

## Discussion Paper

# Because you're worth it? Determinants of Vice Chancellor pay in the UK

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# Because you're worth it? Determinants of Vice-Chancellor pay in the UK

## Abstract

There is increasing pressure on universities to deliver social and economic impact from their work in an increasingly market and metric driven environment. Within the UK, increasing financial pressure has led to both an escalation of student fees, and constrained wage growth for faculty. In contrast, most Vice-Chancellors have secured substantive pay packages raising concerns that regulatory failures may be contributing to the rise. However, there is little empirical evidence of what has driven recent changes in V-C remuneration. Using a panel of British university data we show some measures of institutional performance, internal governance and individual characteristics are related to V-C pay. We find evidence that V-Cs use their internal power within organisations to extract a disproportionate amount of the value created by the institution. However, we do not find that the presence of V-Cs on remuneration committees had an influence on salary. We also find that greater transparency is associated to *higher* rates of remuneration. In terms of the implications for students and learning, the paper suggests that university governance remains a contested domain; it could be argued that when governance failures are most pronounced the learning experience and the community of scholarship is most likely threatened.

## Keywords

pay, governance, metrics, performance, public sector, universities, Vice-Chancellors

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## Introduction

As Guest (2011) notes, one of the core dilemmas of HRM remains the elusiveness of tracing links between HRM systems and performance (c.f. Boselie et al. 2005). Yet, the 2008- financial crisis highlighted the risks posed by inappropriate reward systems, and the need to find better ways of incentivising senior managers. Within UK universities have come under increasing attack both in the popular media and by politicians inter alia for a failure to be relevant to the needs of the 'real world', a perceived liberal bias, and because they allegedly provide poor value for money for taxpayers and students (Daily Mail 2017a; 2017b). As these claims have escalated, so have threats by the UK government both to place universities under closer regulatory scrutiny and provide more opportunities for private competitors as a countervailing pressure (ITV 2017; THES, 2017b). Within the UK, the issue of Vice Chancellors' (V-C) salaries has been added to the mix: critics have charged that they are pseudo-public servants with few opportunities to really change the institutions they run, they are inattentive to the needs of students as customers, and yet are able to extract large pay packages relative to their colleagues on the 'coal-face' (Guardian 2018; ITV 2017). It has been argued that this represents a regulatory failure, making a strong case for external corporate governance reform (c.f. ITV 2017; Telegraph 2017). This study explores the extent to which VC pay is aligned to performance and whether internal corporate governance mechanisms can make a difference. There is a considerable literature exploring the pay and performance of organisational heads (Shaw and Gupta, 2015), and a growing body of work exploring the remuneration of university heads worldwide (Bachin and Reilley, 2015; Cornell, 2004; Clements and Izan, 2008; Essaji and Horton, 2010). In exploring V-C pay and performance, in the UK, we draw upon a variety of data sources covering the 2009 to 2015 period.

Our results show that V-C pay is at least partially determined not only by performance metrics, but also internal governance mechanisms, and individual V-C characteristics. In other words, rather than a systemic failing, some universities seem much better at managing VC pay than others. We explore the implications of these findings for theory and practice.

## The Role of the University and the UK Context

There are two broad ways in which the university may be theorised. The first is that effective research operates in a 'republic of science', which should be removed from commercial and social pressures that dominate in other parts of society (Polanyi, 2000). According to this view, it can be argued that an independent intellectual class having the institutional space and support to generate well-crafted scholarly ideas is a good in its own right, enriching public and social life, and

indeed, forming an integral part of being civilised (Oakeshott, 2004). The second is one that ties academic research – and indeed, university teaching – to immediate and directly visible economic and social development. This view that often equates research and universities as potential ‘engines of growth’; and posits that universities should concentrate on unlocking such economic potential (Perkmann et al., 2013).

Despite some inroads by private-for-profits (and a small number of private non-profits) the UK university system remains dominated by institutions that historically enjoyed both statutory recognition and ‘self-governing autonomy’. The latter, whilst not-for-profit and providing a broad public service, are neither purely charitable or purely statist (Moodie and Eustace 2011). In terms of charters and statutes issued by the Privy Council, internal governance structures centring on Courts, Councils and Senates were set up; in 1946 the bulk of university financing was taken over by the state, when previously their role was somewhat akin to charities. The 1946 changes opened the way for affordable mass education, but diminished the relative influence of lay Courts and Councils, supplanting their historic role in raising funding. It also empowered senates, bodies dominated by senior academics, however, the role of the V-C remained closely circumscribed, with decision making now firmly resting in the hands of an ‘oligarchy’ of senior academics (Shattock, 2017). In the 1980s, radical changes to the funding environment led to the creation of funding councils as direct instruments of government, rather than autonomous policy organs; budget cutbacks forced V-Cs to take closer direct control over trying to allocate diminished funding. The 1985 Jarrett Report cast V-Cs as Chief Executive Officers (CEOs), and encouraged smaller and more assertive councils; on gaining university status in 1992 (Jarrett, 1985), the former polytechnics were restructured to concentrate power around the V-C (Shattock, 2017). The 1997 Dearing and 2003 Lambert report resulted in the streamlining of Senates and Councils, ultimately diluting their effectiveness (Shattock, 2017).

