Received: 12 February 2015 | Revised: 24 October 2017 | Accepted: 25 October 2017

DOI: 10.1111/1748-8583.12179

WILEY Human Resource Management Journal

ORIGINAL ARTICLE

Sovereign wealth funds, productivity and people: The impact of Norwegian Government Pension Fund-Global investments in the United Kingdom

Marc Goergen[1] | Noel O'Sullivan[2] | Geoffrey Wood[3] | Marijana Baric[4]

[1] Cardiff Business School, Cardiff University, UK and European Corporate Governance Institute, Brussels, Belgium

[2] School of Business and Economics, Loughborough University, UK

[3] Essex Business School, University of Essex, UK

[4] Business School, University of Buckingham, UK

Correspondence
Marc Goergen, Cardiff Business School, Cardiff University, Colum Drive, Cardiff CF10 3EU, UK.
Email: goergenm@cardiff.ac.uk

Abstract

Sovereign wealth funds have an increasing presence in the global financial ecosystem, principally through their investments in equities, which, in turn, may influence HRM. This study examines the influence of the world's largest sovereign wealth fund, the Norwegian Government Pension Fund-Global (NGPF-G), on employment in its U.K. investee firms. We find that firms with NGPF-G investment are significantly less likely to reduce their demand for labour, more specifically in the immediate aftermath of the 2008 financial crisis. When a drop in the demand for labour does occur, it is less extreme when compared to similar organisations without a NGPF-G shareholding, and this is evident even in the case of relatively small NGPF-G investments. These findings are in line with the fund's objective of promoting corporate sustainability and Norwegian values. We draw out the key implications of our findings for HR practice.

KEYWORDS

alternative investors, downsizing, Norway, Norwegian Government Pension Fund-Global (NGPF-G), sovereign wealth fund (SWF), sustainability

1 | INTRODUCTION

There is a growing body of literature that explores the relationship between new or alternative categories of investor and HR practices adopted by firms (Appelbaum, Batt, & Clark, 2013; Clark, 2007, 2013; Goergen, O'Sullivan, & Wood, 2014a; Gospel & Pendleton, 2014a). Sovereign wealth funds (SWFs) have become an important feature of the global financial ecosystem. They are "state owned financial vehicles that administer public funds and invest them" (Bahgat,

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.
© 2018 The Authors. Human Resource Management Journal Published by John Wiley & Sons Ltd

2010: 163), potentially providing parent governments with future financial stability (Bahgat, 2010). Although some have been the product of large nonmineral exports, most are founded on the export of primary commodities. Due to their size, the activities of SWFs are expected to have far-reaching consequences for the economies in which they invest and for individual investee companies and their employees. Although emerging types of investor, of which SWFs are one, may impact a range of HR practices, of particular concern has been their effect on jobs (Appelbaum & Batt, 2014; Gospel & Pendleton, 2014a). This would reflect the extent to which changes in ownership may be associated with the aggressive liquidation of physical assets and/or the adoption of strategies that treat labour as a readily disposable or substitutable commodity. Not only may this lead to a loss of organisational specific human capital, which raises issues around organisational sustainability, but also may cause the disruption of work teams, worsening inequality in the employment relationship and the spread of the survivor syndrome.

Even though there is quite extensive research on the effects of other categories of alternative investor (e.g., venture capital and private equity) on work and employment, little has been written on SWFs (for exceptions, see Gospel & Pendleton, 2014a, 2014b), although they feature in wider scholarly debates on alternative investors (Appelbaum & Batt, 2014). This study seeks to redress this gap in generating new quantitative evidence to supplement Gospel and Pendleton's (2014a) earlier qualitative work. Specifically, we investigate the impact of equity ownership by the world's largest SWF—the Norwegian Government Pension Fund-Global (NGPF-G)—on employees in U.K. listed firms. Because no SWF is typical of the category and one cannot reach general conclusions on the likely impact of SWFs on HRM based on the case of a single fund, one can provide evidence as to the level of shareholding at which influence may be secured, and the extent to which SWF investments may result in visible HR outcomes.

We focus on the NGPF-G for several reasons. First, it is the largest SWF in the world in terms of equity investments (SWFI, 2014). Second, it expects investee firms to adhere to basic standards of social responsibility, including towards employees (Dixon & Monk, 2012; Norges Bank, 2014). Although this may make it atypical, it does serve to illustrate the diversity of the alternative investor financial ecosystem and the potential for even small investments to have a substantial impact on firms and their people. Third, recent years have seen a significant increase in its acquisition of U.K. listed equities, which facilitates a "before" and "after" investigation. We structure our research design so that we are able to capture NGPF-G's investments around the recent financial crisis so as to further enrich our findings in terms of SWF impact in the context of a significant financial crisis. Fourth, the NGPF-G is unique in publishing its ownership stakes in all its investee companies. This is important as it allows us to accurately identify U.K. firms in which the NGPF-G has made an investment, and when this investment has occurred as well as ensuring we identify a control sample of firms without NGPF-G investment. Fifth, during the period of our study, the NGPF-G did not invest in firms via private equity, so we are therefore able to focus exclusively on direct investments.[1] Finally, given the impact of country of origin on SWF behaviour (Gospel & Pendleton, 2014a), the NGPF-G represents a particularly interesting case given that Norway is a social democracy, notable for progressive and employee-friendly HR policies (Amable, 2003).

Our paper is structured as follows. In the next section, we discuss the relationship between investors and HRM and how types of investor, including SWFs, are expected to influence corporate behaviour around employment. In Section 3, we introduce the NGPF-G. In Section 4, we present our sample and explain our research methodology. In Section 5, we discuss our empirical findings, and in Section 6, we discuss the practical HR implications of our findings, identify limitations, and suggest avenues for further research.

2 | INVESTORS, HRM, AND SWFS

There is a growing body of work linking investor behaviour with work and employment issues. Lazonick and O'Sullivan (2000) argue that in liberal market economies, legislative reforms in the 1980s and 1990s confirmed the primacy of shareholder value and strengthened the rights of investors over those of managers and, indeed, workers. This has been associated with the empowerment of financial intermediaries and alternative investors who are lightly committed to particular industries and locales, and the commensurate weakening of the position of workers (Appelbaum

et al., 2013). Although investors may press their demands through either voice or exit, it is easier for mobile and uncommitted investors to exercise the latter route. It can be argued that the influence of SWFs on HRM is likely to be indirect and limited, as they are rarely sole owners (Gospel & Pendleton, 2014a), and because their investment strategies are passive (Gospel, Haves, Pendleton, Vitols, & Wilke, 2010). However, in a climate of low investor commitment, the threat by investors to sell even quite small shareholdings can have a significant effect on management, incentivising, or discouraging specific managerial behaviour (Admati & Pfleiderer, 2009; Jacoby, 2005).

