

Agency Performance and Executive Pay in Government: An Empirical Test

Anne Skorkjær Binderkrantz, Jørgen Grønnegaard Christensen
Aarhus University

ABSTRACT

Public management reform has drawn inspiration from principal agent theory and private management, and a favored reform strategy has been civil service reform that strongly recommends pay-for-performance. The hypothesis tested in this paper is that the incentive effect will improve public sector management. The basis is the performance management system introduced in Danish central government where access to both performance and pay data provides us with unique behavioral data. The system combines performance contracts with executive contracts for agency heads, who in this way can earn a bonus based on agency performance. We find no support for the hypothesis and discuss the result against principal agent theory, private sector experience, and bureaucratic theory.

INTRODUCTION

Since the 1980s, governments have launched reforms to improve public sector management. Some represent macro-level strategies and introduce institutional reforms and reorganizations to strengthen governance within the public sector. Other reforms rely on micro-level logics where the goal is to sharpen managerial focus on agency performance. Two strategies are used here. One introduces formal specifications of performance goals for individual government organizations. In some countries, this has been done through performance contracts entered between typically a ministerial department and the agencies reporting to it. Another strategy has been pay reforms that take a critical stance on classic civil service systems combining lifelong tenure with fixed pay scales. Traditional civil service employment has been criticized for being too stiff and consequently to provide few and weak opportunities for rewarding individual staff on the basis of differential performance. This reform wave is to a very large extent an international phenomenon and especially the Anglo-Saxon and the Nordic countries have launched reforms with a certain determination (Ketelaar, Manning, and Turkisch 2007; Organisation for Economic Co-operation and Development (OECD) 1994, 2005a, 2005b, 2008).

The reform strategies have often been pursued quite independently of each other, which in no way excludes that they will work. Still, the very reform rationale implies that if the specification of agency goals is formally linked to executive pay, then the incentives

We are extremely grateful for the comments received from three anonymous reviewers and the editor. We also want to express our gratitude to Bente Bjørnskov and Heidi Salomonsen for giving us access to data from agencies' annual reports. Address correspondence to the author at jgc@ps.au.dk.

doi:10.1093/jopart/mur039

Advance Access publication on July 29, 2011

© The Author 2011. Published by Oxford University Press on behalf of the Journal of Public Administration Research and Theory, Inc. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com

for improved performance will be very strong. A further implication is that if this condition is fulfilled, we have an ideal setting for testing whether the formal linkage of organizational performance and executive pay is also accompanied by an empirical linkage where directors in charge of well-performing agencies are rewarded through individual pay. The present paper will test whether this linkage exists.

The problem has attracted strong interest among scholars and practitioners. The general issue is whether public sector performance can be furthered through systematic reliance on financial incentives. Two lines of research have pursued this problem. One focuses on frontline personnel in order to uncover the role of financial incentives as opposed to other sources of motivation (Andersen 2009; Chalkley et al. 2010); here, the role of public service motivation has recently attracted particular attention (Langbein 2010; Perry and Hondeghem 2008). The other line of research focuses on managerial behavior and its influence on organizational performance (Meier and O'Toole 2010; Moynihan and Pandey 2005; Moynihan et al. 2011). This research is, among other things, preoccupied with the effect of financial rewards when it comes to motivating public managers to improve the performance of their organizations. This research is paralleled by a considerable body of analysis dealing with private corporations.

This scholarly interest is matched by a broad reform movement within OECD countries. Civil service and pay reform have figured prominently in these efforts to improve public sector performance. They are to a large extent documented by the OECD (OECD 2005a, 2005b, 2008). In that respect, a good comparative basis for analysis exists. However, there are two important limits to the use of these data for behavioral analysis. First, a systematic comparison of national reforms reveals considerable variation between countries (Goldfinch and Wallis 2009, 2010). Second, when it comes to the specific topic of civil service and pay reform, OECD primarily provides documentation on enacted policy rather than on implemented policy (see e.g., OECD 2005b). To this comes the difficulty of retrieving comparable data on both performance and pay. As a result analysis must be based on one country studies that limit generalization of any insights.

Danish central government here provides a unique test case. The reason is consistent reforms initiated since the early 1990s that combine performance contracts with executive contracts allowing for the payment of financial rewards to agency heads meeting the demands set up in this set of contracts. Still, exclusive reliance on Danish data naturally raises the issue of how representative the case is when it comes to inferring more general lessons. Particular attention here has to be given to pay policies negotiated within an institutional context holding an egalitarian bias and to a political and administrative culture with low scores in terms of power distance (Mouritzen and Svava 2002; Schedler and Proeller 2007). We return to the generalization potential of our results in the conclusion.

In a comparative perspective, however, the development mirrors a widespread belief that strengthening incentives for chief executives will increase performance in governmental agencies (Langbein 2010; Moynihan 2010). The view finds support in principal agent theory (PA theory) and in the claim that experience from private business provides evidence for a motivating effect of strengthening incentives. The issue is in no way settled (Ingraham 1993). On the one hand, the conventional position has been that the use of low-powered incentives in the public sector was a consequence of the complex, often ambiguous goals of public sector organizations. On the other hand, more recent research has pointed out other limits to the application of performance-related pay for chief executives.

First, the claim is that the alignment of incentives, presupposed by PA theory, faces an impossibility problem because the risk persists that the principal will renege on prior commitments (Miller 1992, 159–79; Miller and Whitford 2002, 2007). Second, empirical research, much in line with this theoretical work, indicates that the private sector experience with performance-related executive pay is much less conclusive than assumed by reform entrepreneurs in the government (Barkema and Gomez-Mejia 1998; Bebchuk and Fried 2004; Berrone and Gomez-Mejia 2009; Cruz, Gomez-Mejia, and Becerra 2010; Tosi et al. 2000).

So, it is quite open what to expect regarding the relationship between performance and pay. Still, we have a unique data set for testing the extent to which performance determines pay for chief executives in central government: Our data consist of the full set of performance contracts and chief executive contracts for Danish agency heads between 2000 and 2008. In addition, we have had access to the annual reports where agencies document performance on the demands set out in their contracts. Finally, the State Employer's Authority (Personalestyrelsen), an agency under the Ministry of Finance, has kindly given us access to the salaries of individual agency heads. Hence, we are able to link individual pay to agency performance. So, contrary to most other analyses of this issue, we can support our conclusions on behavioral data created within the government's managerial systems. This allows us to test principal agent theory's claim concerning the prospects of aligning agent incentives with the preferences of their principals.

We start out by reviewing the literature and developing our analytical argument. We then move on to a presentation of the institutional and political setting within which Danish reforms have been enacted. After a presentation of our data and research design, we carry out the empirical analysis in order to establish whether performance determines executive pay. Given the unique character of our analysis this is followed by an extensive discussion of the research agenda that emerges if our results can be generalized to other national settings where similar reforms have been on the agenda.

GOALS, PERFORMANCE, AND PAY

The literature on the pay-for-performance linkage is extensive but points in different directions. It remains open whether insights from private firms and corporations are transferable to public sector organizations and government agencies. Three streams of research are of particular relevance here: PA theory with its strong argument for linking executive pay and organizational performance; managerial behavior analysis, which questions the empirical validity of PA theory; and finally bureaucratic theory, which raises doubt as to what motivates civil servants. Much of the theory on executive pay and organizational performance is not very explicit about the institutional setting within which executive pay is settled. However, both the managerial behavior and the public administration literature emphasize its importance.

PA theory rests on the agency problems that arise if the agent's preferences differ from those of his principal, and information asymmetries inherent in a hierarchy make it difficult for the principal to monitor his agent. However, this agency problem may be alleviated by the design of proper incentives so that the incentives the agent faces are aligned with the preferences of the principal. According to PA theory, this can be implemented when a board of directors decides the size and the structure of the pay packet for the chief executive officer in order to align his incentives with the interests of shareholders. It is also, the claim

goes, what happens to a large extent in private firms so that executive pay can be expected to reflect corporate performance. But the causality involved is subtle. The interest clearly is in the possibility of furthering performance through managerial pay. But for methodological reasons, existing empirical studies focus on whether managerial pay follows performance. This implicitly involves a logic set out in two steps. First, executive pay is linked to organizational performance in the preceding period; next, the presumption is that this will create a financial incentive for the executive to improve performance in the coming period. Finally, the presumption is that the employment contract for the CEO formally specifies this linkage (Holmstrom and Milgrom 1991). In line with this reasoning, we will investigate whether executive pay is determined by corporate performance for the preceding financial year (Jensen and Murphy 1990a, 1990b).