Perhaps the greatest transformation in university governance has been the transfer of decision-making powers over such policies to chief executive like V-Cs, and small teams and to ‘manager academics’ (Deem et al. 2007): inner cabinets answerable to senates have become Senior Management Teams, administrators have become managers. Evidence for this transformation can be found in a systematic shift to top-down reorganisations of academic decision-making structures. In two successive studies conducted over the 1993–2002 and 2002–2007 period found that 74 per cent of institutions examined in the first and 65 per cent in the second had been subjected to quite fundamental restructuring involving reducing and merging faculties and departments, the creation of devolved colleges or schools and the establishment of new senior officer posts to be filled through public advertisement from outside the university rather than by

election from within (Hogan, 2012). Between 1994–1995 and 2008–2009 the proportion of university expenditure on university administration and central services grew significantly at the expense of expenditure on academic departments (Hogan, 2011).

The alignment of evaluation metrics, most notably, the Research Excellence Framework (REF) (Lee, 2006), and potentially, the National Student Survey, and revenue flows produced significant changes in university funding (Shattock, 2017). More specifically, the Higher Education Act 2004 led to the imposition of fees capped at £3,000 that were adjusted to £3,225 a year to take account of inflation by 2009. However, the abolition of the cap was controversially proposed by the Brown Review in 2010. While the Government did not implement the Brown recommendations it did extend the fee cap to £9,000, envisaging that a competitive market would erupt, with institutions competing on the basis of cost or quality. Following a failed judicial review against the fee rise it came in to effect in 2012.<sup>1</sup> In practice this led to most universities opting for the maximum allowable fee, and competing on the basis of reputation alone, often backed up by external metrics. Coupled with this has been increased competition for overseas students, again with the market disrupted by government action, in this case in the form of increasingly onerous visa requirements.

## Internal and External Corporate Governance

At the heart of their governance is the underlying fact that UK universities are voluntary associations with transient memberships; academics typically move between institutions in their careers, and students study for fixed periods of time (Moodie and Eustace, 2011; Oakeshott, 2004). On the one hand, this transience makes it easier to reconcile competing interest groupings, to sustain and develop a hereditary purpose, and makes for a great deal of resilience (*ibid.*). On the other hand, this transience makes it easier to bring about fundamental changes in governance; whilst members may resist changes, it is equally likely that the discontented will exit (or simply complete their studies). Finally, although councils may be akin to company boards, their role is, in relative terms, more circumscribed (Moodie and Eustace, 2011).

Recent criticism of university governance can be divided into two broad categories. Firstly, there is an implicit application of agency theory: this argument suggests that students or external users are principals and their delegated agents, universities, are failing in their duties to them. Examples of this would include criticisms as to a lack of accountability to students as to how their fees are

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<sup>1</sup> "Tuition fees case: Callum Hurley and Katy Moore lose". *BBC News*. 2012-02-17.

spent and a similar lack of “real world impact” that is failing research users (Paton et al, 2014; Martin 2011). On the one hand, there is little in the formal governance mechanisms of universities to suggest that students or research users are sole or combined principals; on the other hand, this view is widely prevalent, and arguably is likely to interpenetrate future formal or informal governance mechanisms.

Secondly, it has been argued (sometimes by the same proponents of the agency view of universities) that students are consumers, and that the role of the government should be that of a champion and protector of consumer rights (Daily Mail 2017a). A strong emphasis is placed on the need to ensure that students get value for money and that academic staff orientate themselves to delivering optimal customer service (Woodall et al. 2014). Again, it is argued that companies or other users often get poor value for money given the scale of investment in research (THES, 2017a).

In both these instances, V-C pay has been drawn into the debate: it has been depicted as yet another example of agency failing (Daily Mail 2017a), or of a lack of prioritization of the needs of customers (Daily Mail 2017b). What all these criticisms have in common is that it is seen that there are sector wide structural problems which reflect failings in external governance, and that only tighter regulation, and/or the nurturing and support of private-for profit competitors, can correct the failings. A championing of the interests of third parties in part reflects the effects of a decline in state funding: by moving to a system where students are a key financial contributor to the sector it is no longer credible for the government to present itself as either the principal or the main customer of university services, and hence, present itself as looking after those who are to justify constant interventions.

If universities are demonstrably incapable of devising or operating sound internal governance the case for more robust external governance becomes stronger (THES, 2017b). However, if internal governance mechanisms can and do make a difference across the sector, then the case for external regulatory reform becomes less clear. Rather, two alternative arguments come into play. The first is the managing complexity argument (Oswald, 2017). Universities are large and complex organisations, and given the decline of government funding, are something akin to multi-million pound businesses. A complex and turbulent environment requires top managers, who need to be rewarded as such (Stone 2017; Oswald 2017). Again, it has been argued that the need for better customer service requires V-Cs to be better incentivised; those best at it should be rewarded the most (Stone, 2017). More radical critiques argue that excessive V-C pay is simply a product of a surfeit of managerialism (Deem et al. 2007). The effects and effectiveness of internal governance

mechanisms in moderating V-C's pay, in ensuring equity, and in aligning it with real performance form the central concern of this article.

