The Impact of Private Equity on Employment: The Effect of PE's Home Country

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The Impact of Private Equity on Employment: The Consequences of Fund Country of Origin – New Evidence from France

Abstract

This is a study of country of origin effects of Private Equity (PE) investment on employment in France applies propensity score matching methodology to establishment level survey data. We find a significant difference between the effects of investment by foreign and domestic French PE, that have become more pronounced since the onset of the financial crisis that began in 2008. The former were more likely to induce job shedding and employment flexibility. In contrast, there was not a significant difference in these areas between firms that French PE invested in, and those with no PE investment at all.

Introduction

This is a study of country of origin effects of private equity on work and employment in France. There has been growing controversy as to the role and consequences of private equity[i] (PE) for stakeholders within and beyond the firm (Clarke 2007, 2013; Wood and Wright 2010). Particular attention has been focused on the impact on employees, with arguments being advanced both within the academic and practitioner literature that private equity takeovers may leave employees considerably worse off. If a limitation of the early literature on the subject was a limited evidence base (Wood and Wright 2010), a limitation of more recent work has been a tendency to concentrate on liberal market economies. The latter are generally held as contexts particularly conducive to the emergence and sustenance of new investors, and encouraging more short-term investor behaviour. There has been even less work on the differences in practice disseminated by PE players of different national origin, with the notable exception of a 2012 study by Bacon et al. (2012). In attempting to redress this lacuna, this study looks implications of private equity takeovers by players of different national origins on employees in France, a country where institutional mediation remains significantly stronger than that encountered in liberal market economies such as the United Kingdom.

Whilst there is controversy over the role of private equity, both critics and proponents of the industry agree that a major consequence of such takeovers is a realignment of corporate agendas to focus on enhancing owner returns, particularly in the short term (see Jensen 2006; Rosenbuch et al. 2013). Investors' associations argue that this focus has a positive effect on employment (see, for example, A.T. Kearney 2007; British Venture Capital Association 2006; European Venture Capital Association 2005; Shapiro and Pham 2008; and the *Association française des investisseurs pour la croissance* [AFIC] 2013 for the French case). In contrast, employee associations and unions argue that it has negative effects on wages and employment. For example, the Service Employees

International Union has argued that: “Typically it’s easier to decrease costs quickly by cutting heads, which is why buyouts have typically been accompanied by layoffs” (Rasmussen 2008).

Most studies that have investigated the link between PE and employment have focused on the USA (Davis et al. 2008; Davis et al. 2011; Kaplan 1989; Lichtenberger and Siegel 1990; Opler 1992) and the UK (Amess and Wright 2007a, 2007b; Amess et al. 2008; Georgen et al. 2011; Wright and Coyne 1985; Wilson et al. 2012), although there is also an emerging body of work looking at continental Europe (Boselie and Koene 2010; Wieser et al. 2007). The results of these studies are by no means consistent. Simply examining the organizational level employment data may be misleading. For example, an increase in employee numbers in one organization may be due to a merger, whilst at the same time jobs are being shed in the acquired organization, leading to a net loss of jobs (Davis et al. 2011). Again, employment changes following a takeover may lead to a rebalancing of the ratios between operators and managerial staff, leaving one or other category worse off. Hence, it could be argued that there is a need for further research that more closely examines establishment level changes (Wright et al. 2009). Moreover, existing studies almost never take into account differences in strategies and objectives between PE firms. Bacon et al. (2013) underline that most of the criticisms of PE relate to short-term investors focused on increasing organizational efficiency to extract value, but that other kinds of PE investors exist. Furthermore, there are few international studies that compare practices of PE in Liberal Market Economies (LMEs) and in Coordinated Market Economies, and other types of capitalism (Amable 2003; Hall and Soskice 2001; Whitley 1999). And, with the notable exception of Bacon et al. (2012), there has been even less work on PE country of origin effects. The Bacon et al. (2012) study, however, primarily focused on the dissemination of high performance work practices. It found no country of origin effects in this regard, and also noted a general tendency towards a greater usage of high performance work practices following a private equity takeover. However, the study was only of firms subject to private equity buy-outs, and thus did not seek to do any comparisons with firms that were not.