For public sector organizations, problems are more complex. The standard view, often expressed in public administration textbooks, is that goals for public sector organizations are both complex and ambiguous (e.g., Wilson 1989, 129–36; cf. Rainey and Bozeman 2000). One corollary is that it is difficult to measure and even more difficult to monitor and control performance. The other corollary is that any idea of letting pay follow performance has traditionally been dismissed. Rather executive pay, that is, pay for agency heads, permanent secretaries, and other members of the senior civil service, has been based on classic civil service principles combining lifelong tenure with fixed pay grades and a pay-as-you-go pension at career's end (OECD 2005b).

This difference leads to a distinction between private corporations applying high-powered incentives for the chief executives and governmental organizations applying low-powered incentives in combination with hierarchical and other procedural controls to keep the behavior of agency heads within proper bounds (Dixit 2002). This is the logic behind the ministerial hierarchy in parliamentary systems. Interestingly, it is also the logic applied by political scientists that have translated economic PA theory into terms that they implicitly deem more relevant to the public sector setting of public bureaucracy. Economic PA theory sees the solution to agency problems in properly designed pay packets for CEOs; PA theorists in political science for their part emphasize the advantages brought about by the installation of equally properly designed procedures that on an *ex ante* basis induce agency heads to act in accordance with the preferences of the political principal, be that a unitary actor or a set of multiple principals (McCubbins, Noll, and Weingast 1987; Miller 2005).

The New Public Management and the Reinventing Government programs launched in the OECD countries do not accept the standard interpretations of the difference between private and public sector organizations. Rather the view is that government organizations will improve their performance if they apply the same managerial methods as successful private firms. This has resulted in the twin prescription that (1) performance goals should be specified so that they can be subject to systematic monitoring and (2) that the civil service system should be made more flexible to make it possible to reward performance through differentiated and higher pay to government executives (OECD 2005b, 2008). If, as is the case with managerial reform in Danish central government, this is implemented through a system of performance contracts at the agency level and individual contracts at the executive level containing a bonus clause, the conditions set up by economic PA theory have been met. This makes the Danish regime different from and much more stringent than the performance management systems introduced in other national settings. Contrary to them, it can be seen as an approximation to the incentive logic inherent in PA theory (Barzelay

2001, 116–20). Still, it remains an empirical issue whether these combined mechanisms actually link individual pay at the executive level to agency performance.

Managerial behavior analysis has raised considerable doubts about the empirical validity of PA theory when applied to private corporations. PA scholars to some extent acknowledge them, but they argue that the problems arise because the mechanisms in executive pay packets have not been properly designed (Jensen and Murphy 1990a, 1990b). It is a challenge to be solved in more refined job and contract designs or through careful design of corporate governance institutions warding off executive capture (Bertrand and Mullainathan 2001). Other scholars conclude that the correlation between performance and executive pay is weak and often nonexistent. Their basis is empirical research focusing on managerial behavior and based on organizational sociology. A comprehensive meta-analysis of CEO-pay studies by Tosi, Werner, Katz, and Gomez-Mejia (2000) finds that firm performance accounts for less than 5% of variation in CEO pay. Later studies reach similar conclusions (Bebchuk and Fried 2004; Berrone and Gomez-Mejia 2009; Cruz, Gomez-Mejia, and Becerra 2010). Moreover, Jensen and Murphy (1990a, 261) in their classical study concluded that “on average, each \$1,000 change in shareholder wealth corresponds to an increase in this year’s and next year’s salary and bonus of about two cents”. But their implication is that the pay-performance link should be strengthened in order to provide executives with a combination of much stronger and differently structured incentives and penalties (Jensen and Murphy 1990b). Similarly, Holmstrom and Milgrom (1991, 34) draw attention to “the paucity of explicit incentive provisions in actual contracts” and see it as an empirical fact that PA theory has difficulty accounting for.

Bureaucratic theory is equally skeptic of the existence of an unambiguous linkage between performance and executive pay. Weber’s theory of bureaucracy saw civil servants, recruited and promoted on merit criteria, guaranteed lifelong tenure and a pension, as office carriers performing the tasks that constitute their particular role within a professional, but politically controlled hierarchy. Hence, civil service status was supposed to make them immune to impulses that carried them away from the obligations attached to their office (Weber 1921/1976, 124–7, 551–6). This, according to Weber, in no way did away with agency problems, but they were to be solved through institutional checks (Weber 1918/1988, 352–8). Miller (2000) has come to very similar conclusions, claiming that government officials operating within a professional civil service to a large extent respect norms that mitigate the agency problem. The argument has been expanded to demonstrate that the agency problems set out in both economic and political science PA theory are generally overestimated as both managerial and rank-and-file staff are motivated by other factors that together create a dedication to the organization they work for and the tasks assigned to them (Miller and Whitford 2002, 2007).

A sizable literature critically discusses the relevance and consequences of pay-for-performance schemes in the public sector. Often, it does not test the relationship between pay and performance, regardless of the causal direction. Rather it combines theoretical analysis and discourse with case stories that together raise doubts about the strength of the model (cf. the excellent review in Moynihan 2008). In an interesting paper, Weibel, Rost, and Osterloh (2010) have conducted a meta-analysis of the pay-for-performance relationship in the public sector. On the basis of 46 experimental studies, they conclude not only that performance-related pay improves performance for public employees with non-interesting tasks but also that it reduces performance for staff with interesting tasks. They

combine the meta-study with an experiment-like study where they try to uncover the motivation of upper-level civil servants who were presented with vignettes describing a complex project-type task environment deemed characteristic for their jobs. In the vignettes, performance was measured as the respondents' willingness to invest additional hours in solving the task. Moreover, a distinction was made between fixed pay and performance-related pay, while motivation was measured on a scale ranging from highly intrinsic to highly extrinsic motivation. The analysis shows both pay-for-performance and intrinsic motivation to have a positive effect on the willingness to put extra hours into a task although intrinsic motivation is a much stronger factor. But the analysis also shows an interaction effect where pay-for-performance has a strong negative effect on intrinsic motivation and a positive effect on extrinsic motivation (Weibel, Rost, and Osterloh 2010, 403–4).

The literature reviewed above does not allow firm conclusions. We have a strong and coherent PA theory that allows testing with the data we have; this is not the case with hypotheses derived from bureaucratic theory. The problem with PA theory is its exclusive focus on private corporations and weak empirical support. Still, within the public sector, it has served as a source of inspiration for a vociferous reform movement that both refers to PA theory and presents the private sector as model for pay reform within government. However, such references to the private sector experience are often scanty as noted by Ingraham (1993, 349). Academic public administration has countered the reform movement. Yet, these studies suffer from certain limitations. Three are particularly serious. First, the performance measures are often either unspecified as noted by Perry, Mesch, and Paarlberg (2006, 507–8) or do not focus on performance in terms of goal achievement (see Weibel, Rost, and Osterloh 2010 above). Second, data mostly take the form of reported rather than observed behavior or they originate from experimental studies (Dull 2008, 261; Weibel, Rost, and Osterloh 2010; cf. Moynihan and Ingraham 2004, 437–8). Third, most studies deal with public employees in general and thus do not distinguish between rank-and-file employees and civil servants in managerial and executive positions. This is an important limitation as the two groups may differ from each other in their reaction to pay-for-performance schemes (Weibel, Rost, and Osterloh 2010; cf. Holmstrom and Milgrom 1991). So, even if these critical studies come to conclusions that are in line with the claims made within bureaucratic theory, they hardly offer a test of propositions derived from it.