## Hypothesis development

The review highlights an expansion of funds to universities in a period where greater marketization has occurred, but also that governance structures have not become more dislocated from universities traditional internal structures. With the decline of the senate's institutional influence, decision-making has been increasingly located within remuneration committees populated by members of council and often by V-Cs themselves. Rather than contributing to effective oversight and restraint in the pay-setting process, a body of research suggests that remuneration committees are likely to trigger unintended mechanisms such as social comparisons and 'bidding-up' of executive salaries (e.g. Ezzamel and Watson, 1998; Gregory-Smith, 2012).

In the context of this study, rather than attempting to gauge the insider or outsider status of each remuneration committee member, a useful indicator of non-independence would be, as with the case of CEOs in firms, is whether a V-C sits on his/her own remuneration committee (cf. Tosi and Gomez-Mejia 1989). The non-separation of decision-making and oversight roles is central to the agency problem that may lead to excessive executive compensation. We therefore expect to find a positive relationship between V-Cs' remuneration committee membership and V-C pay.

*H1. Where V-C's are members of Remuneration Committees there will be a positive effect on V-C salary.*

Recent corporate governance studies have incorporated remuneration committee size (e.g. Gregory-Smith, 2012; Kent et al., 2016), albeit without much consistent evidence emerging so far. However, the recent study by Kent et al. (2016) provides some impetus for further scrutiny. The authors conclude that a minimum committee size seems necessary in order to engage in effective negotiations on executive pay. Larger committees make it harder to forge consensus around very high rewards, and place pressure on executives to justify their rewards. In the university context, an additional important aspect may be that larger committee size indicates a readiness to include a wider range of stakeholder opinions in the pay-setting process. This is likely to enhance both the quality and integrity of the process. Thus, we propose that the size of remuneration committees is inversely related to V-C pay.

*H2. Larger committees will, on average, be able to temper V-C remuneration.*

Open information flows align internal and external control, thereby reducing agency problems (e.g. Allegrini and Greco, 2013). On the one hand, greater transparency reduces agency problems by providing more information to shareholders and other significant interest groups. On the other hand, organisations that divulge more information to the market may impose additional costs on top managers, for example by reducing their future bargaining power in the external job market (Hermalin and Weisbach 2012). Powerful managers may seek to recoup some of these costs by demanding higher pay. Thus, even though disclosure may reduce agency problems at the surface-level, it is more likely to be associated with higher executive pay (Kanapathippillai et al., 2017). Hence:

*H3. Disclosure levels are positively associated with V-C pay*

It has been argued that, in order to facilitate a strong link between pay and performance, it is necessary to have clear indicators by which to adjudge success against the mission of the organisation, and second there needs to be a clear governance structure through which agent performance can be adjudged (Shaw and Gupta, 2015). However, Holmström and Milgrom (1991) argue that multiple criteria, with some targets easier to meet than others, could have detrimental effects on the principal's welfare and augmented measurement costs. More specifically, the proliferation of targets in UK HE reflects the influence of consultants within the policy community that is highly problematic (see O'Mahoney and Sturdy, 2016). However, the extent to which targets are constantly shifting would suggest that maintaining consistent goals is inimical to the short-termist culture permeating both business and government. A major division in the UK university sector is between research intensive and largely teaching orientated institutions, albeit that the outer boundaries between these categories are blurred. In practice, some institutions may prioritise effectiveness in teaching and outreach, and others may place a premium on overall research progress; again, instrumentalist VCs will encourage the setting of the kind of target they are most likely to reach. Hence:

*H4. Pay is positively linked to performance measures that, in turn, will reflect differing institutional missions.*

## Data and method

### Data

We derive an annual dataset that cover the 2009-10 to 2015-16 academic years. In doing so we capturing the substantive change in fee income from 2012 and being a period of substantive salary growth, and are able to derive information on important variables, such as the composing of remuneration committees. We excluded niche institutions composed of specialist arts and agriculture institutions as these had quite different and specialised foci otherwise capturing all other institutions.

### Measures

#### *Dependent variable*

**Vice Chancellor salary** - We use salary data (including pensions) for V-Cs sourced from *The Times Higher Education Supplement*. We supplement this with information on the pay of Professors, all academic staff and all staff from HESA (Higher Education Statistics Agency).

#### *Independent variables*

**Segmentation and Institutional characteristics** – There is considerable organizational variety between the more than 100 universities in the UK. ‘Old’/pre-1992 universities tend to have a strong orientation towards research (e.g. Oxford and Cambridge,) and ‘new’/post 1992 ones more teaching or industry orientated (e.g. Sheffield Hallam and Gloucester). To capture these differences, we segment between members of the pre- (“old”) and post-1992 (“new”) universities. We proxy complexity by the number of faculty employed and also capture the proportion of pay to administrative staff relative to total pay (Stone 2017; Oswald 2017).

