
What Is a Big Bureaucracy? Reflections on *Rebuilding Leviathan* and *Runaway State-building*

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My interest in post-communism dates to my years in the Czech Republic and Hungary in the mid-1990s, part of which I spent as a guest of the Czech Institute of Sociology. To have the opportunity to discuss two wonderful books about these and neighbouring countries in the pages of *Sociologický časopis/Czech Sociological Review* is therefore a special privilege. Anna Grzymała-Busse's *Rebuilding Leviathan* [Grzymała-Busse 2007] and Conor O'Dwyer's *Runaway State-building* [O'Dwyer 2006] remind me of what attracted me then to the region: the opportunity to witness the unwinding of socialism, the great social experiment of the 20th century, and the suspense about what would emerge in its place.

Like Grzymała-Busse and O'Dwyer, I have become convinced over the past years that understanding why post-communist states evolved as they did is critical to explaining the divergent fortunes of countries in the region. In the process, I have wrestled with the question of what makes one state more effective than another. Obviously there is no one answer to this question, but any investigation must include the sheer number of individuals in the administrative apparatus. In work with David Brown and John Earle (two leading experts on post-communist privatisation), for example, I find that plausibly exogenous variation in the size of regional bureaucracies in Russia helps to explain cross-regional variation in the impact of privatisation on firm performance [Brown, Earle and Gehlbach 2008].¹

Viewing *Rebuilding Leviathan* and *Runaway State-building* through the prism of my own experience, I was therefore struck by the centrality of a seemingly simple issue: how to measure the size and growth of bureaucracies. Both Grzymała-Busse and O'Dwyer are meticulous in their compilation of data on administrative employment. As they each emphasise, however, the issue extends beyond valid

* Direct all correspondence to: Scott Gehlbach, Associate Professor of Political Science, University of Wisconsin-Madison, 110 North Hall, 1050 Bascom Mall, Madison, WI 53706, e-mail: gehlbach@polisci.wisc.edu. I am grateful to Maria Belodubrovskaya, John Earle, and Pieter Vanhuyse for many useful comments on this paper, and to David Brown and John Earle for their collaboration on the project that informs much of the argument here.

¹ Spoiler alert: We estimate that privatisation is more effective in regions with relatively large bureaucracies, the apparent consequence of a relatively hospitable post-privatisation business environment in those regions.

and reliable measures of the number of bureaucrats. Bureaucracies are large or small relative to what they are asked to do.

In our work on Russian bureaucracy and privatisation effectiveness, David Brown, John Earle, and I found that in measuring bureaucracy size it was critical to account for economies of scale in state administration. More populous regions generally have fewer bureaucrats per capita than less populous regions, a relationship that I document below. Because regional population might also exert an independent effect on the relative performance of privatised firms (e.g. through attractiveness to investors), failing to control for economies of scale in state administration could bias the estimated effect of bureaucracy size on privatisation effectiveness.

In principle, the same relationship should hold across countries. To take a simple example, each country needs only one central bank chief. It would therefore be inappropriate to say that Estonia's central bank chiefdom (1 chief per 1 300 000 residents) is larger than Russia's (1 chief per 142 000 000 residents). Of course, the difference would not be so stark if we looked at all central bank employees, as a large country will generally need more staff than a small one. But some economies of scale are likely.

In this note, I expand upon this perspective, using data on regional variation in bureaucratic employment in Russia to illustrate the importance of accounting for economies of scale in state administration. I then show how this approach can add to our understanding of the East European states discussed in *Rebuilding Leviathan* and *Runaway State-building*.

