

# Are Bureaucrats Really Paid Like Bureaucrats?\*

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## Abstract

In a seminal paper, Hall and Liebman (QJE, 1998) ask if corporate CEOs are really paid like bureaucrats, and conclude that they are not. In this paper, we ask if senior bureaucrats are really paid like bureaucrats, and conclude that they too are not. However, there is a critical difference – whereas the Hall and Liebman CEOs face high-powered performance incentives, the bureaucrats in our sample are rewarded for what appears to be ‘empire building’, consistent with the public choice view of bureaucracy. We also find weak evidence that female, inexperienced, and internal-appointment bureaucrats are more likely to engage in such rent seeking behavior.

JEL classification: G34, J33

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# Are Bureaucrats Really Paid Like Bureaucrats?

## 1 Introduction

In a seminal paper, Hall and Liebman (1998) ask if corporate CEOs are really paid like bureaucrats, and conclude that they are not. In this paper, we ask if senior bureaucrats are really paid like bureaucrats, and conclude that they too are not.

The research literature on corporate CEO compensation is dominated by two competing explanations for observed pay structures: the optimal contracting hypothesis and the managerial power hypothesis.<sup>1</sup> The former views executive compensation as a mechanism for providing CEOs with the optimal set of incentives, and hence as a solution to the underlying agency problem. The latter sees executive compensation as the product of rent-seeking by self-interested and opportunistic CEOs, and hence as a symptom of the agency problem. Many papers have tested these contrasting views – see, for example, the surveys by Frydman and Jenter (2010), and Murphy (2012).<sup>2</sup>

By contrast, very little is known about the compensation of senior bureaucrats. This is surprising given the vast literature on bureaucrat motivations and incentives. At one extreme, researchers in public administration (e.g. Perry and Wise, 1990; Crewson, 1997; Perry et al, 2010) typically ascribe idealistic and public service motives to bureaucrats. At the other end of the spectrum, public choice theorists (e.g., Niskanen, 1975; Mueller, 2003) emphasize that bureaucrats are self-interest maximizers who seek to advance their goals by fostering the growth of their organization. Empirical evidence on the implications of these competing views for bureaucrat remuneration is both scarce and mixed. In the most directly relevant study, Johnson and Libecap (1989) report no relationship between the salaries of US federal government employees and the rate of employment growth in their respective agencies. However, their sample includes a large number of junior bureaucrats who are unlikely to have much ability to manipulate their own pay. In related settings, Di Tella and Fisman (2004) and Tuttle and Bumpass (2010) find a positive link between US state governor salaries and state economic performance, while Brickley and Van Horn (2002), Ballantine et al (2008), and Brickley et al (2010) report varying evidence on the links between CEO pay, power and performance in non-profit hospitals. However, elected politicians are not career bureaucrats and hospitals, being at least partly funded by ‘sales’ revenue, are not strictly

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<sup>1</sup>For recent discussions on optimal contracting, see Edmans and Gabaix (2009) or Murphy (2012). The managerial power view is well summarized in Bertrand and Mullainathan (2000) and Bebchuck and Fried (2004).

<sup>2</sup>As Frydman and Jenter note, both hypotheses find support in the data but neither clearly dominates than the other.

bureaucracies.<sup>3</sup>

In this paper, we focus on the pay arrangements for an identifiable group of senior bureaucrats: the CEOs of local government agencies in New Zealand (NZ). By law, these agents are required to provide effective and efficient management of large bureaucratic organizations responsible for providing services to, and collecting revenue from, the community they serve. The traditional view of bureaucrats would then suggest that the heads of these organizations do not need to be paid in a way that aligns their incentives with those of citizens. However, at least one sector participant argues otherwise:<sup>4</sup>

“(T)he market for top local body CEOs (has) become very competitive since councils moved away from traditional public service culture to corporate structures with strong private-sector parallels...(but they) will still be aware it is ratepayers’ money they are spending, and ... will be driving hard bargains to get the people they need.”

