State Capacity and Bureaucratic Autonomy *Within* National States:

Mapping the Archipelago of Excellence in Brazil[1]

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(I) Introduction

The study of state capacity is back in vogue. Following a wave of research on large macro-political phenomena such as transitions to democracy, democratic consolidation, the rule of law, and transitional justice, political science in 1985 famously brought the state back in (Evans et al. 1985). The ensuing new institutionalist turn in political science focused on what institutions were, why they mattered, whom they privileged in the allocation of power, and how they were constructed and evolved over time. But despite its paradigm-shattering impact, in its intense focus on institutions and institutional rules, the new institutionalism had little to say about the functioning of bureaucracy per se, much less about bureaucracy's effects on policy outcomes. A few brave scholars tackled the theme beginning in the 1990s, such as Evans (1995) and Rueschemeyer, et al. (1992), but they did not generate a discipline-wide research program. Thirty years later, suddenly this gap is being enthusiastically noted in a variety of venues, with influential scholars tackling the issue from diverse perspectives that concur on the common view that it is vital both to analyze state capacity, and to develop measures that might help us understand the relationship between state capacity and economic and political development around the world (e.g., Altman and Luna 2012; Fukuyama 2012; Holmberg and Rothstein 2012; Kurtz and Schrank 2007).

What is intriguing about the current wave of interest in bureaucratic capacity is that with few exceptions, it remains a cross-national endeavor, intent on comparing states against each other. But if the goal of studying state capacity is to understand why certain promises of better governance are met while others remain stubbornly unachieved, the research program must evolve to address bureaucratic capacity *within* national bureaucracies, at the agency level.

The gains from abstraction are substantial, of course, and there is much to be said for cross-national research that can tackle big questions. But policymakers and social scientists know far less about how states vary internally in their bureaucratic capacity, and how this matters. *Where* does capacity matter? Given that certain agencies in a single state may have high capacity and others low, might it be possible to focus development efforts on targeted incursions, for example, that improve specific agencies without tackling the whole state? Does it matter how state capacity is distributed: for example, if social policy agencies show consistently lower capacity than macroeconomic policymaking agencies, or vice versa? *How* does state capacity matter to governance within governments: might some higher capacity agencies be inoculated against corruption in ways that their peers are not? Similarly, does autonomy from political pressure help agencies to use their capacity more effectively? Little can be said about these questions without burrowing more deeply into national states to evaluate their individual agencies in comparative perspective.

This essay describes an effort to develop a precise agency-level analysis of state capacity, within national states. It focuses on the Brazilian federal government, with the hope that with increasing data availability, the effort can be replicated by other researchers in a variety of national and subnational governments around the world. But Brazil offers a useful starting point, in part because scholars have long noted the very clear variation in the capacity of its federal agencies. Whitehead (2006, 96) summarizes the extensive literature on the Brazilian case by arguing that "[c]ertain federal agencies are known to be the instruments of unfettered patronage, whereas others pride themselves on their technical competence and professionalism." Indeed, for nearly three decades, the existence of bureaucratic "pockets" or "islands of excellence" (Evans 1995, 257; Schneider 1987; Willis 1986; Geddes 1994; Martins 1985) has served as an influential explanation of how Brazil achieved economic growth and industrial development in the twentieth century: despite generally lackluster bureaucratic capacity, some key agencies were allocated substantial budgetary support and given high-level protection against patronage pressures, which enabled them to drive public policies forward effectively. Although the literature identifies a handful of these agencies qualitatively, little attention has been paid to constructing comprehensive empirical measures of state capacity at anything but a general, cross-national level, or to confirming the capacity of these agencies with objective measures. This essay attempts to correct that shortcoming, while developing a measure of bureaucratic capacity and the closely associated concept of political autonomy. The goal of the essay is to argue for more granular, agency-focused measures of capacity and autonomy; to demonstrate how such measures could be constructed in a more objective manner by starting from *within* national bureaucracies before moving to cross-national comparison; and to demonstrate the potential value of such measures to the comparative social scientific endeavor.

(II) State capacity: conceptual muddle and measurement trouble

It has become de rigueur to criticize the lack of conceptual precision in the study of state capacity (e.g., Andrews 2010; Luna and Altman 2012, 523; Rothstein and Teorell 2012, 13). Part of the problem, as Hendrix (2010, 273) notes, is that "[s]tate capacity is a quality conspicuous both in its absence and presence, but difficult to define." A wide variety of definitions have been used in various branches of the social sciences, which frequently overlap or bleed over into other concepts such as "state autonomy." To complicate matters, a range of analysts have tackled state capacity, including scholars of political science and sociology (e.g., Evans and Rauch 1999, 2000, Geddes 1990, Skocpol 1979), international relations (e.g., Kocher 2010, Hendrix 2010; Thies 2004, 2005, 2007, 2010), economics and economic history (e.g., Acemoglu et al 2011; Cárdenas 2010; Besley and Persson 2009), and of course, public administration (e.g., Weber 1919). These academic contributions are supplemented by a series of influential measures intended to gauge various elements of state capacity, including those produced by the private sector (e.g., International Country Risk Guide [ICRG], Economist Intelligence Unit [EIU], and Bertelsmann management performance indices) and by multilateral agencies (e.g., World Bank Worldwide Governance Indicators [WGI]). The definitions adopted are seldom consistent, and yet they frequently cross-reference each other in such a manner as to generate a conceptual muddle. Authors discuss capacity with little awareness of the conceptual bleeding between related terms such as capacity and autonomy, impartiality, discretion, and subordination. To make matters worse, desired outcomes are sometimes added to the measures of capacity, such as quality, efficiency, effectiveness, absence of corruption; as well as normative goals, such as the rule of law or democracy (see discussions in Holmberg and Rothstein 2012; Fukuyama 2013, 2-4). Given that together, the many extant measures analyze "at least six different functions of the state that are relevant for development"—maintaining order, taxing, protecting property rights, enforcing contracts, providing goods and services, and coordinating information and measures (Hanson and Sigman 2013, 4) – the stage is set for considerable conceptual stretching, if not rending.

This conceptual muddle is further complicated by measurement challenges. As the editors point out in the introduction, our understanding of state capacity can readily become circular because scholars often understand efficacious states in terms of their capacity to get things done. Social scientists have typically attempted to measure state capacity either through proxies, such as by evaluating the state's ability to extract revenue (Levi 1988; Cheibub 1998),[3] or through subjective measures, such as expert surveys of state bureaucracies' recruitment processes and effectiveness (e.g., Evans and Rauch 1999; Rothstein and Teorell 2012; Dahlström 2012). Both of these measures provide an approximation of some elements of state capacity, yet they suffer from shortcomings that limit their ability to provide policy-relevant guidance, except in very broad terms. Proxies such as revenue extraction are useful at explaining broad structural questions of state formation and comparing states in historical perspective, but they say very little about the effectiveness of state bureaucracies in implementing specific policies at an agency level. After all, it is possible that some states are quite good at extracting revenues, and simultaneously quite bad at effectively implementing welfare-enhancing policies, either because of excessive bureaucratic politicization or corruption, for example. More confounding still will be those states that are excellent at implementing some policies, but terrible at others. Expert assessments are also useful in benchmarking states against each other, but they are of course subjective, and thus do not provide a good longitudinal

[3] Other proxy measures include the time for posted letters to arrive, the ability to conduct censuses, the provision of licenses, and the speed with which agencies respond to citizen information requests.

measure across time, since one year's survey may well do nothing more than reflect a previous year's influence.[4] Further, because of their expense, expert surveys usually fail to differentiate among bureaucratic agencies, and thus paint only the broadest of pictures about actual national state capacity. There are also a host of exogenous factors that may confound measurement of state capacity, especially in cross-national efforts. All of the following variables may be "picked up" in some fashion in subjective measures of state capacity: the age and stability of the regime; its legitimacy; levels of economic development; the sovereignty of the state, including both its reach and its monopoly of force; societal norm abidance; institutional arrangements; educational quality; the policy environment and the salience of particular policy arenas at a particular point in time; informal norms or cultures and their effects both on civil servants and the publics they serve; and formal rules and the effect of common administrative laws on civil servant behaviors. The unsurprising outcome of the inability of many measures of state capacity to distinguish capacity from these environmental factors is that measures of state capacity correlate highly with each other, as well as with the measures of outcomes, such as GDP per capita (Altman and Luna 2012, 535-6).