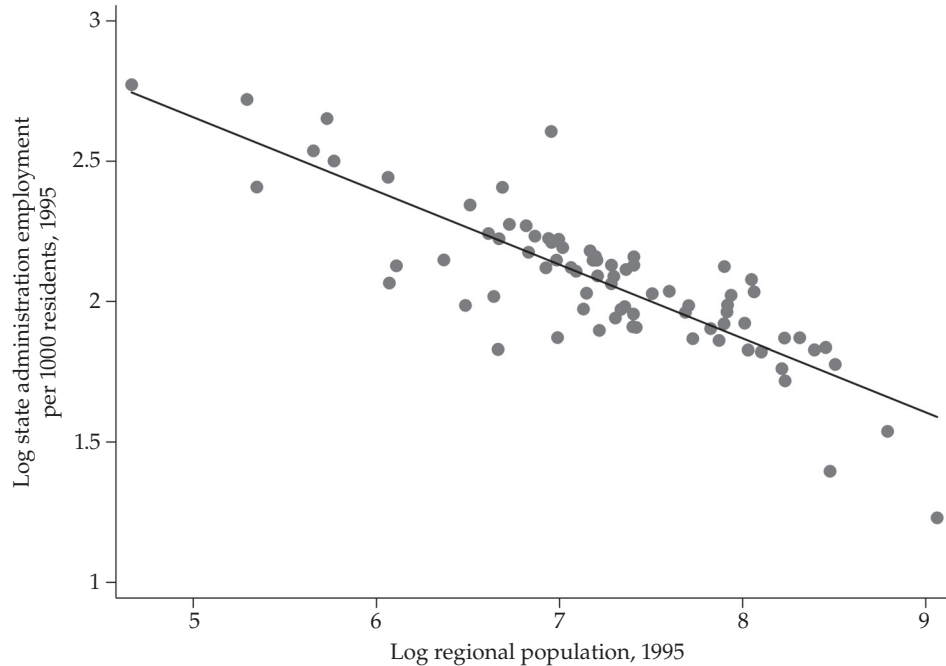
In focusing on the size of bureaucracies, I ignore a range of other issues covered by Grzymała-Busse and O'Dwyer: institutional design, the distribution of administrative positions across parties, bureaucratic turnover and compensation, and so forth. I do so not because I believe these issues are less important, but because I have less to say about them. I also largely skirt the issue of what is responsible for changes in the size of state administrations, the central focus of both books, though I will have a bit to say about one potential explanation that I believe deserves further attention.

Economies of scale in Russian state administration

The theoretical justification for economies of scale in state administration is straightforward: administrative labour is a critical input into public-goods production, and the consumption and distribution of public goods are characterised by economies of scale. To the extent that state administration employees are engaged in public-goods production – staffing anti-monopoly and environmental protection agencies, for example – we should therefore observe fewer bureaucrats per capita in more populous political units.

The argument can be seen most clearly by considering the ideal type of a

Figure 1. Economies of scale in Russian state administration



public good, where what economists refer to as ‘jointness of supply’ is extreme.² The cost of producing such goods is fixed, so that ‘each individual’s consumption...leads to no subtraction from any other individual’s consumption of that good’ [Samuelson 1954: 387]. The larger the number of individuals who consume the good, the lower the per-capita cost of their production. In particular, if the participation of a fixed number of bureaucrats is necessary to produce a public good that can be enjoyed by all residents of a region, then the per-capita cost of producing that good – measured as bureaucrats per capita – will be less in more populous regions.

Figure 1 illustrates this tendency using data from 1995 on state administration employment at the regional level in Russia.³ There is a clear negative re-

² Public goods are also characterised by ‘non-excludability’, such that it is impossible to exclude individuals from their consumption. Non-excludability is a classic rationale for the government provision of public goods, as such goods may not be provided by the market.

³ Data are from Rosstat, the Russian state statistical agency. Regional data on state administration employment are unavailable before 1995; the depicted relationship is quite simi-