A significant body of HR literature suggests that the strengthening of investor rights has translated into strong pressure to disseminate more hard-line approaches to HRM, characterised by arm's length contracting, reduced security of tenure, more rigorous monitoring of performance, and the squeezing of wages and/or the use of variable pay (Collings, 2014; Thompson, 2011). In particular, downsizing is often seen as a relatively simple mechanism for boosting the market value of the firm (Nixon, Hitt, Lee, & Jeong, 2004), often due to an anticipated reduction in costs, even if its real effect on financial performance is less obvious (Zyglidopoulos, 2005). Although it could be argued that alternative investors have broadly similar agendas and are particularly keen to press for job cuts and generally more hard-line HR policies (Appelbaum & Batt, 2014), others have suggested that the alternative investor ecosystem is quite diverse, and those with longer time horizons may favour human capital development over radical job cuts (Wood, 2015). Indeed, the recent experience of Sports Direct would suggest that investor pressure can potentially have positive effects on HRM. In this case, an adverse reaction by several institutional investors in 2016 following labour scandals has resulted in promises of better practice. A year prior to the scandals, the NGPF-G raised concerns as to poor labour practices amongst Sports Direct's suppliers (Milne, 2015), and consequently asked Sports Direct to improve their reporting on labour-related issues. Moreover, given that the NGPF-G's raison d'être is intergenerational savings of foreign exchange windfalls from North Sea oil and gas (Bahgat, 2010), some SWFs may have more of an interest in long-term HR policies than, say, hedge funds, whose time horizons are often extremely short term.

Although SWFs may potentially impact on many HR policies and practices, their effect on the demand for labour is arguably, along with reward systems, the most important, in that it impacts on the relative willingness of firms to invest in people, on employee commitment to the firm, and the durability of collective identities and representation (c.f. Goergen, Brewster, & Wood, 2009; Kelly, 1998). Although SWFs have traditionally focused on a longer-term horizon than hedge funds or private equity, Gospel and Pendleton (2014a) suggest this may be changing. Such a trend towards greater short-termism would leave workers worse off. Again, Appelbaum and Batt (2014) argue that SWFs are often interpenetrated with other new categories of activist investor, notably private equity, with a focus on value release rather than organisational sustainability; however, their study primarily focuses on private equity, and their discussion on SWFs is at the conceptual level.

Theoretically, the potential impact of SWFs on employment is complex and depends largely on the specific SWF. SWF investment may help the position of employees through the provision of much needed capital infusions to struggling firms (Gospel, Pendleton, Vitols, & Wilke, 2011). However, SWF involvement may also lead to job cuts and insecurity (Moeller, 2009). Gospel and Pendleton (2014a: 27) suggest that the strategies of SWFs and other "new investment funds" will be moulded by country of domicile and, in liberal market economies such as the U.K., there will be greater room to introduce more hard-line HR policies. Of course, in the case of the NGPF-G, country of domicile influences would be expected to include a long-term and sustainable perspective as well as an inclination to countenance greater employee–employer interdependence through greater investment in people and lower staff turnover rates than other types of investors and SWFs (Goergen, O'Sullivan, & Wood, 2014b; Gospel & Pendleton, 2014a). Of course, it may be that SWF investment has no discernible impact. Indeed, prior case study evidence suggests minimal influence by SWFs on wages, working conditions, and employee voice (Gospel et al., 2010; Wilke, Vitols, Haves, Gospel, & Voss, 2009). In a case study of the effects of the Dubai SWF-linked Dubai Ports World's acquisition of P&O, Gospel et al. (2011) found few effects on employment but noted minor, albeit detrimental, changes in voice and pensions. The objective of this study is to provide empirical insights where there currently are few, and in doing so to address many of the points raised above by investigating the impact of equity ownership of one prominent SWF, the NGPF-G, on employment in U.K. listed firms. Specifically, our main research question is whether NGPF-G investments in U.K. listed

companies have an impact on the demand for labour by these firms. We focus on NGPF-G investments in the United Kingdom to ensure our findings are not influenced by different employment-related legislation in different countries.

3 | THE NORWEGIAN GOVERNMENT PENSION FUND-GLOBAL

The NGPF-G is a SWF where the surplus wealth produced by Norwegian petroleum income is held. Despite its name, the NGPF-G is not a pension fund but could help fund state pensions. The NGPF-G is the largest SWF in the world, owning approximately 1.2% of all globally listed securities and approximately 2.5% of all European listed securities (Norges Bank Investment Management, 2013). The Norwegian Ministry of Finance manages it, with operational management being delegated to Norges Bank Investment Management, a subsidiary of the Norwegian Central Bank (Ainina & Mohan, 2010).

The Norwegian Ministry of Finance regularly publicises its expectations and excludes firms from investment: this includes all weapons manufacturers, those who transact with such manufacturers, firms whose activities negatively impact on human rights, and those who engage in corruption and other violations of ethical norms or "severe environmental degradation" (Reiche, 2010: 3572). In addition to arms manufacturers, tobacco manufacturers and palm oil producers have been excluded, as well as Walmart for labour issues (Dixon & Monk, 2012; Pier, 2007) and Cairn and Kosmos for ethical issues (Milne & Kiran, 2016). From 2012 to 2014, the NGPF-G divested from 114 companies (Milne, 2015). In addition to exiting, the Fund has voted against 15% of board recommendations at annual shareholder meetings, including the re-election of Jamie Dimon, CEO of JP Morgan, and Lloyd Blankfein, chairman of Goldman Sachs, as well as the issue of new preference shares by BMW (Milne, 2015; see also Sandbu, 2016; Financial Times, 2016). This suggests that even with relatively small ownership stakes, the NGPF-G is very willing to make its views known and expects them to be listened to. The core focus of this research is on whether the NGPF-G does affect the demand for labour by its target firms and what this effect is.

4 | SAMPLE SELECTION AND METHODOLOGY

4.1 | Sample selection

Because the objective of our study is to investigate the impact of ownership by the NGPF-G on the demand for labour by its target companies, we construct a panel of data, that is, a cross section repeated over a number of years, including years preceding the NGPF-G investment and years with NGPF-G investment. We first identify which U.K. listed companies had such investment. We obtain the list of U.K. firms with NGPF-G investment from the NGPF-G's website. We then check whether these firms are incorporated in mainland United Kingdom, excluding firms from the Channel Islands and U.K. overseas territories. We also exclude investment trusts. We arrive at 508 firms with NGPF-G ownership for at least 1 year over the period of 2006–2013.