According to this view, the behavior of senior local government bureaucrats is best viewed from the perspective of a modern corporate governance framework, rather than from the traditional bureaucracy paradigm. This opens up the possibility that their remuneration structures reflect private sector considerations. For example, pay might be linked to community wealth in order to align incentives. Or, alternatively, powerful CEOs may manipulate the pay process in order to extract the maximum possible level of compensation. Our objective is to determine which of these three competing hypotheses best describes the bureaucrat pay-setting process: traditional disinterested bureaucrats, self-serving CEOs, or efficient contracting. In doing so, we not only shed direct light on the payment of senior bureaucrats, but also provide additional indirect evidence on their underlying motivations and incentives.

Consistent with the disinterested bureaucrat view, we find no evidence of a positive relationship between pay and regional economic performance. However, we do find strong evidence that bureaucrat pay is positively related to the financial burden imposed on citizens, i.e., the greater the quantity of per capita revenue collected by local government, the greater the CEO’s pay. Moreover, the underlying driver of this relationship is the component of revenue used to fund the employment of bureaucracy personnel. In other words, senior bureaucrats appear to engage in ‘empire building’ that allows them to extract greater remuneration, consistent with the self-interested (public choice) view of bureaucracies. Finally, we also uncover weak evidence that such behavior is more common among CEOs who are female, have limited experience in the position, or were appointed from within the same

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<sup>3</sup>Using data from New Zealand publicly-owned enterprises, Cahan et al (2005) estimate a positive relationship between CEO pay and accounting performance and report evidence of CEO entrenchment. However, most of these organizations trading-focused and hence not bureaucracies.

<sup>4</sup>See <http://www.stuff.co.nz/sunday-star-times/business/539048/Councils-top-pay-rises-45>.

bureaucratic organization.

In the next section, we provide a brief description of the NZ local government sector, its activities, its legislative underpinnings, and the role of the senior bureaucrats that it employs. Section 3 outlines our hypotheses and the data used to test them, while section 4 contains our principal results. Finally, section 5 offers some concluding remarks.

## 2 NZ Local Government

The NZ local government sector consists of two tiers of agencies, known as ‘councils’. The first – regional councils – are primarily concerned with water rights, natural resource management, land use planning, and other environmental issues. The second – city or district councils – administer core activities such as roads and other community infrastructure, public transport services, waste collection and disposal, natural hazard regulation, libraries, museums, reserves and other recreational facilities. The difference between city and district councils is primarily one of size: a district council can be called a city council if it has a population over 50,000, is predominantly urban, and is a major centre of activity within its region. Title aside, they have exactly the same rights and responsibilities. Our focus in this paper is on the 73 city and district councils in NZ.<sup>5</sup>

City and district councils are governed by the Local Government Act of 2002. This defines a council’s role as enabling democratic local decision-making and action by, and on behalf of, present and communities. In practice, what this means is that each city or district council has a number of democratically elected representatives (known as councillors) who are supported on a day-to-day basis by a permanent bureaucracy. A council can undertake both core and commercial activities, and has the right to fund these via a combination of property-related taxes (known as ‘rates’) on eligible citizens (known as ‘ratepayers’) and borrowing.

Each council must have an appointed CEO who is responsible for providing direction and advice to councillors, implementing councillor decisions, and generally ensuring proper, effective and efficient management of the council’s responsibilities to ratepayers. The CEO is, therefore, the council’s senior bureaucrat. Initial appointment of each CEO is limited to a period of five years, after which reappointment for the same or shorter term is possible, but only after the position has been publicly advertised and all applicants properly considered. CEO pay is normally the responsibility of a subset of councillors who evaluate the CEO on an annual basis and assign a commensurate remuneration package.

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<sup>5</sup>By contrast, there are only 13 regional councils. The much greater population base, and the much narrower set of responsibilities, mean that the CEOs of these bureaucracies have fundamentally different jobs to the city and district council CEOs.