This paper seeks to contribute to filling these gaps in the literature. We carry out an empirical study on the effects of PE funding on employment in French establishments, based on the REPONSE survey, which is a nationally representative survey of French establishments. The French PE market is currently the second largest in Europe after the UK, with about €41.51 billion funds invested between 2007 and 2012 in 3054 companies (vs. €64.45 billion and 2940 companies for the UK) (EVCA – Frontier Economics 2013). Activity in the French PE market is therefore economically sizeable, both with respect to the French economy and to the rest of the world, making France an interesting setting to investigate the impact of PE investment (Gaspar 2012).

We address three issues. First, using propensity score matching procedures, we assess the effect of private equity on the overall workforce employment of our sample of 1629 French establishments (for 2011). We replicate this analysis for 2005 with a sample of 1461 establishments in order to confirm the results. Second, we focus on the impact of PE on employment for different job categories in 2011 and 2005, to check whether there are differences between production employees and non-production employees (Lichtenberger and Siegel 1990). Third, we investigate the 'country of origin effect' of PE. There are indeed both French PE firms and foreign PE firms (mainly American and British) operating in France, a country associated with greater institutional mediation (and stronger employment protection) than is found in LMEs (Whitley 1999).

The paper is structured as follow. The first section uses the literature to explore the issues and leads to the development of our research hypotheses. The following section describes the data and methods. We then report the results and discuss them and finally we draw conclusions for practitioners and for research.

Theoretical background and hypotheses

***Impact of private equity on employment*.** Jensen (2006) and Wright et al. (2006) argue that PE reduces the ownership and control divide by putting in place active investors who provide more

direct scrutiny of managerial behavior. Shleifer and Summers (1988) argue that a change in ownership permits new management to renegotiate the implicit contracts of employment of existing workers. Wage payments may be revisited, particularly those exceeding the marginal product of labor. There can also be a reduction in employment or at least of implicit assumptions of job security. However, an alternative argument is that PE may increase employment as companies funded by PE pursue growth strategies (Wright et al. 2000, 2001). PE funding provides managers with the discretion to decide what business plans to pursue in order to maximize profits (Wright et al. 2001). Given that PEs typically increases managements' equity stake, such decisions will be motivated by managers seeking to maximize their own wealth and income.

As we have seen, the evidence on the effects of private equity on employment is mixed (see Bacon et al. 2013; Wright et al. 2009, for overviews*).* "Reviews of 18 different studies by Wright, Gilligan, and Amess (2009) and Wright, Bacon, and Amess (2009) and Lutz and Achleitner's (2009) review of 49 studies all highlighted the mixed findings of individual studies, but concluded that overall PE LBOs do not appear to systematically erode employment" (Bacon et al. 2013: p.9). Similarly, Tag's (2012) recent review of employment effects in 17 studies finds "weakly negative or no effects on employment" (p.278).

A possible explanation for these mixed results is that the disposal of noncore parts of the business following PE acquisition causes an immediate but short-lived employment decline at the firm level (Amess et al 2008; Amess and Wright 2010; Davis et al. 2011; Wright et al. 2009) which can then be compensated or exceeded by the growth of the firm; however, recent work challenges this finding (Clarke 2013). PE can contribute to employment decline in case of divestments involving the sale of establishments that does not equate with job destruction, and to employment growth via the acquisition of establishments that does not reflect job creation (Appelbaum and Batt 2012). The problem is that it is not fully clear to what extent reductions in employment are the result of divestments of divisions or increases the result of acquisitions (Wright et al. 2009). There is therefore a need to examine establishment level changes (Wright et al. 2009).

Based on recent findings within the HRM literature (Clarke 2013; Goergen et al 2011), we posit the following hypothesis:

(H1) PE has a negative impact on employment at establishment level.

Further, most existing studies focus on the impact of PE on employment of the overall workforce. However, as Wright et al. (2009) argue, PE takeovers may affect non-managerial employees differently to managerial ones. Although there is a limited range of work in this area, Lichtenberger and Siegel (1990) found a reduction in the ratio of non-production to production workers, with the latter being unaffected by the PE takeover. Therefore, we posit the following hypothesis:

(H2) The negative impact of PE on employment is stronger for non-production workers than for production workers.