Figure 2. Regional variation in Russian bureaucracy



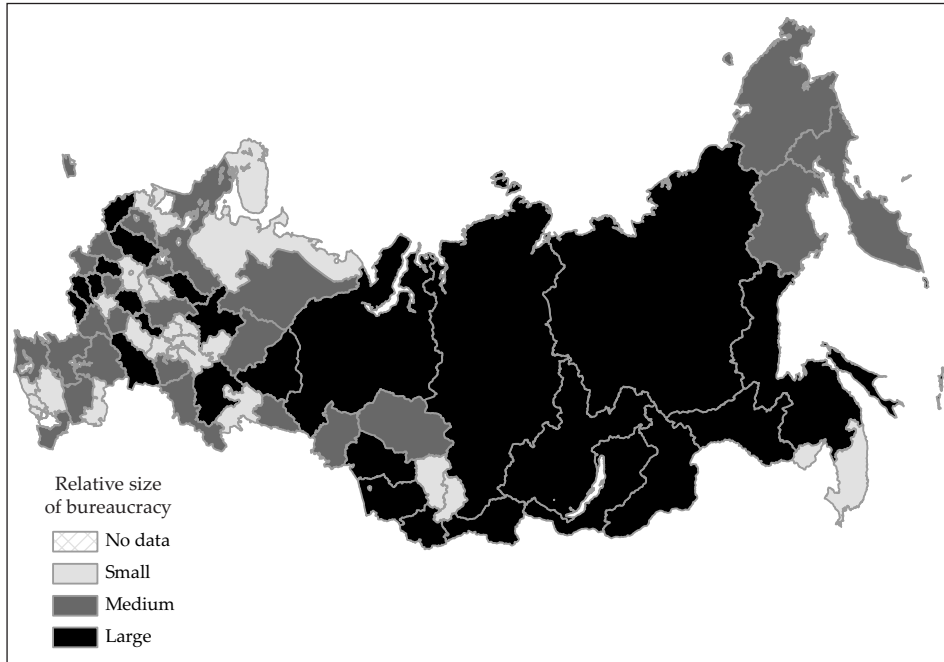
Notes: Data from 1995. 'Small', 'medium', and 'large' are defined as the corresponding terciles of log state administration employment per 1000 residents.

relationship between regional population and state administration employment per capita. Chukotka, the smallest region in the dataset, had 16 bureaucrats per 1000 residents in 1995. The city of Moscow, the largest region in Russia, had only 3.4. The fit is tight: fully 70% of regional variation in the number of bureaucrats per capita is accounted for by economies of scale in state administration.

Figures 2 and 3 demonstrate the main point: failure to account for economies of scale in state administration may result in misleading characterisations of bureaucracies as 'small' or 'large'. For each figure, I divide regions into three groups of equal size, corresponding to bureaucracies that are relatively 'small',

lar for later years. State administration employment is defined as employment in federal, regional, and local public administration per 1000 residents. Employees in the executive, legislative, and judicial branches of government are included, with the exception of personnel in the Ministries of Interior and Defense. Approximately three-quarters of these employees are classified as civil servants, with the remainder secretaries, drivers, and other support staff [Brym and Gimpelson 2004]. Data from 2004 suggest little systematic variation across regions in the ratio between the two.

Figure 3. Regional variation in Russian bureaucracy, adjusting for economies of scale in state administration



Notes: Data from 1995. 'Small', 'medium', and 'large' are defined as the corresponding terciles of the residuals from a regression of log state administration employment per 1000 residents on log population.

'medium', and 'large', respectively. Figure 2 depicts this classification using data on the number of bureaucrats per capita, unadjusted for economies of scale in state administration. Figure 3 depicts the analogous classification using data that adjust for economies of scale in state administration, that is, the residuals from a regression of log state administration employment (per capita) on log population.⁴

Differences in shading in Figures 2 and 3 indicate that a region switches classification after adjusting for economies of scale in state administration. For some regions, the difference can be substantial. Sverdlovsk, for example, governed from 1976 to 1985 by Boris Yeltsin, was the eleventh-smallest bureaucracy in Russia in 1995 before accounting for economies of scale in state administration, but the fifteenth-largest after doing so. More broadly, if we do not control for

⁴ In other words, the data used for Figure 3 are the difference between actual and predicted state administration employment per capita in Figure 1.

population in this way, we miss the generally large scale of bureaucracies in western Siberia and underestimate the relative size of bureaucracies in much of the south of European Russia. Overall, the pairwise correlation of the two underlying measures of bureaucracy size is 0.54.

Measuring bureaucracy size and bureaucratic growth in Eastern Europe

To what extent is variation in the size of bureaucracies across East European countries accounted for by economies of scale in state administration like those observed at the regional level in Russia? To answer this question, I use the cross-national data reported in Table B.5 of *Rebuilding Leviathan*, which are based on government statistical office reporting of data for category L of the Statistical Classification of Economic Activities in the European Union (NACE). Below I discuss related data from *Runaway State-building*, which examines a smaller set of countries.