In the hopes of introducing a more objective measure, this paper adopts a narrow definition of state capacity. The ideal type adopted here is the Weberian legal-rational state: a professional bureaucracy able to implement policy without undue external influence. This definition says nothing about the ends of policy, and offers no subjective evaluation about the desirability of these ends, but rather addresses the ability of the state bureaucracy to effectively implement the policies that are selected by the political leadership. This minimal definition has only three core components: 1) a professional bureaucracy, 2) with the ability to implement policy, 3) free of external influences. Professional means the degree to which public servants specialize in a specific field, distinct from other careers and marked by clear standards for training, remuneration, and advancement. The ability to implement policy refers to the degree to which capital and human resources are available. Freedom from external influence refers to freedom from particularistic pressures, whether interest-based (e.g., business interest groups) or politically-motivated (e.g., congressional interests), that might jeopardize the impersonal or universalistic implementation of policy.

Even this simple definition is not free from confusion. Bendix (1969), for example, famously pointed to the distinct forms that political neutrality takes in US and German bureaucracy.[5] And there is a

[4] For a critique of the subjectivity of these measures, see Kurtz and Schrank (2007).

[5] In the US, the 1939 Hatch Act seeks to actively limit federal employees from participating in partisan activities. By contrast, in Germany participation of civil servants is protected based on an assumption that permission to engage in politics will allow them to maintain a studied neutrality in their application of bureaucratic procedure.

long litany of critiques of the Wilsonian notion of a neutral bureaucracy that only implements decisions taken by political authorities (e.g., Loureiro et al. 2010), not least in the literature on 'new public management' (NPM). Nonetheless, adapting this minimal definition does not require one to believe that bureaucracies are entirely neutral instruments of implementation, without goals or influence of their own.[6] Nor does it require the observer to ignore the exogenous factors noted above that might influence the effectiveness of the state. In sum, the measure used here is purposefully narrow, permitting clearer specification of what is meant by state capacity. Before turning to the measure itself, the Brazilian case is discussed.

(III) State capacity in Brazil

An influential literature addresses state capacity in the Brazilian case, coming to somewhat contradictory conclusions. Some draw attention to the Brazilian state's difficulty in advancing industrial or trade policies (Evans 1995; Cason and White 1998), especially as compared with Asian nations, while others point to its policy success as a developmental state, relative to its Latin neighbors (Sikkink 1991). Despite a relatively low academic opinion of Brazilian bureaucracy (e.g., Schneider 1987, 1991, 1999), the state bureaucracy at the federal level does quite well in regional rankings, outscoring all other Latin American nations in a variety of studies (Stein et al. 2006, 71, 134, 152; Stein and Tommasi 2005; Zuvanic, Iacoviello and Rodríguez Gusta 2010). These contradictory results arise in large degree from the standard of comparison and, particularly, depend on what policies or country cases are being compared with Brazil. Indeed, on most contemporary cross-national measures of state capacity, Brazil is middle-range, with neither superlative nor abysmal performance (Figure 1).

[Insert Figure 1 about here]

Whatever the true nature of its state capacity, Brazil has a prominent role in the comparative politics literature. As a case study, it has contributed to the development of at least two core arguments that motivate this paper. First, the country has served as a crucial test case for scholars attempting to relate state capacity to a conceptually and empirically distinct variable, bureaucratic autonomy. A broad literature posits that the state must be sufficiently strong to resist pressures from organized interests seeking special treatment (Haggard and Kaufman 1992, 23). But alongside this insulation from external pressures must come some interaction with society: "insulation…does not imply a lack of responsiveness either to popular demands or to interest groups. On the contrary…bureaucrats need protection from

[6] Indeed, as Geddes (1994, 6) notes, the literature on state autonomy has performed a useful service by "establishing that officials do at times act on the basis of their own ideologies and preferences."

politicians' efforts to transform state resources into particularistic benefits for supporters in order to respond effectively to popular demands" (Geddes 1994, 49). The "semipermeable membrane" surrounding insulated bureaucracies should preserve the organizational integrity and goals of the bureaucracy, but also permit the bureaucracy to receive information and resources from society (Geddes 1994, 50).

This is a fine balance: in such a porous bureaucracy, there will always be the risk of privileging some interests over others, but this risk may be offset by the beneficial impact of external inputs to the policy process (Pio 1997, 184). This so-called "embedded autonomy" (Evans 1992, 1995) is complex and unstable, but ultimately the interaction with society may provide solutions that insulation alone would not. Much research on autonomy addressed either the military regime (which privileged technocratic solutions) or its legacy, pointing both to the simultaneous autonomy of the state and its permeability to particularistic influences (as in Cardoso's 1975 notion of *anéis burocráticos*). But little is objectively known about how this situation has evolved under democracy or across particular bureaucratic agencies.

Second, the Brazilian case calls attention to the possibility of a dual track, with the coexistence of a large number of low capacity agencies alongside a handful of bureaucratic agencies marked both by high capacity and clear autonomy from the clientelistic practices of the broader political system. Such "islands of excellence" or "pockets of efficiency" coexist alongside informal, patrimonial and clientelistic practices in less-regarded bureaucratic agencies.[7] Reformist governments have frequently sought to increase policy effectiveness in core functions, yet seemingly have been unable or unwilling to completely overhaul clientelistic practices that have vitiated the Brazilian state since the early 19th century (Andrews and Bariani 2009; Abrucio et al. 2010, Nunes 1997). Despite nearly a century of reform – beginning with the creation of a professional military officer corps under War Minister Hermes da Fonseca in the early 1900s, followed by the creation of the Department of Public Service Administration (DASP) under Getulio Vargas, and culminating in Minister Bresser-Pereira's civil service reforms in the 1990s[8] – modern and quite capable bureaucratic agencies have long coexisted with patronage and clientelistic practices, forming an "archipelago of excellence" among a sea of sub-Weberian agencies.

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[7] Islands of excellence mentioned previously in the literature are: the BNDE national development bank (now BNDES); the now defunct trade authority CACEX; the monetary authority (SUMOC), now the Central Bank; the now shuttered Departamento Administrativo do Serviço Público (DASP); the Foreign Ministry, Itamaraty; Kubitschek's Executive Groups and Work Groups; and the now defunct Foreign Exchange Department of the Bank of Brazil (Evans 1995, 257; Schneider 1987; Willis 1986; Geddes 1994; Martins 1985).

[8] For concise histories of the evolution of state bureaucracies and efforts at modernizing the civil service, see Abrucio et al. 2010, Fausto and Devoto 2004, and Bresser-Pereira 1998.

These tendencies have not been uprooted by democracy; indeed, they may even have been further exacerbated by the prevailing system of "*presidencialismo de coalizão*" (Abranches 1988), with its tacit bargain of legislative support from political allies in exchange for a free hand in government ministries. To keep ministries broadly aligned with government priorities and avoid the worst excesses, presidents have customarily appointed the "number-twos" of the ministries controlled by political parties different from the president's (Loureiro et al 2010b; Praça, Freitas and Hoepers 2011). Yet despite these efforts to establish minimal controls, many agencies – along with their budgets and contracts – are turned over to allied parties with a tacit blind eye to potential malfeasance. This Faustian bargain has been at the heart of a series of ministerial scandals in recent years, but it is a longstanding practice that can be traced to the early days of the current democratic regime, with roots that carry back even further. It is a recurring and particularly well-established manifestation of the "politicians' dilemma" described by Geddes (1994): the conflict politicians face between the need to consolidate political support in the short-term and the goal of developing state capacity in the long-term.