Private equity and Varieties of Capitalism. The literature on comparative capitalisms makes a common distinction between liberal market economies (LMEs) and coordinated markets economies (CMEs) (Dore 2000; Hall and Soskice 2001). In the former, shareholders or owners of the business enjoy extensive rights. In the latter, a wider group of stakeholders, including employees, enjoy greater rights, in terms of both formal and informal regulation and associated social ties; hence, employment is more secure, and employee countervailing power more effective than in LMEs (see Dore 2000; Goergen et al. 2009; Lincoln and Kalleberg 1990; Whitley, 1999). In other words, within CMEs, there is a tradition of long-term labor contracts and greater security against lay-offs (Hall and Soskice 2001). France has a somewhat ambiguous position in relation to the LME/CME distinction (Goergen et al. 2012). However, levels of employment protection are clearly closer to the CME than the LME archetype (Hall and Soskice 2001; Harcourt and Wood 2007).

The literature on comparative HRM points to profound differences in firm practices not only according to country of operation, but also country of ownership; it has been argued that firms originating in LMEs are particularly likely to disseminate practices associated with their country of

origin into other settings (for example Almond 2011; Farndale et al. 2008; Ferner 1997; Gooderham et al. 1999).

French origin private equity players are different to their UK counterparts, given considerable variations in the importance of government agencies and of syndication. At the European level of analysis, the contribution of government agencies in 2013 was 38% of the total fundraising (European Private Equity Activity Data 2007-2013, EVCA). Both the UK and France are below this European average but with an important difference between them: fundraising by government agencies is almost non-existent in the UK private equity industry (1.6% of total fundraising between 2007 and 2013) while it is a significant element of total fundraising in France (13.5%). Syndication is also much more developed in the French private equity market, as more than half of the investments made in France between 2007 and 2013 are syndicated investments (53.9%), compared with 30.3% in UK.

These differences have two major implications. The first one is that in France domestic PE players depending on government agencies are unlikely to be focused purely on financial objectives. For example, Bpifrance, the main public investment group with the French State as shareholder, has the following approach:

> "…in addition to appraising the financial performance of a business when making investment decisions (profitability, sustainability, liquidity), Bpifrance Investment takes into account [...]extra-financial factors such as export and international expansion potential, contribution to innovation, Environmental, Social and Governance practices, effects on territorial employment and development, the role within the sector, the development of family businesses, etc" (Bpifrance, 2013, The Doctrine, p.36).

The second implication is relative to the 'diffusion effect' of syndication. The literature on PE syndication notes that the interests of the lead investor may not always coincide with the interests of non-lead investors (Meuleman et al. 2009). Given that lead investors have both more informal

control of the companies they back through their privileged access to information and more formal control through their residual rights of control, they are able to impose their will on non-lead investors. But in syndication investors are also able to share their views, specific knowledge and complementary skills (Brander et al. 2002). Being lead-investor or not, public investors can therefore promote their values and objectives to other investors. Bpifrance favors syndication and promotes corporate social responsibility to partner investors and the companies they back (Bpifrance 2013).

In addition to some 250 French PE players represented by AFIC, LME origin PE is directly involved in funding French companies. For example Blackstone has invested more than €1.6 billions in France, including in the Trianon Palace in Versailles and in Vitalia group (second private hospital group). Bain Capital acquired *Maisons du Monde* (home furnishings and home decor) in June, 2013, for €680 million. In the textile and clothing sectors, private equity firms such as TA Associates, Change Capital Partners, TowerBrook Capital Partners and KKR have invested in the French brands Zadig et Voltaire, Paule K, Kaporal and Sandro between 2011 and 2013. While it is easy to identify the French PE firms thanks to AFIC, it is difficult to get reliable information about foreign PE firms that invest in French non-listed companies. PE industry news and discussions with members of AFIC suggest that foreign PE firms are mainly of direct LME origin, or with ownership being lodged in fiscally attractive European countries such as Luxembourg or Malta.

Given the ability of PE firms to influence employment and given the differences between LMEs and CMEs, particularly with this state participation in the PE industry in France, we predict that the largely LME origin of foreign private equity investors will mean that:

> *(H3) Foreign PE investment is more likely to have negative employment consequences on French establishments than French PE investment is.*