### 3 Hypotheses and Data

If council bureaucrats are motivated by public service concerns, then their interests are perfectly aligned with the ratepayers who provide their funding and additional pay incentives are both unnecessary and inefficient. In this case, council CEO pay should primarily reflect the scale and complexity of the position, along with other factors such as cost of living. On the other hand, if council bureaucrats are motivated by self-interest – money, power, prestige, leisure opportunities – then two other possibilities arise. First, the councillors responsible for setting CEO pay may seek to align the latter’s interests with those of ratepayers by rewarding actions that increase ratepayer wealth. Second, CEOs may simply seek the maximum remuneration their personal circumstances allow them to command, regardless of whether or not this is in ratepayers’ interests.

How might the interests of council CEOs be aligned with those of ratepayers? In the private sector, a sufficient statistic for stockholders is firm financial performance. However, such a concept is essentially meaningless for bureaucratic organizations that generate little or no revenue from sales. Even if they were able to do so, financial performance would do little to align interests since ratepayers cannot trade their ownership ‘claims’. Instead, councils may seek to link CEO pay to the economic performance of the city or district they administer. While much of this broader performance is determined exogenously, CEOs may be able to influence local economic performance by eliminating unnecessary regulations, reducing red tape, encouraging an investment-friendly environment, implementing necessary social welfare and anti-poverty policies, and making the city or district an attractive destination to migrants.

To examine this idea, we would ideally use an income or unemployment per capita series for each council area. However, these are only available at the city/district council level on a 5-yearly basis via the national census. Instead, we use two alternative measures that are available annually. First, new car registrations per capita – more buoyant economic conditions are likely to be accompanied by a higher rate of new car purchases. Second, the percentage increase in the average house price – with housing being a primary source of wealth for most New Zealanders, this should be a reasonable proxy for wealth growth.

Of course, the most direct effect on the economic well-being of ratepayers is via council revenue demands. This motivates an additional performance measure – ratepayer burden, defined as the sum of rates and new long-term borrowing (which necessitates higher future rates). If council CEOs are rewarded for frugality, then we will observe a negative relationship between CEO pay and ratepayer burden. An attractive feature of this performance measure is that it allows us to distinguish between efficient contracting and bureaucrat rent-seeking forces, as unlike the two previous measures – where a positive relationship with pay is

consistent with both views – a positive relationship between pay and ratepayer burden is suggestive of rent-seeking.

These ideas can be expressed more formally in terms of a very simple model. Let  $C$  denote the CEO's remuneration, and assume that

$$C = F + P(W, L, e) \quad (1)$$

where  $F$  is a constant,  $W$  is per-capita wealth,  $L$  is ratepayer burden, and  $e \geq 0$  is the 'effort' exerted by the CEO in extracting rents, via empire-building, lobbying, and so on. In words, equation (1) states that CEO pay equals the sum of a fixed component  $F$  (a bureaucratic salary) and a 'premium' component  $P$  that depends on his performance in assisting wealth creation, minimizing ratepayer burden, and the success of his rent-extraction efforts. We assume  $P_W \geq 0, P_L \leq 0, P_e > 0$  (subscripts indicate partial derivatives), where  $P = P_W = P_L = P_e = 0$  if the CEO is paid as a bureaucrat. The optimal choice of  $e$  satisfies:

$$P_e = 1 \quad (2)$$

Assuming that there are diminishing returns to CEO rent-extraction efforts and that such efforts are more productive when ratepayers are financially comfortable, it follows from (2) that:

$$\frac{dC}{dW} = P_W - \frac{P_{eW}P_e}{P_{ee}} \geq 0$$

and

$$\frac{dC}{dL} = P_L - \frac{P_{eL}P_e}{P_{ee}} \leq 0$$

As conjectured, CEO pay is increasing in ratepayer wealth for both efficiency and rent extraction reasons, but the impact of ratepayer burden on CEO pay is ambiguous: it can be positive or negative depending on whether or the rent extraction effect outweighs the efficiency effect.