The second task is to identify a suitable control group of non-NGPF-G targets to enable reliable comparisons to be made. This is achieved as follows. First, we review existing studies that have investigated the likelihood of SWF investment. Sojli and Tham (2011) and Kotter and Lel (2011) suggest that SWF investment is more likely in larger firms (market capitalisation, turnover, and assets) and firms with higher sales growth (sales growth); higher growth opportunities (market-to-book ratio); greater accounting performance (return on assets); greater levels of cash (cash as a proportion of total assets); lower levels of short-term debt (short-term debt as a proportion of total assets); and higher dividend payments (dividend yield). Second, we collect data on each of these variables for all U.K. listed firms in the year immediately preceding the NGPF-G investment from *Datastream*. The definition of these variables and those of the other variables used in this study can be found in Table A1. Third, we winsorise the variables at the 10% and 90% percentiles to reduce the impact of outliers. Fourth, we utilise propensity score matching (PSM) to match each target firm with a nontarget firm (Rosenbaum & Rubin, 1983). We run a logit regression based on the observations from the year preceding the first year of NGPF-G investment for the 508 firms that were targets of NGPF-G

TABLE 1 Characteristics of target firms and control firms

	Target firms		Control firms			
	Mean	Median	Mean	Median	*t*-test for diff. in means	*z*-test for diff. in medians
Ln (market capitalisation)	13.72	12.72	13.68	12.66	−0.102	0.064
Ln (sales)	11.62	11.82	11.56	11.59	−0.284	−0.655
Ln (total assets)	13.84	12.83	13.75	12.92	−0.238	−0.347
Ln (sales growth)	2.92	2.99	2.72	2.75	−1.431	−1.441
Ln (market-to-book ratio)	−0.02	0.05	0.05	0.07	0.672	0.466
Ln (return on assets)	9.21	9.21	9.21	9.21	0.485	−0.301
Ln (cash over total assets)	2.23	2.39	2.13	2.37	−0.617	−0.503
Ln (ST debt over total assets)	1.14	0.98	1.01	0.74	−0.997	−1.144
Ln (dividend yield)	0.97	1.14	0.92	1.02	−0.477	−0.496

investment during the period of our study and observations for all non-NGPF-G target firms. The dependent variable is an indicator variable indicating the first year of NGPF-G investment. All independent variables are measured in the previous year, that is, with a lag of one. This logit provides us with a propensity score for all firms, and we use the nearest neighbour approach to identify suitable matches. We specify a maximum caliper distance of 0.1 to reduce bias by minimising systematic differences between the matches. Fifth, we only seek nearest neighbour scores for control firms in the same industry (using the FTSE industrial classification) and year as the target.[2] Thus, we match targets in terms of propensity score and also preserve the industrial closeness of our targets to the nontarget matches. This procedure allows us to successfully match 111 of the 508 targets. The prematching logit is reported in column 1 of Table A2. The logit has a high pseudo-R^2 with a value of 0.332, and most of the independent variables have statistically significant coefficients. Finally, to confirm the quality of our matching, we proceed as follows. First, we rerun the logit underlying the PSM on the matched sample. As expected, the postmatching logit (see column 2 of Table A2) has little explanatory power as its pseudo-R^2 is close to zero and the coefficients on the independent variables are insignificant, except for one which is just about significant at the 10% level. Second, we use mean and median comparisons to test for differences between the targets and matched nontargets for each of the explanatory variables included in our propensity score logit regression. We fail to identify any statistically significant differences between the two samples (see Table 1); hence, we are confident that our matching is of good quality.

4.2 | Method

Because our aim is to assess the effects on employment of NGPF-G ownership in the target firms, including possible workforce downsizing, we estimate a labour demand equation. Our equation is based on Nickell (1984; see also Conyon, Girma, Thompson, & Wright, 2002; Goergen *et al*., 2014b). Subject to several assumptions (see, e.g., Goergen et al., 2014b), the demand for labour for a given firm is a function of its expected output quantity and the ratio of the expected wage rate to the firm's expected cost of capital. It can be expressed as follows:

$$L_{it} = \alpha L_{i,t-1} + \beta_1 w_{i,t-1} + \delta_1 Q_{it} + \delta_2 Q_{i,t-1} + \gamma_i + \eta_t + \varepsilon_{it}. \quad (1)$$

where L_{it} is the quantity of labour (the natural logarithm of the number of employees) for firm i in year t; w_{it} is the real wage rate relative to the firm's cost of capital (the natural logarithm of real wages); Q_{it} is real output over value added (proxied by real turnover as per Nickell, Wadhwani, & Wall, 1992); γ_i is unobservable (firm) fixed effects; η_t is a time varying error term common to all firms; and ε_{it} is an error term that varies across time and firms. We estimate the above equation adopting a difference-in-differences (DID) approach. The aim of the DID approach is to determine what effect NGPF-G investment has on the demand for labour while allowing for possible intrinsic differences in labour demand between NGPF-G target firms and non-NGPF-G target firms. Such intrinsic differences may arise if

the matching process has omitted important variables. In other words, our DID approach adjusts for differences between the NGPF-G target firms and the nontarget firms that may remain after the PSM.

We add the following variables to Equation 1 in order to perform the above-mentioned DID analysis.[3] First, our key variable is *NGPF-G Ownership*$_{it}$, the percentage of ownership held by NGPF-G in firm *i* in year *t*. This variable measures the effect of NGPF-G's investment on employment. Second, we add the following three indicator variables. *Target Firm*$_i$ is set to one if firm *i* has NGPF-G investment during at least 1 year of the period of study, and zero otherwise. This indicator variable measures the employment effects affecting target firms independent of the NGPF-G investment. *Control Firm*$_i$ is the equivalent indicator variable for the nontarget firms. To avoid perfect colinearity, the constant is omitted from the regressions. The third indicator variable, *NGPF-G Year*$_{it}$, is set to one for firm-year observations with NGPF-G investment. It is also set to one for the same years for the equivalent nontarget firm. It is set to zero otherwise. This indicator variable accounts for possible employment effects affecting both target firms and control firms during years with NGPF-G investment. This variable would pick up industry-wide employment effects (and/or any other effects pertaining to other firm characteristics) that affect all firms in that industry (and/or with the same firm characteristics) at a particular time (i.e., the years with NGPF-G investment) and that are not due to NGPF-G investment itself. Finally, some regressions include *NGPF-G Ownership * Year 2009 (No NGPF-G Ownership * Year 2009)* instead of *NGPF-G Ownership*. This is the interaction between *NGPF-G Ownership* (*No NGPF-G Ownership*, that is, a dummy variable set to one if there is no NGPF-G ownership in year *t*, and set to zero otherwise) and the year 2009 dummy variable.[4] The two interaction terms measure the differential effect of NGPF-G ownership and its absence, respectively, on employment in the immediate aftermath of the 2008 financial crisis.[5]

The augmented Equation 1 is a dynamic equation as it includes the lagged dependent variable (i.e., $L_{i,t-1}$) on the right-hand side and is estimated for a panel of data, that is, a cross-section repeated over the years 2006 to 2013. Two econometric challenges arise (Abdallah, Goergen, & O'Sullivan, 2015). First, the presence of unobservable fixed effects causes the error term in an ordinary least squares (OLS) regression to be correlated with the explanatory variables. Hence, the OLS estimates of the coefficients on the explanatory variables will not be consistent, that is, they will be biased, and the bias will not be reduced by increasing the sample size. Second, the coefficient on the lagged dependent variable will be upward biased as the lagged dependent variable will be correlated with the unobservable fixed effects. A way forward is to estimate the equation using a fixed-effects or within groups (WG) regression procedure. This procedure takes the time mean from each variable's observation, including the dependent and independent variables, and then estimates the regression based on the demeaned variables. As they are assumed to be time invariant, the WG procedure effectively eliminates the unobservable fixed effects. However, it also generates a biased estimate of the coefficient on the lagged dependent variable. In contrast to OLS, the estimated coefficient is downward biased.

