

The Political Economy of Statistical Capacity

A Theoretical Approach

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**Institutions for
Development Sector**

**Institutional Capacity of the
State Division**

**DISCUSSION
PAPER N°
IDB-DP-471**

August 2016

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Abstract

The development of statistical systems facilitates development. Such development is usually associated with the rise in statistical capacity, a concept on which there is still no consensus. This paper explores a theoretical approach to statistical capacity from the conceptual standpoint of state capacity and methods proposed recently in the literature to measure it. In the proposed theoretical approach, the paper proposes a transmission mechanism that goes from statistical capacity to strengthening the capacity of the state, and vice versa. The paper further discusses political-economy factors that may influence the strengthening or weakening of statistical capacity.

JEL code: Y80

Keywords: national statistical system, national statistical office, political economy factors, state capacity, statistical capacity

Presentation

This document is part of a knowledge initiative of the Institutional Capacity of the State Division (IFD/ICS) of the Inter-American Development Bank. It was undertaken in 2015 to explore the dynamics and incidence of political-economy factors on the technical and institutional capacity of national statistical systems (NSS) in Latin American and the Caribbean, especially on national statistical offices (NSOs). The paper seeks to answer the following questions: *What are the determining political-economy factors that condition statistical capacity in the countries of the region? Why do some countries have greater statistical capacity than others do?*

To this end, this initiative provides a conceptual framework that contextualizes the importance of statistical institutional strengthening within the policy formation process, especially in terms of the state capacity, as well as to propose theoretical and methodological frameworks to define indicators of statistical capacity and analyze the effects of the political economy factors of statistical institutionalization. Additionally, as part of a continuous effort to deepen knowledge, it provides examples of the products described through case studies carried out in several countries of the region.

In general, the incentives to strengthen statistical capacity are not always aligned within governments. That is, there are trade-offs that affect the development of statistical policy: on the one hand, governments need data to make better decisions; and on the other, these same data can support citizens as they demand accountability for the decisions of their governments, which can consequently go against the interests of the latter. In this context, more knowledge is needed to understand why governments would be interested in strengthening their NSOs.

It is hoped that the products generated by this initiative will contribute to the analysis, helping to explain why there is variation in the generation and use of statistical information in the region, as well as how governments produce statistics, why they make more or less use of them, and how they could produce and disseminate them better in the future. The initiative also aims to stimulate and substantiate the debate on the challenges involved in carrying out the design of an evidence-based policy in the countries of the region, as well as orient the actions of the Bank to support the strengthening of this sector.

Matthew Taylor prepared this document.¹ He is grateful for the comments of Carlos Santiso, Ben Roseth, Phil Keefer, Marcelo Leiras, and Martin Alessandro. Jose Antonio Mejia (joseam@iadb.org) and Gilberto Moncada (gilbertom@iadb.org), both from IFD/IDS, coordinated the research initiative on the political economy of statistical capacity.

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Introduction

The importance of national statistical systems (NSSs) is well established. Reliable data are central to public administration and public policy formulation. They provide the essential elements for evaluating policy choices, providing inputs to both private and public sector decision making, permitting results-based management of policy, and enabling subsequent analysis of short-term trends and long-term historical patterns of development.

More recently, there is an emerging recognition that NSSs play a key role in improving data collection and data provision for the achievement of new Sustainable Development Goals (SDGs) at a global level. In the context of the elaboration of SDGs for a post-2015 development agenda, NSSs are essential to providing credible data, setting baselines for comparison, and providing effective and reliable metrics on issues such as poverty, gender equality, health, and the environment within national States. These potential contributions are increasingly recognized not only as essential government functions, but even as an exciting new frontier in development, not least because of the increasing availability of “big data,” promising new techniques for evaluating massive amounts of data, and the proliferation of the technologies needed to effectively make use of it.

As a United Nations expert advisory group recently argued, “data are the lifeblood of decision making” (IEAG, 2014: 2). If data are the lifeblood, NSSs are the circulatory system, generating effective data, processing it following clear standards and procedures, and cycling it where it can serve the best purpose within the body politic. With these vital contributions in mind, this report is divided into three parts. The first defines the overall state capacity and summarizes an incremental approach to its measurement. The second section provides a theoretical framework for thinking about how NSSs contribute to strengthen the capacity of the State, while the third analyzes the political economy factors that influence countries’ statistical capacity.

1. State Capacity and its Importance to Development

Enhanced state capacity has been linked to a number of positive outcomes, including economic growth, less conflict, greater political stability, a better quality of governance, more effective tax policy, and greater popular support and legitimacy (Kurtz, 2013). One reason posited for these connections is that a high-capacity bureaucracy is presumably strong enough to resist pressures from organized interests seeking special treatment (Haggard and Kaufman, 1992). A related justification is that bureaucracies must be strong enough to obtain information from society to inform their work, but also strong enough that such contact does not corrupt their

organizational integrity or distort their bureaucratic goals. Others, particularly economists in the institutionalist tradition of Douglass North, argue that the state must be capable if it is to credibly impose the rule of law and protect property rights (Acemoglu and Robinson, 2012; Kurtz, 2013; North, 1990). More recently, this argument about the essential links between state capacity and economic and political development has been echoed by a variety of proponents, both within academia² and in multilateral organizations.³