We investigate these issues by estimating regression models of the general form:

$$\text{Real CEO Pay} = \alpha_0 + \sum_i \beta_i \text{Performance}_i + \sum_j \gamma_j \text{Control}_j + \varepsilon \quad (3)$$

where the control variables are population, size (area in square kilometers), and average house price. The first two capture the scale and complexity of the CEO's task while the last reflects the cost of living. All monetary variables are converted to 2005 values using the NZ consumer price index.<sup>6</sup>

To estimate equation (3), we collected data on NZ councils and CEOs between 2005 and 2010. Data on CEO pay and ratepayer burden appear in council annual reports. New car registrations were obtained from NZ Transport Agency while population estimates and

<sup>6</sup>This is available from the Reserve Bank of NZ website: [www.rbnz.govt.nz](http://www.rbnz.govt.nz)

size come from the Statistics NZ website.<sup>7</sup> Finally, house price data were provided by Quotable Value. Our initial sample covers 73 councils and six years, yielding a panel of 438 observations. However, we lose (i) the 2005 observations due to new long-term borrowing being estimated as the real change in long-term debt, and (ii) four councils due to one or more variables not being reported in any sample year. Moreover, not all variables are available in every year for the remaining 69 councils. Our final sample is an unbalanced panel of 280 observations.

Table 1 provides some summary statistics for this sample. All variables contain considerable cross-council variation. For example, the typical council CEO is paid slightly over \$200,000, but this lies within a range of \$107,000 to \$420,000. Similarly, annual council revenue demands are approximately \$850 per person on average, but individual councils charge considerably more and less than this during the sample period.

Table 1: Summary Statistics

Summary statistics from an unbalanced 2006–2010 panel of 280 annual observations on 69 New Zealand city and district councils. CEO pay is remuneration of the council’s CEO; New Cars is the number of new car registrations per head of population; Wealth Growth is the real percentage change in the average house price; Ratepayer Burden is the sum of rates and new borrowing per head of population; Population is the number of people living in the region; House Price is the average house sale price; Size is the area (in square kilometres) of the Council’s jurisdiction. All monetary variables are in 2005 NZ dollars.

Variable	Mean	Standard Deviation	Median	Maximum	Minimum
Panel A: Pay and Performance Variables					
CEO Pay	\$214287	\$61474	\$204284	\$419719	\$106917
New Cars	0.011	0.006	0.010	0.051	0.003
Wealth Growth	3.01	13.08	1.19	101.4	−36.4
Ratepayer Burden	\$851	\$358	\$789	\$3013	\$103
Panel B: Control Variables					
Population	56923	76668	33550	444100	3770
House Price	\$267053	\$95518	\$259538	\$559857	\$104720
Size	3917	4423	2615	30753	22

Some preliminary insight into the pay-setting process for council CEOs is offered by the correlation matrix in Table 2. CEO pay is strongly positively correlated with population, average house price, and new car registrations. However, the latter variable is also positively correlated with the first two, so its univariate effect may just reflect these more fundamental factors. By contrast, CEO pay is only weakly related to ratepayer burden and negatively related to house price growth. However, these two variables are strongly negatively cor-

<sup>7</sup>See [www.stats.govt.nz/](http://www.stats.govt.nz/).



Table 2: Correlation Matrix

Correlation coefficients for the variables defined in Table 1. **(\*)** denotes significance at the .01 (.05) level.

	CEO Pay	New Cars	Wealth Growth	Ratepayer Burden	Population	House Price	Size
CEO Pay	1.000						
New Cars	0.536**	1.000					
Wealth Growth	-0.119*	0.023	1.000				
Ratepayer Burden	0.089	0.038	-0.157**	1.000			
Population	0.791**	0.689**	-0.064	-0.037	1.000		
House Price	0.675**	0.478**	-0.049	0.202**	0.526**	1.000	
Size	-0.218**	-0.259**	0.013	0.100	-0.270**	-0.154**	1.000

related with each other, suggesting that their univariate correlations may understate their true relationships with CEO pay. Clearly, multiple regression models like (3) are needed to disentangle these complex relationships.

## 4 Results

Table 3 contains the results we obtain from estimating various versions of equation (3). We estimate all models in log form so that the coefficient estimates have an elasticity interpretation. Column (1) includes only the control variables, which together explain an impressive 80% of the variation in council CEO remuneration. However, while population and the cost of living are both economically and statistically significant determinants of CEO pay, the effect of greater size is indistinguishable from zero – as it is in all specifications.

