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Business Experts on Public Sector Boards: What Do They Contribute?

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Abstract: Although public management reforms around the world have given business experts an enhanced role in the governance of public service organizations, the impact of this change is poorly understood. Drawing from the literature on board human capital as a theoretical framework and focusing on the case of hospital boards in the English National Health Service, this concern is addressed by investigating whether increasing the presence of individuals with business expertise has any significant relationship with organizational performance. The findings show that while business expertise appears to have no influence on service quality, it does have a positive effect on financial performance. This, however, only applies to governing boards that are less experienced, in terms of their collective tenure. As such, the findings lend partial support to board capital theory, but also show that in certain conditions generic business expertise can be a valuable asset for public sector organizations.

Practitioner Points:

- Little evidence exists on the influence of business expertise on the governance of public sector organizations.
- Greater presence of business experts in the boardroom does not have any effect on the quality of service provided.
- A higher proportion of business experts at the board level positively influences the financial management and efficiency of the organization.
- The positive contribution of business experts to process and outcome-based efficiency is limited to relatively inexperienced governing boards.

It is increasingly commonplace for public service, non-profit organizations around the world to be led by top management teams with a wide range of expertise, including from the commercial sector (van der Walt and Ingley 2003). The argument that business people might help to improve the performance of public organizations has been a staple of public administration as a discipline since its inception (Wilson 1887; Thayer 1972). In the US, there have been longstanding practices of favoring political appointees, or generalists – sometimes with business backgrounds and technical expertise in management - over specialist career civil servants (Maranto 1998; Lewis 2007). More recently, however, the desire to make public services more 'business like' and 'entrepreneurial' (Meynhardt and Diefenbach 2012) has become part of the "zeitgeist" of the new public management (NPM) (Petrovsky, James, and Boyne 2015; p. 220), encouraged by policy makers, researchers and global consulting firms. McKinsey & Co., for example, identify the "need for managerial knowledge and expertise" as one of five global challenges facing public sectors and suggest that "notions of clear divisions between public and private skills" have become increasingly redundant (Barber, Levy, and Mendonca 2007; p. 11). In policy terms, a desire to learn from business experts has led to formal temporary transfers of workers and, in many cases, the direct recruitment of business people from the private sector (Verbeeten and Speklé 2015), including senior roles in transnational agencies such as the World Bank and the IMF. In some countries it has also meant 'de-privileging' public service employment, increasing flexibility to recruit business expertise directly into the civil service itself to run public services at more operational levels (Pollitt and Bouckaert 2011).

These changes in the nature of public management have been justified in a number of ways. It is often argued, for example, that managers with business backgrounds will add value to public services, introducing much needed commercial knowledge, while ushering in a different mind-set that emphasizes the importance of financial control and consumer

satisfaction. Related to this view is the argument, informed by public choice theory, that managers drawn from outside the career civil service will be more attuned to the demands of elected politicians (Lewis 2007). In this respect, attempts to diversify the skill mix of public administration stem "from a distrust of the permanent bureaucracy – its objectives and/or its perceived biases in staffing positions" (Aucoin 1990; p. 121).

Yet, while the benefits of business expertise are widely assumed by policy makers and some scholars, the supporting evidence is still limited. This is not to ignore long standing debates regarding 'polycentricity', highlighting the potential benefits of using private sector practices, providers and contractual arrangements in the management and delivery of public services, to enhance the 'common good' (McGinnis and Ostrom 2012). Support for this idea comes from studies focused on US local government, showing that the 'council-manager' form of municipal government can perform better than 'mayor-council' governments, although 'this literature is still maturing, and more work is required to fully assess these claims' (Carr 2015; p. 683). There also exists a rich tradition of research focusing on the impact of political appointees on the delivery of US federal programs. With some exceptions (see Maranto 1998), studies have consistently found that specialist career civil servants tend to perform better than outside generalists (Lewis 2007; Gallo and Lewis 2012). However, because the focus of this work has been primarily on political appointees – a category that includes the third sector and civil servants re-deployed from other areas of federal government, as well as business people (Boyne et al. 2010) – it is hard to disaggregate the specific impact of business expertise.

In this article, the objective is to contribute to this debate focusing on the influence of business experts at the board level of public sector organizations. Specifically, the analysis is framed drawing from ideas on board capital theory (Johnson, Schnatterly, and Hill 2013).

This perspective is useful because it highlights the role of different kinds of expertise – 'generic', 'industry' and 'firm specific'– in shaping the contribution of board directors. However, it also requires certain modifications when applied to the public sector to account for the proliferation of different kinds of performance outcomes (service quality and financial goals) and the role of collective experience in board activities. To illustrate the application of this approach, the article focuses on the case of public hospitals in the English National Health Service (NHS).

Board Human Capital and Performance

In recent years, board capital theory has grown in popularity as a framework for understanding the behavior of governing boards. A central argument is that boards are not homogeneous and that attention needs to be given to their demographics and to the resources provided by each individual director (McDonald, Westphal, and Graebner 2008). These resources comprise the ever changing bundle of knowledge, skills and experiences of board members and their access to information (Kor and Sundaramurthy 2009; Hillman and Dalziel 2003; Johnson, Schnatterly, and Hill 2013). Specifically, they include 'human capital', referring to the knowledge and expertise of directors, and social capital (Oh, Labianca, and Chung 2006), arising from each board members' network of connections and relationships (Kor and Sundaramurthy 2009; Tian, Haleblian, and Rajagopalan 2011).

In this context, 'human' capital comprises the prior knowledge and skills of directors, acquired as a consequence of their formal education and qualifications (e.g. having trained as doctor, nurse, or accountant), employment choices and professional experiences (Kroll, Walters, and Wright 2008; McDonald, Westphal, and Graebner 2008). Scholars frequently cite human capital as an intangible resource that generates rents (i.e. returns on invested resources above their supply price) for the organization, essentially providing a means of

competitive advantage (Sturman, Walsh, and Cheramie 2008; Becker 1975). Indeed, an underlying assumption is that boards with higher levels of human capital are more effective due to their access to better-quality information and superior information-processing capabilities (Tian, Haleblian, and Rajagopalan 2011).