A way forward is to use a system generalised method of moments (GMM) estimator (Blundell & Bond, 1998). This estimator is based on an instrumental variable approach using two types of equations and internal instruments: equations in levels using the lagged differences of the dependent and independent variables as instruments and equations in first differences using the lagged levels of the dependent and independent variables as instruments. The estimated coefficient on the lagged dependent variable is likely somewhere between the upward biased OLS and the downward biased WG coefficient estimates. In what follows, we report the regression results from all three estimation techniques.

5 | EMPIRICAL ANALYSIS

5.1 | Descriptive statistics

Table 2 reports the NGPF-G investments across time (Panel A) and across industries (Panel B). The table is based on the 111 target firms from the PSM. The average and median stake is around 2%, with the maximum just below 9%. NGPF-G's investments are most frequent in firms operating in the consumer services and industrial sectors.

TABLE 2 Norwegian Government Pension Fund-Global ownership across time and across sectors

Panel A: Ownership distribution across time					
Year	*N*	Mean	Median	Min	Max
2006	2	1.08	1.08	0.58	1.58
2007	46	0.38	0.14	0.01	2.04
2008	39	1.00	0.96	0.06	2.88
2009	46	1.57	1.35	0.01	4.68
2010	52	2.03	1.49	0.01	5.81
2011	51	2.56	2.33	0.02	8.07
2012	49	2.40	2.29	0.02	7.54
2013	79	1.91	1.73	0.01	8.53

Panel B: Ownership distribution across industries			
	N	%	Cumulative %
Basic materials	7	6.31	6.31
Consumer goods	7	6.31	12.61
Consumer services	24	21.62	34.23
Financials	15	13.51	47.75
Health care	9	8.11	55.86
Industrials	27	24.32	80.18
Oil & gas	6	5.41	85.59
Technology	12	10.81	96.40
Telecommunications	3	2.70	99.10
Utilities	1	0.90	100.00
Total	111	100.00	

5.2 | Regression analysis

Table 3 reports the results for the OLS (columns 1 to 3), the WG (columns 4 to 6), and the system GMM (columns 7 to 9) regressions. Regressions 1, 4, and 7 include *NGPF-G Ownership*, whereas the remaining regressions include the interaction between *NGPF-G Ownership* and *Year 2009* as well as the interaction between *No NGPF-G Ownership* and *Year 2009*. Again, the two interaction terms measure the effect of NGPF-G ownership and its absence, respectively, on the demand for labour in the immediate aftermath of the 2008 financial crisis.

As expected, with one exception,[6] the coefficient on the lagged dependent variable is greatest for OLS and lowest for WG and somewhere in between the two for system GMM. The coefficients on *Target Firm*$_i$ and *Control Firm*$_i$ are significant (at the 5% level or better) in all the regressions and are of a similar size.[7] This suggests that there are no differences in the demand for labour between the target firms and the control firms, independent of NGPF-G investment, alleviating concerns about possible selection issues.

Further, the coefficient on *NGPF-G Ownership* is positive and significant (at the 10% level or better) in all three regressions that include this variable. More importantly, *NGPF-G Ownership * Year 2009* is not significant, whereas *No NGPF-G Ownership * Year 2009* is significant at the 1% level and negative. This suggests that firms with NGPF-G ownership do not reduce their demand for labour in the immediate aftermath of the 2008 financial crisis. In contrast, firms without NGPF-G ownership in 2009 reduce their demand for labour during that same year, as a reaction to the 2008 financial crisis. The significant and negative coefficient corresponds to a decline in employment of between 33.0% (column 8) and 33.9% (column 2).

TABLE 3 Labour demand equation—OLS regression, within groups regressions, and system GMM regressions

	OLS			Within groups			System GMM		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln (employees $t-1$)	0.947***	0.944***	0.948***	0.692***	0.794***	0.746***	0.906***	0.953***	0.939***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Ln (remuneration over employees t)	−0.162**	−0.177**	−0.162**	−0.143*	−0.184**	−0.138*	−0.263**	−0.258*	−0.244*
	(.020)	(.015)	(.020)	(.072)	(.031)	(.072)	(.045)	(.052)	(.071)
Ln (remuneration over employees $t-1$)	0.091	0.098	0.093	0.013	0.048	0.075	0.095	0.069	0.126
	(.194)	(.164)	(.186)	(.864)	(.386)	(.353)	(.535)	(.513)	(.366)
Ln (turnover over employees t)	−0.082	−0.094*	−0.087	−0.081	−0.094	−0.084	0.033	0.004	0.038
	(.152)	(.088)	(.136)	(.197)	(.127)	(.196)	(.550)	(.944)	(.527)
Ln (turnover over employees $t-1$)	0.074	0.077	0.074	0.062	0.090*	0.064	−0.026	0.012	−0.046
	(.181)	(.150)	(.189)	(.252)	(.094)	(.270)	(.640)	(.856)	(.442)
Target firm	0.876***	0.696***	0.967***				1.154**	1.090**	0.923**
	(.000)	(.000)	(.000)				(.027)	(.017)	(.033)
Control firm	0.869***	0.664***	0.949***				1.154**	1.180***	0.914**
	(.000)	(.000)	(.000)				(.017)	(.005)	(.017)
NGPF-G ownership	0.026**			0.032**			0.043*		
	(.020)			(.012)			(.089)		
NGPF-G ownership * Year 2009		0.027	0.037		0.025	0.013		0.087	0.068
		(.429)	(.290)		(.445)	(.693)		(.201)	(.236)
No NGPF-G Ownership * Year 2009		−0.083***	−0.100***		−0.089***	−0.087***		−0.110***	−0.105***
		(.000)	(.000)		(.000)	(.000)		(.000)	(.000)
NGPF-G year	−0.033*		−0.014	−0.007		0.046***	−0.060		−0.035
	(.079)		(.362)	(.722)		(.009)	(.267)		(.419)
Ownership largest shareholder	−0.001	−0.000	−0.001	−0.001	0.000	−0.001	−0.003	−0.005	−0.002
	(.266)	(.601)	(.210)	(.175)	(.981)	(.484)	(.558)	(.291)	(.689)
UO state	−0.080**	−0.084***	−0.082***	−0.123***	−0.075***	−0.084**	−0.810	0.846	−0.900
	(.024)	(.009)	(.009)	(.001)	(.008)	(.010)	(.402)	(.551)	(.369)
UO family	−0.027	−0.020	−0.027	−0.023	−0.031	−0.022	−0.068	−0.080	−0.062
	(.288)	(.388)	(.290)	(.355)	(.157)	(.364)	(.410)	(.502)	(.436)
UO pension	−0.024	−0.023	−0.026	−0.070**	−0.055*	−0.064*	−0.032	−0.143*	−0.018
	(.297)	(.299)	(.277)	(.045)	(.089)	(.075)	(.752)	(.100)	(.829)