Columns (2)-(4) successively introduce the three economic performance variables while column (5) includes all of them together. New car registrations and house price growth are negatively related to CEO pay, but are never statistically significant at conventional levels. By contrast, ratepayer burden is always positively and significantly (at the 5% level) related to CEO pay, with an elasticity of about 0.065, i.e., a 10% rise in ratepayer burden is associated with a 0.65% increase in CEO pay. Applying a one standard deviation rise in ratepayer burden to the typical council CEO, this corresponds to approximately 2.7% more pay, or \$5900. Column (6) shows that this result is robust to the inclusion of period fixed effects.

One potential problem with these models is the presence of significant measurement error in some of the explanatory variables. For example, in the borrowing component of ratepayer burden, it is not uncommon to see large increases in long-term debt in one year followed by equally large reversals in the following year; similar year-to-year fluctuations

Table 3: Bureaucrat Pay and Performance: Regression Results

The dependent variable is the natural log of Council CEO pay. All explanatory variables are defined in Table 1.. Regressions (1)–(6) are estimated from an unbalanced 2006–2010 panel of 280 annual observations; regressions (7)–(8) are estimated from a cross-section based on 2006–10 annual averages of all variables. Terms in parentheses are robust standard errors clustered at the council level. \*\*(\*) denotes significance at the .01 (.05) level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	8.223** (0.430)	8.166** (0.446)	8.239** (0.423)	7.916** (0.388)	7.887** (0.408)	7.986** (0.405)	7.592** (0.355)	7.523** (0.444)
ln Population	0.206** (0.016)	0.213** (0.017)	0.205** (0.016)	0.209** (0.015)	0.213** (0.016)	0.208** (0.016)	0.212** (0.016)	0.219** (0.019)
ln House Price	0.153** (0.041)	0.159** (0.043)	0.152** (0.040)	0.140** (0.037)	0.147** (0.039)	0.140** (0.038)	0.121** (0.039)	0.125** (0.045)
ln Size	−0.004 (0.010)	−0.006 (0.010)	−0.004 (0.010)	−0.006 (0.010)	−0.007 (0.010)	−0.007 (0.010)	−0.006 (0.008)	−0.007 (0.008)
ln New Cars		−0.027 (0.027)			−0.026 (0.027)			−0.031 (0.040)
Wealth Growth			−0.124 (0.073)		−0.090 (0.068)			−0.044 (0.067)
ln Ratepayer Burden				0.067* (0.029)	0.064* (0.030)	0.059* (0.029)	0.144** (0.048)	0.149** (0.050)
N	280	280	280	280	280	280	69	69
Year Fixed Effects	No	No	No	No	No	Yes	NA	NA
Adjusted R <sup>2</sup>	0.80	0.80	0.80	0.81	0.81	0.81	0.88	0.88
F-statistic	366.1**	275.7**	279.8**	289.7**	196.0**	151.7***	124.5***	81.26**

also appear in the house price series. We are sceptical about the accuracy of such intra-variable volatility and suspect at least some of it may be attributable to reporting error or small-sample bias. If so, the effects on our regression estimates could cut both ways. On the one hand, if measurement error in long-term borrowing is positively correlated with CEO pay, then the estimated coefficient on ratepayer burden will be overstated. On the other hand, measurement error noise will understate the precision of that estimate. Similarly, measurement error in the house price variable may be affecting the coefficient estimates on the other performance variables.

To address this issue, we create a new data set that eliminates these year-to-year fluctuations. Specifically, for each council we calculate annual averages of each variable over the sample period (reducing the sample size to 69 observations) and then re-estimate equation (3). Columns (7) and (8) report two of these models. For the control variables and the two measures of local economic performance, nothing changes. However, the estimated elasticity of CEO pay to ratepayer burden more than doubles and is much more precisely

estimated (now significant at the 1% level); a one standard deviation rise in ratepayer burden now corresponds to approximately 4.7% more pay, or \$9900, for the average CEO.