However, not all aspects of human capital bear the same value adding function for an organization. Sundaramurthy, Pukthuanthong, and Kor (2014) differentiate between three forms of capital - generic, industry and firm specific – which lie along a continuum in terms of their degree of transferability and ability to generate rents. Where generic skills are concerned, a starting assumption is that directors with knowledge acquired through previous experience on boards are more likely to contribute to the formulation and implementation of an organization's strategy (Kroll, Walters, and Wright 2008). As such, generic human capital entails managerial knowledge, skills and abilities - such as finance, marketing and human resource management – that are transferable and capable of generating value in any type of organization.

Nevertheless, while these generic highly transferable skills are necessary, they are not sufficient to ensure high board performance. This is because organizations, even when operating in the same domain, have different ways of using bundle of resources and capabilities at their disposal. Thus, a director's experiential knowledge of the specific context of an organization may be crucial to making an effective contribution to board decision making (Kroll, Walters, and Wright 2008). Board capital theory also notes the importance of industry or sector specific knowledge, arising from long standing experience in a particular sector or strategic environment. The way in which technology, regulation and innovation develops in a certain industry, for example, is often path-dependent, giving those directors and their boards who better understand these patterns a distinct advantage. Such knowledge

may allow directors to spot favorable opportunities or to critically assess management proposals and provide meaningful advice in strategic decisions (Castanias and Helfat 2001). For these reasons, industry/sector experience has been described as an important, uncommon and not-easily-replicable resource (Castanias and Helfat 2001) associated with sales growth (Kor and Sundaramurthy 2009), stock market reactions to acquisitions (Walters, Kroll, and Wright 2008), and effective succession planning (Tian, Haleblian, and Rajagopalan 2011). As we shall see, this may be particularly relevant in the case of public sector organizations, such as public hospitals, that have undergone processes of corporatization (Lindlbauer, Winter, and Schreyögg 2015) with the establishment of executive boards.

Hence, it is argued that board effectiveness is strongly influenced by the characteristics of human capital in boards, especially with reference to generic, firm specific and industry/sector specific skills (Kor and Sundaramurthy 2009; Haynes and Hillman 2010). Of course, it is important to recognize that the skill mix of boards is constantly evolving as a result of turnover of directors. Boards also differ in their ability to function as a cohesive decision making group and capacity to exploit the individual expertise of their members (Kor and Sundaramurthy 2009; Oh, Labianca, and Chung 2006; Haynes and Hillman 2010). But while these caveats are important, they only partially qualify the wider claims made in this literature about the significance of human capital in shaping the effectiveness of boards and ultimately the performance of organizations.

Human Capital and Board Performance in Public Service Organizations

Although board capital theory has been developed exclusively in the context of private firms, public sector reforms around the world have led to the establishment of corporate-style board arrangements in organizations such as hospitals, universities and social care agencies. This fact suggests that many of the governance challenges faced by private firms are increasingly

indistinguishable from those of public sector organizations. It also raises similar questions to those posed by board capital theory about the value and contribution of different kinds of human capital. Following Sundaramurthy, Pukthuanthong, and Kor (2014), policies of recruiting outside senior managers with business expertise (i.e. from private firms) onto public sector boards can be interpreted as an extension of generic skills. Nevertheless, all the indications are that the knowledge gaps created by the decision to recruit business experts will be considerable.

Historically, public administration has been distinct from the private sector in ethos, organization and methods of accountability with managerial discretion more "fenced in by explicit standards and rules" (Hood 1995; p. 95) . Although these characteristics of 'publicness' have become increasingly less apparent, they still remain significant. Hence Petrovsky, James, and Boyne (2015) note how the dimensions of public ownership, public funding and regulatory constraints can still make it hard for outsiders (who lack experience in this areas) to adjust to the specific demands of public organizations. Research in this area has also tentatively identified a link between 'organizational publicness' and certain performance outcomes such as efficiency and equity (Andrews, Boyne, and Walker 2011; Bozeman 1987; Perry and Rainey 1988).

Therefore, there is a strong prima facie case to support the predictions of board capital theory about the likely influence of generic business expertise. The latter relates to directors who lack previous experience in public organizations and whose 'publicness fit' is very low or non-existent. In practical terms, a greater reliance on such directors may be negative for performance, especially in core areas linked to service quality that require deep sector knowledge. One reason for this is the potential for ineffective decision making, with disruptive costs associated with the lack of experience of outsiders outweighing adaptive

benefits of fresh leadership (Petrovsky, James, and Boyne 2015). Directors recruited from private firms may also struggle to adjust to the more ambiguous and contested nature of quality goals in the public sector (Chun and Rainey 2005). Another possibility, suggested by human capital theory, is that the recruitment of business experts indirectly undermines performance by crowding out boards and reducing the opportunity for directors with sector specific expertise to make a positive contribution (Kor and Sundaramurthy 2009). Either way, it can be hypothesized that:

> H_1: A high proportion of directors with generic business expertise on the board of public sector organizations will have a negative effect on core performance (measured by service quality).

However, as noted earlier, in most developed countries a broader array of performance goals, including financial, have become more significant (Pollitt and Bouckaert 2011). In health care, for example, Reay and Hinings (2009) note how reforms have fundamentally altered the rules of the game, allowing a logic of business like-health care to coexist with that of medical professionalism. While this does not imply that public organizations will suddenly become profit driven, it does nevertheless raise the profile of performance objectives associated with financial efficiency that are not sector specific (Veronesi and Keasey 2011).

These trends raise obvious questions about the possible contribution that generic business expertise on boards could make towards achieving efficiency goals as well as to core service quality goals. While it might be argued that such expertise will be hard to apply fully without deep sector knowledge, the intense pressure on public organizations to comply with financial targets may have generated conditions in which managers from the commercial sector are able to exert greater influence. Consequently, one can further predict that:

H_2: A high proportion of directors with generic business expertise on the board will enhance the financial management and efficiency of public sector organizations.

Of course, when exploring this hypothesis, it is important to consider how certain conditions of boards and their host organizations might moderate the positive effect of generic expertise on financial outcomes. A point raised by the literature on chief executive officer succession (Hill 2005) is that any positive consequences associated with the recruitment of outsiders to senior roles are most likely to be realized in organizations that have previous low levels of performance (Petrovsky, James, and Boyne 2015). This is because low performing organizations have weaker capabilities in management and also have less to lose from greater risk taking that might be associated with the recruitment of managers from outside the public sector. Hence, it can be further hypothesized that:

H_3: The positive influence of directors with generic business expertise on financial performance outcomes will be contingent on past performance levels of public sector organizations, especially for prior low performance levels.