Neither of these arguments can be clearly addressed using existing cross-national measures of state capacity, such as those developed by Evans and Rauch (Evans and Rauch 1999, Rauch and Evans 2000) or by several multilateral institutions (e.g., the compilation by Teorell et al., 2011). The existence of politically insulated, high-performing islands of excellence would not be discernible in cross-national, average measures of national state capacity. Further, the subjectivity of extant measures of agency capacity, many of which are derived from expert surveys or qualitative evaluation, suggests that extant studies of "islands of excellence" may neglect to identify all of the relevant agencies in the pool of federal agencies. Finally, the literature to date has proven unable to provide an objective measure of both dimensions – autonomy and capacity—and thus cannot distinguish agencies within the various potential combinations of high and low state capacity and high and low bureaucratic autonomy. Without such a distinction, it is impossible to effectively evaluate the relevance of capacity or autonomy, alone or in tandem. With these concerns in mind, the next section presents a new approach.

(IV) Measuring Capacity and Autonomy *Within* National States

This section describes an original dataset on the autonomy and capacity of the Brazilian federal civil service, which advances the debate in four important ways. First, the measures of state capacity and bureaucratic autonomy described here provide *objective measures* that are independent of, and can be compiled prior to, hypothesis testing about the *effects* of capacity or autonomy. Second, drawing on advances in data transparency and availability, the measures are developed from public data on *individual* civil servants, rather than aggregate institutional characteristics, which in the future will permit fine-grained analysis of the evolution of agencies' capacity and autonomy over time.[9] Third, the measurement technique permits *differentiation* between autonomy and capacity, allowing for an evaluation of the separate effects of both.

Fourth, by virtue of studying agencies within a single national state, it is possible to hold constant many of *exogenous factors* that confound cross-national measurement efforts, mentioned earlier. As Fukuyama (2013, 14) argues, the quality of government is the outcome of an interaction between capacity and autonomy. But Fukuyama's intent is cross-national, and he thus has a broad spectrum of state capacity in mind, presumably ranging from the virtually ungoverned states of East Africa through highly developed states in Western Europe. Other authors also point to the various subtypes of states that result from various combinations of territorial reach, autonomy and capacity, with Giraudy categorizing them into five "diminished subtypes" (Giraudy 2012, Soifer 2008, Soifer and vom Hau 2008).[10] Capacity and autonomy may have quite different effects in each of these types of state, limiting the relevance of cross-national examination across the various types. The focus on a single nation-state constrains these combinations and permits the evaluation of capacity and autonomy in a single case, Brazil, which is representative of various categories of states: "large emerging economies" (Kahler 2013); "emerging market democracies" (Sola and Whitehead 2008); and states in the "crony state" or "strong state" categories of Giraudy's typology (Giraudy 2012).

What does this measurement effort cover? There are currently more than 10 million public employees in Brazil, of whom roughly 1.1 million are federal employees. Of these federal employees, around 156 thousand work for other branches of government, such as the Prosecutor's Office[11], Congress, and the Judiciary. Another 350 thousand are members of the armed services and 40 thousand are employees of state companies. Of the remaining 595 thousand who are federal civil servants, the grand majority of whom are formally contracted by civil service exam, the dataset analyzes just over 325 thousand. The difference between the two figures is due to the exclusion of federal universities, research centers[12], and minor agencies.[13] There are two main categories of civil servants in the dataset[14]: those

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[9] A convenient side-effect of studying individuals, rather than ministries, is that it permits aggregation at the agency level. Given the frequent tendency of Brazilian presidents to reshuffle agencies into new cabinet ministries, the agency-level measure allows the tracking of bureaucratic agencies as they migrate from ministry to ministry.

[10] Weak states, weberianless non-reaching states, non-reaching states, crony states, and strong states.

[11] The prosecutorial office, the *Ministério Público*, is by virtue of the independence established for it in the 1988 Constitution, for all intents and purposes a "fourth branch" of government in Brazil.

[12] There are 104 thousand professors and 114 thousand administrative personnel in these institutions.

[13] According to the selection criteria used here, a federal agency is an agency that is responsible for the implementation of a certain policy or set of policies and it necessarily has a national jurisdiction. These criteria exclude federal universities. There are 327 agencies identified in the core dataset obtained from the federal government's official public transparency website, the *Portal da*

contracted via CLT ("*Consolidação das Leis do Trabalho*") rules – that is, workers who have a normal labor contract with the government and who have passed civil service exams but have no *de jure* stability, accounting for about 13.5% of civil servants – and those contracted by the "*Regime Jurídico Único*", who have passed civil service exams and have *de jure* stability, accounting for 82% of civil servants.[15]

There are seven variables that feed into the measures of capacity and autonomy, listed in Table 1. Each is described briefly below (the Appendix offers a more detailed explanation of the construction of these measures).

[Insert Table 1 about here]

State capacity: Within state capacity, the category "career strength" is the proportion of civil servants within the agency who are essential to that agency's function and fall into one of the two categories:

1. "core career" measures the number of employees who belong to a career that is specific to the agency's mandate, such as federal attorney in the attorney general's office or tax analyst in the Federal Revenue Service;
2. "expert career" measures the number of employees who belong to a career which is not specific to the agency's mandate, though they are trained as experts in policy administration, such as *Especialistas em Políticas Públicas e Gestão Governamental* (EPPGG), *Analistas de Finanças e Controle,* or *Analistas de Planejamento e Orçamento.*[16] These career paths are transversal, meaning that their members can be transferred across agencies throughout their careers, but they are an elite group.

Agencies also have "non-essential career" employees, those who belong to a career that is not specific to the agency's mandate. This might include generic jobs that could be conducted in any number of agencies, such as a doorman or receptionist, but it might also include specialized personnel, such as a

Transparência do Governo Federal. After removing agencies that have only a peripheral role in national civilian policy implementation, 100 of the most important of Brazil's federal government agencies remain.

[14] Four other categories apply to a minority of civil servants: two specific contracting regimes for health professionals (2,700 civil servants), temporary workers in various agencies (11,000 civil servants) and also political appointments of a "special nature" (365 civil servants) (who, despite this name, are not at all different from the Direção e Assessoramento Superior political appointments referred to later).

[15] The "*Regime Jurídico Único*" also comprises around 6,500 civil servants who hold political appointment slots without having gone through civil service exams. They are outsiders brought in because of partisan ties, academic and/or professional expertise etc. and, contrary to other civil servants contracted under the "*Regime Jurídico Único*," can be let go at any time.

[16] Specialist careers were created during the Sarney government in the hopes of modernizing the civil service. Career specializations were created in Foreign Trade; Finance and Control (AFC); Planning and Budget (APO); and Public Policy and Government Administration (EPPGG). The idea was to create an elite core of specialists, with each career specialization under the responsibility of a particular ministry: APO and EPPGG belonged to the Planning Ministry and AFC to the Finance Ministry. Each ministry would have control over hiring, employment and professional development for its program. There have been problems with the programs, including: the incorporation of old civil servants without specific training; hiatuses in hiring (Guerzoni Filho 1996, 48-49); a relatively small number of members, totaling less than 3,000 within the civil service (Cruz 2008, 105); and inter-ministerial conflicts or turf battles. However, the programs have nonetheless created an elite force that has been essential in creating new capacity, as in the CGU. Simultaneously, the transition to democracy brought new attention to core careers, such as the core careers within the DPF, which were created in 1987 and have been expanded since.

Revenue Service analyst housed in the Attorney General's Office. They are not included in the count as they represent the remainder, after core and expert career employees have been counted. The assumption is that the greater the proportion of core careers, the stronger the *esprit de corps* and the more likely it is that procedures and rules are settled, established, and implemented effectively, at least from the perspective of that agency's core attributions. The more core and expert employees an agency has, the better equipped it is to formulate management objectives and perform its tasks.