The results in Table 3 reveal no evidence of council CEOs being rewarded for superior economic performance in the regions they administer, but they do offer fairly strong evidence of a positive link between CEO pay and the financial burden imposed on ratepayers. The latter finding has two possible explanations. First, that council CEOs are engaging in ‘empire building’ in order to extract greater remuneration. Second, that the additional funding is used to provide services valued by ratepayers who in turn reward CEOs for doing so. To distinguish between these two competing explanations, consider the uses to which additional ratepayer funding might be put. On the one hand, it could be used to invest in additional infrastructure, greater cultural and recreational opportunities, and community ‘events’. On the other hand, it could be used to hire more council employees, bulking up the size of the organization controlled by the CEO. In general, the first type of expenditure will be desired by ratepayers while the second will not. We therefore split the ratepayer burden variable into two components: the portion used to finance expenditure on bureaucrat employment (personnel cost) and the rest (core ratepayer burden), both in per-capita terms. If the Table 3 results reflect empire building by council CEOs, then the personnel cost variable should be the more important determinant of CEO pay. But if additional funding is used to provide services desired by ratepayers, then we should see CEO pay being more closely linked to core ratepayer burden.

Table 4 reports the results of this decomposition using both the panel (with and without fixed effects) and period average data sets. In every specification, core ratepayer burden is economically small and statistically insignificant. By contrast, personnel cost is uniformly large and highly statistically significant (at the 1% level or better). From the panel estimates, a one standard deviation rise in personnel cost corresponds to approximately 6.3% (\$13500) more pay for the average CEO; the analogous figure from the period average data is 8.5% (\$17800). Council CEOs are apparently rewarded for the size of the organization they are able to create; more employees – a bigger ‘empire’ – evidently allows CEOs to extract additional remuneration at the expense of ratepayers.<sup>8</sup>

An obvious question of interest is whether some types of bureaucrat are more likely to engage in rent-seeking behavior than others. That is, in the context of this paper, are there observable CEO characteristics associated with a tendency to extract excess compensation via empire building? Our ability to address this question is severely constrained by the availability of data on CEO personal characteristics, limiting us to the following three variables: Gender, set equal to 1 if the CEO is male and 0 if female; Tenure, set equal to the number of

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<sup>8</sup>This finding is foreshadowed in the model of Weatherby (1971).

Table 4: Bureaucrat Pay and Empire Building I

The dependent variable is the natural log of Council CEO pay. Personnel Cost is the natural log of expenditure on Council personnel. Core Ratepayer Burden is the per-capita sum of rates and new borrowing minus Personnel Cost. All other variables are described in Table 1. Regressions (1) and (2) are estimated from a 2006-10 unbalanced panel of 280 observations; regression (3) is estimated from a cross-section based on 2006-10 averages of all variables. Terms in parentheses are robust standard errors clustered at the council level. \*\*(\*) denotes significance at the .01 (.05) level.

	(1)	(2)	(3)
Intercept	7.560** (0.416)	7.610** (0.419)	7.455** (0.398)
ln Population	0.206** (0.013)	0.204** (0.013)	0.208* (0.013)
ln House Price	0.149** (0.038)	0.150** (0.038)	0.146** (0.036)
ln Size	-0.007 (0.010)	-0.008 (0.010)	-0.004 (0.008)
ln Core Ratepayer Burden	0.012 (0.008)	0.010 (0.008)	0.020 (0.012)
ln Personnel Cost	0.115** (0.024)	0.112** (0.024)	0.122** (0.026)
N	280	280	69
Year Fixed Effects	No	Yes	NA
R <sup>2</sup>	0.82	0.83	0.89
F-statistic	261.8**	154.3**	106.9**

years the CEO has held office; Internal, set equal to 1 if the CEO was appointed from within the same council and 0 otherwise. We estimate the effect of these three characteristics on the relationship between pay and personnel cost in regression models of the form:

$$\begin{aligned} \text{Real CEO Pay} = & \alpha_0 + \alpha_i \text{Characteristic}_i + \beta(\text{Personnel Cost}) + \sum_j \gamma_j \text{Control}_j \\ & + \lambda_i (\text{Characteristic}_i * \text{Personnel Cost}) + \varepsilon \end{aligned} \quad (4)$$

where our primary interest is in the  $\lambda_i$  coefficients on the interaction variables.