Given this state of our knowledge, it is quite open what to expect. Still, the combination of general pay reform and introduction of performance contracting in Danish central government has linked executive pay to agency performance. This together with the type of data we have collected allows us to test the following hypothesis derived from PA theory: *For agencies that combine a performance contract with an executive contract, improved performance at the agency level will increase the bonus as well as the total pay of agency heads.*

INSTITUTIONAL AND POLITICAL SETTING

The organization of Danish central government builds on relatively consistent principles. Departmental ministers enjoy considerable autonomy and have executive authority over a ministerial administration. This administration is generally two-layered, consisting of a department serving as secretariat to the minister and one or several agencies. Agencies have their own budget and staff but are subject to executive control by the minister and the

Table 1
Agencies with Performance Contracts and Executive Contracts. Percentages

	Number of Agencies	Agencies with Performance Contract	Agencies with Performance Contract and Executive Contract
2000	56	62.5	39.3
2005	59	91.5	71.2
2008	62	93.5	77.4

department to which the agency reports. The precise interface between a department and its agencies may vary, although the general idea behind the department-agency model is that ministers delegate current policy implementation to agencies (Binderkrantz and Christensen 2009b).

The department-agency organization has been expanded with a system of performance contracts, which was launched on an experimental and limited basis in the early 1990s but is now close to universal (see table 1 for an overview). The performance contracts specify a set of demands to be met by the agencies in the period ahead. The demands are numerous ranging from the agency's obligation to launch a specific project or event to the specification of policy- and output-related demands. The result is a multifaceted document covering a broad field of activities, but performance demands are in most cases phrased in terms allowing observers to evaluate whether the demand has been met. It is thus relatively straightforward to establish the precise nature of the demands (Binderkrantz and Christensen 2009a, 2009b). Also agency performance is routinely reported in annual agency reports.

Performance contracts ideally present a solution to the goal complexity and goal ambiguity that is often acknowledged to mar public sector organizations and thus to overcome the challenges that face systematic performance management in government. Thus, ideally, performance contracts may focus managerial attention to performance. However, a question remains regarding the demands included in contracts compared to other dimensions of performance not covered by the contracts: they rarely specify efficiency- and cost-related demands (Binderkrantz and Christensen 2009a, 2009b). Moreover, in principal agent terms, the contractual relationship is complex as it involves a triple relationship between (1) the department and the agency, (2) the permanent secretary and the agency head, and (3) the agency head and agency staff. Finally, the Audit of the State Accounts has shown that demands specified in performance contracts are generally proposed by the agency and then accepted by the ministerial department. With some notable exceptions, it is even evident that performance contracts are a managerial responsibility rather than a task that departmental ministers engage in (Audit of the State Accounts 2009).¹

Parallel to the streamlining of central government organization civil service reform has been enacted. This is the result of a continuous and gradual process originating in the 1960s (Andersen, Christensen, and Pallesen 2008, 259–64), which altogether still amounts to a comprehensive reform (Gregory and Christensen 2004; State Employer's Authority 2001). Government employees nowadays rarely enjoy civil service status; rather they are employees whose salary and other conditions are defined in a collective agreement. This also applies to the agency heads in focus in this analysis; moreover, they are often

¹ Select interviews conducted by graduate students and ourselves confirm this.

employed on fixed-term contracts, normally for a period of 5 years with an option for discretionary renewal for another 3 years. Civil service reform has been accompanied by an equally gradual pay reform, starting in the late 1980s and brought further up to the present (Christensen 1994; Gregory and Christensen 2004). It has several components, but the general rationale is to make pay systems more flexible and to allow for more individual variation. In the case of executive pay, this involves the creation of an allowance for fixed-term appointments, an allowance for executive responsibilities, a discretionary allowance for outstanding performance, and finally a bonus linked to performance as set out in the agency's performance contract and in the executive contract that typically states the agency head's responsibility for implementing the performance demands set out in the contract. Importantly, the Ministry of Finance in its guidelines states that the performance bonus must not exceed 25% of the basic salary of an executive, including permanent allowances (State Employer's Authority 2009). In 2008, 77.4% of agencies were covered by a combined performance and executive contract.

The contract management system and the managerial evaluations accompanying it may appear quite streamlined. Yet departmental ministries enjoy considerable autonomy, which they invariably exploit to develop their own organization, governance systems, and managerial practices. This is also clearly evident in the wide variation in the way performance contracts have been implemented in the central government (Binderkrantz and Christensen 2009a, 2009b).

Here, one caveat is due. Executive contracts may be seen as a practical example of how systematic contract management can contribute to a solution of agency problems that arise because the instruments used to guide and control agents rarely provide the agent with an individual incentive to behave accordingly. This may be so, but only to a certain extent. The reason is that the performance and the executive contracts are incomplete contracts without a claim to cover all contingencies related to the agency head's tasks; neither is the executive contract an employment contract. If the agency head enjoys civil service status no such contract exists. However, many agency heads today have fixed-term employment, and in their case, a formal employment contract has been entered specifying their full salary, including a differentiated set of pay components, the period of employment, as well as the conditions for extension. Contrary to the executive contract, the employment contract is subject to judicial trial.²

Neither governmental reorganization nor gradual and wide-ranging pay reform have high political salience. Clearly, the system operates within severe political constraints. In organizational terms, they involve the supremacy of political executives, emphasizing their access to intervention into managerial decisions, even when these have been delegated to agency heads. Similarly, pay policy and civil service reform are regulated through a tightly knit bargaining system where almost all issues are subject to negotiation between the State Employer's Authority and public sector unions (State Employer's Authority 2001, 91–100). Moreover, the assumption is the involvement of local union representatives in negotiations. One implication is that the collective bargaining system constrains autonomy at the agency and ministerial level. Another implication is that the negotiation of individual pay, for example, for agency heads involves their union. Here, it is important to note that an

2 Compared to civil service employment fixed-term contracts involve a pay and pension premium to compensate for higher job insecurity. However, executive job insecurity over time has increased significantly for either group of top civil servants (Christensen 2011).

agency head typically will see his pay defined in a contract negotiated with union assistance, while the bonus defined in the executive contract is an internal and routine responsibility for the agency head and the permanent secretary.

The precise importance of these constraints is difficult to determine *prima facie*. But they point to the possibility that even if pay has been officially linked to performance and even if modern pay policy emphasizes the importance of delegation and decentralization in pay, policy actors are so heavily constrained in institutional and political terms that any causality between performance and pay, whatever the direction, becomes *dreggy*. Studies of executive pay in private firms reach a similar conclusion, stressing the influence of institutional factors, such as remuneration committees, ownership structure, and the allocation of authority within a corporation (Bebchuk and Fried 2004; Berrone and Gomez-Mejia 2009). In a critical discussion of the weak correlation between corporate performance and executive pay, Jensen and Murphy (1990a, 254) noted that “managerial labor contracts are not, in fact, a private matter between employers and employees. Strong political forces operate in both the private sector (board meetings, annual stockholder meetings, and internal corporate processes) and the public sector that affect executive pay. Managerial contracts are not private because by law the details of the pay package are public information open to public scrutiny and criticism.” In addition to this, the possibility that the really tough incentives may not be related to pay and bonus but to tournaments where more junior staff competes for promotion and executives face real a risk of losing their jobs (see e.g., Orrison, Schotter, and Weigelt 2004). Thus, in the light of these empirical results, focus turns away from the performance-pay linkage to the conditions under which executive pay is settled. We will return to this below.