Within state capacity, the category "agency career specialization" adapts the essential notions of the Evans and Rauch (1999) "Weberianness Scale" to the Brazilian case.[17] Evans and Rauch used survey measures of four variables: competitive salaries, internal promotion, meritocratic recruitment, and career stability,[18] justifying these variables as a measure of bureaucratic performance by arguing:

> Making entry to the bureaucracy conditional on passing a civil service exam…and paying salaries comparable to those for private positions…should produce a capable pool of officials. The stability provided by internal promotion allows formation of stronger ties among them. This improves communication, and therefore effectiveness. It also increases each official's concern with what his colleagues think of him, leading to greater adherence to norms of behavior. Since the officials entered the bureaucracy on the basis of merit, effective performance is likely to be a valued attribute…The long-term career rewards generated by a system of internal promotion should reinforce adherence to codified rules of behavior. Ideally, a sense of commitment to corporate goals and 'esprit de corps' develop (Evans and Rauch 2000, 52).

Application of these variables at the agency-level presents some challenges. Because the Brazilian civil service is governed by the same rules across the full federal government, there is no inter-agency variance in the final two variables, meritocratic recruitment and career stability, both of which are protected by law. Meanwhile, the complexity of collecting data using objective rather than survey-based measures poses a problem in relation to internal promotion.

In light of these problems, the measure developed here attempts to address the core question posed by Evans and Rauch – "the degree to which core state agencies are characterized by meritocratic recruitment and offer predictable, rewarding long-term careers"— by looking at three variables.

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[17] Evans (1992, 1995) develops a "Weberian state hypothesis," that "replacement of a patronage system for state officials by a professional state bureaucracy is a necessary (though not sufficient) for a state to be 'developmental'" (Evans and Rauch 2000, 50).
[18] Similarly, Dahlström et al (2012) point to three clusters of characteristics of state capacity: bureaucratic professionalism; closedness; and salaries. In a within-country analysis of Brazil, there is very little variance on closedness, since the labor laws are national. However, bureaucratic professionalism and salaries provide substantial variation.

1. Average longevity: what is the average public service tenure of civil servants in the agency? Our data includes turnover within the agency, which might reflect instability and dissatisfaction, or alternately, might reflect a relatively new agency.
2. Civil servants requisitioned from other agencies: as a measure of the extent to which the agency bureaucracy is autonomous or instead dependent on skilled staff from other agencies to function adequately.
3. Competitive salaries: what is the average salary of civil servants in the agency?[19]

Autonomy: With respect to autonomy, the most difficult challenge is to measure interactions between bureaucrats and society, especially when some of these interactions may be purposefully obfuscated.[20] In light of this measurement problem, a second-best operationalization of autonomy is used, based on the political pressures brought to bear on civil servants. The politicization of appointees within the bureaucracy is used to get at the issue of autonomy from the perspective of partisan influence over bureaucratic tasks. A measure of the partisan affiliation of civil servants within each agency is also included, as a means of measuring the autonomy of the agency from political pressures.[21]

Three measures related to autonomy are used. In the first two, Brazil's DAS system is used to evaluate the partisanship of appointees within the bureaucracy. The DAS (*Direção e Assessoramento Superior*, or High Level Direction and Advice) appointments were first implemented during the military dictatorship in 1970 and kept alive in the 1988 Constitution. DAS appointees are responsible, along with the minister, for the most important decisions taken in each ministry. The first two measures refer to the proportion of DAS appointments filled by party members at the senior and junior levels. That is, the number of partisan political appointees divided by the total of potential political appointment slots in the agency at both the DAS 4-6 and DAS 1-3 levels. The third measure is the proportion of regular civil servants who are party members, a unique database created by combining records kept by the federal government as well as the electoral courts.[22]

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[19] The Brazilian federal civil service is well-paid in comparison to the private sector. Available data shows that average federal civil service salaries are nearly twice as large (+98.6%) as those of comparable private sector workers, controlling for gender, race, age, education, experience levels, union membership, and geographic location (Marconi 2010, 251-254).

[20] One possibility is network analysis. Marques (2004), for example, maps out relationships between business and government in São Paulo state to illustrate how networks of state relations influence public bidding. However, this is an enormously time-consuming and granular process, and thus impractical in an effort of this breadth and scale.

[21] Twenty five of the agencies do not have political appointment slots.

[22] The first group is made up of low-level appointees. They are paid from R$ 2,115 to 4,042 (US$ 1,200 to 2,200). Higher-level DAS appointees – DAS-4 to 6 – are paid from R$ 6,843 to 11,179 (US$ 3,880 to 6,351) and control and implement policies according to directives put forth by the minister and/or political parties. If the appointee is a career bureaucrat, he can opt to receive the full salary of the position he gained by merit plus up to 60% of the DAS wage, a comfortable choice (De Bonis and Pacheco 2010, 359-360). Since July 2005, DAS appointees have been formally nominated by the Planning Minister (D'Araújo 2009, p. 20), after informal

Aggregation: Although most statistical explanation has been relegated to the Appendix, a few observations about aggregation may be helpful. Rather than simply aggregating these variables into an index by summing and weighting them on the basis of subjective normative views about their relative importance, the latent variable approach is used. In addition to avoiding the problem of ad hoc aggregation, this approach is statistically agnostic as to *a priori* preferences about the relative importance of the component variables. The relevance of these variables may be highly contextual: for example, one could easily imagine scenarios in which a higher number of political appointments might improve governance outcomes, but one can also imagine scenarios in which they worsen those outcomes. After all, too much isolation from society may be pernicious, but so too might be excessive external meddling that interferes with innovation and experimentation. Which hypothesis should guide us in the evaluation of the importance of political appointment processes? In latent variable analysis, the direction of each of the component variables is unimportant; only their effect on the shared variance in the latent variable matters to the final measure (see further discussion below).[23]

In evaluating these indicators as manifestations of an underlying latent quantity (Treier and Jackman 2008, 201), one central theoretical consideration guides us: namely, that capacity and autonomy are distinct dimensions of state capacity. Practically speaking, this division is justified by empirical realities at the level of nation states. One can easily imagine a bureaucracy with great capacity and yet very little autonomy (e.g., many one-party authoritarian states), as well as a bureaucracy with high capacity and high autonomy (e.g., technocracies[24]). Within national states, this distinction also holds, as suggested by Section III's discussion of previous authors' appraisals of the Brazilian case. The empirical question, therefore, is not whether these two dimensions are separate, but 1) how separate they are *within* the Brazilian government; and in a later analysis, 2) to what extent the different combinations of autonomy and capacity in fact matter to governance outcomes. Confirmatory factor analysis reveals that capacity and autonomy are indeed empirically separable.[25]

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consultation with the President's chief of staff (*Casa Civil*). Also in 2005, a decree established that 75% of the lower-level DAS and half of the DAS-4 slots had to be occupied by career civil servants.

[23] We thank Maria Hermínia Tavares de Almeida and Atul Kohli for noting that neither career specialization nor political appointments are necessarily always normatively preferable, comments which led us to adopt latent variable analysis.

[24] We are grateful to Kurt Weyland for the important insight that the approach we develop here is better at evaluating bureaucracies qua bureaucracies; "technocracy" is perhaps a term best reserved for bureaucracies that combine high capacity, high autonomy, and some degree of innovativeness to address particular problems or tasks.

[25] Following Bollen and Grandjean (1981), a model was estimated with two factors, for capacity and autonomy. A second model identical to the first was then estimated, but constraining the correlation of the two factors equal to 1, which treats them as if they are a single factor. The fit of the two models was then compared. The difference between the chi-squares in the two models is 33.7, which is highly significant ($p < .00001$), permitting the conclusion that the one-factor model (the constrained model) should be rejected in favor of the two-factor model.

We use a Bayesian latent variable approach to create measures of agency autonomy and capacity. Each indicator is rescaled to run from 0 to 1. The career strength and career specialization indicators are assigned to agency capacity, while the politicization indicators are assigned to generate the latent variable for agency autonomy. As noted above, the manner by which the measures are constructed is agnostic about the weight given to any particular indicator. The Bayesian latent variable approach treats the seven indicators described above as manifestations of the latent quantities, with the goal of capturing "patterns of association among several observed variables via a relatively parsimonious model" (Quinn 2004: 339). There are several benefits of this latent variable approach. It helps to resolve the issue of how best to aggregate the component indicators; provides useful measures of uncertainty around the estimates; addresses the subjective preferences question described above (e.g., whether politicization, for example, is in fact preferable); and helps us to address the fact that there is "no strong prior theoretical reason to believe that any one indicator is a better (or worse) indicator than any other…" (Treier and Jackman 2008, 201).