Scholars have been hard-pressed, however, to agree upon a definition, and conceptual imprecision is exacerbated by vexing measurement issues.⁴ Despite agreement on its potential benefits, capacity is an “essentially controversial concept,” which generates considerable debate over its central meaning, the best way of measuring it, or its effects (Andrews, 2010; Rothstein and Teorell, 2012). Capacity is often discussed, conceptually or empirically, alongside related terms such as autonomy, impartiality, and discretion. It often becomes intertwined with desired outcomes, such as quality, efficiency, or effectiveness (Bersch et al., forthcoming). The measurement issue can be significant, since state capacity may be conceived as outcome measures, such as gross domestic product (GDP) per capita: richer countries, for example, may be better placed to fund policy outcomes, independent of actual state capacity. Further complexity is thus introduced by the uneven ability of many States to enforce their monopoly across the entire national territory.⁵ Historical factors may also play a role. The path of labor integration and electoral incorporation of civil society may be significant causes of the persistent inequalities in the “quality, reach, and efficacy” of public institutions in Latin America, in light of their effects on the universalism or elitism in the provision of public goods, including the provision of high-capacity government institutions (Kurtz, 2013: 5).

To clear up some of this confusion, this section provides a basic definition of state capacity, before analyzing the measurement strategies that have been developed to evaluate it.

1.1. Defining State Capacity

The central concept that has guided much of the literature on state capacity harkens back to Max Weber’s study of patrimonial and rational-legal administrative forms of state organization. In the former, rulers governed States through family networks or kinship, with all of the conflicts of interest, inequities, and inefficiencies that such structures might imply. Weber pointed to the

² See Fukuyama (2013); Holmberg and Rothstein (2012); Kurtz and Schrank (2007).

³ See, for example, the argument made by Holt and Manning (2014).

⁴ See discussion in Bersch et al., forthcoming.

⁵ Giraudy (2012), for example, categorizes states according to five subtypes: weak states, weberianless non-reaching states, non-reaching states, crony states, and strong states. See Giraudy (2012), Soifer (2012), and Soifer and vom Hau (2008).

very significant shift that took place when States and rulers transitioned to rational-legal administration, which created a permanent bureaucracy, marked by meritocratic and predictable recruitment that rewarded long-term careers.⁶

The existence of long-term meritocratic and predictable careers may seem banal to modern ears. Historically, however, it contributed to fomenting a more universal form of rule making and rule implementation that is more efficient, effective, and oriented toward the long term than previous forms of state organization. As Evans and Rauch note, “meritocratic recruitment and predictable career ladders should help structure the incentives of bureaucrats—individually, in a way that enhances the ability of the organizations they manage to effectively achieve long-term goals” (Evans and Rausch, 1999: 752). Meritocratic recruitment, with selection based on education and examination, and a predictable career ladder, which provides long-term rewards, together increase the “likelihood of at least minimal competence....corporate coherence and *esprit de corps*, which in turn...[has] substantive effects on the motivation of individual officeholders” (Evans and Rausch 1999: 752). Together, these characteristics are thought to lead civil servants to internalize shared bureaucratic norms and goals, increase corporate coherence, create incentives to curb activities that subvert organizational goals, reduce the relative gains from corruption, and generally increase the likelihood that long-term goals will guide civil servant behaviors (Evans and Rausch, 1999; 2000).

The most basic definition of state capacity is the Weberian legal-rational State: a professional bureaucracy, understood as one marked by meritocratic, long-term careers. Implicitly associated with this career path is the regular provision of sufficient resources to actually engage in the tasks required of the bureaucracy, both with regard to human resources as well as to operational tasks. After all, a meritocratic career loses its luster as an effective strategy for creating and efficaciously applying rules if the bureaucrat is completely powerless to do either.

Two further assumptions are worth noting. The first has to do with autonomy. No bureaucracy is completely autonomous from political power, and all bureaucracies respond to mandates set by the political regime. Yet highly institutionalized political systems have bureaucracies with a high degree of autonomy (Fukuyama, 2013). In this case, it can be defined as (i) autonomy with respect to leaders, or the “manner in which the political leader imposes mandates on the bureaucrats who act as their agents” (Fukuyama, 2013: 356) and (ii) autonomy from particularistic pressures that might jeopardize the impersonal or universalistic

⁶ For discussion, see Evans and Rauch (1999: 748–65). More recently, Fukuyama has taken up these themes in Fukuyama (2013; 2011).

implementation of policy (Bersch et al., forthcoming). Ideally, the leader's mandates will be broad enough to permit some latitude to civil servants, but not so broad as to allow the bureaucracy to act beyond the reasonable scope of its function or without supervision. With regard to particularistic pressures on the bureaucracy, there is a longstanding critique of the Wilsonian notion of a neutral bureaucracy that receives and faithfully executes decisions taken by political authorities, and many governments recognize that bureaucrats face their own incentives in the policy process and that responding to those incentives need not be prejudicial to effective policy implementation.

A second assumption has to do with the ethical neutrality of the concept of state capacity. High-capacity bureaucracies, of course, may be put to bad ends.⁷ Ideally, though, high-capacity bureaucracies will be used to deliver services effectively. For analytical purposes, however, it is probably worthwhile to separate the definition and measurement of capacity from the ends to which it will be employed, and even from the type of political regime that uses it. After all, there is some analytical benefit to being able to distinguish a high-capacity autocratic State from a low-capacity autocratic State, and both of these from high-capacity or low-capacity democracies. And while the normative implications of these distinctions may be readily apparent, the central concern of this paper is analytical, and our focus will thus remain on capacity, rather than the normative objectives that may lie behind the use of that capacity, or their interactions with regime type.