DESIGN AND DATA

Contractual Management

Contractual management consists of performance contracts entered between ministerial departments and their agencies, executive contracts entered between permanent secretaries and the agency heads reporting to each of them and finally annual reports documenting agency activities and goal achievement for the previous year. The reports are defined as an integral part of the central government performance management system. According to the Ministry of Finance guidelines, the report shall register each demand set out in the performance contract, document whether they have been met, and finally indicate the degree of goal achievement (Danish Agency for Governmental Management 2009, 13–14; Ministry of Finance 2010). During the development of this system, a systematic procedure for evaluation of agency heads’ individual performance has been established.³

Dependent Variable

The dependent variable in the analysis is annual pay to agency heads. Their salary consists of several components. We focus on two, namely (1) the size of an annual bonus and (2) total pay, including contributions to pension schemes, special allowances, and the annual

³ While agency heads are evaluated by their permanent secretary, the permanent secretaries from the departmental ministries are evaluated through a procedure involving both the State Employer’s Agency and the permanent secretary of the Prime Minister’s Office.

bonus. While total pay is straightforward, the bonus is not, mainly because any bonus paid to an agency head may consist of several components, of which only some are related to the executive contract. In formal terms, the entire bonus is defined as a one-off remuneration paid to the agency head at the end of the year. Whether this remuneration is just the bonus defined in the executive contract is not clear as the data stored with the State Employer's Authority do not allow further breakdown of the figures. It is therefore possible, and probably often true, that the figures include both a performance bonus paid out with reference to the executive contract and a discretionary bonus that is paid irrespective of clauses incorporated in the contract. Such discretionary remuneration has always been part of the Danish civil service system (Christensen 1994). Therefore, the bonus measure defined within the official pay system is broader than the bonus concept defined for use within the system combining performance contracts with executive contracts for agency heads. This conceptual inconsistency indicates that there may be a difference between the performance measures laid down in the contract management systems and the performance standards applied by permanent secretaries when deciding whether an agency head shall receive a one-off remuneration on top of his salary for his all-round performance over the past period. Still, investigating the existence of a systematic linkage between agency performance and bonus paid to agency heads constitutes the strongest test possible of the performance-pay link. But even if this is the case, the provision for a discretionary element in executive pay underlines the complexity involved in determining what constitutes laudable performance for agency heads.

Independent Variable

The independent variable is the degree of goal achievement. We have calculated this by combining information on performance demands in performance contracts with the goal achievement registered in agencies' annual reports. Goals registered in the performance contracts have been compared with the reports on goal achievement in the annual reports. For some 10% of the performance demands, there is no matching information in the annual reports. This is generally not a big problem, and the demands on which there were no achievement reports were simply left out of the analysis. But for a handful of contracts, the discrepancy between the two documents is large. Therefore, contracts for which the annual report contained goal achievement information on less than 75% of the performance demands were eliminated from the analysis.⁴

Control Variables

We include three control variables in the analysis. One is whether the agency's performance contract has been expanded with an executive contract or not. Another is agency size as we know that the civil service grades and thus salary to some extent mirror the size of the organization as defined by the number of staff. The third is the number of years during which agencies have had performance contracts. The inclusion of this variable allows us to estimate whether experience with performance contracting influences the relationship between performance and pay. We are not sure about the sign of the relationship. It may take time to gain sufficient experience with pay-for-performance so that a positive effect only

4 An analysis including all cases has confirmed the robustness of our results based on this sample.

appears after some years. However, the effect of pay-for-performance may gradually be muted because executive pay is determined on another basis and possibly also because the system may lack credibility. Finally, it is possible that the average bonus or salary of agency directors changes over time. Therefore, it could be relevant to include dummies for 2005 and 2008. These are, however, rather closely correlated to the variable capturing experience with performance contracts. Since almost all agencies had entered performance contracts by 2005, from 2005 to 2008 most agencies simply gained another 3 years of experience with performance contracting. In consequence, we test the possible effect of dummies for 2005 and 2008 in an alternative model not including number of years with performance contract. Substantially, this means that any effect of the time-related variables must be regarded as tentative as it is difficult to establish whether it is due to general developments or to individual agencies gaining more experience with performance contracting.

Other control variables might also have been relevant, for example, the organizational structure of ministries or the task environment of agencies, which both vary considerably. Yet, even if we have found that the content of performance demands varies with these variables, there is no relationship between them and agency goal achievement (Binderkrantz and Christensen 2009b). Therefore, we have left them out.

Finally, the institutional and political setting involves considerable decentralization, but executive pay is still negotiated within a system where unions have considerable influence on implementation and where de facto centralization applies when it comes to executive pay (OECD 2005b). First, the employment contract is negotiated with participation by the civil service unions; second, the executive contract that holds the performance clause is highly standardized. Therefore, the institutional setting within which executive pay-for-performance has been implemented is quite uniform so that it can be regarded as a constant. This corresponds to findings from other countries (Boyne, Jenkins, and Poole 1999; Ingraham 1993; OECD 2005b; Weibel, Rost, and Osterloh 2010).

Data Set

Table 2 provides an overview of our sources and specifies information retrieved from a particular source as well as operationalization. In order to analyze whether there is a link between organizational performance and executive pay, all information is related to the individual level of agency heads, that is, the name of the agency head who signed the performance contract, was part in an executive contract, and finally was responsible for the annual report. In addition, we have information on both the total pay to the agency head and the part of the salary paid as a one-off remuneration to the named agency head. These individual level pay data are kindly provided by the State Employer's Authority under the strict condition of confidentiality.

By combining information from these data sources, we have constructed an independent variable measuring aggregate performance as set out ex ante in performance contracts and registered ex post in annual agency reports. Similarly, due to our access to pay data, we have been able to link individual pay to agency performance in cases with and without an executive contract. The analytical implication is that we have a unique opportunity to establish the extent to which performance measured as the degree of goal achievement influences executive pay to agency heads. Our data set comprises the entire universe of units, which is important given the limited number of observations (Moynihan and Ingraham 2004, 433–4).

Table 2
Data and Operationalizations

Information	Data Sources	Operationalization
Independent variables		
Goal specifications	Performance contracts	Listing of performance demands
Goal achievement	Annual reports	Listing of performance by demand
Performance	Database combining information from performance contracts and annual reports	1. Aggregate performance defined as percentage of demands met 2. Percentage of demands met for select performance indicators
Dependent variables		
Executive pay	Data provided by the State Employer's Authority	1. Total pay in current year 2. One-off remuneration in the year following the contract and report period
Control variables		
Use of executive contracts	Executive contracts	Listing of agencies whose heads have entered a contract involving a performance-related bonus
Agency size	Central government budget	Staff as number of full time equivalents
Years with performance contract	Performance contracts	Number of years since first contract

Model

The data set consists of observations from agencies with performance contracts in 2000, 2005, and 2008. This raises two concerns in relation to modeling the relationship between performance and salaries. First, each agency may be included in the data set more than once and the data must therefore be described as panel data. In modeling the relationship, it therefore needs to be considered how factors related to individual agencies could affect the dependent variables. Second, three different time periods are included, which raises the possibility—as discussed above—that general changes over time may affect bonuses and total salaries.

To accommodate these concerns, the multivariate analyses of agency head bonuses and salaries are done using a GLS model. Different models have been tested yielding similar results, but the results reported in table 5 are based on fixed-effects models in order to fully control for variation due to factors specific to each agency. Tests utilizing the Durbin-Watson statistic have demonstrated that autocorrelation is not present in the analyses.

THE PERFORMANCE-PAY LINKAGE

The idea behind contractual management in Danish central government has been to clarify agency goals and to establish an explicit basis for monitoring goal achievement; an effort undertaken at the organizational level. However, the development of executive contracts underlines agency heads' personal responsibility for fulfilling the demands set up for their

Table 3
The Linkage between Performance and Executive Contracts

	Percentage of Executive Contracts	<i>N</i>
Cross-reference to performance contracts	98.4	64
Bonus clause in executive contract	68.8	64
Formula for bonus calculation	67.2	64
Discretionary judgment	67.2	64
Negotiation clause	7.8	64
Sanctions at nonperformance	71.9	64

Note: Covers contracts for 2000 and 2005.

agency. This effort to establish personal commitment is emphasized with the inclusion of a bonus clause in their contracts.

By 2008, 77% of all agencies with a performance contract were also covered by an executive contract (cf. table 1 above). As table 3 shows the two types of contracts in these cases explicitly refer to each other, 68.8% of the executive contracts (2000 and 2005) had a bonus clause. Typically, the clause combined a formula for calculating the bonus with a discretionary element. This discretionary element was in a few cases linked to a negotiation between the agency head and the permanent secretary of the agency's mother department. In the remaining more than 90% of the cases, the clause simply distinguished between the mechanisms defined in the executive contract and the discretionary element applied by the permanent secretary. This performance bonus is part of a one-off remuneration paid to agency heads; for 2000 and 2005, it made up 7.1% of their total pay on average; in 2008, 7.8%.⁵ As noted above, the data do not allow a distinction between the share of this remuneration calculated according to the contract formula and the share based on the permanent secretary's discretion. Neither does it distinguish between bonus paid with reference to the performance and executive contracts and parts of the remuneration paid on another basis. Still, the total one-off remuneration is very far from the 25% limit in the Ministry of Finance guidelines.