Turning to the (internal) characteristics of boards, levels of experience may also be important. Implied by H_2 is that changing demands in the public sector and growing uncertainty may have exaggerated the contribution of business experts with generic knowledge and skills. This is made more likely by the historic weakness of management training and skill gaps in financial accounting that have characterized many public organizations (Broadbent and Guthrie 2008). Under these conditions, having more business expertise on boards may be a distinct advantage when sector insiders (professionals and civil servants) themselves lack this knowledge. However, in any context expert knowledge is accumulated in a certain area depending on the prior involvement of the individual in a number of decisions in that relevant domain (McDonald, Westphal, and Graebner 2008). The tenure of boards may also help to

improve group cohesiveness and quicker learning and the sharing frames of reference and knowledge (Oh, Labianca, and Chung 2006). As such, one might expect that in the context of public services, over time the extent of skill gaps in financial savviness in boards will become less pronounced and that, consequently, the specific contribution made by business experts to financial performance will also become less significant. Put differently, it might be predicted that:

> H_4: The influence of directors with generic business expertise on financial management and efficiency of public sector organizations will be greater on boards that are less experienced.

Data and Methodology

The article focuses on the case of one area of the English public sector: the governing boards of NHS acute hospital trusts. The NHS represents an ideal case for this analysis, being central to attempts to recruit management experts from the private sector, effectively transforming them into career civil servants (Ferlie, Ashburner, and Fitzgerald 1995). This process began in earnest following the Griffiths report in 1983 (itself written by the CEO of a major UK supermarket chain, Sainsbury's) and has continued subsequently especially at board level. Trusts are organizational forms introduced at the beginning of the 1990s that comprise one or more hospitals, with semi-autonomous status and, similarly to corporate sector organizations, governed by a board of directors. Trusts are supposedly allowed to compete for contracts from primary sector organizations responsible for commissioning health care services, although they remain part of the public sector and (unlike private hospitals) are not expected to generate financial surpluses. To this end, considerable emphasis has been placed on improving their governance through boards of directors accountable for service quality and

the efficient use of resources (Veronesi and Keasey 2011). Boards are unitary and comprise executive and non-executive (independent) members, selected every three years.

A further development of these reforms has been trends towards corporatization (Lindlbauer, Winter, and Schreyögg 2015), giving some organizations the status of foundation trusts (FTs). Established by the Health and Social Care Act (2003), FTs formally have a more independent trust legal status as public benefit corporations. In theory, FTs have greater autonomy in the management of resources, for instance to recruit staff, and freedom in their operating and financial regimes to retain surpluses and even borrow from the private sector (Exworthy, Frosini, and Jones 2011).

Due to the absence of a central repository of information on the governance of hospital trusts, data on board composition was gathered by manually working through the websites and official documents (e.g. annual reports and other corporate communications) of individual trusts. As with private sector organizations, it has become customary for hospital trusts to make available the individual profiles of the members of the board (and other key information and facts) on a specific section ('About Us') of the official website. This led to the creation of a unique dataset profiling the main professional qualifications (for example physician, nurse or career manager) and job titles of each individual director. In 2008/09 there was a total of 169 acute care hospital trusts (70% of which were FTs) operating in the English NHS, although only a fraction provided full information on the membership of the boards.

Thus, the final sample included 236 observation points from 2006/7 to 2008/9. For the final year, our dataset represented about 60% of the total population (101 trusts) whereas the more limited availability of governance data for the previous years limited the sample to 56 observations in 2006/7 and 80 in 2007/8. The characteristics of the organizations included in

the sample were not statistically different from the overall population of acute care hospital trusts.

Dependent Variables

To test the hypotheses, two composite measures of performance – service quality and financial efficiency - were used to capture process and outcome based elements of organizational activity. Issues of equity in service provision were not considered as the data available could not support such analysis.

To build composite measures of quality and efficiency, data were sourced from the sector regulator - Healthcare Commission (HC), re-named Care Quality Commission in 2009. Specifically, the focus was on the annual ratings of hospital trusts, published on annual basis by the regulator in the Annual Health Check. These ratings were mainly related to process elements of service provision, with the first gauging the quality of the service provided, while the second related more narrowly to efficiency in the use of financial resources. They comprised four categories indicating progressively better performance, from weak (1) to excellent (4).

The quality score (Q_RATING) summarized the care and treatment provided with reference to 67 standards - focusing health and well-being, clinical effectiveness, safety and patient focus and ease and equity of access - and indicators - measuring waiting times, referrals to treatment and infection rates - set consistently over the study period by the Department of Health (Healthcare Commission 2008). The financial management score (FIN_RATING) - rated the ability of trusts to efficiently manage resources along five dimensions: financial reporting, financial management, financial standing, internal control and value for money.

To complete the composite measures and focusing on performance outcomes, two additional indicators were gathered from publicly available sources. First was the Hospital Standardized Mortality Rates (HSMRs) produced by Dr Foster – an independent think-tank – which compares the performance of hospitals in relation to the number of observed deaths of patients admitted to hospital to the expected number of deaths adjusted for the patient mix. Although not a perfect measure of service quality – they are limited in their ability to differentiate between preventable and non-preventable deaths - mortality rates do represent one of the more reliable indicators of treatment outcomes (Salge 2011). The negative values of the mortality rates were employed in the analysis to transform lower mortality rates into higher outcome levels.

Where financial performance is concerned, a further outcome measure of cost efficiency was combined with the previously described process-based indicator of efficiency. The Reference Cost Index (RCI) - downloadable from the website (GOV.UK) for UK government services and information - entails a single index that compares the average cost of the casemix of each NHS trust with the cost of that casemix based on average unit costs of treatment. Therefore, a hospital trust with an RCI of 100 has average unit costs equal to the national average, whereas an organization with an index of 110 has average unit costs 10% higher than the national average. Each hospital trust in only paid the national average cost for a procedure, which is intended to incentivize efficiency gains without threshold effects. Accordingly, negative values of the RCI were used in the analysis, with higher outcome values corresponded to greater organizational efficiency.