**V-C characteristics** – Using *Who’s Who UK* in combination with web searches we derive a list of characteristics that includes: whether the individual came from the private sector, the public sector, from academia, or had recent experience of working both in academic and in the public or private sector, whether the individual had been hired from a pre-92 or post-92 institution, gender, age, country of birth, country located when hired, whether or not the individual had an acting role or a permanent appointment, the institution that the V-C graduated from, whether or not the V-C did an undergraduate or postgraduate programme in Oxbridge, the subject area of the V-C (science, social science, arts and humanities), individual academic influence (measured in year field adjusted life time citations taken from Scopus) and whether the individual has obtained a title (such as a CBE or Knighthood).

We incorporate regional dummies to take account of variations in living costs across the country.

**Governance structures** – A number of characteristics of governance and disclosure are identified by consulting websites of each institution and from information requests to the University College Union.<sup>2</sup> We draw together information on whether or not the V-C sits on the Remuneration Committee, the number of committee members and the level of disclosure, the latter as follows: Differing degrees of disclosure of the minutes of Remuneration committees in 2014/15 and 2015/16 to information requests of the UCU: 1=no minutes of the meetings were provided; 2=minutes are provided with redactions; 3=full minutes are provided without redactions.

**Performance** – There are a rich set of performance metrics available, some of which are produced annually, while a large-scale research exercise tends to be conducted every four to five years. The time-series measures are extracted for the 2008-09 to 2015-2016 period. A general performance metric we focus upon is the Global University Rankings calculated by *The Times Higher Education*. This metrics does summarise a set of teaching and research indices. However, it provides ranking of only a fraction of institutions, mostly research-intensive ones. To capture perceived teaching ‘quality’ we supplement this with the National Student Survey, and more specifically, responses to the ‘overall satisfaction’ question. Institution level citations is based on publication data from *Elsevier’s Scopus*. The overall financial success of institutions is captured in income, expenditure and surplus of each institution with information coming from HESA. We distinguish between three different sources of income: funding body grants; research grants/contracts; and tuition fees. We also capture the enrolment of overseas students, especially for taught postgraduate degrees, given their importance as a revenue stream. It is plausible that V-C performance is partially evaluated on overseas student enrolments, given how lucrative they are. We choose two variables that are continuously available in HESA publications to measure such effects: the number of non-home/EU postgraduate and the number of non-Home/EU undergraduates.

We supplement this information with cross-sectional performance measures derived from the results of the RAE (2008), and REF (2014) by the Higher Education Funding Council of England (HEFCE). We examine two REF components, and (publication) ‘output’. As these data relate to two time periods, rather than being annual measures, we align them to the years where these would be available to assess performance (i.e. RAE for 2009-2014, REF for 2015-16).<sup>3</sup>

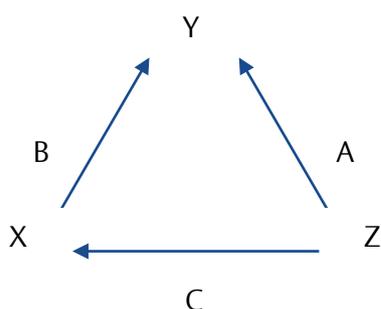
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<sup>2</sup> Full details and reports are found at <https://www.ucu.org.uk/V-Cpay>.

<sup>3</sup> HEFCE REF 2014 (<http://results.ref.ac.uk>) and RAE 2008 (<https://www.rae.ac.uk/>).

## Methods

Our dataset incorporates annual data from 2009/10 to 2015/16. Ideally, we would wish to estimate an econometric model for the determination of V-C pay which will distinguish between the individual's personal attributes, performance metrics, different types of institutions and characteristics of the institutions themselves. We undertake a mediation analysis (general treatments of the methods are found in MacKinnon, 2008; Hayes, 2013). Specifically, we assume that one variable  $Y$ , depends on  $X$  and  $Z$ . Furthermore,  $X=f(Z, z1)$ , expressed graphically as follows:



We run several regressions:  $Y=f(X)$  we estimate the total effect of  $X$  on  $Y$ .  $Y=f(Z)$  we estimate the total effect of  $Z$  on  $Y$ .  $Y=f(X,Z)$  we estimate the direct effect of  $X$  on  $Y$ , once we controlled for  $Z$ , (arrow A), and the direct effect of  $Z$  on  $Y$  once we controlled for  $X$  (arrow B). But, since there is a causal effect from  $Z$  to  $X$ , for example, we would be interested in distinguishing the part of the total effect of  $X$  on  $Y$  that is due to the indirect effect caused by  $Z$ : That is  $Z$  affects  $X$  that affects  $Y$ . In this case, we need the estimated effect of  $Z$  on  $X$  (arrow C).