1.2. Measuring State Capacity

Measuring state capacity can be difficult in part because of the lack of hard data about civil servants and the bureaucracies they serve. Especially in cross-national work, this has led to efforts to measure state capacity through proxies, such as the state's ability to extract revenue.⁸ There are at least two problems with such an approach. The first is that the ease of revenue collection may be associated with particular sources of revenues (e.g., easily captured resource rents, as opposed to more difficult income taxes), and therefore may not tell us much about the state's differential ability to actually extract resources from society. Further, it tells us more about the state's extractive capacity relative to other states than it does about the state's performance relative to its actual domestic objectives (Hanson and Sigman, 2013). Collecting

⁷ See Fukuyama 2013, in particular his discussion of where he parts ways with Rothstein's (2011) perspective on impartiality.

⁸ Bersch et al. (forthcoming) and Cheibub (1998). 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 citizens' requests for information.

25 percent of GDP in taxes may be very impressive in cross-national perspective, but not if the objective was to collect one-third of output.

A second measurement effort has consisted of collecting subjective opinions of state capacity, such as expert surveys of state bureaucracies' recruitment processes and effectiveness (e.g., Dahlström, 2012; Evans and Rauch, 1999; Rothstein and Teorell, 2012). But these evaluative mechanisms face problems of scalability, given the high cost of conducting expert surveys; of longitudinal comparison, given the influence of one year's scores on later expert perceptions; and of replicability, thanks to their inherent subjectivity.

Measurement of state capacity may prove difficult, however, not only because of data availability problems. Often the more important challenge is that the lack of conceptual precision carries over into measurement imprecision: as Bersch et al. (forthcoming) note, our "understanding of state capacity can readily become circular because scholars often understand efficacious States in terms of their capacity to get things done." This tautology not infrequently leads scholars to conflate state capacity with public policy outcomes, "making it difficult to distinguish the extent to which weak state capacity should be blamed for development failures, rather than poorly designed policies." After all, even very high-capacity States are susceptible to poor policy choices, as well as variations in the contextual political and economic conditions that may engender them. The emerging consensus, therefore, is that "state capacity is best measured by focusing on internal measures rather than what government achieves" (Holt and Manning, 2014: 726).

With this in mind, this section describes a basic, minimal measurement approach that is objective rather than subjective, and can be used to develop measures at various levels of aggregation. If data were available, this baseline measure could then be expanded in ways discussed below to create an even more robust depiction of state capacity. But first, a minimum baseline measure is needed.

At its most basic, state capacity needs to take into account four core variables that influence the incentive structure for civil servants (Evans and Rauch, 2000). First, the degree to which agency careers are meritocratic: have civil servants passed selective examinations, do employees have special training, and do they have a shared professional background?⁹ Second, pay. Are public sector salaries competitive? Are long-term salary incentives strong enough to overcome pressures toward arbitrary behavior? Third, is there a clear career track via

⁹ See Bersch et al. (forthcoming), Dahlström, Lapuente, and Teorell (2012), Evans and Rauch (1999), and Rothstein and Teorell (2012).

internal promotions that will encourage longevity? Finally, are careers stable, ensuring the long-term perspective needed to ensure public-mindedness and generate a resistant *esprit de corps*?

According to Evans and Rauch (1999, 2000), these variables can be measured through subjective expert surveys, but for the reasons already discussed above, it is preferable that they be built from a more objective source. One possibility is to construct such measures from a combination of: (i) an analysis of legislation on civil service pay and merit-based examinations that establishes the procedural baselines for civil service recruitment, promotion, and removal, as well as (ii) information from personnel databases containing individual-level data on bureaucrats' career paths, salaries, and specialization (Bersch et al., forthcoming).

One benefit of such relatively straightforward measures is that once the data have been collected on individuals within the civil service, they may be aggregated upward at a variety of levels: career track, agency, ministry, policy domain, or state. As Fukuyama (2013: 354) notes, one appeal of such an approach is that “[a]s state capacity varies substantially across functions, levels of government, and regions, one would ideally want capacity measures for all major government agencies.” As Bersch et al. (forthcoming) demonstrate in a study of the Brazilian federal government, collecting data on individual civil servants and aggregating it using latent variable analysis may uncover enormous differences at the agency level, between “islands of excellence” and more laggardly agencies.

Once such a basic measure has been collected, it may be desirable to augment it with two additional sources of data concerning education and autonomy. With regard to the former, data on educational attainment may be useful: do civil servants have advanced degrees, Ph.D.s in relevant fields, or others? Second, how autonomous are they? While autonomy offers a harder measurement challenge than capacity, its importance is undisputed, as the quality of government is widely believed to be related to the interaction between capacity and autonomy, two separate and distinct qualities of the State (Fukuyama, 2013). One operationalization of autonomy may be the degree of partisan affiliation of civil servants (although not all countries collect such data, and in some countries, such affiliations are banned);¹⁰ others include subjective evaluations by elite respondents, counts of mandates imposed on agencies,¹¹ or statutory rules on agency leadership structure (Selin, 2015). Ideally, output measures—such as standardized test scores, clearance rates, arrest rates, prevalence of corruption—would only be used *ex post* to measure the effects of capacity, rather than serving as proxies for capacity itself.