[Insert Figure 2 about here]

(V) Islands of excellence

The latent variable results provide a concrete and objective measure to identify high capacity agencies. Figure 2 scores agencies on capacity and autonomy, and provides averages of both by policy area. Perhaps the most important finding here is that there is only a weak correlation (of 0.173) between the two measures, which suggests that in fact it is important to distinguish the two.

As noted earlier, the "islands of excellence" argument has been prominent in discussions of Brazilian state capacity. But many of the islands discussed in the literature (noted in supra footnote 5) are no longer in existence, such as the DASP, while others have changed so significantly as to call into question whether they still excel, such as the SUMOC, now the Central Bank. Furthermore, scholars have no idea whether this list is complete, or whether it misses other agencies that deserve to be included.

Substantively, the results confirm – objectively – that a number of agencies mentioned in the literature are indeed "islands of excellence," renowned for their technical excellence and political insulation, such as the Finance Ministry, Central Bank, and Foreign Ministry (e.g., Alston et al. 2008, 134-35). However, the data also point to 25 other agencies in the quadrant marked by high capacity and high autonomy that have never before been cited as exemplars of high capacity and high autonomy, with some surprising new ones, like the *Polícia Federal* and the *Controladoría Geral da União*. Most intriguingly, though, the measures permit us to distinguish between high capacity and high autonomy agencies like the Central Bank, and high capacity but low autonomy agencies, such as the Federal Highway Police and the Ministry of Agriculture, where politics seems to play a larger role.

Third, there are important differences across policy realms, as shown by the diamond markers representing average scores by policy arena. One common hypothesis in the literature on Brazil (e.g., Martins 1985; Willis 1986; Schneider 1987) is that the great influence of technical expertise in the economic policy and foreign relations community, combined with strong presidential insulation from patronage pressures, contributes to better performance by these agencies. The results corroborate this perspective, with agencies in this policy arena ranking above average on both measures. It is intriguing, however, that agencies in the legal policy community, which is never mentioned in the literature, are also well placed. The data also confirm a related argument alluded to – but never specifically stated – in the literature: the relatively weak capacity and autonomy of infrastructure agencies, on average.

(VI) Corruption, State Capacity and Bureaucratic Autonomy

What are the effects of capacity and autonomy on governance? One of the challenges to answering this question is the great diversity of government outputs: it is quite difficult to compare the outcomes of agencies operating in fields as diverse as health, education, transportation and foreign policy. There are also problems in comparing various government outputs from diverse agencies because of the difficulty of distinguishing outcomes on the basis of efficiency, efficacy, and effectiveness (Motta 1990).

But one area in which it is possible to obtain measures that are coherent across agencies is corruption; after all, some degree of corruption is possible in all fields of government activity. Assuming that oversight is constant across the entire state bureaucracy – a reasonable assumption in a country like Brazil with effective federal oversight bodies and a vigorous national media – it is possible to generate comparable measures at the agency level.

Two measures are used. The first is a count of newspaper stories on corruption appearing in the *O Estado de São Paulo* (OESP) newspaper between 2002 and 2012. This is used as a proxy of corruption at the agency-level, recognizing that it is an imperfect measure, but that this instrumentalization is necessary in light of the slow pace of Brazil's judiciary, which means that prosecutions or convictions for convictions are rare and frequently delayed.[26] However, a count that simply tallied media mentions of corruption at the ministerial level would be unsatisfactory, as it might blend agencies that appear in the

[26] Similar instrumentalization is used by Butto, Pereira and Taylor (2010) and Pereira, Rennó and Samuels (2011). On the slow pace of Brazilian justice, particularly in corruption cases, see Taylor (2011).

news for fighting corruption with those that appear because of corruption allegations. To avoid this problem, the measure is constructed by carefully evaluating the content of each news article to ensure that it reflects allegations of corruption *within* that respective agency.[27] The ten-year total count is used as a means of diluting any scandal-specific effects. The corruption figures are divided by agency budget, to control for agency size, and then logged.[28] The second measure is of civil servant dismissals by agency between 2003 and 2011. The results are reported for only 65 of the 100 agencies, due to a lack of information on civil servant dismissals for the remaining agencies. The dismissal figures are divided by each agency's civil servants, so as to correct for the size of the agency, and then logged.[29]

The results, shown in Figures 3 and 4, demonstrate that capacity and autonomy have an important and statistically significant relationship with the measures of corruption. The figures display a joint "autonomous state capacity" measure, an average of capacity and autonomy, while the tables below each figure display the results for each variable independently. Autonomous state capacity is associated with lower media mentions of corruption: an improvement of one standard deviation from the mean is associated with 5 fewer news stories about corruption. By way of example, an increase in the joint capacity-autonomy measure (ASC) from the level of the Public Defender's Office (DPU) to that of the Foreign Ministry (Itamaraty, MRE) would imply a drop in scandal reports by about 72%. Presumably, this could reflect either a smaller *a priori* susceptibility to scandal, or more cynically, perhaps greater ability to hide scandal from outsiders. Similar results are obtained for independent regressions of capacity and autonomy against media mentions of corruption, as shown in the table below Figure 3.

Although the two corruption measures are not entirely complementary,[30] the results for civil servant dismissals in Figure 4 suggest the less cynical possibility is more likely. Two hypotheses are possible with regard to civil servant dismissals. The first is that higher numbers of dismissals indicate a stronger ministry; i.e., a ministry that is able to effectively police itself and remove rotten apples. The second is that civil servant dismissals indicate a weak ministry; i.e., one with more opportunities for administrative malfeasance of the sort likely to lead to dismissal. The results show that, holding agency size constant, a one standard deviation improvement in autonomous state capacity is associated with a 43% decline in dismissals. By way of example, a shift from the Agriculture Ministry (AGR) to the Public Defender's Office (DPU) is associated with 15 fewer dismissals. In the case of dismissals, the capacity variable on its own is not statistically significant, but autonomy is highly significant. That is, an agency

[27] We are grateful to Marina Merlo and Rafael Papadopoli for their assistance in cataloguing and coding these stories.
[28] A constant is added to corruption for purposes of calculation: Log ((Corruption + 1)/Share of federal budget)
[29] Log of (Dismissals / Agency employees)
[30] A scandal reported in the news could potentially only involve the minister, without affecting any civil servants.

with a more professional career and greater specialization is no more or less likely to have a high number of dismissals. However, partisan politicization is much more likely to be associated with higher numbers of dismissals.

The results suggest that Weberian bureaucracy, in both of the dimensions described here – capacity and autonomy – is essential to improved governance outcomes. Findings from the Brazilian case thus contradict cross-national analysis of 97 countries by Dahlström and Lapuente (2012, 167), whose research demonstrates no empirical association between formalized recruitment, long career tenures, and strong employment laws, and corruption. At a minimum, it suggests that Brazil is an outlier. But it also suggests that once within-country variance is taken into account, these variables may play an important role. These findings pose a challenge for future empirical research: once the variables exogenous to state capacity and autonomy (e.g., state type, state legitimacy, reach of sovereignty) have been held constant, do agency-level capacity and autonomy play a more determinative role in establishing the quality of government?