Executive contracts in most cases also specify negative sanctions that can be applied in case of nonperformance. A typical sanction can be the discretionary reduction of the bonus in case the permanent secretary finds performance less than satisfactory, thus underlining the agency head's personal accountability. Yet, the use of sanctions seems rare and financially modest, but if made public, they expose the agency head's personal responsibility for things going wrong.⁶ This raises the question of both the performance criteria used to identify unacceptable performance and the types of punishment used to signal it. We take this up in the discussion below.

Table 4 shows that there is considerable variation in salaries and bonuses paid to agency heads. Bonuses vary from nil to close to DKK 200,000 and are on average some 43% higher for agency heads in the upper quartile compared to agency heads in the lower quartile. This variation is much higher than the variation in total pay. Here, agency heads in

⁵ Data from the State Employer's Authority. The figures are not shown in the table.

⁶ This happened according to press reports for the national police chief when the implementation of a large-scale police reform ran into difficulties, resulting in vehement political criticism. Of a maximum performance bonus of DKK 100,000, only DKK 85,000 were paid. The reduction, according to a letter from the Department of Justice, was due to citizen services that did not meet the performance demand (*Politiken* June 26, 2008).

Table 4
Distribution of Bonus and Total Salary (2000 prices)

	Bonus	Total Salary
Mean	75,600	1,055,100
Minimum	0	698,600
Lower quartile	62,300	947,000
Upper quartile	89,200	1,142,000
Maximum	192,700	1,590,300
<i>N</i>	124	109

the upper quartile receive 21% more than the mean for their colleagues in the lower quartile. The strong variation in bonus payments shows that the system is used to differentiate executive pay.

The ultimate question then is whether these bonus payments are related to performance as defined in the contracts and documented in agencies' annual reports. In the analyses presented in table 5, the sizes of bonuses and of total salary have been regressed against the performance indicator. In either case, we show the results for three models. Model 1a and 1b just contain agency performance with the existence of an executive contract as the sole control variable. The regression shows a positive, but modest and insignificant relationship between performance and bonus, while the positive relationship between performance and total salary turns out to be significant. We have also included a dummy variable that indicates whether the agency had an executive contract or whether it just operated under a performance contract; as shown in table 1, the latter was the case with most agencies in 2000 while it only applied to 29% and 22% of all agencies in 2005 and 2008, respectively. The analysis shows that agency heads with an executive contract are paid a higher bonus than the heads of agencies that do not add an executive contract to the performance contract; this difference is significant. The same relationship applies for total salary, but now it is no longer significant.

Model 2a and 2b include two additional control variables. Again, there is a positive relationship between performance and both the size of bonus and total salary, but the relationships are insignificant. However, there is a stronger, positive and significant relationship between the number of years agencies have had a performance contract and total salary received. This finds further support in model 3a and 3b, which also include interaction between the use of executive contract and goal achievement. Again, we find a positive, although insignificant, relationship between performance and bonus as well as total salary. The positive relationship between the number of years an agency has been covered by a performance contract, and executive pay is confirmed and significant.

In alternative models (not shown), we have included dummies for 2005 and 2008 rather than the variable for experience with performance contracts. These dummies turn out to have positive effects on both the size of bonuses and the total salary, but only the effects on salary are significant. Because of the problems with high correlation between contract experience and year, it is not possible to conclude whether the time effect is due to general rises in salary or to factors more directly related to performance contracting. Most likely, the introduction of performance contracts has gradually been accompanied by increased executive pay, while more general developments in the total salary paid to top civil servants have also been present.

Table 5
The Performance-Pay Relationship. GLS Fixed-Effects Regression

	Size of Bonus ^a			Size of Total Salary		
	1a	2a	3a	1b	2b	3c
Models						
Constant	301	301	335	7,647	8,613	6,971
Executive contract	223*	175	139	608	-352	1,557
Goal achievement	389	233	189	3,366***	831	3,061
Agency size		0.05	0.05		0.15	0.15
Number of years with performance contract		15	15		218***	217***
Interaction contract and goal achievement			52			-2,562
R ² (overall)	0.031	0.002	0.02	0.004	0.225	0.216
N	124	124	124	109	109	109

Levels of significance: *0.1 level, ***0.001 level. Dependent variable deflated with consumer price index.

^aThe bonus figure equals the total one-off remuneration that contains the performance bonus as well as a possible discretionary bonus that is formally not related to neither the performance nor the executive contract. An analysis yielding similar results has been conducted using the size of bonus relative to the total salary as dependent variable.

The information gained from the regression is straightforward. The relationship between goal achievement according to agencies' annual reports and pay to agency heads is weak and insignificant. This is the case for both bonus pay and total salary, and the pattern applies across the models where control variables are included. Hence, the PA hypothesis is rejected. However, we also find a positive and rather significant relationship between the length of an agency's subjection to performance contracting and total executive pay. While explained variance is weak for models 1a, 1b, and 2a, it increases to about 21% for model 3b and 3c. In our interpretation, this has two implications. The first is that the introduction of performance-related bonus pay in combination with performance contracting does not establish a strong connection between performance management and executive pay. The second is that managerial reform and government pay policies seem to be quite closely related, but neither in the way reformers claim nor in accordance with principal agent theory.

DISCUSSION

Performance-related pay has been a central component in both civil service reform and in strategies aiming at the improvement of managerial performance within the public sector. The reform movement persists even if the OECD admonishes that no panacea is available (OECD 2005a). Our results strongly endorse this moderate conclusion, but they also raise a series of questions when put in the broader perspective of the scholarly literature. Below we briefly discuss five issues, which we find particularly important both from an analytical and a policy perspective: (1) the relationship between managerial responsibilities and executive pay, (2) the prospects for lesson-drawing from private to public management, (3) the classic civil service conception and managerial reform, (4) our understanding of interactions at the executive level in government, and finally (5) the analytical challenges and trade-offs involved in studying managerial performance in government.

First, the pay aspect of civil service reform has not distinguished sharply between different groups of public employees. The general idea has been that traditional pay systems were too inflexible and especially that they contained too few and too weak incentives to individual employees, regardless of their tasks or hierarchical position. So, even if in the Danish case, a distinction is made between pay-for-performance to on the one hand rank-and-file staff and managerial staff and on the other hand executives, the inherent logics are identical. However, the finding that executive performance does not determine executive pay in no way allows us to generalize this conclusion to all groups of public employees. It is possible that performance-related pay, if properly designed, might work for staff without managerial tasks. At the same time, there are strong arguments that it will not work for senior civil servants working at the top executive level. PA theory actually offers one important reason for this, namely, that executives multitask to an extreme degree, which makes it difficult to design a pay schedule that takes the full range of their responsibilities into account. In addition to this comes that the performance ascribed to the chief executive to a very large extent is the result of teamwork implying contributions from the entire organization (Holmstrom and Milgrom 1991; Miller 1992). This argument has been directed toward the problems in private corporations but applies equally well to government. The combined system of performance and executive contracts implemented in Danish central government can be seen as a quite sophisticated attempt to overcome this problem. But it is telling that the system is designed and managed in a way that allows a strong discretionary element when it comes to deciding the size of the individual bonus. This indicates that performance matters but also that performance evaluations by the permanent secretaries have not been put on a formula. This is further supported by the fact that bonus pay varies considerably, even if it is unrelated to the official performance reports. In addition to this comes, the question of the precise character of motivation where it is reasonable to assume that top executives like agency heads have challenging tasks, which in itself is rewarding. In this situation, there is doubt about whether a financial incentive will work and even if it will have unintended consequences (Weibel, Rost, and Osterloh 2010).