¹⁰ See Bersch et al. (forthcoming) for details on operationalization of such a partisan measure.

¹¹ Following the suggestions laid out in Fukuyama (2013).

1.3. Measuring the Capacity of Statistical Offices

Comparison of the capacity national statistical offices (NSOs) within Latin America could presumably follow the simple measurement strategy above, possibly augmented with educational data at the individual level. This information would refer to state capacity, or what could be labeled the institutional capacity of the NSO. For each country-year, data would be collected on individual civil servant's longevity, specialization, salaries, and educational level in the statistical agency. Some data, such as internal surveys of technical capabilities, are already being collected within statistical agencies in Latin America, measuring their responses to more than 240 questions about the agency's performance. A third set of information would refer to the legislative-statutory rules on agency mission, career tracks, civil service hiring, merit, promotion and protections.¹²

According to the objective of the analysis, it may make sense to collect and aggregate each of the three categories of data separately, in three distinct sub-indices (a preliminary list of data items for measuring institutional capacity and legislative-statutory rules can be found in the Annex). The individual data on institutional capacity could be aggregated into agency measures using the latent variable technique described above, which—because it measures shared variance across all of the variables—has the benefit of avoiding fixed aggregation formulas that assign specific—and often arbitrary—weights to specific variables. The technical capabilities and statutory data, meanwhile, will provide useful context about how these agencies fit within the overall State, their mandates, and stakeholders, as well as about important differences in technical skillsets across national borders.

2. National Statistical Systems and State Capacity Building

Government bureaucracies have been usefully divided into two broad categories: upstream, core central agencies at the center of government, with functions that cut across all sectors of the government, and downstream, delivery bodies, which provide services to citizens (Holt and Manning, 2014). NSOs are one of the few government bodies whose work bridges both categories, and they therefore have the potential to contribute to building state capacity across all government functions.

Figure 1 offers a heuristic description of the relationship between NSO capacity, the NSO work product, and overall state capacity. On the left-hand side, we see that the overall political economic context deeply influences NSO capacity and autonomy, for reasons that will

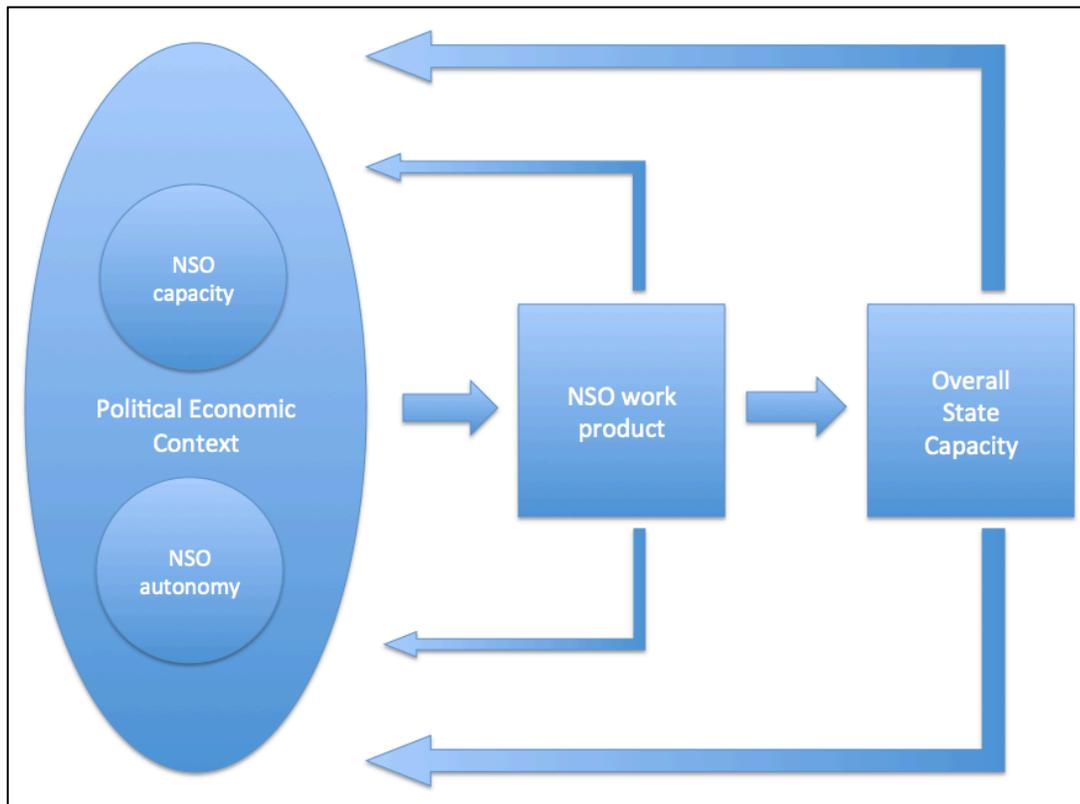
¹² One model to be considered for the measurement of this final category of data is the effort to measure judicial independence, in Ríos-Figueroa (2006).

be discussed in Section III. Moving from left to center in Figure 1, the correlation between NSO capacity and the quality of its work product is presumably higher than in many other agencies or sectors within government. In part, this is because the NSO work product that lies at the center of Figure 1 is relatively straightforward: data about the demographic, social, political, and economic state of the nation. This is not to argue that collecting, processing, aggregating, and publicizing such data is a simple task; it is only to assert that it is much less subject to external manipulation, crises, or other factors extraneous to agency capacity than many other government products. In sum, this work product requires passing through fewer levels of bureaucracy and implementation than numerous other government tasks, suggesting that a high-capacity bureaucracy within NSOs may translate more directly into higher-quality outcomes than the work products of other agencies.

