test of this chapter's main hypothesis on Russian regional data, we use a database comprising 79 regions.<sup>13</sup> Measurement of Russian regional institutions is still work in progress (Baranov et al., 2015); we selected one of the most popular measures – the RA Expert regional investment climate rating,<sup>14</sup> which reflects investment potential, quality of governance and political, legal and other investment

risks. This index aggregates official statistical data with expert assessments, and is in agreement with a number of other commonly used indicators of Russian regional institutions. We take the RA Expert rating for 2009, and, due to possible autocorrelation, control for the same rating in 2002.

Governors' rotation is estimated as the number of power shifts over the 2003–2010 period; it takes values from zero to three with the average of 0.84. While a Russian law requires disclosure of asset ownership by governors, it has a number of loopholes and is inconsistently enforced and official data do not reveal the true picture. Instead we proxy asset ownership by whether a governor had been involved in commercial activities prior to taking the office. Regional index of governors' business affiliation is calculated as the number of years in the 2003–2010 period when the governor was a former entrepreneur. Following Gehlbach et al. (2010), we control for regional population, GDP per capita, share of tertiary educated, economic inequality, share of the resource sector in regional employment, voter turnout and whether a region has the status of a 'republic' (with a non-Russian titular ethnic group).

In a regression with governors' rotation and business affiliation as independent variables, both of these variables are statistically insignificant. However, once the interaction of these variables is added, both variables and the interaction become highly significant and have, respectively, negative and positive signs (Table 10.4). Such results are robust to various sets of controls.

These estimations agree with our theory. Negative coefficients of governors' rotation and business affiliation indicate that none of these factors alone improve the investment climate – in fact, they adversely affect regional institutions, and this is what can be expected of a 'roving bandit' with no assets to protect, and of its opposite – a 'stationary bandit' cum entrepreneur. However, a positive coefficient of the interaction term confirms that these factors indeed complement each other in improving regional institutions.<sup>15</sup> The magnitude of this effect is comparable with the variation of the dependent variable, and hence such mechanism is significant not just statistically but economically as well.

## **Concluding comments**

Autocracies are not restricted by conventional checks and balances, which adversely affect public policies (Persson et al., 1997) and leave the private sector vulnerable to expropriation. Government rotation offers a partial remedy, sustaining a dynamic version of checks and balances. However, power shifts deliver property rights without democracy only

Table 10.4 Investment climate, governors' rotation and business-affiliations

Dependent Variable	Investment climate in 2009				
Business affiliation	-0.194*** [0.04]	-0.207*** [0.05]	-0.218*** [0.05]	-0.215*** [0.05]	0.0925** [0.04]
Turnover	-0.469** [0.16]	-0.452** [0.19]	-0.464** [0.19]	-0.435** [0.19]	0.186 [0.13]
Turnover*	0.183***	0.182***	0.192***	0.189***	-0.0679**
Business affiliation	[0.04]	[0.04]	[0.04]	[0.04]	[0.03]
ln(Population)	0.693*** [0.12]	0.687*** [0.11]	0.686*** [0.11]	0.634*** [0.11]	-0.416*** [0.11]
ln(Income p.c.)		0.645 [0.43]	0.986* [0.54]	0.910*** [0.31]	0.186 [0.30]
Higher education		-3.004 [2.42]	-4.519* [2.68]	-4.016* [2.24]	
Inequality		0.508 [4.58]	0.196 [5.08]		
Extraction industry			-0.0119 [0.01]	-0.00919 [0.01]	
Republic			0.0602 [0.24]		
Small business				0.132 [0.10]	-0.228** [0.11]
Average turnout					
Observations	79	79	79	79	79
Adjusted R <sup>2</sup>	0.470	0.491	0.490	0.512	0.377
Standard Errors	Clustered	Robust	Robust	Robust	Robust

\* p-value &lt; 0.1, \*\* p-value &lt; 0.05, \*\*\* p-value &lt; 0.01

Source: Syunyaev and Polishchuk, 2014

if ruling elites are themselves property owners – otherwise they become ‘roving bandits’, without assets that need protection.

Elite rotation and asset ownership create a shortcut from autocracy to the private sector, which could at least in part substitute for democratic accountability by aligning the incentives of an asset-owning autocrat with the needs of the society at large. Endogenous protection of property rights in such polities obtains as an equilibrium based on cooperation between different elite groups, which insure each other against political risks. Such cooperation establishes a ‘rule of law for elites’ which is a doorstep condition for an open access society with inclusive institutions (North et al., 2009). Indeed, government rotation in autocracies could lead to a political reform which introduces checks and balances (Besley et al., 2012) and extends suffrage (Lizzeri and Persico, 2004), although such transformations are beyond the scope of this chapter.

## Notes

- 1 In what is essentially a static version of Olson's idea, Shleifer and Vishny (1993) argue that centralized corruption is less damaging than a decentralized one.
- 2 We will reconcile these empirical findings in the cross-country analysis included in the chapter.
- 3 In the 'stationary bandit' case there was a different kind of externality where future rewards accrue when the same individual or group still holds power.
- 4 Similar assumptions are made in Besley and Persson (2011) and Besley et al. (2012).
- 5 Polishchuk and Syunyaev's (2015) model power shifts by a continuous Poisson process, and assumes a distributed lag in institutional changes.
- 6 Concavity implies risk-aversion and hence the reluctance to accept sharp income fluctuations caused by power shifts.
- 7 In addition the marginal utility of expropriation diminishes in the incumbent elite's wealth, which makes a wealthy group less interested in expropriation.
- 8 This section relies on Polishchuk and Syunyaev (2015).
- 9 The second indicator was included due to the key role of independent judiciary in the security of property rights.
- 10 In a panel with country fixed effects, we do not need controls that do not change over time, such as legal origin and geography.
- 11 This reconciles our claim with the finding of Holcombe and Boudreaux (2013) that longer tenures of an autocrat tend to improve institutions – such a variable proxies the elites' asset ownership, rather than their turnover.
- 12 Russian national institutions receive low scores (see e.g. Polishchuk, 2013), but such country averages conceal significant internal heterogeneity (Snyder, 2001).
- 13 More details can be found in Polishchuk and Syunyaev (2014).
- 14 [www.raexpert.ru](http://www.raexpert.ru)
- 15 When one of the factors is sufficiently high, the other has positive marginal impact, inclusive of the interaction term; this is the case for over half of the observations.

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