(Continues)

TABLE 3 (Continued)

	OLS			Within groups			System GMM		
UO VC/PE	−0.034 (.346)	−0.019 (.668)	−0.036 (.346)	0.001 (.979)	0.043 (.415)	0.015 (.697)	0.297 (.190)	0.063 (.785)	0.229 (.315)
UO industrial	−0.009 (.746)	−0.009 (.718)	−0.008 (.769)	−0.038 (.397)	−0.027 (.472)	−0.022 (.604)	−0.014 (.912)	−0.217* (.098)	−0.015 (.907)
UO others	−0.019 (.527)	−0.026 (.417)	−0.042 (.161)	−0.013 (.787)	−0.061 (.232)	−0.066 (.202)	3.621 (.571)	0.234 (.968)	2.490-- (.651)
UO own Treasury shares	−0.015 (.611)	−0.048 (.482)	−0.135*** (.001)	−0.042 (.200)	−0.115* (.063)	−0.158*** (.003)	0.437 (.465)	−0.166 (.743)	0.116 (.817)
Constant	–	–	–	2.595*** (.000)	1.943*** (.000)	2.059*** (.000)	–	–	–
Year dummies	Yes	No	No	Yes	No	No	Yes	No	No
Industry dummies	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Observations	971	1165	971	971	1165	971	971	1165	971
Adjusted R^2	0.999	0.999	0.999	0.684	0.696	0.675	–	–	–
F	209.82	5.97	243.57	138.70	233.61	138.20	–	–	–
m1 (p-value)	3.80 (.000)	3.35 (.001)	3.57 (.000)	0.17 (.000)	0.24 (.000)	0.16 (.000)	−1.16 (.248)	−3.49 (.129)	−1.41 (.157)
m2 (p-value)	−0.38 (.705)	0.39 (.696)	−0.15 (.878)	−0.11 (.000)	0.04 (.006)	−0.11 (.000)	−0.96 (.338)	−0.91 (.363)	−0.75 (.452)
Sargan test (p-value)	–	–	–	–	–	–	46.66 (.718)	78.83 (.004)	59.04 (.132)
Hansen test (p-value)	–	–	–	–	–	–	56.04 (.362)	55.74 (.236)	58.62 (.140)

Note. The system GMM regressions consist of two types of equations: the equations in levels with the first-differenced dependent and independent variables as instruments and the first-differenced equations with the dependent and independent variables lagged t-3 as instruments. m1 and m2 are tests for first-order and second-order serial correlation in the residuals and asymptotically distributed as $N(0,1)$ under the null of no serial correlation. The Sargan and Hansen statistics are tests of overidentified instruments. All regressions contain year dummies. The OLS and system GMM regressions also contain industry dummies. p-values in parentheses. GMM = generalised method of moments; NGPF-G = Norwegian Government Pension Fund-Global; OLS = ordinary least squares.

*$p < .10$.

**$p < .05$.

***$p < .00$.

We also include variables measuring the ownership by various types of largest shareholder (with very few exceptions this is not the NGPF-G), that is, the state, families, pension funds, venture capitalists/private equity houses, industrial companies, or other types of shareholder, or own treasury shares.[8] Generally, the ownership by the largest shareholder does not influence the demand for labour as the coefficient on this variable is not significant in any of the regressions. However, there is evidence that the type of largest shareholder matters: For the government and pension funds, we observe a significant and negative effect in a number of regressions. Whereas the number of firm-year observations with pension funds as the largest shareholder is too small to draw any meaningful conclusions, the government only emerges as the largest shareholder in the financial institutions it rescued because of the 2008 financial crisis. We also observe a significant and negative effect if the largest stake in the firm is held in the form of treasury shares. Treasury shares are the result of share repurchases. One of the motivations for share repurchases is the management's belief that the firm's shares are undervalued. Such undervaluation may be combined with downsizing of the workforce. However, this would suggest mere correlation rather than causation.

To sum up, we find evidence that the NGPF-G prevented a drop in the demand for labour in the aftermath of the 2008 financial crisis. Importantly, there is no evidence that firms with NGPF-G investment had excess demand for labour during the period of study of 2006 to 2013. Does NGPF-G ownership ultimately have a negative effect on firm profitability given that it reduces potential workforce downsizing? To answer this question, we regress (not tabulated) profit over turnover on the same variable measured in the previous year, NGPF-G ownership, *Target Firm*$_i$, and *NGPF-G Year*$_{it}$, and year and industry dummies. We find that NGPF-G ownership has no effect on firm performance.

6 | DISCUSSION AND CONCLUSIONS

Our study confirms that alternative investors have far reaching consequences for HRM (Appelbaum & Batt, 2014; Appelbaum et al., 2013). Our findings document that a reduced demand for labour does not necessarily lead to higher returns, so activist investors who base their business models on such assumptions are likely to be disappointed. We find that SWF investments, even when relatively small, can have a significant effect on the HR practices of investee firms, specifically in relation to the demand for labour.

However, SWFs are diverse and the impact of other SWFs on employment may be quite different. For example, prior work on Gulf SWFs in the United Kingdom has reported negligible or detrimental effects (Gospel & Pendleton, 2014a). Theoretically, our study highlights the need for viewing alternative investors within the context of the institutional domains in which they are nested (c.f. Jacoby, 2005). In other words, the policies alternative investors seek to impose will reflect, at least in part, their country of origin's institutional environment. Although the literature on comparative capitalism assumes that owner agendas will follow on contextual dynamics, it only accords limited attention to differences in investor categories, and the extent to which some are more likely to concur or actively seek to reinforce a particular national model than others (c.f. Wood, Dibben, & Ogden, 2014). There is an extensive body of HR literature that looks at country of origin and domicile effects on the firm itself, but not its owners (Brewster, Wood, & Brookes, 2008; Ferner, Almond, Colling, & Edwards, 2005; Ferner et al., 2011). Our study reveals strong country of origin pressures from owners that have the effect of supplementing national level regulation. An important agenda for future research would be to provide a more integrated understanding of contextual effects on both owners and firms.