(VII) Conclusions

The measures of state capacity and bureaucratic autonomy developed here provide a template for empirically evaluating the claims of an influential literature on the Brazilian state, while also providing a useful corrective to that literature by more clearly distinguishing between agency capacity and agency autonomy. The paper confirms the high capacity of some frequently cited "islands of excellence," identifies new high capacity agencies, and also identifies laggards. This is complemented by a second dimension, of autonomy, demonstrating that autonomy and capacity need not go hand in hand: some highly autonomous agencies have low capacity, while some high capacity agencies have low autonomy. These findings demonstrate the true diversity of state capacity and bureaucratic autonomy within nation states, both at the agency level and within policy arenas. Although the research reported here confirms the existence of many of the "islands of excellence" identified in the literature, a second important finding is that Brazilian bureaucracy is not clearly split between a few islands of excellence and a broader morass of terrible agencies, as many scholars seem to assume. Excellent agencies are still, by definition, the exception, but the data suggests that there is a very large set of agencies of middling, reasonable-but-not-outstanding, capacity. Differences are more of degree than of kind.[31]

These agency-level measures of state capacity and autonomy can provide a useful complement to survey research. While survey methods provide an incalculable benefit by more readily enabling cross-

[31] We are grateful to Kurt Weyland for highlighting this point in personal correspondence with the authors.

national comparison, they may be subject to issues of respondent subjectivity, as well as longitudinal comparability. The measures developed here permit finer-grained in-country comparisons, as well as a degree of objectivity unavailable in many past measures of capacity and autonomy. And in the process of collecting this data, it may actually be possible to perform the useful service of obtaining granular data on bureaucratic structures in specific countries, which has been sorely lacking in the debate over governance (Dahlstrom, Lapuente and Teorell 2012, 40).

Fukuyama (2013, 8) noted with regard to an earlier draft of this paper that the kind of data compiled here "obviously…does not exist for many countries, and even in Brazil the authors do not have similar statistics for capacity at the state, local, and municipal levels where a great deal of governance happens." This is a powerful argument for deepening this initiative and expanding it to other contexts. Measurement at the national agency or subnational provincial agency levels forces scholars to be far more rigorous in their operationalization of capacity and autonomy. Discretion, accountability, and other exogenous factors have much less causal effect, after all, when confounding phenomena are held constant by a common national political and judicial environment. Fukuyama is correct that data collection is a monumental task, and may not even be possible in some nations. But construction of a similar set of indicators for the federal governments of Mexico, the US, or Canada (three federations with strong national data collection standards) seems entirely possible, for example, and would allow for very creative and potentially powerful hypothesis generation and testing. By way of example, one might ask:

- Do infrastructure agencies or "street-level" service-providing agencies always show less capacity and autonomy than finance and foreign ministries? What can this tell us about how national histories and policy situations lead to the creation of "islands of excellence," and what are the implications of choosing different "islands" to improve government performance?
- Do law enforcement agencies elsewhere replicate the Brazilian pattern of high capacity and low autonomy, and if so, what does this tell us about states' willingness to entrust coercive functions to agencies beyond their control? Similarly, what are the patterns of capacity and autonomy in defense agencies, and what do they tell us about state priorities, especially in countries with a history of military intervention?
- More broadly, Fukuyama (2013, 1) points to the relationship between institutions that "check and limit power," and those that "accumulate and use power": might the balance of capacity and autonomy between agencies that fit the former category (courts, police, accounting tribunals) and agencies in the latter category (finance ministries, social service providers, and tax authorities) say something about the quality of democracy in these countries?

- Does the relationship between corruption, capacity, and autonomy hold up under other within-country datasets? What might this tell us about how best to structure bureaucracies to ensure good governance?

Evaluating these questions from a stronger empirical base would enable us to more effectively address some of the most complex questions of comparative development, democratic consolidation, and public administration in a new and more objective manner. The rising availability of "big data" is one of the most significant trends of our time, and the recent push toward government transparency, especially in the Western Hemisphere, suggests that with a little digging and prodding, a rich research agenda could be developed that is not only broad-brush and cross-national, but also deep, rich, and context-specific.

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Appendix 1: Construction of the State Capacity and Autonomy Measures and Description of Sources

This appendix discusses i) the sources of data, and ii) the means by which latent variable analysis has been conducted.

i) Data sources

Table 1 lists the sources for the component variables. The Federal Transparency Website, online since November 2004, is kept by the *Controladoria Geral da União*. It gathers data on budget expenditure, revenue collection, transfers to states and municipalities, and human resources. The website makes available an Excel file listing all civil servants currently hired at the federal level – who may be working in a federal agency or loaned to state and city governments, assemblies and courts. Another Excel file on the same website reveals individual salary data for all civil servants and political appointees. With the exception of the Central Bank, all information regarding civil servants comes from a system called *Sistema Integrado de Administração de Recursos Humanos* (SIAPE), managed by the Ministry of Planning. Both files are updated monthly and the data used in this article is from August 2011 (civil servants) and June 2012 (salary data).

The Federal Civil Service Wage Table was created by the now defunct Ministério da Administração Federal e Reforma do Estado (MARE) in June 1998 and is now updated by the Ministry of Planning. It holds information regarding the existence and structure of civil service careers in each federal agency, as well as wage information on civil servants and political appointees at the federal level. It permitted us to determine just how many different types of careers exist in the Brazilian federal government. Consulting the Federal Civil Service Wage Table alongside the Excel file on civil servants made available by the Portal da Transparência website provides the proportion of civil servants in core and expert careers for each federal agency.

Finally, the Federal Electoral Court (TSE) since March 2011 has made available on its website a full list of all individuals who are members of political parties in Brazil. This information allows us to check the proportion of political appointees and civil servants that are party members. To compile the politicization variable, the Excel file on civil servants available by the Portal da Transparência website was cross-checked against the TSE data.

ii) Latent variable analysis

Construction of latent variable scores of agency capacity and autonomy was done in three steps. First, the variables listed in Table 1 were assigned to agency capacity and to agency autonomy. Theoretical considerations guided the assignment of indicators, as described in the main text. The first test was to establish whether autonomous state capacity is bidimensional or unidimensional. Confirmatory factor analysis reveals that capacity and autonomy are indeed empirically separable.[32]

Second, each indicator was rescaled to run from 0 to 1, using the formula:

$$\frac{X_i - X_{\min}}{X_{\max} - X_{\min}}$$

Third, a Bayesian latent variable approach is used to create measures for both capacity and autonomy. One of the clear advantages of this approach, in addition to those mentioned in the text, is that by characterizing the joint posterior density of all parameters in the analysis means, the factor scores are easily recovered (Treier and Jackman 2008). Traditional factor analysis provides factor loadings (e.g. how indicators such as Cap1 or Aut2 load on the underlying concept) and model fit, but not the factor scores themselves (e.g. the scores of DNIT or the Banco Central on capacity).

Following Treier and Jackman (2008), agency capacity is treated as a latent, continuous unidimensional variable. A Bayesian framework is used to compute the posterior density over all unknown parameters conditional on the indicators (i.e. Cap1-4; Aut1-3) and priors (Jackman, 2009, 438). The indicators for each agency are modeled as functions of the unobserved level of agency capacity, following the factor analytic model. Let $i = 1, \ldots, n$ index agencies and $j = 1, \ldots, m$ index the state capacity indicators (i.e. Cap1-4; Aut1-3). The equation and prior take the form:

$$\begin{aligned}
&\mu_{ij} = \gamma_{j0} + \gamma_{j1} * x_i \\
&y_{ij} \sim N(\mu_{ij}, \sigma^2) \\
&x_i^* \sim \mathrm{N}(0,1) \\
&\gamma_{j0}, \gamma_{j1} \sim \mathrm{N}(0,100) \\
&\sigma \sim \mathrm{U}(0,100)
\end{aligned}$$