Moving from the center to the right-hand side of the figure, it is evident that the NSO work product has the potential to reshape significantly the overall capacity of the State. A high-quality work product, both on its own and through its impact on overall state capacity, has the potential to shape the political-economic context in fundamental ways, shown in the arrows that run from right to left in Figure 1. NSOs serve many of the functions of central agencies, including most importantly as “public information systems” that enable core ministries to plan effective policy interventions, evaluate policy, and allocate budgets in an informed fashion. In addition, as a central agency, they contribute to establishing credible rules for national statistical collection by various other bureaucracies that jointly make up the NSS; they contribute to the credibility of policy choices, based on empirically verifiable results; and they contribute to ensuring resource adequacy and predictability, by enabling downstream delivery bodies to accurately serve the populace (Holt and Manning, 2014: 721).

When they function well, however, NSOs also provide a downstream service provision function, sharing information with citizens and private sector actors, contributing to rational long-term decision making, based on realistic understandings of what the data say about both past historical performance and future trends across the demographic, social, political, and economic spheres.

Figure 1: Conceptual Map of NSO Impact on Overall State Capacity



Source: Author's elaboration.

Through both its upstream and downstream functions, NSSs can be very influential forces in the development of state capacity. Directly, they contribute by providing the data needed to accurately inform policymaking, to make justified choices between alternate policy pathways, and as a result, to effectively allocate state resources. Indirectly, NSOs may contribute to the development of state capacity through their effects on the information made available to private sector, civil society, and opposition political forces on the state of affairs in particular sectors. This information may permit these actors to critically evaluate the incumbent government's policy choices and formulate policy alternatives. Indirectly, too, accurate provision of statistical data and its contribution to enhanced decision making may drive the economy forward in ways that both finance and increase the demand for a high-capacity state apparatus.

If it is to have positive effects on overall state capacity and development outcomes, however, the NSO work product must have a number of qualities, best summarized as: timely, efficient, modern, professional, and independent.¹³ To meet these objectives, the NSO will need

¹³ These qualities come from discussion of the experience of reform in the Netherlands, carried out in United Nations (2003).

to comply with international standards, guarantee that production and performance standards are high, ascertain that users are satisfied by the data and the methodologies used to aggregate it, and most importantly, ensure that the credibility of its procedures is unquestioned. To effectively provide credible, high-quality, predictable, reliable, and timely information, furthermore, the agency will need to rely on a series of partners who help to provide source data. The relative credibility of the end product will greatly influence their compliance with NSO requests, suggesting that credibility is both an instrumental end and a good in its own right.

If the provision of high-quality statistical data is such an unequivocal public good, with direct and indirect effects on the development of overall state capacity across government, why is the creation of effective NSOs and NSSs not more widespread? A simple answer is resource scarcity: oftentimes investments in other bureaucracies and policy choices offer more salient returns in the short term. Yet, given the direct and indirect benefits of statistical data provision, many of the costs of establishing effective NSOs would seemingly be easily recouped. Another plausible answer is that the path from the construction of an NSO to its beneficial effects on broader state capacity is a long and highly contingent one, influenced by the NSO's own capacity and autonomy, as well as the broader political economy, as depicted in Figure 1. The contingency of this path means that even when they have been created, NSOs do not always live up to their considerable promise.

With this in mind, the next section turns to the political economy factors influencing statistical capacity, paying particular attention to the factors that will enable NSOs to develop their own technical capacity to produce high-quality, reliable data, as well as the factors that may permit them the autonomy needed to ensure credibility and autonomy.

3. Political-economy Factors Influencing the Development of Statistical Capacity

Two political-economic tensions lie at the core of governments' efforts to build statistical capacity. The first is common to many of the public goods provided by governments: ideally, governments develop statistical capacity when the costs of provision are too great for any single private agent to bear and no market incentive exists for private actors to collect and compile much of the data. Governments may develop statistical capacity for a variety of reasons, described below, but the overarching rationale is that the aggregate social benefits of creating such bodies outweigh the costs borne by society through government. When data are provided impartially, statistical capacity can lead to considerable society-wide welfare gains. As with many government failures, though, failure to provide effective NSOs (and/or a reliable NSO work product) may be highly correlated with one of the causes of weak state capacity more

generally: the incentives to politicians and to policymakers are not aligned with the broader welfare of the entire society. Pressures instead align with specific interests or factions, and the broader welfare gains that might accrue to designing an effective institution are redirected, in a “neopatrimonial” process by which particularistic groups “capture” the state apparatus and appropriate to their own ends the state’s provision of the public good.¹⁴

A second tension relates to accountability: while statistical data may help to improve the accuracy and reliability of both public and private sector decision making, the same data may expose the shortcomings of government policies and lead to demands for change. Policymakers and politicians may thus fear the public airing of data for a variety of reasons. They may fear that the data present too simplistic a perspective, in a world marked by complex contingent causation. They may be worried by sectoral pressures that are mobilized by data demonstrating the particularistic effects of policies in one segment or another of the economy. They may be reluctant to divulge data in a timely fashion, fearing that it may hamper public support for policies that will work, if only “given enough time.” They may fear public backlash against policymakers, such as demands for more effective policies or more aggressive leadership. For politicians facing electoral pressures, releasing data may be extremely inconvenient, undermining the credibility of campaign promises or even providing ammunition to the opposition.