Independent and Control Variables

As noted earlier, the study looked at the biographical profile of the board directors for each year included in the period of analysis. Following the model of other studies focusing

exclusively on board human capital theory in the private sector (Sturman, Walsh, and Cheramie 2008; Khanna, Jones, and Boivie 2014), a first stage was to identify those individuals on the board with significant professional expertise in private sector organizations. The data collection was conducted by accessing any publicly available source of information on the trust board composition, including annual reports and organizations' official websites (e.g. www.leedsth.nhs.uk/about-us/ for Leeds Teaching Hospital trust), giving details of who sits on boards and short biographies. A director was classified as having business expertise if, at any point in the professional career, he/she had worked in the private sector in a comparable top managerial role such as a directorship. These individuals were recruited from a wide range of industries, but around half of them came from the service sector, with roughly one in two having worked in financial services or management consulting firms. In this category were also included individuals with expertise in the third sector, although this applied to only a handful of cases (less than 10). Those individuals with a professional background in local authorities, schools, or other public sector services were not considered as having business expertise.

Using these data, the category business experts was calculated as the percentage of board directors with private sector expertise to total number of board members. The same procedure was then followed for chief executive officers, focusing on the business background (CEOBACK_BUSEX) of individuals. In this way, a cohort of board members was identified who were outsiders to the public sector with low levels of publicness fit. Importantly, this cohort also lacked more specific health sector specific knowledge, through previous experience in private hospitals. This is perhaps unsurprising given the fact that in the UK, over 85% of healthcare is provided by the public sector, with little or no movement of senior managers from the private health sector to the NHS.

To isolate the effect of business expertise among board members on organizational performance, potentially confounding factors related to board composition were controlled for. Previous studies on hospital boards in the UK and US reveal that clinical expertise (what we have previously defined sector specific expertise) can have a positive impact on the quality of the service provided (Veronesi, Kirkpatrick, and Vallascas 2013; Goodall 2011). Hence, following the same process described above, we identified board members with a clinical background, which included doctors, nurses and the other allied health professions (e.g. physiotherapists), and generated a variable (CLINICAL) constructed as the percentage of clinical professionals on the board. As typical in governance research (Kor and Sundaramurthy 2009), a number of board-related control variables were included such as: the log transformation of the number of board members to measure board size (BOARDSIZE); the percentage of independent directors to total board members to capture the degree of board independence (INDEPENDENCE); and the percentage of female directors on the board as a proxy of the gender composition (GENDER). Board size, independence and gender mix are regularly included in governance studies as they can influence collective behaviors and decision making in the boardroom.

To account for the possible impact of trust status and context on performance, a variety of additional controls were used (Salge 2011; Veronesi, Kirkpatrick, and Vallascas 2013). First, trusts were divided into a binary group according to their legal status, whether or not they had converted into the more autonomous Foundation Trust (FT) organizational type (FOUNDATION). Greater freedom in decision making can affect resources allocation and, therefore, overall performance. Second, a control was added for teaching status (TEACHING) to account for the possible impact of greater complexity of clinical services in teaching hospitals on quality and efficiency levels. Third, the possible impact of size on performance outcomes was controlled for using the log transformation of the total number of

beds available (SIZE), with the expectation that in larger, hence harder to manage, organizations the effect of board members' human capital on performance might be diluted. Lastly, case load (CASELOAD) - calculated as the log transformation of the total number of admissions per staff numbers - was employed as a proxy for the overall level of operational slack in the organization. Intuitively, busier organizations can find harder to deliver high levels of effectiveness and efficiency.

As a further control and indicator of board overall experience, tenure (TENURE) was calculated as the percentage of directors with three or more years of membership of the governing board to the total number of board members (Kor and Sundaramurthy 2009). This measure captures the percentage of board members who have completed at least one term of directorship and, thus, have greater practical experience in the job as well as having a deeper firm-specific expertise.

Methods

The nature of the HC ratings employed as a dependent variable dictated the choice of method to analyze the data. Since the financial and quality rating indicators are ordinal variables the analysis was conducted through pooled regressions via an ordered logit model. Given the comparable characteristics of the research design, the methodological approach closely followed the one described in Veronesi, Kirkpatrick, and Vallascas (2013) and was based on the estimation of the ordered-logit model (detailed description of the model specification can be provided on request). Conversely, for the mortality ratios and the RCI, which are continuous variables, the analysis was run using linear regression via Ordinary Least Squares (OLS) estimations.

In the case of the ordered model, to explore the effect of the main explanatory variables (HC ratings), the average marginal effects on the predicted probabilities to obtain a rating class

determined were also reported. Additionally, given the longitudinal structure of the sample and the presence of repeated observations for each hospital trust, inferences were based on robust standard errors clustered at the hospital trust level. This relaxes the conventional requirement for observations to be independent allowing for the presence of within group (cluster) correlation. To verify H_4, an interaction test was conducted to look at the moderating effect of the experience of governing boards on the influence of business expertise on performance.

Results

Table 1 reports the descriptive statistics and the definitions for the explanatory and control variables employed for the 3-year period in the relation to the quality rating, mortality rates, financial management rating and the RCI. From table 1 panel A, it can be seen that on average business experts comprised over a half of the board members (52.12%), meaning that business expertise was the dominant type of expertise at the board level in the English NHS hospital sector. However, there are sizeable differences within the sample. While at one extreme business expertise accounted for more than 80% of the boardroom, at the other it might be lower than a third of board members. With regard to the expertise of the CEO, the data illustrate that just 3% of the CEOs had a business background. Conversely, table 1 panel B shows a higher presence of business experts in the higher financial rating classes (3 and 4) but a less defined pattern for the quality ratings classes.

[Table 1 here]

Table 2 presents the results of the ordered logit regression and the OLS estimations on the effect of business expertise respectively on the quality and financial management ratings and on mortality rates and the average unit costs. As shown in the table 2 panel A columns 1-3, neither of the regressions employing as dependent variable the quality rating or the mortality rates and additional controls accounting for the specificities of these indicators provided any significant result for the share of business experts on the board. Conversely, following previous studies (Veronesi, Kirkpatrick, and Vallascas 2013; Goodall 2011) a higher percentage of directors with clinical background (sector specific expertise) on the board was related to better service quality. As such, while the analysis bears out some of the assumptions of board capital theory concerning the value of sector specific expertise, it does not support H_1 with regard to the negative effect of a high percentage of business experts (with generic skills) in the boardroom.