Data and methods

Data and variables. We use data from the French REPONSE survey (*Relations Professionnelles et Négociations d'Entreprise*), conducted in 2005 and 2011 by the research center of the French Ministry of Labor (DARES). As a nationally representative establishment-level survey, REPONSE is very similar to the British Workplace Employment Relations Survey (WERS). It therefore mainly concerns industrial relations but, to our knowledge, it is one of the very few databases that includes information on the ownership status of companies that are both listed and not listed. A representative sample of 2 930 establishments with at least 20 employees was surveyed in 2005. In 2011, 4 000 establishments were surveyed, but with at least 11 employees. As it is compulsory to complete the survey sent out by the Ministry of Labour, the response rate was almost 100%. To be able to compare the results of 2011 with those of 2005, we keep only the establishments of at least 20 employees. We exclude from the sample public administration, financial sector, company establishments whose employees are the main shareholders (as in workers' co-operatives) and listed companies, in order to keep establishments that could be funded by private equity to develop their activity (Wood and Wright, 2010). The final sample size is 1 461 for 2005 and 1 629 for 2011. We have ensured that this sample deals with firms financed by private equity but not firms financed by venture-capital. Indeed, all the investor owned firms in the sample are more than five years old and have more than 50 employees: they are not start-ups.

One top manager per establishment was asked questions about company ownership, establishment characteristics, employment, human resource management and industrial relations. The question relative to ownership is "What is the main category of shareholder of the company?" This allows us to know whether ownership is private equity or other shareholders: and family, non-financial company or others. Whatever the country it is difficult to get reliable data on ultimate ownership for non-listed companies. We define a dummy variable that takes the value 1 if the company is owned by a private equity firm, and 0 otherwise. In 2005, 9.6% of the establishments in our sample belong to PE funded companies. According to a 2012 study by Grant Thorton and AFIC, the number of companies funded by private equity in France increased between the mid 2000's and 2011. Our

sample reflects this evolution with 10.9% of the establishments belonging to PE funded companies in 2011. The questionnaire asked the top manager to distinguish one of two cases regarding the nationality of the shareholder: the private equity firm is French or the private equity firm is foreign.

One question in the REPONSE survey is about the variation of the workforce in the establishment during the past three years. This question is not very precise (it does not capture the range of variation) but it offers simple data at the establishment level. For Wright et al. (2009) and Davis et al. (2011) it is very important to focus analysis at establishment level because, for example, reductions of employment at firm level can be the result of divestments of divisions and increases can be the result of acquisitions. Establishment level is therefore the most relevant level of analysis, allowing us to capture greenfield job creation or job destruction. The same question is then asked for each job category present in the establishment: managers, first-line managers and technicians, office and clerical worker, skilled and unskilled workers. We create a dummy variable for the decrease of the workforce at establishment level, and other dummies for each of the four job categories. As temporary employees may partially or completely compensate lay-offs in order to give more flexibility, we create a dummy for the presence of temporary workers.

As underlined by Davis et. al (2011), employment variation may be affected by some characteristics of the parent firm (size, multi-unit or not) and of the establishment (age, industry). All these factors are controlled by dummy variables. A job variation may also be influenced by whether there is trade union representative able to negotiate lay-offs, so we control for trade union presence in the establishment. Tetrachoric correlations were computed for all the variables used in our analysis for 2005 and 2011. No significant problems have emerged.

Propensity score matching method. One of the main limits of cross-sectional studies of private equity and employment is that they fail to identify causal links between the former and the latter. In this paper, we apply propensity score matching to estimate the 'causal treatment effect' of private equity on employment at establishment level[ii]. This allows direct comparison between PE funded

companies and non-funded companies using a representative survey, an area where there is “a crucial need for systematic academic evidence” (Wright et al. 2009b, p.365).

Propensity score matching has become a popular approach to estimate causal treatment effects in non-experimental causal studies (Caliendo and Kopeinig 2008). It is used for example when evaluating labor market policies (Heckman et al., 1997) or the effect of unionization on wages (Eren 2007). To our knowledge, only one study employs propensity score matching to estimate the consequences of leverage buyouts, private equity and acquisitions on wages and employment (Amess et al. 2008).

Rubin (1974) defines a causal effect as the: “measure for a specific person [of] the difference between the likely outcome of a person’s participation in a measure and the likely outcome of a person’s non-participation” (Rubin 1974, p.689). In our case, being funded by private equity is the binary treatment.

It can be argued that companies funded by private equity might differ from companies that are not funded by private equity (e.g. they need more money to finance their growth; they are more attractive for private equity firms, etc.). In this case our results would suffer from a selection bias because the assignment of observations to our treatment group would not be a random process. Therefore we used propensity score matching analysis to adjust this selection bias (Rosenbaum and Rubin 1983). Using this method we can compare employment differences between establishments that are as similar as possible with respect to age, industry, size of the parent firm, presence of a trade union representative, except for the fact than one establishment (treatment group) is part of a company funded by private equity and the other (control group) is not.