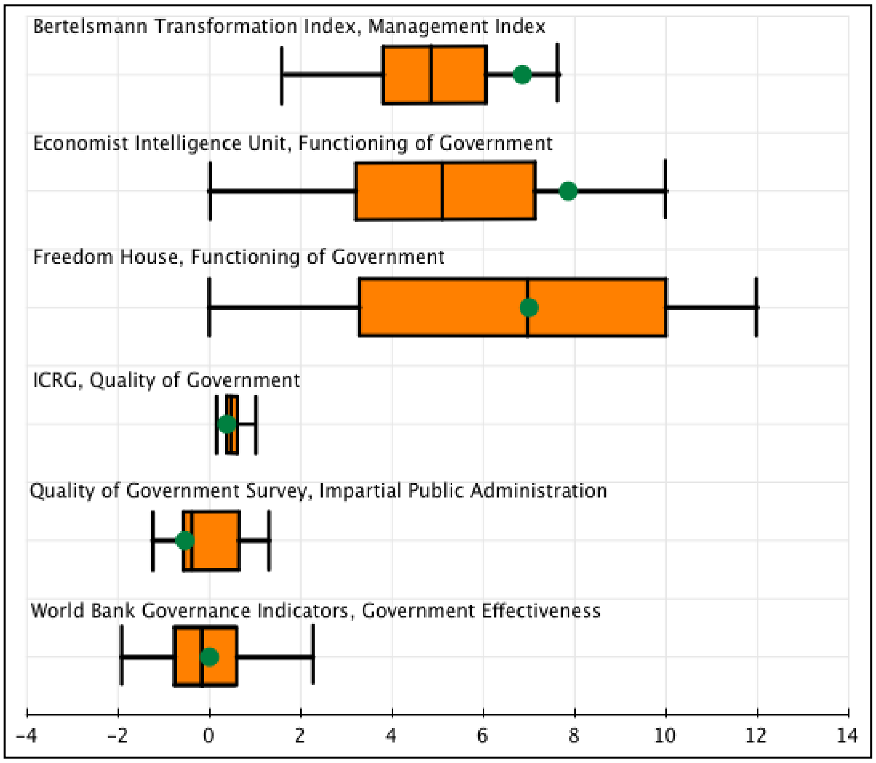
where x_i is the latent level of agency capacity in agency *i* and y_{ij} is the *i-th* agency's score on indicator *j*. Vague priors were specified for γ_{j0} and γ_{j1} to reflect the absence of prior information about these

[32] Following Bollen and Grandjean (1981) a model is estimated with two factors, for capacity and autonomy. Then, a second model is estimated identical to the first except that it constrains the correlation of the two factors equal to 1, which treats them as if they are a single factor. Comparing the fit of the two models, the difference between the chi-squares in the two models is 33.7, which is highly significant ($p < .00001$) and permits the conclusion that the one-factor model (the constrained model) should be rejected in favor of the two-factor model.

indicators. Following Gelman's (2006) recommendation, a uniform prior is set on the standard deviation over a large range, 0-100. Further, in order to estimate this model and to prevent shifts in location and scale for the latent traits, x_i is constrained to have mean zero and a variance of 1.

The model is estimated using the Markov chain Monte Carlo (MCMC) algorithm in WinBugs. After discarding the first 10,000 iterations as burn-in, estimates and inferences are based on 50,000 iterations, thinned by 100, in order to produce 500 approximately independent draws from the joint posterior density. Standard MCMC diagnostics for the sample are consistent with Markov chain convergence.

Figure 1: Brazil's Bureaucracy in Comparative Perspective

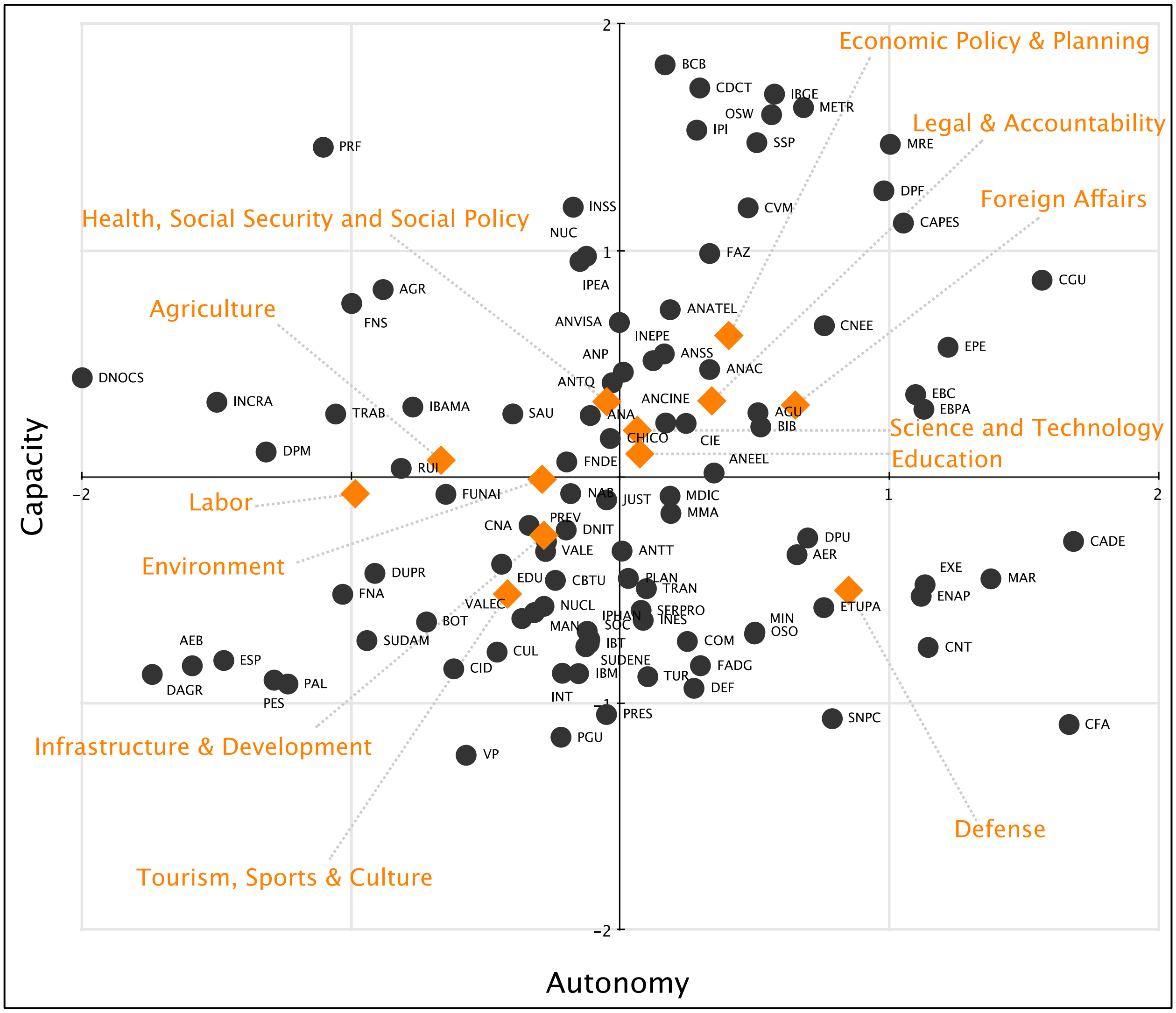


Note: Brazil's position on each index is marked as a dot. The box and whisker plots show the range of scores for other measured countries. Source: Graph by authors. Data from Teorell, Samanni, Holmberg and Rothstein (2011).