Our findings suggest three key implications for the practice of HRM. First, there is not necessarily a relationship between employment and job security and organisational performance/efficiency. In other words, employers—and HR managers—that promote lean staffing (and, by implication, an associated atmosphere of insecurity) in pursuit of an enhanced bottom line may be pursuing a fool's gold. Secure workforces are more likely to be committed to the firm and hence have greater incentives to enhance their organisation-specific (as opposed to immediately externally marketable) human capital. This would offset any benefits that might accrue from a reduced wage bill, the disciplinary

power imparted by insecurity, and numerical flexibility. It is important for HR managers to recognise the constrictions and opportunities flowing from different categories of owner (c.f. Bushee, 2004). Moreover, workers who are more secure in their jobs are more likely to voice any concerns, rather than seek redress via the external labour market. This may make for better communication and easier resolution of areas of dispute.

Second, if the optimal HR strategy varies according to locale and sector, then firms that wish to provide high levels of security of tenure, in order to incrementally build and husband organisation-specific knowledge and capabilities, would do well to attract investments from the NGPF-G. In turn, the NGPF-G has shunned controversial industries and firms associated with low labour standards. There is evidence that a number of differing institutional investors have begun to take employee well-being more seriously and are translating this into investment choices (CIPD, 2016).

Third, although it is often assumed that a relatively small stake by an alternative investor will have minimal effects on HRM, our findings suggest otherwise. The NGPF-G is generally more likely to sustain employment than many other alternative investors (c.f. Appelbaum et al., 2013). This suggests that HR managers—and trade unionists—need to deepen their understanding of the nature and behavioural patterns of new investor categories, keep abreast of changes in their firm's shareholding, and develop policy options to respond to the latter. As Jacoby (2005) notes, in contexts with highly mobile investors, HR managers need to be aware of the likely agendas imposed or encouraged by specific investors and react accordingly. Although it is often held that greater owner activism may leave workers worse off, it is evident that the converse can also be true. Although this study focuses on jobs, maintaining/reducing the demand for labour is not the only behaviour that has an impact on HRM. SWF investment may, for example, also impact on rewards and pensions (Gospel & Pendleton, 2014a, 2014b). Therefore, this constitutes a limitation of our study.

Although NGPF-G investment may not lead to higher levels of overall employment, our results suggest that it reduces proclivity to engage in downsizing. However, it is less clear how this comes about. Further research should investigate the methods through which an SWF, such as the NGPF-G, actually seeks to influence corporate behaviour, although implicit threats of exit are likely to exert a strong influence. For example, in the case of the NGPF-G, it may be due to managers being aware of the NGPF-G's reputation for promoting Norwegian values and aligning their firm's actions accordingly. The NGPF-G is an explicitly ethical SWF. However, there is no evidence that SWFs from dictatorships with poor human rights track records would have any interest in labour standards. This study could be extended to include other SWFs and provide a broader picture of this expected diversity of the impact on HR practice of other SWFs.

ACKNOWLEDGEMENTS

This paper has benefitted from the very constructive comments of the former Editor-in-Chief David Collings, the current Editor-in-Chief Dora Scholarios, an Associate Editor, and two anonymous reviewers. We also acknowledge the comments of participants at research seminars at Cardiff Business School and the University of Southampton Business School and the 26th NBER-TCER-CEPR Conference on Corporate Governance in Tokyo.

ENDNOTES

[1] However, the NGPF-G is open to invest in private equity in the future (Holter & Mohsin, 2016).

[2] We transform the propensity scores obtained from the previous step via the following formula: *Amended Propensity Score = Year * 100 + Industry Code * 10 + Propensity Score*.

[3] This is effectively a double DID, combining both a cross-sectional and a time-series DID (see Roberts & Whited, 2013).

[4] An earlier version of the paper reported regression results including *NGPF-G Ownership Postcrisis*, that is, the interaction between *NGPF-G Ownership* and an indicator variable that equals one for the years 2009–2013, and zero otherwise. This variable picks up any differential effect of NGPF-G investment on employment following the 2008 financial crisis. *NGPF-G Ownership Precrisis* is the equivalent for the precrisis period. *NGPF-G Ownership Postcrisis* was found to be positive and significant, whereas *NGPF-G Ownership Precrisis* was not found to be significant.

[5] We focus on the year 2009 for the following reason. The annual unemployment rate in the United Kingdom increased from 5.7% in 2008 to 7.6% in 2009. It then remained at around that level until 2013 inclusive. See https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/mgsx/lms.

[6] For regressions (2) and (8), the coefficient from the system GMM regression is slightly higher than the coefficient from the OLS regression.

[7] Being time-invariant, both variables are differenced away in the WG regressions.

[8] See Table A3 for details of the ultimate largest shareholders in our sample firms. There are 363 NGPF-G target firms in 2012, but data on the ultimate largest shareholder are available for only 262 of these firms.

ORCID

Marc Goergen http://orcid.org/0000-0003-4391-2651

Noel O'Sullivan http://orcid.org/0000-0002-4615-4043

Geoffrey Wood http://orcid.org/0000-0001-9709-1823

REFERENCES

Abdallah, W., Goergen, M., & O'Sullivan, N. (2015). Endogeneity: How failure to correct for it can cause wrong inferences and some remedies. *British Journal of Management*, *26*(4), 791–804. https://doi.org/10.1111/1467-8551.12113.

Admati, A. R., & Pfleiderer, P. (2009). The "Wall Street Walk" and shareholder activism: Exit as a form of voice. *Review of Financial Studies*, *22*(7), 2645–2685. https://doi.org/10.1093/rfs/hhp037.

Ainina, F., & Mohan, N. (2010). Sovereign wealth funds: Investment and governance practices. *Journal of Asia-Pacific Business*, *11*(4), 278–295. https://doi.org/10.1080/10599231.2010.520642.

Amable, B. (2003). *The diversity of modern capitalism*. Oxford: Oxford University Press. https://doi.org/10.1093/019926113x.001.0001.

Appelbaum, E., & Batt, R. (2014). *Private equity at work: When Wall Street manages Main Street*. New York, NY: Russell Sage.

Appelbaum, E., Batt, R., & Clark, I. (2013). Implications of financial capitalism for employment relations research: Evidence from breach of trust and implicit contracts in private equity buyouts. *British Journal of Industrial Relations*, *51*(3), 498–518. https://doi.org/10.1111/bjir.12009.

Bahgat, G. (2010). Sovereign wealth funds: An assessment. *Global Policy*, *1*(2), 162–171. https://doi.org/10.1111/j.1758-5899.2010.00008.x.