In modeling salary we need to account for both how V-C characteristics impact upon the performance of an institution, as well as the direct impact of V-C characteristics on salary setting. To account for these, we provided a nested structure first estimating,

$$X_{it} = \beta_0 + \sum_{i=1}^I \beta_i Z_{it-1} + v_t + \varepsilon_{it} \quad (1)$$

Where  $Z$  is the one period lagged performance variables of institution  $i$ , where  $X$  are their determinants (in particular VC's individual's personal characteristics). Doing so enables us to extract the indirect impacts of the  $Z$  variables. Then we can utilize the predicted values of the performance models in the second stage estimation of remuneration:

$$Y_{it} = \beta_0 + \sum_{i=1}^I \beta_i X_{it} + \sum_{i=1}^I \beta_i Z_{it-1} + l_j + v_t + \varepsilon_{it} \quad (2)$$

where (log)salary is the dependent variable – and the explanatory,  $X$  variables, are the direct impacts of V-C and institutional characteristics,  $Z$  are a set of performance metrics,  $l$  are regional

dummies for regions,  $j$ ,  $v_t$  are year effects and  $\varepsilon_{it}$  is the error term. We pool the data undertake the analysis using Generalised Least Squares in order to optimize the efficiency of the estimates.<sup>4</sup>

## Results

*A priori* there are strong reasons to consider that the market is segmented between established research institutions and ‘new’, typically less research intensive, institutions granted University status as part of a reform of the sector in 1992. Descriptive statistics and pair wise correlations between the dependent and independent main and control variables are given in Table 1 between the “old” (pre-1992) and “new” (post-1992) institutions.<sup>5</sup> The descriptive data shows that V-C remuneration is about 25% higher on average in pre-1992 institutions. V-Cs at “old” institutions have more than two and half times more citations and are more likely to have knighthoods. Some other characteristics are quite similar, but there have been substantive shifts over time. For example, earlier work pointed to 93% of V-Cs being male. While the proportion of women is still highly unequal the proportion of men has fallen by more than 10%. It is also the case that the proportion of V-Cs who were hired from Deputy V-C roles has fallen substantially, while the proportion of new appointments who were V-Cs previously has risen by more than 20%. Other characteristics have remained relatively stable with the vast majority of appointees, over 90%, being UK born and hired in the UK. It is also noteworthy that there are substantial differences in the correlation between the dependent and independent variables between the two types of institution highlighting not examining each separately may mask differences in the drivers of pay within the sector.<sup>6</sup>

<INSERT TABLE 1>

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<sup>4</sup> Given the panel structure of the data it would be feasible to use fixed-effects panel methods. Given many of our variables are time-invariant the approach would greatly reduce the richness of the analysis hence our focus of a pooled regression analysis.

<sup>5</sup> The correlations between explanatory variables are not provided here as due to the extensive nature of the data set, but not particularly high. We also undertook sensitivity analysis excluding variable to check the stability of the results and found them robust.

<sup>6</sup> Furthermore, we undertook analyse examining differences between the samples and confirmed substantive and statistically significant difference between them.

Table 2 reports the results of the pooled Generalised Least Squares (GLS) analysis dividing between “old” and “new” institutions where we incorporate year dummies to account for systematic differences in given years having used the mediation analysis

Given the interest of the study is in determining the impact of a set of factors on V-C salaries we provide the second stage estimates here. The first panel examines a set of individual characteristics finding some substantial differences in how V-C personal characteristics relate to remuneration.<sup>7</sup>

< INSERT TABLE 2 >

Panel 2 examines a set of governance variables. It shows that V-C participation on remuneration panels does not appear to exhibit a direct impact on remuneration, however, the extent of disclosure has a well determined influence, particularly in “new” universities. The number of members on committees has a differential impact on each segment of the sector, with larger committees tempering remuneration in “new” institutions, but the opposite being the case in “old” institutions.<sup>8</sup>

Panel 3 suggests that performance does have effects. In “new” less-research intensive institutions, total income is positively correlated with remuneration, as is ‘impactful’ research – however measures of teaching quality (NSS) and quantity (number of students) are not. In older universities, traditional measures of research matter more.

Finally, year and regional effects are jointly significant controls with F-tests of more than 35.<sup>9</sup>

## Discussion and conclusions

Our findings corroborate the notion that remuneration committees have a limited impact on executive pay. We do not find any evidence to support the first hypothesis, i.e. that V-Cs are paid more if they sit on the university's pay committee. However, we do find some evidence that the size of the committee matters, as proposed in the second hypothesis. An explanation of the lack

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<sup>7</sup> Other than being only of methodological relevance to the paper, providing the set of first stage estimates.

<sup>8</sup> We also examined changes in salary and found qualitatively identical results with respect to the governance variables.