Second, a central premise for the pay-for-performance reform is drawing lessons from the private sector. This touches upon two vital issues, namely, whether transfer is possible, and if so what the private sector lesson is. The standard answer to the former question has been that public and private management are fundamentally different, implying that any similarities are trivial (Allison 1984). However, recent literature questions this. Rainey and Bozeman (2000) pointed out that there is a divide in the scholarly literature where economics and political science emphasize the differences and organization sociology the commonalities. In their own analyses, they come to a much more nuanced position that is supported by other research (Boyne 2002; Boyne, Jenkins, and Poole 1999). Hence, lesson-drawing is possible, but it presumes careful analysis of when it is defensible and what the lesson is. This brings us to the latter issue where James (2001) has rightfully questioned whether we can just assume private business to hold a uniform practice and thus also to offer one general lesson to be learned. Still, the design of our study allows lesson-drawing for three reasons: (1) We study a narrow, but also sharply outlined field, that is, to explore whether there is a link between managerial performance and executive pay in the public sector. (2) This is possible because Danish public management reform over a long period has developed a system that combines performance contracts entered between ministerial departments and central government agencies with a system of executive contracts for

agency heads; these contracts increasingly contain clauses that foresee bonus payment to agency heads that are linked to organizational performance as specified in agencies' performance contracts and reported in their annual reports. With access to individual level pay data, we have been able to conduct an empirical test of the presupposed link. (3) A huge and lively literature reviewed above deals with the same issue for corporate managers. The analytical question raised here is identical to ours.

This allows us to conclude that in this respect similarity prevails as performance is not related to executive pay in either sector. While this conclusion is backed up by many studies of corporate practices this is one of the very first for government. Other conclusions might therefore be reached in different national contexts or for other types of public sector organizations than central government agencies. There are, however, good reasons to assume that our result may be generalized. Civil service reform and the introduction of performance management have been long term and systematic in Danish central government. Moreover, acceptance of both is high, in political as well as civil service circles. So the fact that we are unable to establish a performance-pay linkage there makes it unlikely that we will find it elsewhere. Finally, it also supports our claim for generalization that no such correlation has been documented for private firms where, *ceteris paribus*, performance criteria remain simpler and much easier to transfer from one firm to another.

Third, the managerial reform movement as represented first of all by the New Public Management sees pay and more generally civil service reform as central parts of a strategy to improve public management and more generally public sector performance. Our results question the validity of this reasoning as pay is not related to performance in the way claimed by PA theory and the managerial reform movement. This in no way implies that executive pay is a trivial issue. Once more there is a parallel to the studies of executive pay in private corporations. This literature reveals disagreements about the nature of executive motivation and about the prospects for devising a job and contract design that more precisely links pay to performance, thus aligning managerial incentives to the preferences of the board of directors. But across such disagreements, there is agreement that executive pay is an important and sensitive issue and with strong political overtones. The political salience stems both from intraorganizational relations and from political constraints that operate at the societal level (Bebchuk and Fried 2004; Jensen and Murphy 1990a; Tosi et al. 2000). Our results similarly indicate that executive pay in government is an issue in its own right. On the one hand, our analysis demonstrates how pay reform based on the pay-for-performance rationale has given top civil servants more in their wallets; on the other hand, it demonstrates how the regime is administered with conspicuous circumspection as actual performance bonuses are held well within the guidelines defined by the Ministry of Finance. This observation is well in accordance with comparative studies of pay to the incumbents of high public office (Hood and Peters 1994; Hood, Peters, and Lee 2003). But these very studies also reveal the importance of varying national contexts, an observation that also applies to the private sector (Bruce, Buck, and Main 2005). We draw two corollaries from this: Performance management and pay policy are independent of each other; and executive pay policy deserves analysis in its own right.

Fourth, our results are relevant for understanding interactions within the executive hierarchy. A central concern for economic PA theory is how to overcome the agency problem. Classic bureaucratic theory acknowledges the existence of this problem as does political PA theory. But where economic PA theory sees a solution in the design of proper

incentives, Weberian theory and political PA theory concur in their focus on institutional and procedural constraints as the preferred instruments. Our results support the latter interpretation in a double sense as financial incentives seem largely irrelevant, while agencies and agency heads are subject to tight controls. Performance contracts can be seen as a modern form of such controls (Binderkrantz and Christensen 2009a, 2009b), but probably more important is that agencies operate in an extremely tight interaction with their mother department and through them with departmental ministers who in Danish central government are strongly positioned as political executives for any organization within their portfolio.

This raises an additional issue as to the true nature of the principal agent relationship in governmental hierarchies, which is important because the interaction between a principal and his agents implies several risks: the agent may shirk; the principal may violate promises given to his agents in order to confiscate the gains created by an agent responding to the incentives designed by the principal (Miller 1992, 2000); political principals may give in to short-term political incentives that compromise policy commitments entered earlier and laid down in, for example, budgets and laws. Therefore, the organization's problems can only be solved if the principal realizes the necessity of establishing a credible commitment vis-à-vis the agent: "This means that principal agent theory has it just exactly wrong: The problem is not for principals to impose their preferences on their agents, the problem is for principals to be restrained from undermining efficiency through the imposition of their rent-seeking preferences" (Miller 2000, 313–14). This problem has not been analyzed here, but one incident illuminates its relevance to the way performance management and performance contracting operate within Danish central government. In recent years, food safety has figured prominently on the political agenda. After a comprehensive reorganization, the Danish Veterinary and Food Inspection gradually improved its performance, generally meeting the demands in the agency's performance contract. Still, first financial management problems since prolonged criticism of apparently lax inspection standards led to consecutive replacements of the agency head and eventually to the minister's resignation (Audit of the State Accounts 2006). This is part of a more general pattern where top civil servants, among them agency heads, only serve in their offices for a relatively short period (Christensen 2006; Christensen 2011). This development in no way makes performance irrelevant. But it raises the question of what the performance criteria are by which agency heads and other senior civil servants are evaluated and where failure to pass the evaluation may eventually cost them their post. It is telling that the Department of Justice in an audit report on its financial management is quoted as giving "first priority to serving the minister and to ensuring that its agencies stay within their budgets" (Audit of the State Accounts 2004, 22), standards that rarely figure explicitly in performance and executive contracts (Binderkrantz and Christensen 2009a, 2009b). Thus, the discretionary element involved in interactions between permanent secretaries and their agency heads may decouple the link between contractual performance and bonus pay. Permanent secretaries are instead applying a broad range of criteria when they decide the size of the total one off remuneration for each of their agency heads. These discretionary decisions involve consideration of the specific challenges of the previous year, the complexity of the agency's tasks, and the agency head's ability to anticipate and accommodate ministerial and political

concerns.⁷ The interpretation finds support in the development of an increasingly tough practice where agency heads are replaced if they fail in managing their organizations (Christensen 2011).

Fifth, with the present analysis, we have conducted a quantitative study of the relationship between agency performance and executive pay in government. With these data, we have been able to carry out a systematic study with focus on behavior rather than on attitudes and perceptions. The ensuing analysis has allowed us to reach new insights into managerial reforms, the way these reforms have formally been linked to executive pay and civil service reform, while unraveling the weak linkage between them in actual behavior. Our analysis has also showed that the system of executive bonuses is apparently used in a very discrete way. Even if bonus payments are relatively modest and kept well below centrally defined limits, bonus payments vary considerably from agency head to agency head. With the quantitative data at our disposal, we have not been able to uncover the criteria behind this differentiation. As indicated above, broader criteria than those defined in the combined performance and executive contracts are probably at play, including agency heads' accommodation of political demands and needs. To move beyond anecdotal evidence and gain further insight into the content and application of these criteria, other methods such as a case study approach or systematic interviews with permanent secretaries and agency heads are relevant. Such analyses could actually complement and strengthen the behavioral focus of the research presented in this paper. An additional strength of expanding the study with qualitative data and analysis is the possibility of analyzing ministerial management in a more comprehensive manner. With the strict focus on performance management and executive pay applied here we have not been able to go into depth with an analysis of the full range of interaction between ministers, their departments as well as these departments and agencies. A recent comparative case study of four agencies in two ministries has shown that interactions are close and informal while involving a lot more than applying the provisions set out in performance and executive contracts (Hansen 2011). Substantially, this points not only to the importance of political and situational contingencies but also to the considerable scope for managerial differentiation between departments and even between agencies reporting to the same department. Methodologically, it points to the benefits of complementary use of qualitative and quantitative data and analysis.