One central puzzle, then, is why politicians and policymakers would even consider developing statistical capacity. Several answers are possible. They may do so to constrain future governments, whose policies will be evaluated by similar measures. Further, creating an NSO may enable current incumbents to monitor their successors if they believe they may eventually be out of office. They may suspect that the short-term losses in public oversight are outweighed by the long-term gains in performance, gained through better analytical tools. They may have few options in light of pressures from other bureaucracies within government or due to demands from influential private sector actors. Statistical agencies may be empowered as a means of informing past agreements between members of the political regime. Finally, policymakers may find that developing statistical capacity is a useful way of signaling a credible commitment to certain policies by ensuring that both private and public sector agents are able to independently evaluate policy sustainability in the short term and effectively develop long-term perspectives on their likely continuity over time.

Given this central tension between potential political pressures and possible policy gains, the development of statistical capacity has been extremely uneven across countries. Two

¹⁴ See, for example, the discussion in Fukuyama (2014: 27–28).

dimensions of statistical capacity are particularly relevant to this uneven evolution. The first is agency capacity, which can be defined as the ability of agencies within the statistical system to provide their work products efficiently and effectively. The second is institutional autonomy, or the degree to which the statistical system is able to produce these data and make them public without interference from policymakers and politicians. Each of these is discussed in turn below.

3.1. Technical Capacity

Moving down the ladder of abstraction from cross-national measures of state capacity to the technical capacity of specific country agencies, a combination of domestic and international pressures may have an important influence on the development of technical capacity within NSOs. It has been suggested that the development of capacity may vary according to the characteristics of agencies. That is, agencies are more likely to develop capacity when (i) their functions respond to the demands placed on states by international actors, (ii) they may cause potential political costs to incumbents if they perform poorly, (iii) they regulate the interests of powerful stakeholders, or (iv) they are in charge of complex policymaking processes (Dargent, 2014).

NSOs fit at least two of these characteristics—responding to demands by international actors and participating in complex policymaking processes—which might suggest incentives for political leaders to invest in providing the long-term incentives needed to develop agency capacity. There is frequently strong international demand for agencies capable of providing reliable data on national development outcomes, including macro and microeconomic data, demographic data, and social performance indicators. Even weak and poor states will face pressures to build such capacity, for example, from international donors. Second, by virtue of their data provision functions, statistical agencies are also often at the heart of complex policymaking processes that require particular expertise.

However, on the second and third criteria, NSOs do not always rise to the attention of political leaders, which may influence politicians' relative willingness to invest in developing agency capacity. The political costs of an absent or poorly functioning NSO can often be misidentified as bad policymaking in other realms of government, while powerful stakeholders may find that the absence of an effective NSO may in fact provide them with considerable policy leeway in the short term. Under such conditions, it may be difficult to find the political will to invest in improving performance, increasing agency resources, or increasing the agency's abilities to carry out statistical activities.

3.2. Institutional Autonomy

Institutional autonomy is important for the development of statistical capacity because it enhances the credibility and reliability of data over the long term, and thus permits public and private agents to use the data effectively in their own decision making. Credibility may also enhance cooperation with associated agencies, whose efforts are often needed to compile statistics. This cooperation often has an aspect of voluntary compliance, which can be hard to sustain if credibility is low and/or autonomy is in question. As the United Nations (2003: 9) notes:

A special circumstance affects statistics: the results of the activities of statistical agencies must be replicable to be believable, but realistically the user cannot replicate them. This is why a statistical agency must work hard to bolster credibility, and why there is such extreme sensitivity to any attack on credibility or to notions of a loss of public faith in the reliability of a statistical agency's output.

The development of the institutional autonomy of national statistical bodies thus has parallels in the literature on other autonomous or semi-autonomous structures of government, such as courts, central banks, audit agencies, and regulatory agencies.¹⁵ These types of agencies and structures require independence to ensure the credibility of their work product, as well as to enhance compliance with their decisions or requests for information. This section draws on the experiences of other autonomous agencies to describe the central political economy drivers of institutional autonomy relevant to statistical bodies.

An agency is generally understood to be autonomous when it is free to act—within legal bounds—in ways that diverge from the preferences of other members of government, whether these are located in the executive branch or outside it, for example in the legislature or judiciary. Given the interplay between agencies and across branches of government, autonomy is therefore politically determined. As a result, the common practice of arguing that autonomy is solely the result of formal institutional protections, such as budgetary independence, appointment procedures, or mechanisms of policy review, has been shown to be inadequate (Taylor, 2014).

In considering the factors that influence the autonomy of agencies, therefore, both *de jure* formal institutions and *de facto* informal institutions and political interactions play a role. De

¹⁵ A vast literature exists on the independence of each type of agency. Examples from Latin America include Leiras et al. (2014) on judicial independence, Sola et al. (2002) on central banks, Santiso (2009) on audit agencies, and Jordana (2010) on regulatory agencies.

jure influences include the mandated scope of agency action, statutory rules on policy review, the appointment process, the rules on appointee removal, the size of the appointed leadership, tenure stability, and budgetary autonomy. De facto influences include the reputed expertise of the agency; support structures in the public sector, the private sector, and international markets and peer institutions; divided government and electoral turnover; and the potential of interference to adversely affect other sectors of the agency's workload. Both types of influences are addressed in turn below.