<sup>9</sup> We also experiment with OLS estimation which while less efficient does have the advantage of enabling us to obtain R<sup>2</sup> which were a respectable 67.9% for the “new” and 66.4% of the “old” universities.

of support for the first hypothesis might be that the direct influence of V-Cs with a seat on the remuneration committee on their own pay is partially offset by what is likely to be a stronger engagement with pay issues, as well as possibly a greater sensitivity towards the consequences of high pay awards. Our results for the second hypothesis indicate that both larger and smaller remuneration committees may temper V-C salaries, at “new” and “old” universities respectively. While a larger committee is likely to dilute the influence of powerful individuals, thus making it more difficult for V-Cs to dominate proceedings if they sit on the committee, when systemic checks and balances are weaker (Kent et al., forthcoming), smaller committees are likely to have a higher concentration of expertise and may therefore work more effectively towards a fair pay structure, when check and balances are stronger. Our findings show that the former logic, which aligns with our hypothesis, is more applicable at “new” institutions, whereas the latter rationale may explain why we find the opposite outcome at “old” universities. Higher levels of disclosure, measured by the publication of committee meeting minutes, is associated with higher V-C pay, as predicted by our third hypothesis. This finding is broadly in line with the notion that disclosure is a two-edged sword with costs and benefits (c.f. Hermalin and Weisbach, 2012).

We find modest evidence that institutional performance is related to V-C pay; this would confirm earlier work which suggests that under specific circumstances, material rewards can impact on senior manager performance (Shaw and Gupta, 2015). The finding that different performance metrics are associated with V-C pay levels at different types of institutions is broadly in line with our fourth hypothesis. However, we found that it was only in “old” institutions that rankings with respect to research outputs were influential, while the REF impact was notably more influential in “new” institutions. That ‘impact’ is more rewarded in “new” institutions may be reasonable, as it may be difficult for new institutions to be able to compete with respect to scholarly outputs, whereas there are clear benefits of being able to show a social and economic impact in the local economy and beyond: however, impact may be difficult to evidence, allowing more opportunities to game the system. There was no identifiable relation between the key teaching quality measure the NSS. In other words, ‘old’ universities are more focused rewarding research publication performance and ‘new’ ones perceived impact, but neither do much in terms of two key measures of teaching performance, a particularly surprising finding in the case of teaching intensive institutions. Finally, we find evidence that the financial success of the institution was well determined only in “new” institutions, perhaps owing to their more fragile financial base.

Through a systematic marketization of the HE sector and by encouraging an increasingly metric-driven approach to university leadership, policy-makers have created an environment where V-Cs have opportunities to behave as value-maximizing agents. Second, we find some evidence to

indicate that V-Cs act in line with the managerial power approach (Bebchuk and Fried 2003; Boyle and Roberts, 2013), suggesting that V-Cs will use their internal power within organisations to extract a disproportionate amount of the value created by the institution; this problem seems one most pronounced in 'new' universities. We found that disclosure was positively related to pay: ironically this would suggest that calls for greater transparency in VC pay setting may drive pay even higher.

Does this mean that there is a case for stronger regulation of universities? It may be that other broader socio-economic factors are at play that are not easily identified empirically. Council members encompass individuals in senior leadership roles, whose pay has risen precipitously over recent decades. Such individuals, who are well aware of the greater flow of revenues and growth in what is a highly successful sector, may be particularly inclined to reward university leaders for the growing complexity of their role. Thus, many of the classical arguments for CEO pay increases in the private sector are likely to play out similarly in academia (Cornell, 2004). In short, VC pay seems to represent an inevitable by-product of the adoption of practices from the private sector; in this case, further marketization of the HE sector would make the problem worse, not better. Again, the dominant effects of government regulatory changes to date has been to weaken the powers of key stakeholders (local communities and academics), and centralise it in the hands of university managers (Shattock 2017); yet, it is when the power of VCs is constrained that pay is better aligned to performance. Finally, constant regulatory tinkering clearly makes the job much more difficult, and hence, may justify even higher pay. The academic influence of the V-C (indicated by their life-time citations) as a determinant of salary only in the "new" universities. This may reflect higher levels of academic influence being a scarce commodity in the new university sector. On the other hand, research-intensive institutions may have less need to shore up their credibility based on their V-C's own research reputation; it also makes the distinction between the VC and the rank and file professoriate less pronounced.

Students are the most transitory members of a university community and a focus on their concerns may, at the least, open issues of continuity; however, of all the reward metrics, teaching quality appears to be the least influential. This article does not explore what would happen if association members – that is, students and staff - genuinely ran universities. Again, the choice of performance metrics is likely to vary greatly according to the relative representation of association members. Finally, at a theoretical level, there are clear limitations in the application of agency theory to universities; there remains a lack of clarity as to who the principals really are (are they simply association members?), and it is difficult to reach conclusions as to the scale of any agency problems given this. This would suggest that alternative approaches for understanding

universities and how they are governed, either as ‘republics of science’ who have, over centuries, developed viable and sustainable governance models (Polanyi, 2000) and/or simply a social good that deserves sustaining whatever its imperfections (Oakeshott, 2004). We also encountered much heterogeneity in the sector, most notably in terms of the divide between “new” and “old” institutions; the latter have more robust internal governance structures. If the core function of the university is research and teaching, then some are much better at incentivising VCs this than others. This diversity would indicate that universities are indeed capable of devising internal governance solutions. At the same time, the modest and uneven linkages between pay and performance would indicate the basis of a case for pay restraint.