For each CEO characteristic, we estimate (4) using both the panel and period-average data and report the results in Table 5.<sup>9</sup> On average, the personnel cost elasticity is more than twice as large for females as for males (although the statistical significance of this difference is marginal); it is lower for more experienced CEOs (but again of marginal significance); and its estimated value for internal appointments is more than double that of others (with slightly more statistical precision, at least using the period-average data). It is difficult

<sup>9</sup>As the control variable coefficients are essentially unchanged from Tables 3 and 4, we do not repeat them here.

Table 5: Bureaucrat Pay and Empire Building II

The dependent variable is the natural log of Council CEO pay. Gender equals 1 if the CEO is male and 0 if female. Tenure is the number of years the CEO has held the position. Internal equals 1 if the CEO was an internal promotion, 0 otherwise. All other variables are described in Tables 1 or 4. Regressions (1)–(3) are estimated from a 2006–10 unbalanced panel of 280 observations; regressions (4)–(6) are estimated from a cross-section based on 2006–10 averages of all variables. All regressions also include the control variables appearing in Tables 3 and 4. Terms in parentheses are robust standard errors clustered at the council level. \*\*(\*) (^) (^) denotes significance at the .01 (.05) (.10) (.15) level.

	(1)	(2)	(3)	(4)	(5)	(6)
ln Personnel Cost	0.193* (0.087)	0.140** (0.039)	0.085** (0.025)	0.335* (0.170)	0.134** (0.049)	0.080** (0.023)
Gender	0.700 (0.517)			1.487^ (0.944)		
Gender x ln Personnel Cost	−0.118 (0.092)			−0.269^ (0.176)		
Tenure		0.213^^ (0.123)			0.207 (0.187)	
Tenure x ln Personnel Cost		−0.031^ (0.021)			−0.032 (0.033)	
Internal			−0.621^ (0.431)			−0.886^ (0.545)
Internal x ln Personnel Cost			0.116^ (0.029)			0.169^^ (0.101)
N	280	280	280	69	69	69
Adjusted R <sup>2</sup>	0.83	0.84	0.82	0.88	0.88	0.88
F-statistic	264.4**	285.5**	257.7**	105.1**	101.9**	102.3***

to know whether the lack of statistical precision in these estimates reflects the absence of any systematic relationship or merely deficiencies in the data. For example, only 31 of our 280 observations involve female CEOs, so there is obviously a small sample problem in identifying gender differences. And the internal appointment variable almost certainly contains considerable measurement error – our categorization of the source of appointment relies heavily on a detailed internet search, but this necessitates a degree of guesswork in the case of some CEOs about whom there was little information to be found. We conclude, therefore, that Table 5 provides weak evidence that female, inexperienced, and internal-appointment bureaucrats are more likely to engage in empire building behavior.

## 5 Concluding Remarks

Are bureaucrats actually paid in the manner traditionally associated with their position? Our sample of senior bureaucrats from NZ local government suggests not. Instead, they

appear to be rewarded for expanding the size of their ‘empires’ in a manner that is unlikely to be of great benefit to the citizens they are appointed to serve.

Such a conclusion is unlikely to surprise many, especially those well versed in public choice theory, but it provides empirical evidence where none previously existed. However, we have really only scratched the surface of the complexities of bureaucrat compensation. How, for example, does the use of compensation consultants affect pay outcomes, and does this mitigate or exacerbate the empire building tendencies observed above? Do pay structures reflect the dominant political affiliation within the government? Does the uncertain tenure of their paymasters (politicians) allow bureaucrats to become entrenched more easily than their private sector counterparts? Answers to these and many other questions will help to elevate our understanding of bureaucrat pay to the same level as our current understanding of corporate sector pay.

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