[Table 2 here]

Turning to the second hypothesis, in all specifications (see table 2 panel A columns 4-5 and 7) the findings appear to consistently suggest that business expertise had a positive and significant effect on the financial performance of hospital trusts, both with reference to the financial management scores and the RCI. That is, in all empirical models, the data revealed a

statistically significant pattern indicating links between an increasing percentage of directors with business expertise and better financial performance. Interestingly, clinical expertise appears to have a significant and negative effect as far as the RCI is concerned.

For each of the estimated models reported in table 2 panel A related to the HC ratings, panel B shows the average marginal effects measuring the change in the probability to achieve a given rating class for an increase in the share of business experts on the board. This analysis indicates that there is no significance in relation to the influence of business expertise on the quality rating, substantially disconfirming the assumption made in H_1. On the other hand, an increase in the share of business expert significantly increases the probability to achieve the highest financial rating and the effect is robust to changes in the model specification, thus validating H_2. These results, therefore, lend mixed support for the first two hypotheses about the different contribution of business expertise to core (not significant) and financial (positively significant) performance. However, interestingly, no significant association was found between business expertise of the CEO and the financial performance achieved by a hospital trust.

With regard to the impact of the various control variables included in the model, there was a positive relationship between FT status and financial ratings (but not with lower average unit costs). Traditional governance variables such as board size, independence and gender seem to have only a marginal or not significant effect. Lastly, the analysis appears to disconfirm any significant link between teaching status and size of hospitals and their ability to achieve better financial performance.

One immediate concern with the findings entailed the possibility that these were affected by endogeneity problems due to reverse causality. Specifically, it is possible that business experts were not generating high performance but had gravitated to hospital trusts that were

already high performers. To address this, a linear-regression via two-stage least squares instrumental variables was estimated. The percentage of business experts was modelled as an endogenous covariate that was expected to be positively correlated with two exogenous variables (instruments). First, the log transformation of the population served by the trust was used as a proxy for the market for business experts. For the second instrument the average share of business expertise in boards of neighboring trusts was used. To operationalize these instruments, trusts in the sample were initially grouped in ten geographical areas corresponding to higher tiers of administration: the Strategic Health Authority (SHA). Using these ten clusters, the first instrument was computed as the share of the log of the population served in the catchment area of each trust in relation to all the trusts within the same SHA. The second instrument was calculated as the yearly average of the share of business experts on the board using all the trusts located in the same geographical area. The instruments fundamentally capture the fact that the market for directors (especially non executives) is primarily local and that similar organizations have also similar governance structures. The predicted values of the percentage of business experts resulting from the first stage regression were then entered as an explanatory variable in the regression on the determinants of financial ratings. As shown in table 2 panel A columns 6 and 8, the results of the analysis remained consistent.

[Table 3 here]

To rule out the possibility of unobserved heterogeneity and further confirm the strength of the relationship, the analysis was repeated using panel data fixed effect models. The use of fixed effect estimations allows to focus on within-trust variations in performance while excluding the impact of time-invariant characteristics on the key results. It was not, however, possible to employ a fixed effect model for the financial ratings because of the low within-trust variation of the ratings in comparison to overall variation between trusts. Therefore, to provide further evidence on the robustness of the key findings, panel random effect estimators were employed.

Furthermore, a sub-sample of trusts with more volatile financial ratings over the sample period was isolated. Here the assumption was that individuals with business expertise would find more problematic to positively predict the ratings at time t. Therefore, the ratings achieved by hospital trusts would not be explained by the propensity of business experts to seek appointment in boards of already high performing trusts (i.e. endogenous matching). The pooled regressions were carried out employing the sub-sample of trusts that experienced at least one change in rating over the sample period (140 observations). The results obtained with these two estimators and the volatility in the ratings as dependent variable confirmed the outcomes of the main analysis (not reported here for the sake of simplicity and brevity).

Next, a test controlling for the possible impact of prior low performance was conducted to assess H_3. Precisely, the models reported in table 2 columns 5 and 7 were re-estimated with the addition of a control variable that identifies those trusts with low past performance levels in the first year they appeared in the dataset. Specifically, in the case of financial ratings, the low past performance variable is a dummy equal to 1 if a trust had a financial rating below four in the first year it appeared in the sample. In the case of the efficiency score, the analysis was carried out by employing a dummy variable equal to 1 if the initial performance level

was in the lower quartile of the sample distribution. This test (reported in table 3 columns 1-2) showed that past performance levels significantly influence future performance levels. Crucially, however, it also demonstrated that the influence of business expertise on financial outcomes did not significantly change when controlling for low past performance, therefore disproving H_3. The overall findings suggest that the benefits from managers who switch sectors are not limited to low performing organizations.

To further support the validity of this conclusion, two additional tests were conducted. First, to remove the influence of past performance the regression with the efficiency score (RCI) as dependent variable was re-run using first difference (in a panel data format) of the main dependent, explanatory and control variables. In essence, the model tests whether changes in performance are associated with changes in the share of business experts on the board. Second, a test was carried out modelling the probability of a financial rating upgrade at time t_{+1} as a function of explanatory variables measured at time t while controlling for past financial rating scores. These two tests, reported in table 3 columns 3-4, strongly suggest that business expertise is a significant driver of performance improvements in the study sample.

[Table 4 here]

Turning to H_4, table 4 presents the main empirical findings of the moderating effect of board experience – as measured by tenure - on the strength and significance of the relationship

between business expertise and financial performance. No significant moderation was found for quality ratings and mortality rates. However, when the marginal effects of business experts on financial ratings are computed for two different values of board tenure more interesting results are obtained. The first value (equal to the first quartile of the sample distribution) includes boards where only 37% or less of the directors had three or more years of experience in the boardroom (low tenure). The second value (third quartile in the distribution) refers to boards where up to 70% of the members had at least completed one full term of directorship. The marginal effects reported in panel B columns 1-2 of table 4 show that while an increase in the percentage of business experts did have a significant positive influence on the probability to achieve the highest rating of four, this only applied to boards with lower tenure directors. By contrast, where boards with higher tenure were concerned, the results of the interaction were not statistically significant at the customary levels. The positive influence of business expertise only in less experienced boards was also confirmed when using the RCI as dependent variable (see table 4 panels A-B column 3). This improvement in financial performance from increasing the percentage of business experts in the boardroom seemed to persist up to a tipping point where roughly 60% of the board members have at least one full terms of directorship. Hence, strong support was found for H_4 regarding the positive moderating effect of tenure (the proxy for overall board specific experience) on the contribution of business expertise to financial efficiency.