Blundell, R. W., & Bond, S. R. (1998). Initial conditions & moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*(1), 115–143. https://doi.org/10.1016/s0304-4076(98)00009-8.

Brewster, C., Wood, G., & Brookes, M. (2008). Similarity, isomorphism or duality? Recent survey evidence on the HRM policies of MNCs. *British Journal of Management*, *19*(4), 320–342. https://doi.org/10.1111/j.1467-8551.2007.00546.x.

Bushee, B. (2004). Identifying and attracting the "right" investors: Evidence on the behavior of institutional investors. *Journal of Applied Corporate Finance*, *16*(4), 28–35. https://doi.org/10.1111/j.1745-6622.2004.tb00671.x.

CIPD (2016). *Building the business case for managing stress in the workplace*. London: Author.

Clark, I. (2007). Private equity and HRM in the British business system. *Human Resource Management Journal*, *17*(3), 218–226. https://doi.org/10.1111/j.1748-8583.2007.00046.x.

Clark, I. (2013). Templates for financial control management and employee interests under private equity. *Human Resource Management Journal*, *23*(2), 144–159. https://doi.org/10.1111/j.1748-8583.2012.00192.x.

Collings, D. G. (2014). Toward mature talent management: Beyond shareholder value. *Human Resource Development Quarterly*, *25*(3), 301–319. https://doi.org/10.1002/hrdq.21198.

Conyon, M. J., Girma, S., Thompson, S., & Wright, P. (2002). The impact of mergers and acquisitions on company employment in the United Kingdom. *European Economic Review*, *46*(1), 31–49. https://doi.org/10.1016/s0014-2921(00)00086-6.

Dixon, A. D., & Monk, A. H. B. (2012). Rethinking the sovereign in sovereign wealth funds. *Transactions of the Institute of British Geographers*, *37*(1), 104–117. https://doi.org/10.1111/j.1475-5661.2011.00447.x.

Ferner, A., Almond, P., Colling, T., & Edwards, T. (2005). Politics on union representation in US multinationals in the UK: Between micro-politics and macro-institutions. *British Journal of Industrial Relations*, *43*(4), 702–728. https://doi.org/10.1111/j.1467-8543.2005.00480.x.

Ferner, A., Tregaskis, O., Edwards, P., Edwards, T., Marginson, P., Adam, D., & Meyer, M. (2011). HRM structures and subsidiary discretion in foreign multinationals in the UK. *International Journal of Human Resource Management*, *22*(3), 483–509. https://doi.org/10.1080/09585192.2011.543628.

Financial Times (2016). Companies listen when Norway's oil fund shouts. Active engagement with Volkswagen offers lessons to sovereign investors. *Financial Times*, 16 May. Retrieved from https://www.ft.com/content/caec9fee-1b6b-11e6-a7bc-ee846770ec15

Goergen, M., Brewster, C., & Wood, G. (2009). Corporate governance and training. *Journal of Industrial Relations*, *51*(4), 461–489. https://doi.org/10.1177/0022185609339513.

Goergen, M., O'Sullivan, N., & Wood, G. (2014a). The consequences of private equity acquisitions for employees: New evidence on the impact on wages, employment and productivity. *Human Resource Management Journal*, *24*(2), 145–158. https://doi.org/10.1111/1748-8583.12032.

Goergen, M., O'Sullivan, N., & Wood, G. (2014b). The employment consequences of private equity acquisitions: The case of institutional buy-outs. *European Economic Review*, *71*, 67–79. https://doi.org/10.1016/j.euroecorev.2014.06.015.

Gospel, H., Haves, J., Pendleton, A., Vitols, S., & Wilke, P. (2010). *The impact of investment funds on restructuring practices and employment levels*. Dublin: European Foundation.

Gospel, H., & Pendleton, A. (2014a). Financialization, new investment funds, and labour. In H. Gospel, A. Pendleton, & S. Vitols (Eds.), *Financialization, new investment funds, and labour: An international comparison* (pp. 53–85). Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199653584.003.0001.

Gospel, H., & Pendleton, A. (2014b). Financialization, new investment funds, and weakened labour. In H. Gospel, A. Pendleton, & S. Vitols (Eds.), *Financialization, new investment funds, & labour: An international comparison* (pp. 86–114). Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199653584.003.0003.

Gospel, H., Pendleton, A., Vitols, S., & Wilke, P. (2011). New investment funds, restructuring, and labor outcomes: A European perspective. *Corporate Governance: An International Review*, *19*(3), 276–289. https://doi.org/10.1111/j.1467-8683.2011.00848.x.

Holter, M., & Mohsin, S. (2016). Norway wealth fund isn't joining global stock selloff, CEO says. Bloomberg, 9 March. Retrieved from http://www.bloomberg.com/news/articles/2016-03-09/norway-wealth-fund-gains-39-billion-in-2015-as-stocks-recover

Jacoby, S. (2005). *The embedded corporation: Governance and employment in Japan and the United States*. Princeton, NJ: Princeton University Press.

Kelly, J. (1998). *Rethinking industrial relations: Mobilization, collectivism and long waves*. London: Routledge. https://doi.org/10.4324/9780203213940.

Kotter, J., & Lel, U. (2011). Friends or foes? Target selection decisions of sovereign wealth funds and their consequences. *Journal of Financial Economics*, *101*(2), 360–381. https://doi.org/10.1016/j.jfineco.2011.03.007.

Lazonick, W., & O'Sullivan, M. (2000). Maximizing shareholder value: A new ideology for corporate governance. *Economy and Society*, *29*(1), 13–35. https://doi.org/10.1080/030851400360541.

Milne, R. (2015). Norway fund reveals divestments and resolution rejections. *Financial Times*, 5 February. Retrieved from https://www.ft.com/content/cef444fe-ad1a-11e4-bfcf-00144feab7de

Milne, R., & Kiran, S. (2016). Norway oil fund drops investment in Cairn and Kosmos. *Financial Times*, 29 June. Retrieved from https://www.ft.com/content/3ed3be5a-3d19-11e6-8716-a4a71e8140b0

Moeller, S. (2009). *Surviving M & A*. Chichester: John Wiley. https://doi.org/10.1002/9781119207191.

Nickell, S. (1984). An investigation of the determinants of manufacturing employment in the United Kingdom. *Review of Economic Studies*, *51*(4), 529–558. https://doi.org/10.2307/2297778.

Nickell, S., Wadhwani, S., & Wall, M. (1992). Productivity growth in UK companies 1975–1986. *European Economic Review*, *36*(5), 1055–1085. https://doi.org/10.1016/0014-2921(92)90046-y.