The first step is to estimate the propensity score that is defined as the probability for an establishment of being part of company funded by private equity. We estimate this probability using a Probit regression model which is usually preferred at this stage (Caliendo and Kopeinig 2008). The model includes as dependent variable our dummy for private equity ownership, and as explanatory

variables, the characteristics of the establishment and of the parent firm noted above. Only variables that influence simultaneously the participation decision (i.e. being funded by private equity) and the outcome variable (i.e. employment) should be included (Caliendo and Kopeinig 2008). After deriving the propensity score, we need to ensure that there is enough common support. This is done by discarding treated establishments with a propensity score laying outside the range of propensity scores for establishments in the control group. Therefore, treated establishments lacking a pair wise control group observation are eliminated.

The second step is to match the establishments in the treated group (funded by private equity) to similar establishments in the control group (not funded). Various matching methods have been proposed in the literature as a means to identify a comparison group, such as nearest-neighbor (NN) or kernel matching (KM)[iii]. As there is no clear evidence of how to choose the 'good' matching method, it seemed sensible to try a number of approaches, given that with growing sample size they all become closer to comparing exact matches (Caliendo and Kopeinig 2008). Therefore, we use a number of them as a robustness check. The most intuitive matching method is nearest-neighbor matching, which matches each treated observation to a control observation with the closest propensity score. We implement this procedure with replacement; that is, each treated establishment has one match, but a control group establishment may be matched to more than one treated establishment. One problem with NN matching is that it faces the risk of bad matches if the closest neighbor is far away. The kernel matching method offers an alternative. In KM, the contribution of each control group observation is weighted so as to attach greater weight to 'good' matches. Two kernel functions are used: Gaussian kernel and Epanechnikov kernel. One major advantage of KM is the lower variance which is achieved because more information is used for constructing counterfactual outcomes.

In the third step, we compare the matched establishments with respect to the variation of employment. Thus, we are able to analyze the hypothesized effect of private equity on employment, ruling out any potential selection bias. Once each treated observation is matched to a control group

observation, the difference between the outcomes for the treated versus the control observations is computed. The ATT (average treatment effect on the treated) is then obtained by averaging these differences. But testing the statistical significance of treatment effects and computing their standard errors is not straightforward. The problem is that the estimated variance of the treatment effect should also include the variance due to the estimation of the propensity score and the imputation of the common support. One way to deal with this problem is to use bootstrapping (Lechner 2002). This is a popular way to estimate standard errors in case analytical estimates are biased or unavailable. So our standard errors for kernel matching models are based on 1 000 bootstrap replications. A limitation with bootstrap methods is their invalidity for NN matching (Abadie and Imbens 2008). We use therefore the *nnmatch* program on Stata proposed by Abadie and al. (2004) to obtain standard errors of treatment effects for NN matching models.

This procedure is primarily used to estimate the effect of private equity on the total workforce of the establishments in 2011, then the effect on the different job categories (managers, first-line managers and technicians, office and clerical worker, skilled and unskilled workers) and on the presence of temporary employees. The procedure is afterwards replicated with the propensity score as the probability for an establishment of being part of company funded by a French private equity firm, and with the propensity score as the probability for an establishment of being part of company funded by a foreign private equity firm. Finally all these estimates are replicated for 2005.

Results and discussion

Univariate analysis. Table 1 describes difference in means tests for PE funded versus non funded establishments in 2011, then for those funded by French PE versus those funded by foreign PE establishments in 2011. In other words, Table 1 enables us firstly to compare the reduction in employment in the establishments funded by PE compared to non-funded, then to see if there are differences between French-funded and foreign-funded establishments.

----- Table 1 about here -----

There is a clear and strongly significant difference in employment reduction of the overall workforce between establishments that belong to companies funded by PE and those that belong to non-funded companies: 37% of the former show a decrease in employment against 27% of the later. The proportion of unfunded establishments reducing the overall workforce is variable depending on job categories. Whilst only 13% of the establishments have reduced the number of first-line managers, more than 30% reduced the number of skilled and unskilled workers. For all job categories, funded establishments have reduced employment more frequently than non-funded (by 6% to 10% depending on the category). The differences are significant for all job categories. Table 2 highlights that these differences were already observable in 2005, and were often greater.