Table 1: Indicators used to compile capacity and autonomy measures

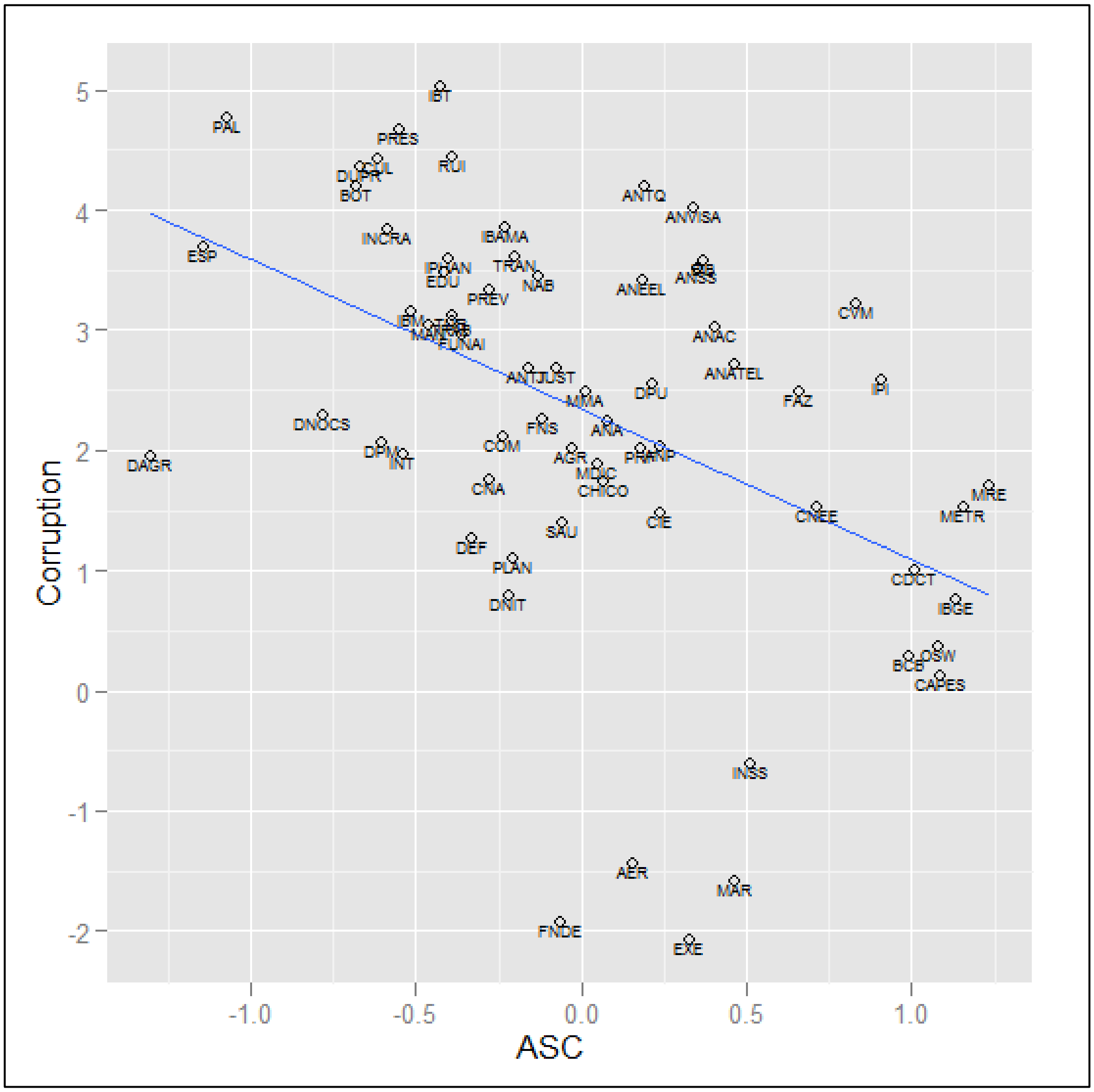
	Variable	Source
Capacity	Cap1. Career strength: Proportion of civil servants in either core or expert careers (%) Cap2. Career specialization A: Average longevity in civil service Cap3. Career specialization B: Civil servants requisitioned from other agencies (%) Cap 4. Career specialization C: Average salary for civil servants within agency	Portal da Transparência do Governo Federal; Tabela de Remuneracao dos Servidores Públicos Federais; Boletim Estatístico Pessoal n. 184, Ministry of Planning, August 2011.
Autonomy	Aut1. Proportion of low-level DAS appointments filled by party members (%) Aut2. Proportion of high-level DAS appointments filled by party members (%) Aut3. Proportion of regular civil servants that are party members (%)	Portal da Transparência do Governo Federal and Tribunal Superior Eleitoral

Figure 2: Laggards and Leaders by Agency and Policy Arena



Note: Diamond shaped points are averages by policy arena; round points are individual agencies.

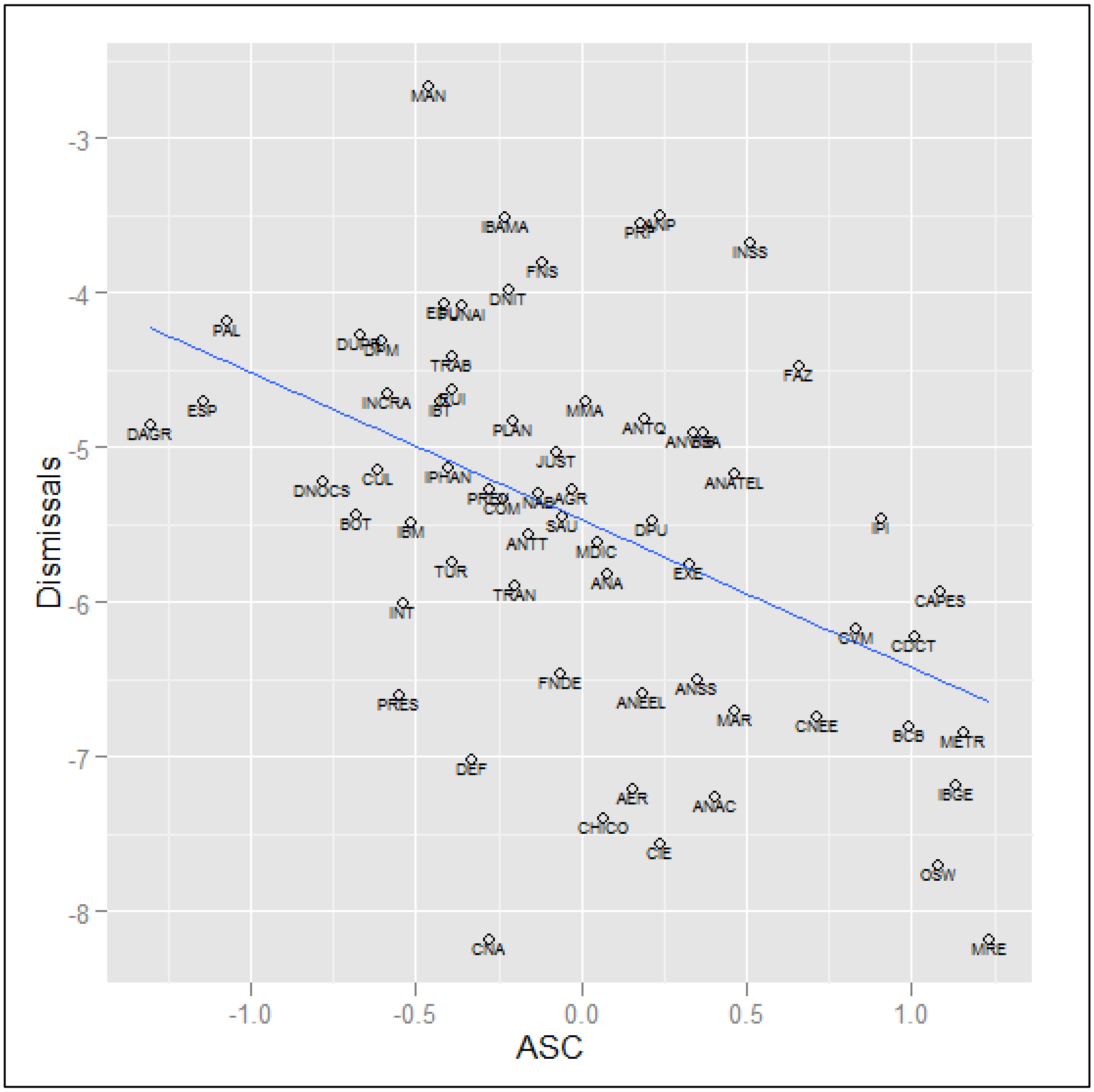
Figure 3: Media Mentions of Corruption and Autonomous State Capacity



	Coefficient Estimates
Autonomy	**-1.0042*** **
Capacity	**-.5939***
ASC (shown in Figure 3)	**-1.2500*** **

Significance: ***=.001; **=0.01; *=.05

Figure 4: Civil Service Dismissals and Autonomous State Capacity



	Coefficient Estimates
Autonomy	**-0.9644*** **
Capacity	**-0.2980**
ASC (shown in Figure 4)	**-0.9526*** **

Significance: ***=.001; **=0.01; *=.05