Nixon, R. D., Hitt, M. A., Lee, H. U., & Jeong, E. (2004). Market reactions to announcements of corporate downsizing actions and implementation strategies. *Strategic Management Journal*, *25*(11), 1121–1129. https://doi.org/10.1002/smj.423.

Norges Bank Investment Management (2013). *2012 Government Pension Fund Global annual report*. Oslo: Author.

Norges Bank Investment Management (2014). *2013 Government Pension Fund Global annual report*. Oslo: Author.

Pier, C. (2007). *Discounting rights: Walmart's violation of US workers' right to freedom of association*. New York: NY: Human Rights Watch.

Reiche, D. (2010). Sovereign wealth funds as a new instrument of climate protection policy? A case study of Norway as a pioneer of ethical guidelines for investment policy. *Energy—The International Journal*, *35*(9), 3569–3577. https://doi.org/10.1016/j.energy.2010.04.030.

Roberts, M. R., & Whited, T. M. (2013). Endogeneity in empirical corporate finance. *Handbook of the Economics of Finance*, 493–572. https://doi.org/10.1016/b978-0-44-453594-8.00007-0.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, *70*(1), 41–55. https://doi.org/10.2307/2335942.

Sandbu, M. (2016). Activism: From boardroom to Shangri-La. *Financial Times*, 19 February. Retrieved from https://www.ft.com/content/0d36c748-d5c7-11e5-829b-8564e7528e54

Sojli, E., & Tham, W. W. (2011). The impact of foreign government investments: Sovereign fund investments in the U.S. In J. Cosset, & N. Boubakri (Eds.), *International finance review: Institutional investors in global capital markets* (pp. 207–244). Bingley: Emerald Group. https://doi.org/10.1108/s1569-3767(2011)0000012011.

SWFI (2014). Sovereign wealth fund rankings. Retrieved from http://www.swfinstitute.org/fund-rankings/

Thompson, P. (2011). The trouble with HRM. *Human Resource Management Journal*, *21*(4), 355–367. https://doi.org/10.1111/j.1748-8583.2011.00180.x.

Wilke, P., Vitols, S., Haves, J., Gospel, H., & Voss, E. (2009). *The impacts of private equity investors, hedge funds and sovereign wealth funds on industrial restructuring in Europe as illustrated by case studies*. Hamburg: Wilke, Maack and Partners.

Wood, G. (2015). Review symposium: Private equity at work. *Socio-Economic Review*, *13*(4), 818–820. https://doi.org/10.1093/ser/mwv026.

Wood, G., Dibben, P., & Ogden, S. (2014). Comparative capitalism without capitalism, and production without workers: The limits and possibilities of contemporary institutional analysis. *International Journal of Management Reviews*, *16*(4), 384–396. https://doi.org/10.1111/ijmr.12025.

Zyglidopoulos, S. C. (2005). The impact of downsizing on corporate reputation. *British Journal of Management*, *16*(3), 253–259. https://doi.org/10.1111/j.1467-8551.2005.00460.x.

How to cite this article: Goergen M, O'Sullivan N, Wood G, Baric M. Sovereign wealth funds, productivity and people: The impact of Norwegian Government Pension Fund-Global investments in the United Kingdom. *Hum Resour Manag J*. 2018;28:288–303. https://doi.org/10.1111/1748-8583.12179

APPENDIX

TABLE A1 Definitions of the variables

Variable	Definition
Market capitalisation	The closing share price times the number of issued shares at that date
Sales	Total revenue
Sales growth	Annual growth in revenue (%)
Market-to-book ratio	The market value of equity divided by the book value of equity
Return on assets	Net income before taxation divided by total assets (%)
Cash over total assets	The proportion of total assets in the form of cash or cash equivalents (%)
ST debt over total assets	Short-term liabilities divided by total assets (%)
Dividend yield	The total dividend per share divided by the closing share price (%)
Ln (employees t−1)	The natural logarithm of the number of employees in t−1
Ln (remuneration over employees t)	The natural logarithm of real wages in t over the number of employees in t
Ln (turnover over employees t)	The natural logarithm of real turnover in t over the number of employees in t
Target firm	Indicator variable set to one if there is NGPF-G investment during at least one year of the period of study, and zero otherwise. This indicator variable measures the employment effects affecting target firms independent of the NGPF-G investment
NGPF-G ownership t	Percentage of ownership held by NGPF-G in t
NGPF-G ownership * Year 2009 (No NGPF-G ownership * Year 2009)	This measures the effect of NGPF-G ownership (the absence of NGPF-G ownership) in 2009. It is the interaction between NGPF-G ownership (no NGPF-G ownership, i.e., an indicator variable set to one if there is no NGPF-G ownership, and set to zero otherwise) and the year 2009 indicator variable
NGPF-G year t	Indicator variable set to one for firm-year observations during which there is NGPF-G investment. It is also set to one for the same years for the equivalent control firm. It is set to zero otherwise. This variable would pick up industry wide employment effects (as well as any other effects pertaining to other firm characteristics) that affect all firms in that industry (and/or with the same firm characteristics) at a particular time (the years with NGPF-G investment) and that are not due to the NGPF-G investment
Ownership largest shareholder	The proportion of shares held by the ultimate largest shareholder
UO X	Indicator variable set to one if the ultimate largest shareholder is of type X where X is the state, a family, a pension fund, a venture capitalist/private equity house, an industrial company, another type of shareholder, or own treasury shares

TABLE A2 Prematching and postmatching logits

	(1)	(2)
	Prematching logit	Postmatching logit
Ln (market capitalisation $t-1$)	0.753*** (.000)	−0.029 (.921)
Ln (sales $t-1$)	0.279*** (.000)	0.079 (.580)
Ln (total assets $t-1$)	0.088 (.363)	0.019 (.946)
Ln (sales growth $t-1$)	0.878*** (.000)	0.266* (.081)
Ln (market-to-book ratio $t-1$)	−29.044 (.815)	−0.160 (.643)
Ln (return on assets $t-1$)	−0.141 (.110)	−62.481 (.728)
Ln (cash over total assets $t-1$)	−0.199** (.045)	0.185 (.190)
Ln (ST debt over total assets $t-1$)	0.292* (.090)	0.143 (.344)
Ln (dividend yield $t-1$)	252.718 (.825)	0.207 (.417)
Constant	0.753*** (.000)	573.230 (.729)
Observations	3501	222
Pseudo-R^2	.332	.021
χ^2	465.659	6.452
p	.000	.694

TABLE A3 Distribution of types of ultimate largest shareholder in the Norwegian Government Pension Fund-Global (NGPF-G) target firms in 2012

Type of ultimate largest shareholder	Percentage of NGPF-G target firms
State	1.53%
Family	9.54%
Pension fund	15.27%
Venture capitalist/private equity house	1.15%
Industrial firm	11.45%
Other	0.38%
Own treasury shares	0.38%