Robustness Tests

A series of robustness tests were run to test the reliability of the findings. For the sake of simplicity and brevity, table 5 only reports the baseline results without the control variables. First, the analysis was repeated by adding control variables to remove concerns related to omitted-variable problems. In particular, the main models were re-estimated with the addition

of a dummy variable that controls for the prior business expertise of the chair of the board. In our sample, 77% of the chairs had prior knowledge and expertise accumulated within the private sector. The findings remained qualitatively similar (column 1).

[Table 5 here]

Further checks were conducted to ensure that the main results were not driven by directors' expertise in financial (or accounting) matters due to their individual qualifications (e.g. being a qualified accountant) or experiences in relevant organizational roles (e.g. chief financial officer, internal auditor and so forth). The regressions were, therefore, re-run adding as a control variable the percentage of board directors with financial expertise. The results confirmed the explanatory power of business expertise as financial expertise was not significantly associated at the customary levels with the financial rating score (column 2).

Third, the clinical background of the CEO and the chair was controlled for, but this did not change the overall effect of business expertise (results not reported but available on request). Fourth, to capture the possible impact of the external networks of board directors and the resources they might acquire from this, a new variable, calculated as the percentage of board members with external appointments on other boards to the total number of board members, was entered in the regressions. Greater access to external information could, to a certain

extent, obfuscate the influence of business expertise. Nevertheless, once again the results of the main analysis were confirmed (column 3).

A fifth test assessed whether the results depended on the number of rating classes used to classify the sampling units. Essentially, the number of observations with a rating equal to one – the weakest - was extremely low (being equal to 8 and 5 respectively for the quality and financial management rating classes), especially compared to the number of observations in the other classes, which could reduce the reliability of the tests. Regressions were consequently re-run based on the classification of the sampled units in three rating categories obtained by grouping of the two lower ratings (1 and 2). This additional test confirmed the positive nexus between the share of business experts on the board and the financial rating (column 4), as well the lack of statistical significance in relation to the quality rating (not reported). Additionally, these supplementary tests reinforced the evidence of a significant interaction effect between business expertise and tenure (see panels A2-B2).

Finally, to account for environmental factors such as different labor market conditions and estates related expenses, a dummy variable was added to capture the 'London' effect on costs and wages. All the different regression model specifications re-run with this added control yielded comparatively similar results (not reported).

Discussion

Focusing on the English NHS, this study lends partial empirical support for broad assumptions contained within the board human capital theory and publicness fit literatures. As we saw, human capital theory assumes that generic expertise of board members will have only limited value unless combined with industry or sector expertise (Kor and Sundaramurthy 2009; Kroll, Walters, and Wright 2008; Sundaramurthy, Pukthuanthong, and Kor 2014). This

assumption is also present in the more specific research on publicness fit, for example, in relation to management succession planning (Andrews, Boyne, and Walker 2011; Petrovsky, James, and Boyne 2015) and in the mainly US-based research focusing on the impact of generalist political appointees in public services (Gallo and Lewis 2012; Lewis 2007).

While it is important not to overstate causality, the findings confirm that non-sector specific business expertise has no significant impact on core performance goals in the sector, namely those associated with service quality and patient wellbeing. On the one hand, this suggests that the recruitment of business experts to the boards of public hospitals may not be as negative as predicted (disproving H_1). In the health policy literature, it is frequently argued that the financial orientation of many boards will be at the expense of quality (Chambers et al. 2013). In the NHS, this idea has also featured in government reports on the failings of leadership, including the Francis inquiry (2013) and Berwick Review on quality and patient safety (2013). Although caution is required given the fact that the study period coincided with an era of relative growth in NHS expenditure, the view that increasing numbers of business people on boards will always undermine service quality is hard to sustain. However, at the same time, the lack of any positive contribution poses important questions about the utility of public management reforms that encourage the transfer of both private sector management techniques and human capital. This is consistent with the argument that the ambiguous nature of public sector goals will generate particular challenges for individuals with private sector backgrounds to transfer their expertise (Chun and Rainey 2005).

Notwithstanding this conclusion, a second main contribution is to qualify certain assumptions made within the board human capital theory literature. Greater business expertise at board level does appear to have a positive effect on a more specific range of financial management and efficiency outcomes. To some extent this can be explained by the fact that, as a result of

ongoing public management reforms, the criteria for performance have shifted, with greater emphasis placed on financial concerns that was true under 'traditional public administration' (Hood 1995). However, what this also implies is a need to revise some of the predictions of board capital theory. Growing 'institutional complexity' (Reay and Hinings 2009) has forced managers to respond to multiple, competing demands, some of which (those emphasizing financial control) are relatively new to the sector. Under these conditions of sector transformation, the value of (non-sector) generic expertise has been raised, temporarily, in ways that are not predicted by board human capital theory or notions of publicness fit. This conclusion is supported by the finding (H_4) that generic expertise has greatest effect on boards that are relatively inexperienced as measured by lower tenure. Although not focusing on chief executive officer succession, these results also raise questions about the assumed importance of prior levels of organizational performance (Petrovsky, James, and Boyne 2015), which were found to have no significant influence on the main results. While the findings support the prediction that poor performing organizations benefit (in terms of financial outcomes) from business expertise, they suggest that these benefits are not limited only to those organizations.

Conclusion

This article represents the first major application of board capital theory to the study of governing boards in the public sector. Contrary to the predictions of that literature and research on 'publicness fit', the results reported here show that recruiting business specialists from the private sector has some value – in terms of financial management and efficiency. This is especially in situations where governing boards are inexperienced. On the other hand, the results indicate that business experts do not appear to make a positive contribution on quality outcomes, largely reinforcing the predictions of board human capital theory.