3.3. De Jure Protections

The most basic de jure protection tends to be the law determining the establishment of the agency, giving its mandate and establishing the core structure and central objectives for the agency. Frequently, this founding law will also include rules on the appointment of agency leaders, their tenure and stability, and budgetary autonomy (Domingo, 1999). Often, such laws will also include rules on centralized review of decisions by the agency's political principals, for example, in the presidency or the legislative branch.

One of the most effective appointment protections is to adopt appointment procedures in which a collegiate agency leadership—which might mean, in practical terms, a statistical council and a national statistical officer—“outlives” the current political coalition, with terms that are staggered, so that the full agency leadership is not fully replaced at any given moment, and its removal is not timed to the political process, so as to avoid replacement of agency leaders in sync with the election cycle. Collegiate leadership, staggered terms, and an appointments timetable that is not in sync with the electoral cycle may contribute to lessening short-term political pressures on the agency, as well diminishing the influence of particular partisan electoral concerns on agency performance (Tiede, 2006). In the process, such appointment procedures may enhance the credibility of agency processes.

With regard to agency leaders' tenure and stability, guarantees of non-interference by elected officials—such as statutorily guaranteed terms—will make it harder to intimidate individual agency directors, thus preserving the long-term credibility of agency decision making. However, interference with tenure and stability frequently goes beyond efforts to replace particular agency leaders. It includes initiatives to dilute particular collegiate leadership boards by expanding the number of agency leaders, to reduce or reassign essential support staff, and to constrain the agency's mandate by declaring some policy arenas off limits or transferring those responsibilities to more amenable or submissive agencies elsewhere in the government bureaucracy. Efforts at mandate- or jurisdiction-stripping are significant threats to agency

autonomy, as may be efforts to impose strict limitations on data collection or diffusion. De jure protections of agency structure, appointments, staffing, tenure, and mandate are therefore enormously significant. At their most functional, these statutory protections will be obeyed by elected officials. At a minimum, even when flaunted, they may serve as a benchmark against which subsequent political interference can be gauged.

Legislative budget approval, and the threat to withhold budget appropriations, may have a significant impact on agency independence. Consequently, de jure protection of agency budgets is one of the most effective ways of ensuring continued agency performance, as are self-funding mechanisms.¹⁶ Yet budgetary protections may be one of the most tenuous aspects of agency autonomy, especially in countries facing tight or volatile fiscal conditions. Further, while the statutory protection of civil service salaries and benefits helps to preserve the working conditions for human capital of the agency, it may have unintended and undesirably restrictive budgetary and fiscal consequences over the long haul. Over time, budgetary protections often become skewed toward human resources, without taking into account the equally vital need for adequate operational resources, which can be significant in the collection of public data by statistical agencies (including advanced information technology, high-capacity data storage, and web interfaces for data distribution). In sum, protections of budgetary autonomy can be very useful in ensuring that undue pressures are not brought to bear on the statistical collection process, but they must be tempered by realism.

A final set of de jure protections has to do with the statutory provisions that insulate agency policy decisions from review by political principals. In the United States, for example, Selin (2015) notes that most agencies “must submit budgets, legislative materials, and economically significant administrative rules to the White House’s Office of Management and Budget (OMB) for centralized coordination. Submission of these materials allows the president to keep tabs on agency decisions” (Selin, 2015). Similarly, Congress may create instruments of review for NSOs, such as congressional hearings or the creation of advisory boards, with the objective of influencing policy decisions and policy directions. Both legislative and executive branches in many countries have also created Inspectors General, advisory commissions, and ombuds offices within agencies as a means of obtaining information on agency activities, and in some cases, influencing agency direction. While the salutary aspects of such oversight should not be neglected, they also carry with them the potential for significant leverage over agency policy.

¹⁶ Realistically, however, revenue from self-funding mechanisms, such as the sale of products and services at market prices, is unlikely to fund the agency. As UN (2003) notes, “few statistical offices generate more than 10-20 per cent of their income from sales.”

3.4. De Facto Protections

The literature on the autonomy of specific government bureaucracies—including central banks and courts—increasingly recognizes that autonomy is dynamic and politically determined, in ways that far exceed de jure legal protections.¹⁷ While de jure protections are an important first step in generating the conditions for autonomous performance, they are insufficient on their own, given that autonomy is a contingent outcome of interactions between elected actors, diverse publics, and agencies themselves. Therefore, formal institutional protections may only be effective inasmuch as they are buttressed by contextual political conditions, including agency expertise, support structures inside and outside government, and partisan politics.

Agency expertise may provide both de jure and de facto support for agency autonomy. In de jure terms, agency statutes may often include clear rules about the qualifications for holding leadership positions, such as academic credentials, years of experience in the profession, or personal reputation. Clear statutory guidelines can thus limit (but not entirely eliminate) the potential for purely partisan actors to obtain authority positions within the agency. In de facto terms, two supports arise from increasing expertise. The first is that the simple presence of agency experts in leadership positions may reduce political interference: in a study of audit agencies in Brazil, for example, scholars found that as the number of tenured career civil servants in an audit agency's collegiate decision-making body increased, the audit agency became more active in fighting corruption (Melo et al., 2009). Second, elected officials may face important reputational and electoral costs in overriding agencies, even those agencies that are technically subordinate to them, in part because of the perceived expertise of the technical staffs of those agencies. No matter how good the reasons, overriding seemingly high-capacity technical agencies is often seen as undue interference by political or partisan interests. For this reason, an agency's technical capacity (described in the previous section) and its degree of autonomy may be interwoven.