## Limitations and future research

Our study is based on a survey of academics in a single country and this is an important limitation to the generalizability of our findings. However, the UK has been at the forefront of developing research assessment systems, and it has sought to institutionalize their assessment on a recurring cycle, for example incorporating impact in its latest round (Hicks 2012); it has also developed a system for grading teaching quality, the Teaching Excellence Framework. As such, UK institutions are perhaps ‘canaries in the mine’ for academics in other contexts where such assessment systems are being put in place.

A performance pay approach assumes that performance can indeed be measured. We have used a series of measures relevant to the UK universities context’ however each has its own set of limitations and has been criticised in the literature. For example, York (2009) points to limitations in the NSS, while Bell and Brooks (2017) also point to methodological issues with the measure. We cannot conclude that the lack of influence of teaching metrics means that universities do not take teaching seriously; rather, it could be that this reflects the challenges of accurately measuring teaching quality and/or the lack of legitimacy externally imposed metrics have within the sector. Indeed, policy makers considering the development of further performance metrics to judge universities by would be well advised to reflect further on this question. There is a substantive literature highlighting the limits of both peer review and citation-based metrics. Thus, even if UK universities have become more corporatist in their objectives it does not necessarily mean that finding a limited relationship between pay and performance of V-C is inherently bad; taking account of a wider range of measures might indicate a better – or worse – alignment between performance and pay.

Tosi and Gomez-Mejia (1989) argue that, within owner controlled firms, pay is much better aligned to performance than in managerially controlled ones. It could be argued that the misalignment between V-C pay and performance indeed reflects a product of excessive managerial power, rather than owner control. However, this raises the question as to who really owns universities. If one returns to their role as voluntary associations, then this would be defined as their transient memberships (Moodie and Eustace 2011). Although this could be contested, the alternatives would be council members or government. Although councils may have a formal role as supreme governing bodies, members generally lack de facto, if not de jure accountability. Meanwhile, constant shifts in UK government higher education policy would suggest the elusiveness of sustainable regulatory fixes.

In terms of the implications for students and learning, the paper suggests that university governance remains a contested domain. The paper highlights that a linkage between governance failures and unjustified VC pay. Although in traditional terms, universities are seen as a community of learners and teachers, in which both are stakeholders, in the UK, there has been a general departure from this ideal, the only differences being in terms of distance travelled. We found that more appropriate reward systems were associated with better outcomes for the university overall; however, these are metrics that cannot capture the richness of the learning experience, or the open ended nature of scholarship. On the one hand, it could be argued that better aligned pay could be associated both with universities with sound governance and corporate universities that are good at manipulating metrics. On the other hand, managerial excess is rarely associated with sustainability and consistency in outcomes (Kurucz et al, 2014). At the same time, we could surmise that when the difference between VC reward and reality is most pronounced, these are most likely be where the latter is most likely to be under threat. Having developed a framework for understanding where and when a misalignment in VC rewards is most likely to take place, a fertile area for follow up research would be in terms of in-depth studies of the relationship between this and diversity in actual experiences of research and learning.

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**Table 1. Summary statistics including pairwise correlations with the dependent variable**

Variable Name	"New" universities	Pairwise Correlations (Dependent Variable)	"Old" universities	Pairwise Correlations (Dependent Variable)
Salary (excluding pension)	230,447.40		289,277.60	
<b>Individual Characteristics</b>				
Gender (Male=1)	0.82	0.31 *	0.81	-0.14 *
Age at appointment	56.81	0.03	60.18	0.21 *
Tenure	6.31	0.19 *	6.05	0.23 *
Tenure (Squared)	39.80	0.19 *	36.64	0.26 *
Academic Influence (life time citations)	1,038.78	0.27 *	3,601.21	0.25 *
Title				
	Knighthood	0.06	0.10 *	0.24
	Public Honours	0.40	0.14 *	0.26
<b>Previous occupation (role)</b>	VC	0.42	-0.15 *	0.37
	Deputy VC	0.32	0.07 *	0.22
	Other HE	0.14	0.19 *	0.37
	Other	0.12	-0.09 *	0.03
<b>Previous occupation (sector)</b>	Public	0.10	-0.02	0.11
	Private	0.02	0.01	0.00
	HE	0.82	0.00	0.78
	Private and HE	0.05	0.03	0.11
<b>Born in</b>	UK	0.87	0.04	0.82
<b>Hired from</b>	UK	0.95	-0.10 *	0.86
<b>Academic Background</b>	Science	0.36	0.11 *	0.59
	Social Science	0.11	0.08 *	0.24
	Arts and Humanities	0.47	-0.19 *	0.17
<b>Oxbridge (UG or PG)</b>		0.21	0.03	0.40
<b>Acting VC</b>		0.01	-0.35 *	0.03
<b>Internal Candidate</b>		0.20	-0.08 *	0.17
<b>Entrant</b>		0.11	0.09 *	0.15
<b>Governance</b>	VC on committee	0.82	0.18 *	0.57
(Remuneration Committee)	No. of members	6.51	-0.11 *	5.93
	No Minutes	0.36	-0.23 *	0.39
	Provide Minutes (with retractions)	0.28	0.09 *	0.37
	Provide Minutes (no retractions)	0.36	0.14 *	0.24
	Average Faculty Salary	42,851.01	0.13 *	44,361.33
<b>Performance Characteristics (t-1)</b>				
<b>Overall</b>	Total Income	153,170.40	0.39 *	407,758.30
<b>Research</b>	Total Citations	17.78	0.27 *	54.72
	Funding Body Grants	63,992.33	0.28 *	127,554.80
2008 and REF2014	REF Outputs (GPA)	94.61	-0.30 *	34.20
	REF Impact	78.43	-0.34 *	30.89
	Change between RAE2008 and REF2014	-1.68	-0.01 *	0.09
<b>Teaching</b>	NSS	83.84	0.06	87.09
	No. Non-UK Postgraduate students	10,004.81	0.20 *	10,106.56
	No. Non-UK Undergraduate students	824.08	0.25 *	1,972.94
	Tuition fees income	57,271.13	0.28 *	110,077.00
<b>Other</b>				
Institutional complexity	No. of Staff (FTE)	2,268.03	0.41 *	4,731.14
Administrative burden	Ratio of Academic to Administrative Staff	1.98	0.12 *	1.93
N		574		263