When drawing these observations, it is important to note certain caveats and directions for future work. An obvious point concerns the need for more data over a longer time period to further strengthen the main findings reported here and being able to interpret the results in a robust causal sense. In addition, there is a need for a greater understanding of how different combinations of human capital on boards translate into decisions that impact on organizational-wide performance outcomes. This might require the use of qualitative data sources, focusing in depth on a limited number of cases. Such work might explore how different forms of human capital influence the power of board members to influence decisions (McDonald, Westphal, and Graebner 2008) and could also consider more fully the role of social capital (Hillman and Dalziel 2003; Haynes and Hillman 2010). Furthermore, more work could be done to extend the analysis here reported to gain a better understanding on the collective ability of board members to shape decisions (Kor and Sundaramurthy 2009; McDonald, Westphal, and Graebner 2008; Oh, Labianca, and Chung 2006).

Beyond this, more studies are needed to better understand the conditions that shape these dynamics of board capital. A fruitful line of inquiry might be to explore the importance of the national context. While moves to reform public management have been global, the actual development of corporate style boards and other management practices varies greatly from country to country (Pollitt and Bouckaert 2011). Lastly, there is scope to investigate how far the predictions of board capital theory apply to other types of public services, such as those run by legislative councils or which are less professionally dominated than health care.

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Table 1 Summary statistics and sample distribution by rating class

Panel A: Summary Statistics		N	Mean	Median	S.D.	P1	P99
Q_RATING	Numerical transformation of the quality rating	236	3.14	3.00	0.77	1.00	4.00
FIN_RATING	Numerical transformation of the financial rating	236	3.53	4.00	0.74	1.00	4.00
HSMR	Negative value of mortality rates	233	-96.56	-97.40	18.06	-139.40	-41.50
RCI	Negative value of the Reference Cost Index	236	-99.61	-98.40	10.01	-131.00	-81.02
BUSINESS EXPERTS	Number of directors with business background divided by total board members (%)	236	52.12	53.85	14.48	20.00	83.33
CLINICAL	Number of directors with clinical background divided by total board members (%)	236	26.30	25.00	9.00	9.90	50.00
CEOBACK_BUSEX	Dummy equal to 1 if the CEO has a business background	236	0.03	0.00	0.17	0.00	1.00
BOARDSIZE	Log transformation of the total number of board members	236	2.51	2.48	0.14	2.20	2.83
INDEPENDENCE	Number of non-executive directors divided by total board members (%)	236	51.44	50.00	5.55	33.33	61.54
GENDER	Number of female directors divided by total board members (%)	236	34.88	33.33	12.58	12.50	66.67
TENURE	Number of directors with 3 or more years of experience in the board (%)	236	53.18	51.471	23.37	33.33	100.00
FOUNDATION	Dummy equal to 1 for foundation trusts	236	0.74	1.00	0.44	0.00	1.00
TEACHING	Dummy equal to 1 for teaching trusts	236	0.41	0.00	0.49	0.00	1.00
SIZE	Log transformation of the number of beds	236	6.39	6.50	0.61	4.28	7.61
CASELOAD	Log transformation of the total number of admissions per staff numbers	234	2.97	3.01	0.33	2.08	4.01

Panel B: Distribution by Rating Class	Quality Rating			Financial Rating		
	N	%	% Business Experts	N	%	% Business Experts
Rating 1 (Weak)	8	3.39	51.96	5	2.12	35.22
Rating 2 (Fair)	31	13.14	49.17	20	8.47	43.90
Rating 3 (Good)	116	49.15	51.03	56	23.73	53.74
Rating 4 (Excellent)	81	34.32	54.84	155	65.68	53.15
Total	236	100.00		236	100.00	

Note: Period 2006/7 – 2008/9

Table 2 Does the share of directors with generic business expertise on the board influence the quality of service and/or the financial performance of the organization?

	1	2	3	4	5	6	7	8
Panel A: Regression Analysis	Dependent Variable							
	Q_RATING		HSMRs	FIN_RATING			RCI	
	Ordered Logit		OLS	Ordered Logit		2SLS	OLS	2SLS
BUSINESS EXPERTS	1.438	0.959	-7.465	**2.894****	**2.779****	**0.728****	**11.668***	**11.531***
	(1.114)	(1.069)	(7.902)	**(1.309)**	**(1.382)**	**(0.323)**	**(6.777)**	**(6.651)**
CLINICAL	**3.679****	**2.389***	**37.748****	3.395	3.158	0.700	**-18.292****	**-18.293****
	(1.468)	**(1.418)**	**(17.774)**	(2.591)	(2.408)	(0.493)	**(7.994)**	**(7.714)**
CEOBACK_BUSEX	0.971	1.512	0.455	-0.772	-0.699	-0.081	1.462	1.314
	(0.896)	(0.932)	(5.393)	(1.204)	(1.257)	(0.276)	(3.927)	(3.727)
BOARD SIZE	0.488	0.447	10.913	**2.595****	**2.689****	0.409	1.911	1.766
	(1.074)	(1.225)	(8.809)	**(1.251)**	**(1.352)**	(0.260)	(5.680)	(5.465)
INDEPENDENCE	0.012	-1.165	-10.489	0.702	0.388	-0.255	-10.365	-10.224
	(2.548)	(2.597)	(20.978)	(2.788)	(3.166)	(0.722)	(14.972)	(14.380)
GENDER	0.606	0.514	-19.170	1.019	0.982	0.245	2.312	2.194
	(1.095)	(1.068)	(13.559)	(1.258)	(1.360)	(0.353)	(7.773)	(7.529)
TENURE		0.390	1.565		0.239	0.002	2.319	1.743
		(0.921)	(6.556)		(1.200)	(0.192)	(3.706)	(2.786)
FOUNDATION	**0.754***	**0.722***	-2.091	**3.862*****	**3.802*****	**1.130*****	1.542	1.614
	(0.436)	**(0.417)**	(4.371)	**(0.503)**	**(0.555)**	**(0.119)**	(2.005)	(1.884)
TEACHING	0.091	0.046	3.025	0.491	0.496	0.097	-2.145	-2.125
	(0.320)	(0.310)	(4.010)	(0.419)	(0.396)	(0.086)	(2.024)	(1.974)
SIZE		-0.108	-5.979		-0.080	0.037	1.033	1.013
		(0.281)	(4.627)		(0.457)	(0.088)	(2.070)	(2.011)
CASELOAD		**-1.654*****	**-13.769****		-0.196	-0.050	**8.382****	**8.533*****
		(0.511)	**(6.378)**		(0.739)	(0.169)	**(3.334)**	**(3.192)**
Constant			-37.911	2.894**	2.779**	1.022	-134.893***	-133.806***
			(35.514)	(1.309)	(1.382)	(1.110)	(26.374)	(25.296)
Observations	236	234	231	236	234	234	234	234
(Pseudo) R-squared	0.04	0.080	0.221	0.324	0.321	0.503	0.232	0.229
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hansen J statistic						1.260		0.147
(p-value)						(0.531)		(0.929)
Panel B: Average Marginal Effects								
Rating 1 (Weak)	-0.046	-0.030		**-0.056***	-0.054			
	(0.040)	(0.033)		**(0.032)**	(0.033)			
Rating 2 (Fair)	-0.143	-0.091		**-0.124****	**-0.120****			
	(0.111)	(0.102)		**(0.057)**	**(0.060)**			
Rating 3 (Good)	-0.111	-0.070		**-0.154****	**-0.148***			
	(0.094)	(0.082)		**(0.078)**	**(0.083)**			
Rating 4 (Excellent)	0.301	0.191		**0.334****	**0.322****			
	(0.233)	(0.213)		**(0.152)**	**(0.162)**			