A second de facto protection for statistical agencies comes from diverse support structures elsewhere in government, in the private sector, in civil society, and in international markets. Statistical agencies often operate with an audience in other segments of the government, such as peers within other bureaucracies, including the staffs of bureaucracies that rely upon the statistical agency's data or partners in other agencies which also collect data. The private sector, such as financial market institutions or management consultants, may rely on the statistical agency's work products to set in motion their own long-term perspectives on the

¹⁷ This section draws on dynamic models of agency autonomy developed for the analysis of central banks and courts. A dynamic model of central bank independence can be found in Eijffinger and Hoeberichts (2002). An application of the model to courts can be found in Taylor (2014).

economy or specific aspects of national development. Given this dependence, they may act as whistleblowers when neutral data provision is threatened. Civil society and the media may also provide diffuse support by drawing attention to attempts at interference that might damage the legitimacy of the statistical agency's outputs. Even when the agency's work is unpopular, furthermore, over time it may acquire legitimacy that provides a bulwark against interference.¹⁸ International pressures may come from other governments or multilateral institutions concerned about the reliability of statistical results. They may also emerge among capital markets and investors, for whom indications of interference with statistical agency efforts may be seen as a sign of reduced financial credibility or increased macroeconomic vulnerability, with potentially pernicious effects on capital flows.

A related issue is the role of partisan support. In the literature on judicial autonomy, it is commonplace to argue that divided government may contribute to improved autonomy by increasing the benefits that the opposition gains from an external institutional protector. Incumbents may also accede to this logic, especially if they think that they will someday be out of office and thus require the "insurance" provided by an independent arbiter that is not the governing party's lapdog.¹⁹ A similar "insurance theory" logic may apply to statistical agencies, which can provide important resources to the opposition, thus gaining the support of current opposition members, as well as potentially the support of current incumbents, if they foresee a day when they are no longer in office.

The less positive flip side of this argument, of course, suggests that dominant one-party governments may be able to shape the career incentives of agency personnel in ways that undermine otherwise reasonable institutional safeguards. As scholars have shown in the cases of the Mexican and Japanese courts at times of one-party dominance, governments have found it relatively easy to manipulate decisions by ensuring that disloyal judges would face lackluster future career options (Ramseyer, 1994; Domingo, 2000). A similar argument might prevail with statistical agencies, whose members—given the specificity of their skill sets—may find the options for gainful private sector employment restricted upon leaving the agency.

A second partisan calculation may lie in the need to monitor multiparty or multi-factional coalitions' representatives within the governing cabinet. Executives are unable to foresee all of the challenges that each of their appointees in diverse government agencies will confront, so they choose agency leaders based on the likely response of these leaders to known challenges.

¹⁸ An analogous argument exists in the literature on judicial independence, where such legitimacy encourages the public to "accept judicial decisions, even those they bitterly oppose, because they view courts as appropriate institutions for making such decisions." Gibson and Caldeira (2003).

¹⁹ See, for example, Chavez (2004), Finkel (2008), and Ginsburg (2003).

These likely responses are signaled through professional expertise, past professional performance, or partisan ideological attachments. In multiparty coalitions, however, oversight of diverse cabinet positions and partners can be a daunting task, which may encourage executives to create neutral laws and structures that permit them to monitor their allies more effectively. Michener (2015) explores this logic in the context of freedom of information laws, noting that the “benefits leaders derive from a monitoring tool such as [freedom of information] begin to outweigh the costs of greater public scrutiny as the number of parties administering government rises. Put differently, the value that leaders place on monitoring mechanisms increases with the number of parties holding cabinet portfolios” (Michener, 2015: 77). A similar logic may hold for statistical agencies: NSOs may serve as a valuable tool for monitoring and evaluating the performance of coalition allies and ensuring the policy coherence of the overall coalition. As the size of the governing coalition increases, the value of NSOs to incumbents may increase, as may their relative autonomy.

In sum, a combination of expertise, support structures, and partisan-coalitional politics may provide the contextual conditions that influence development of NSOs. Even when formal *de jure* protections are in place, the depth of NSO capacity and autonomy will be heavily influenced by the calculations engendered by these contextual conditions.

4. Conclusions

This paper underscores the central importance of NSOs to the development of government-wide state capacity. Developing the capacity and autonomy of NSOs is therefore essential to develop the state’s overall ability to respond effectively and efficiently to pressing public policy challenges. Yet developing NSOs is not simply a matter of overcoming resource scarcity or confronting the typical challenges of public goods provision. Given the importance of NSO credibility with partner agencies and publics, the political-economic context plays a central role through its effects on capacity and autonomy. This paper discusses several reasons why governments might choose to develop NSO capacity and autonomy despite the short-term costs of doing so. Finally, the essay points to the essential *de jure* protections that may enhance NSO autonomy, as well as the contingent contextual political-economic factors that may influence the effectiveness of such formal protections.

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