Figure 4 plots the relationship between bureaucracy per capita and population in 1992 (the first year for which data are available for all nine countries covered in *Rebuilding Leviathan*) and 2004. Although the number of observations is small, in both years there is evidence of economies of scale in state administration, reflected in the negative relationship between the two variables. The slopes are quite similar: -0.195 (SE = 0.159) in 1992 and -0.184 (SE = 0.086) in 2004.

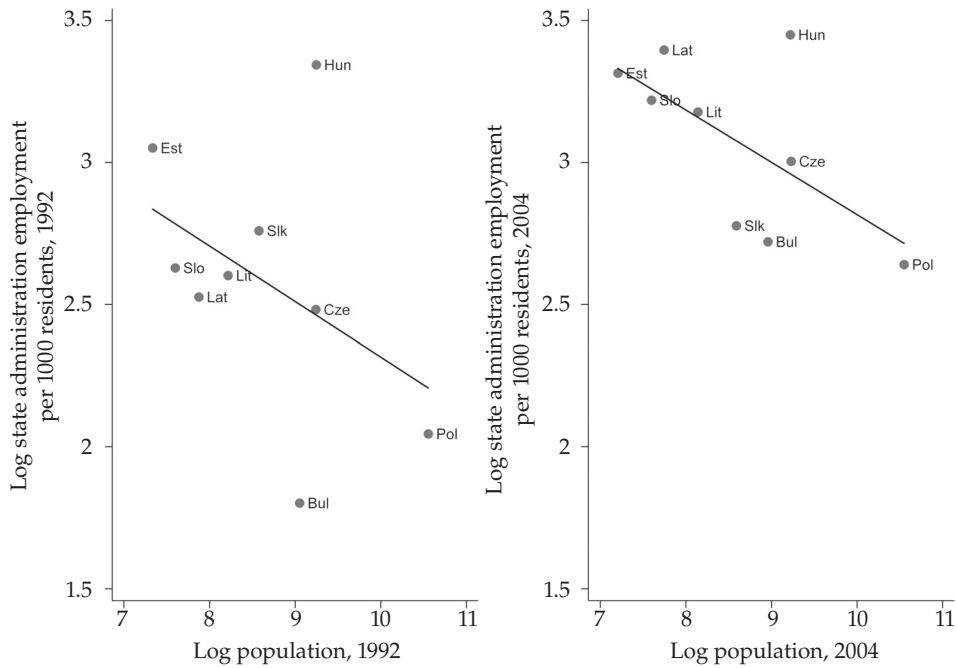
Beyond this general resemblance, there are two important differences between 1992 and 2004. First, there is a secular increase in bureaucracy size during this period: the regression line jumps upward. This development is consistent with the notion that an increase in state administrative capacity was necessary during the transition period to compensate for the withdrawal of the Communist Party (under socialism, many administrative tasks were carried out by the Party rather than the state) and to provide institutional support for the market economy. It is also consistent with a generalised desire to exploit the state for political reasons, as described in *Rebuilding Leviathan* and *Runaway State-building*.

Second, there is a much tighter fit around the regression line in 2004 than in 1992.⁵ Wherever they started, post-communist bureaucracies seemed to converge during the transition period to a size consistent with their population. Thus, Hungary – which started the transition period with a relatively large bureaucracy, given its population – added few state administration employees between 1992 and 2004. In contrast, Bulgaria's bureaucracy grew by leaps and bounds, nearly catching up to its predicted level by 2004.

Figure 4 suggests another way of looking at bureaucratic growth in post-communist countries: did a country converge to or diverge from the level pre-

⁵ The R-squared statistic for the 1992 regression is 0.18, versus 0.39 for the 2004 regression.

Figure 4. Economies of scale in East European state administration



dicted by its population, given the secular increase in bureaucracy size during the transition period? Viewed from this perspective, only two countries exhibit patterns of growth inconsistent with convergence: Latvia and Slovakia. Beginning the transition period with a relatively small bureaucracy, Latvia overshoots the mark, so that in 2004 its bureaucracy is larger than that predicted by its population. In contrast, the absolute change in the size of Slovakia's bureaucracy is limited enough that by 2004 it has the smallest bureaucracy in the region, once economies of scale in state administration are accounted for.