Another option for drawing on different types of data arises from the relevance of various types of incentives. Above it was mentioned how executive pay is only one form of high-powered incentive; another and possibly even higher powered incentive is the prospect of promotion combined with the risk of being replaced if an agency head does not meet the demands of her or his political principal, maybe even of the permanent secretary. We have good quantitative data demonstrating how the risk of replacement has been dramatically increased. Agency heads could in the past expect to serve for an average 15–18 years where agency heads appointed after 1980 on average keep their positions for just some 9 years (Christensen 2011). Ideally, these career data should be combined with the performance and pay data in order to analyze how different performance criteria are used and how different rewards and sanctions are applied at the senior executive level. The challenge of this more ambitious research strategy is that the data required are extremely sensitive and that many replacements at the upper levels of the ministerial hierarchy are surrounded by

7 Except from a few interviews, we do not have systematic evidence for this interpretation, compare note 1 above.

considerable ambiguity. Therefore, a systematic quantitative study is hardly feasible and even a qualitative analysis based on interviews will face severe challenges.

This pattern puts the present analysis in perspective. The standard distinction between hard and soft powered incentives where soft powered incentives are routinely assumed to prevail in the public sector deserves further attention. Here, the question is whether there is a relationship between contractual performance and senior civil servants' career prospects. Should this be the case it rehabilitates PA theory by demonstrating that the career-related incentives are effective because the stakes involved are much higher than the relatively modest financial incentives involved in performance-pay for executives. If this is not the case, there will be good reasons to dig deeper into the interactions between both the political and the administrative executive and in the senior civil service between the departmental level serving the minister and the agency level operating at some arm's length from the political executive.

For some decades now, the classic civil service system has suffered vehement attacks. Our analysis contributes to a deeper understanding of the reform alternative so strongly promoted and we raise empirically founded doubt about the validity of its recommendations. It is therefore logical to draw attention to recent literature that reconsiders the civil service solution. The literature applies to private business and recommends that managers be paid as bureaucrats, that is civil servants (Frey and Osterloh 2005; see also Baron and Kreps 1999). Of course, it also applies to public management (Ingraham 1993, 2006; Miller 1992, 2000; Miller and Whitford 2007). Characteristically, this voice has not been prominent in neither the scholarly nor the policy debate. The topics are nonetheless central to Weberian theory of bureaucracy and have been the subject of theoretical analysis in more recent scholarship. Simon (1951) drew attention to the fundamental difference between a sales contract and an employment contract, arguing that employer and employee in the latter relied on a wide area of acceptance where the employee accepted the employer's authority, while the employer trusted the employee's discretion. Similarly, Williamson (1985, 131–62) in his comparative analysis of firms and markets has pointed to the prevalence of low-powered incentives inside firm and hard-powered incentives in the market. Our analysis suggests that these classical distinctions are of considerable relevance to the future study of civil service reform and to the study of interactions within the governmental hierarchy.

CONCLUSIONS

Pay-for-performance is a central element in public management reforms. It is also highly contested. Principal agent theory recommends pay reform because it sees it as a strategy to improve public sector performance. Similarly, New Public Management-inspired reform sees it as a way to transfer lessons from private firms to public sector organizations. However, both the managerial behavior literature and the classic theory of bureaucracy are skeptical. Following principal agent theory, we have used a unique data set to test whether there is a positive relationship between agency performance and executive pay for the heads of Danish central government agencies. Our results indicate no such relationship, neither for bonus paid to executives nor their full salary. Still, we find that executives who entered the pay-for-performance scheme early are better paid than their more hesitant colleagues.

By drawing on the literature on executive pay in private firms, we are able to show that in this field the prospect for lesson-drawing has been clearly oversold. This raises interesting questions about the relevance of the civil service conception for the understanding of

interactions within the governmental hierarchy, both central in classic theory of bureaucracy. We discuss the prospects for further analysis in these respects, not least pointing to the need for deeper analysis of the performance criteria on which government executives are evaluated when decisions are made to promote or replace them. These are topics to be taken up in future analysis.

Combining formal performance reports with individual pay data for agency heads has given us a unique data set that lends strength to our empirical results. Still, there are important limits to our results as they only apply to one country and to a limited time span and only cover top-level executives. Their jobs have characteristics that are different from lower level jobs, so we cannot draw conclusions about the relevance of pay-for-performance schemes for staff below the very top level in government. However, in spite of the egalitarian culture prevailing in Danish society, there are strong reasons to see our results for executive pay as representative and thus allowing for generalization. First, our results are actually in accordance with other empirical studies conducted in other societal contexts. Second, our results are strikingly similar to those achieved for private corporations; moreover, these empirical studies are mostly conducted on American data, that is, in a presumably much less egalitarian context. Third, we think the very nature of executive responsibilities is less consistent with the establishment of formal linkages between organizational performance and executive pay.

FUNDING

This research was supported by The Danish Council for Independent Research.

REFERENCES

- Allison, Graham T. 1984. Public and private leadership: Are they fundamentally alike in all unimportant respects? In *Leadership and organizational culture. New perspectives on administrative theory and practice*, ed. Thomas J. Sergiovanni and John E. Corbally, 214–39. Chicago, IL: Univ. of Illinois Press.
- Andersen, Lotte Bøgh. 2009. What determines the behaviour and performance of health professionals? Public service motivation, professional norms or economic incentives. *International Review of Administrative Sciences* 75:79–97.
- Andersen, Lotte Bøgh., Jørgen Grønnegaard Christensen, and Thomas Pallesen. 2008. The political allocation of incessant growth in the Danish public sector. In *The state at work. Vol. 1. Public sector employment in ten western countries*, ed. Hans-Ulrich Derlien and B. Guy Peters, 249–67. Cheltenham, UK: Edward Elgar.
- Audit of the State Accounts. 2004. *Beretning til Statsrevisorerne om Justitsministeriets økonomistyring*. Copenhagen, Denmark: Rigsrevisionen.
- . 2006. *Beretning til Statsrevisorerne om fødevarekontrollen*. Copenhagen, Denmark: Rigsrevisionen.
- . 2009. *Beretning til Statsrevisorerne om mål- og resultatstyring i staten med fokus på effekt*. Copenhagen, Denmark: Rigsrevisionen.
- Barkema, Harry G., and Luis R. Gomez-Mejia. 1998. Managerial compensation and firm performance: A general research framework. *Academy of Management Journal* 41:135–45.
- Baron, James N., and David M. Kreps. 1999. *Strategic human resources*. New York, NY: John Wiley & Sons.
- Barzelay, Michael. 2001. *New public management*. Berkeley, CA: Univ. of California Press.
- Bebchuk, Lucian, and Jesse Fried. 2004. *Pay without performance*. Cambridge, MA: Harvard Univ. Press.
- Berrone, Pascual, and Luis R. Gomez-Mejia. 2009. Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal* 52:103–26.