Notes: Clustered robust standard errors in parenthesis.
IV = Instrumental Variable.
Significance at *** p<0.01, ** p<0.05, * p<0.10.

Table 3: Is the influence of the share of directors with generic business expertise on the financial performance of the organization contingent to low past performance levels?

	1	2	3	4
	Dependent Variable			
	FIN_RATING	RCI	RCI	FIN_RATING upgrade t+1
BUSINESS EXPERTS	**2.950****	**13.421****	**11.351****	**5.924****
	(1.411)	**(5.536)**	**(4.376)**	**(2.355)**
FIN_RATING				**-3.982*****
				(0.956)
LOW PAST PERFORMANCE	**-3.013*****	**-12.076*****		
	(0.535)	**(2.160)**		
Observations	234	234	132	129
(Pseudo) R-squared	0.410	0.440	0.110	0.632
Controls	Yes	Yes	Yes	Yes
Time Dummies	Yes|	Yes|	Yes	Yes|
First Difference	No	No	Yes	No

Notes: Clustered robust standard errors in parenthesis.
Same controls employed as in table 2 columns 5 and 7.
Significance at *** p<0.01, ** p<0.05.

Table 4 Does the influence of the share of directors with generic business expertise on the financial performance of the organization vary depending on the tenure of board members?

	1	2	3
	Dependent Variable		
	Financial Rating		RCI
Panel A: Regression Analysis			
BUSINESS EXPERTS	**7.869****	**7.862****	**33.842****
	(3.547)	**(3.386)**	**(13.706)**
BUSINESS EXPERTS*TENURE	-8.861	-8.996	**-38.009****
	(6.639)	(6.294)	**(17.247)**
TENURE	4.936	5.090	23.217**
	(4.277)	(4.033)	(10.301)
Observations	236	234	234
(Pseudo) R-squared	0.332	0.330	0.249
Controls	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Panel B: Marginal Effects			
Low Tenure			
			20.267**
			(8.654)
Rating 1 (Weak)	**-0.093****	**-0.093****	
	(0.044)	**(0.044)**	
Rating 2 (Fair)	**-0.186*****	**-0.185*****	
	(0.067)	**(0.069)**	
Rating 3 (Good)	**-0.255****	**-0.254****	
	(0.114)	**(0.116)**	
Rating 4 (Excellent)	**0.534*****	**0.532*****	
	(0.197)	**(0.201)**	
High tenure			
			7.236
			(6.15)
Rating 1 (Weak)	-0.026	-0.024	
	(0.041)	(0.039)	
Rating 2 (Fair)	-0.070	-0.066	
	(0.082)	(0.083)	
Rating 3 (Good)	-0.088	-0.083	
	(0.099)	(0.100)	
Rating 4 (Excellent)	0.185	0.174	
	(0.219)	(0.219)	

Notes: Clustered robust standard errors in parenthesis.
Same controls employed as in table 2 columns 5 and 7.
Significance at *** p<0.01, ** p<0.05.

Table 5 Robustness tests

	1	2	3	4
	Chairman Background	Financial Expertise	External Network	3 Rating Categories
Panel A: Dependent Variable Financial Rating				
A1: Baseline Specification				
BUSINESS EXPERTS	**2.757****	**3.017****	**2.812****	**2.551***
	(1.405)	**(1.481)**	**(1.386)**	**(1.381)**
Observations	234	234	233	234
(Pseudo) R-squared	0.325	0.323	0.321	0.335
Controls	Yes	Yes	Yes	Yes
A2: Interaction with Tenure – Average Marginal Effects of the probability to achieve Rating 4				
Low tenure	**0.512*****	**0.541*****	**0.522*****	**0.524****
	(0.191)	**(0.201)**	**(0.197)**	**(0.207)**
High tenure	0.170	0.192	0.176	0.142
	(0.234)	(0.237)	(0.232)	(0.205)
Observations	234	234	233	234
(Pseudo) R-squared	0.333	0.331	0.329	0.346
Controls	Yes	Yes	Yes	Yes
Panel B: Dependent Variable RCI				
B1: Baseline Specification				
BUSINESS EXPERTS	**11.685***	9.910	**12.435***	
	(6.784)	(6.592)	**(6.773)**	
Observations	234	234	233	
R-squared	0.232	0.238	0.233	
Controls	Yes	Yes	Yes	
B2: Interaction with Tenure				
BUSINESS EXPERTS	**33.910****	**33.864****	**34.451****	
	(13.828)	**(13.748)**	**(13.713)**	
BUSINESS EXPERTS*TENURE	**-38.141****	**-41.776****	**-37.949****	
	(17.406)	**(17.101)**	**(17.864)**	
Observations	234	234	233	
R-squared	0.249	0.258	0.250	
Controls	Yes	Yes	Yes	

Notes: Clustered robust standard errors in parenthesis.
Same controls employed as in tables 2 columns 5 and 7.
Significance at *** p<0.01, ** p<0.05, * p<0.10.