We would, of course, see different patterns if we plotted data for different time periods. As Seán Hanley notes in his review in this issue, for example, most of the increase in Slovakia's bureaucracy reported in *Rebuilding Leviathan* occurred between 1989 and 1992, and so that change is not picked up in Figure 4. Moreover, other data sources may provide a different picture. The data in *Runaway State-building* suggest that the fastest growth in the Slovak state administration took place later, from 1994 to 1997. To the extent that is the case, Slovakia's 'relative' growth during the period examined here might have been positive rather than negative.

Notwithstanding these caveats, the approach to measuring bureaucratic size and growth presented here suggests new questions about state-building in both the socialist and post-socialist eras and so points to a research agenda that moves beyond *Rebuilding Leviathan* and *Runaway State-building*. I turn to these questions in the following section.

Unanswered questions

For both their empirical and theoretical contributions, *Rebuilding Leviathan* and *Runaway State-building* will serve as the starting point for future research on East European state-building. For those who would work in this literature, let me propose three questions for which I believe we do not yet have complete answers:

1. *Why did some post-communist countries inherit bureaucracies that were bigger (adjusting for economies of scale in state administration) than others?* Hungary's position as an outlier in Figure 4 suggests that the degree of market reform under socialism may have played a role, though that explanation does not work so well for some other countries in the sample.⁶ In general, the better we understand the sources of variation in socialist-era bureaucracies, the better we can identify the impact on transition outcomes of variation in post-socialist bureaucracies.
2. *Is the convergence to a common bureaucracy size (adjusting for economies of scale in state administration) a long-term trend affecting most or all countries in the region?* This is really two questions: will the pattern identified here hold over time, and does it hold for other countries in the region? To the extent that the answer to both questions is yes, we may want to revisit the 'functionalist' explanations for variation in bureaucratic growth generally discounted by both *Rebuilding Leviathan* and *Runaway State-building*.
3. *What forces drive convergence to a common bureaucracy size (adjusting for economies of scale in state administration), and how do those forces interact with the institutional factors identified by *Rebuilding Leviathan* and *Runaway State-building*?* In some contexts – economic growth, for example – the cause of convergence is clear. To the extent that post-communist bureaucracies are converging to a common size, the mechanism is less obvious. Intuitively, it seems that external influence must be a factor, and indeed *Rebuilding Leviathan* documents that pressure from the European Union played an important (if late) role in constraining exploitation of the state in countries with weak party competi-

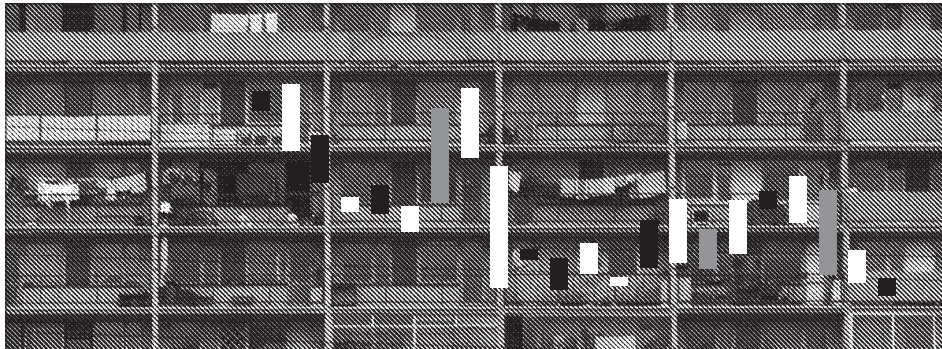
⁶ Following *Rebuilding Leviathan*, for Poland and Hungary I used data for which the reporting unit is household rather than establishment [Grzymała-Busse 2007: 234]. If instead I use establishment data for these two countries, then Hungary is less of an outlier. As before, however, there is strong evidence of economies of scale in state administration in both 1992 and 2004, with an increase in fit from the first year to the second.

tion. At the same time, the discussion of regional decentralisation in *Runaway State-building* shows that external influence and domestic considerations often interact in unexpected ways.

Convincing answers to these questions will advance our understanding of post-communist state-building, and of the state more generally, beyond the high-water mark set by *Rebuilding Leviathan* and *Runaway State-building*.

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