- Bertrand, Marianne, and Sendhil Mullainathan. 2001. Are CEOs rewarded for luck? The ones without principals are. *Quarterly Journal of Economics* 116:901–32.
- Binderkrantz, Anne Skorkjær, and Jørgen Grønnegaard Christensen. 2009a. Governing Danish agencies by contract: From negotiated freedom to the shadow of the hierarchy. *Journal of Public Policy* 29:55–78.
- . 2009b. Delegation without agency loss? The use of performance contracts in Danish central government. *Governance* 22:263–93.
- Boyne, George A. 2002. Public and private management. *Journal of Management Studies* 239:97–122.
- Boyne, George A., Glenville Jenkins, and Michael Poole. 1999. Human resource management in the public and the private sectors: An empirical comparison. *Public Administration* 77:407–20.
- Bruce, Alistair, Trevor Buck, and Brian G. M. Main. 2005. Top executive remuneration: A view from Europe. *Journal of Management* 42:1493–506.
- Chalkley, Martin, Colin Tilley, Linda Young, Debbie Bonetti, and Jan Clarkson. 2010. Incentives for dentists in public service: Evidence from a natural experiment. *Journal of Public Administration Research and Theory* 20:i207–23.
- Christensen, Jørgen Grønnegaard. 1994. Denmark: Institutional Constraint and the Advancement of Individual Self-Interest in HPO. In *Rewards at the top*, ed. Christopher Hood and B. Guy Peters, 70–89. London, UK: Sage Publications.
- . 2006. Ministers and mandarins under Danish parliamentarism. *International Journal of Public Administration* 29:997–1019.
- . 2011. Weber's modern form. The persistence of merit bureaucracy in Danish central government. In *Bürokratieim Irrgarten der Politik*, ed. Hans Peter Bull, Werner Jann, and Dieter Schimanke. Baden-Baden, Germany: NomosVerlag.
- Cruz, Christina C., Luis R. Gomez-Mejia, and Manuel Becerra. 2010. Perceptions of benevolence and the design of agency contracts: CEO-TMT relationships in family firms. *Academy of Management Journal* 53:69–89.
- Danish Agency for Governmental Management. 2009. *Vejledning om udarbejdelse af årsrapport*. <http://www.oes.dk/OEAV/Vejledninger/Arkiv-materiale/Regnskabsomraadet> (accessed July 18, 2011).
- Dixit, Avinash. 2002. Incentives and organizations in the public sector. An interpretative view. *Journal of Human Resources* XXXVII:696–727.
- Dull, Matthew M. 2008. Results-model reform leadership: Questions of credible commitment. *Journal of Public Administration Research and Theory* 19:255–84.
- Frey, Bruno S., and Margit Osterloh. 2005. Yes, managers should be paid like bureaucrats. *Journal of Management Inquiry* 14:96–111.
- Goldfinch, Shaun F. and Joe L. Wallis, eds. 2009. *International handbook of public management reform*. Cheltenham, UK: Edward Elgar.
- . 2010. Two myths of convergence in public management reform. *Public Administration* 88:999–1024.
- Gregory, Robert, and Jørgen Grønnegaard Christensen. 2004. Similar ends, differing means: Contractualism and civil service reform in Denmark and New Zealand. *Governance* 17:59–82.
- Hansen, Kristian Holm. 2011. *Resultatkontraktensom styringsinstrument*. Thesis, Department of Political Science, Aarhus Univ.
- Holmstrom, Bengt, and Paul Milgrom. 1991. Multitask principal-agent analyses: Incentive contracts, asset ownership, and job design. *Journal of Law, Economics, and Organization* 7:24–52.
- Hood, Christopher S. and B. Guy Peters, eds. 1994. *Rewards at the top*. London, UK: Sage Publications.
- Hood, Christopher S., B. Guy Peters, and Grace O. M. Lee, eds. 2003. *Reward for high public office*. London, UK: Routledge.
- Ingraham, Patricia W. 1993. Of pigs in pokes and policy diffusion: Another look at pay-for-performance. *Public Administration Review* 53:348–495.
- . 2006. Building bridges over troubled waters: Merit as a guide. *Public Administration Review* 66:486–94.
- James, Oliver. 2001. Business models and the transfer of businesslike central government agencies. *Governance* 14:233–52.

- Jensen, Michael C., and Kevin J. Murphy. 1990a. Performance pay and top-management incentives. *Journal of Political Economy* 98:225–64.
- . 1990b. CEO incentives. It's not how much you pay, but how. *Harvard Business Review* 68(3): 138–49.
- Ketelaar, Anne, Nich Manning, and Edouard Turkisch. 2007. Performance based arrangements for senior civil servants OECD and other country experiences. OECD Working Papers on Public Governance 2007/5.
- Langbein, Laura. 2010. Economics, public service motivation, and pay for performance: Complements or substitutes? *International Public Management Journal* 13:9–23.
- McCubbins, Mathew, Roger G. Noll, and Barry Weingast. 1987. Administrative procedures as instruments of political control. *Journal of Law, Economics, and Organization* 3:243–76.
- Meier, Kenneth J., and Laurence O'Toole Jr. 2010. Beware of managers not bearing gifts: How management capacity augments the impact of managerial networking. *Public Administration* 88:1025–44.
- Miller, Gary J. 1992. *Managerial dilemmas*. New York, NY: Cambridge Univ. Press.
- . 2000. Above politics: Credible commitment and efficiency in the design of public agencies. *Journal of Public Administration Research and Theory* 10:289–328.
- . 2005. The political evolution of principal-agent models. *Annual Review of Political Science* 8:203–25.
- Miller, Gary J., and Andrew B. Whitford. 2002. Trust and incentives in principal-agent negotiations: The 'insurance/incentive' tradeoff. *Journal of Theoretical Politics* 14:231–67.
- . 2007. The principal's moral hazard: Constraint on the use of incentives in hierarchy. *Journal of Public Administration Research and Theory* 17:213–33.
- Ministry of Finance. 2010. *Ansvar for styring—vejledning om styring fra koncern til institution*. Copenhagen, Denmark: Schultz.
- Mouritzen, Poul Erik, and James H. Svara. 2002. *Leadership at the apex*. Pittsburgh, PA: Univ. of Pittsburgh Press.
- Moynihan, Donald P. 2008. The normative model in decline? Public service motivation in the age of governance. In *Public service motivation: State of the science and the art*, ed. James L. Perry and Annie Hondeghem, 247–67. Oxford, UK: Oxford Univ. Press.
- . 2010. A workforce of Cynics? The effects of contemporary reforms on public service motivation. *International Public Management Journal* 13:24–34.
- Moynihan, Donald P., and Patricia W. Ingraham. 2004. Integrative leadership in the public sector: A model of performance-information use. *Administration and Society* 36:427–53.
- Moynihan, Donald P., and Sanjay K. Pandey. 2005. Testing how management matters in an era of government by performance. *Journal of Public Administration Research and Theory* 15:421–39.
- Moynihan, Donald P., Sergio Fernandez, Soonhee Kim, M. Kelly LeRoux, J. Suzanne Piotrowski, E. Bradley Wright, and Kaifeng Yang. 2011. Performance regimes amidst governance complexity. *Journal of Public Administration Research and Theory* 21:i141–55.
- Organisation for Economic Co-operation and Development (OECD). 1994. *Trends in public sector pay: A study of nine OECD countries 1985-1990*. Paris, France: OECD.
- . 2005a. *Modernising government*. Paris, France: OECD.
- . 2005b. *Performance-related pay policies for government employees*. Paris, France: OECD.
- . 2008. *The state of the public service*. Paris, France: OECD.
- Orrison, Alannah, Andrew Schotter, and Keith Weigelt. 2004. Multiperson tournaments: An experimental examination. *Management Science* 50:268–79.
- Perry, James L. and Annie Hondeghem, eds. 2008. *Public service motivation: State of the science and the art*. Oxford, NY: Oxford Univ. Press.
- Perry, Jerry L., Debra Mesch, and Laurie Paarlberg. 2006. Motivating employees in a new governance era: The performance paradigm revisited. *Public Administration Review* 66:505–14.
- Rainey, Hal G., and Barry Bozeman. 2000. Comparing public and private organizations: Empirical research and the power of the a priori. *Journal of Public Administration Research and Theory* 10:447–69.

- Schedler, Kuno, and Isabella Proeller. 2007. Public management as a cultural phenomenon. Revitalizing societal culture in international public management research. *International Public Management Review* 8(1): 186–94.
- Simon, Herbert A. 1951. A formal theory of the employment relationship. *Econometrica* 19:293–305.
- State Employer's Authority. 2001. *Lønpolitik*. Copenhagen, Denmark: Schultz.
- . 2009. *Direktørkontrakter i staten 2006 og 2007*. <http://perst.dk/~media/Ansaettelse/Loen/direktrkontrakter%20Opflgning%202006-2008%20ekstern%202.ashx> (accessed March 15, 2010).
- Tosi, Henry L., Steve Werner, Jeffrey P. Katz, and Luis R. Gomez-Mejia. 2000. How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management* 26:301–39.
- Weber, Max. 1918/1988. Parlament und Regierung in neugeordneten Deutschland. In *Gesammelte politische Schriften*, ed. Max Weber. Tübingen, Germany: J.C.B. Mohr.
- Weber, Max. 1921/1976. *Wirtschaft und Gesellschaft*. Tübingen, Germany: J.C.B. Mohr.
- Weibel, Antoinette, Katja Rost, and Margit Osterloh. 2010. Pay for performance in the public sector—Benefits and (hidden) costs. *Journal of Public Administration Research and Theory* 20:387–412.
- Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. New York, NY: Basic Books.
- Wilson, James Q. 1989. *Bureaucracy*. New York, NY: Basic Books.