**Table 2. Determinants of (log)salary (Estimated using GLS)**

Variable Name	Measurement	"New" universities		"Old" universities	
		Coeff	z-stat	Coeff	z-stat
<b>Individual Characteristics</b>					
Gender	Gender (Male=1)	-0.003	(0.63)	-0.316 **	(2.64)
Age at appointment	Years	-0.002	(0.36)	0.001	(0.84)
Tenure		0.009	(1.24)	0.026	(1.41)
Tenure (Squared)		0.000	(0.36)	-0.001	(1.31)
Academic Influence (000s)		0.013 ***	(3.60)	0.012 **	(2.12)
Titular Status	Knighthood	0.050	(1.07)	0.214 **	(2.22)
	Public Honours	0.050 **	(2.08)	0.136 **	(2.22)
Previous occupation (role) -Ref. VC	Deputy VC	0.041	(1.39)	-0.108	(1.18)
	Other HE	0.134 **	(2.05)	0.143 *	(1.71)
Previous occupation (sector)	Other	-0.196 **	(2.42)	0.087	(0.61)
	Public	0.029	(1.16)	0.041	(0.94)
Ref. HE	Private	0.182 *	(1.70)		
Born in	Private and HE	0.066	(1.16)	-0.208 *	(1.67)
Hired from	Ref. UK	-0.029	(0.86)	0.071	(0.95)
Academic Background	Ref. UK	0.144 ***	(2.80)	-0.274 ***	(2.05)
	Social Science	-0.043	(1.05)	0.105	(1.19)
Ref. Science	Arts and Humanities	0.024	(1.08)	0.123 **	(2.13)
	Other	0.109 **	(2.36)		
Oxbridge (UG or PG)		0.000	(0.15)	0.016 **	(1.98)
Acting VC		-0.766 ***	(2.57)	-0.486	(1.24)
Internal Candidate		-0.070 ***	(3.28)	0.078	(0.44)
Entrant		0.051	(1.25)	-0.086	(1.34)
<b>Governance</b> (Ref. No minute provided)	VC on committee	0.057	(0.59)	0.099	(1.35)
	Provide Minutes (with redactions)	0.065 ***	(3.29)	0.057	(1.34)
	Provide Minutes (no redactions)	0.159 ***	(4.84)	0.170 *	(1.95)
	No. of members	-0.108 **	(2.47)	-0.093	(1.56)
Relative salary	Average Faculty Salary	0.003	(0.70)	-0.041	(1.53)
<i>Overall</i>	Income (mn)	0.001 **	(1.99)	-0.073	(0.51)
<i>Research</i>	Total Citations (000s)	0.001 **	(1.96)	0.001 *	(1.77)
	Research grants (000s)	0.002	(1.30)	0.001 *	(1.70)
	Change between RAE2008 and REF2014	0.002 ***	(2.47)	0.001 *	(1.78)
	RAE/REF Outputs	0.000	(0.08)	-0.007 **	(2.22)
<i>Teaching</i>	NSS	0.001	(0.82)	0.007	(1.13)
	No. Non-UK Postgraduate students (000s)	0.001	(1.54)	0.000	(0.21)
	No. Non-UK Undergraduate students	-0.013	(1.21)	0.005	(0.17)
	Tuition fees income (mn)	1.270 ***	(2.62)	0.464	(0.96)
Insitutional complexity	No. of Staff (FTE, 000s)	0.050 ***	(2.52)	0.012	(0.60)
	Ratio of Academic Staff to Administrative				
Administrative burden	Staff	-0.089 ***	(3.88)	0.034	(0.32)
	Constant	12.596 ***	(38.94)	12.877 ***	(11.37)
Area		YES		YES	
Year		YES		YES	
N		574		263	
Log pseudolikelihood		210.90		57.72	

**Notes:** The GLS estimations assume a Gaussian (normal) distribution. White adjusted standard errors.