When analysis is focused on the geographical origin of the PE firm, results underline a significant difference in the proportion of establishments that reduced the overall workforce: 29% of the establishments funded by French PE reduced employment versus 46% of those funded by foreign PE. The situation of establishments funded by French PE is quite similar to unfunded establishments (29% vs. 27%). Here again the results for 2005 are very similar.

----- Table 2 here -----

***Likelihood of being funded by private equity*.** Table 3 displays the results from the probit models of the likelihood for an establishment of being part of a company funded by private equity in 2011 (model 1), of being part of a company funded by French private equity firm in 2011 (model 2), or of being part of a company funded by foreign private equity firm in 2011 (model 3). Table 4 displays the results for 2005.

In 2011, PE (especially French PE) favored the information and communication sector. In contrast, in both 2005 and 2011, there was little interest in wholesale and retail. The age of the establishment and business strategy have little or no influence on the probability of being funded, either in 2005 or 2011. There is almost no relationship between size and the likelihood of being funded by PE in 2005, whereas this link is very strong in 2011. This may reflect a reduced appetite for risk taking since the onset of the financial crisis.

***Impact of private equity on employment*.** Our first hypothesis is that PE has a negative impact on employment. As predicted, there is statistically significant evidence of a link between PE and a reduction of the overall workforce at establishment level (Table 5). The impact of PE on the overall workforce is stronger in 2005 than in 2011; it is likely that the financial crisis that began in 2008 forced many organizations to downsize, leaving few opportunities for easy job-shedding following a PE takeover.

Our second hypothesis, as predicted by Lichtenberger and Siegel (1990), is that the impact of PE on employment decrease is more important for non-production employees than for others. The results here are less clear-cut and quite different between 2005 and 2011. For 2005 they confirm this hypothesis, since there is a link between PE funding and employment reduction for managers and first-line managers, but no relationship with skilled and unskilled workers. More exactly, only one matching algorithm suggests an impact of PE funding on this category of employees and that is only significant at the 10% level.

For 2011, we do not observe the same reductions. The results highlight few differences between the 'treated group' (PE funded establishments) and the 'control group'. This can be linked to a change in behavior of the PE funded establishments between 2005 and 2011 or to a change in behavior of the control group; the economic crisis may have pressured many organizations to cut staffing whether PE funded or not. Indeed, statistics from the Ministry of Labor and the Institut National de la Statistique et des Études Économiques (INSEE), the French National Institute for Statistics and

Economic Studies, show an increase of the ratio "number of employees leaving the company / total workforce" in French companies between 2005 and 2011, with a commensurate increase in unemployment.

Difference between French PE and foreign PE: the impact of PE's home country. Our results strongly support the hypothesis that foreign PE funding is more likely to lead to job losses than French PE funding. In 2011, being funded by a French PE firm neither effects overall workforce numbers at the establishment level nor employment in different job categories (see Table 6). However, foreign PE investment (mostly, as noted above, LME investment) leads to job cuts, particularly for (non-line) managers, office and clerical workers. As with most other developed nations, France was negatively affected by the onset of the crisis, with a period of negative growth of -0.1% in 2008 and -3.1% in 2009; recovering to 1.7% in 2010, with commensurate effects on the labor market. Yet workers in establishments with French PE investments were no worse off than firms where there was no PE involvement. In the 2011 data, we do not observe any greater decline in employment in establishments funded by French PE than in the control group, in spite of the requirements of profitability commonly associated with PE funding However, within the foreign PE firms, we encounter significantly greater job losses, arguably in line with a greater focus on short term returns that would be typical for LME companies.

The results for 2005 differ from these in some crucial areas (see Table 7). It was a different economic context: the growth rate of the economy was 0.9% for 2002, 0.9% for 2003 and 2.5% for 2004. First of all, being funded by a French PE firm does not have any influence on the overall workforce variations, although we found some differences for first-line managers and technicians. A decrease of first-line managers and technicians employment was significant for establishments funded by foreign PE firms. The more negative consequences of foreign PE funding were also less pronounced prior to the crisis and, indeed, not much different to the effects of French PE funding. This may be because the high levels of leverage associated with foreign PE may have been difficult to sustain in the aftermath of the crisis, forcing an even greater emphasis on downsizing and distribution.

However, it also may reflect the extent to which French players may be more responsive to informal conventions and, as we have seen, the abiding influence of the French state.

In both 2005 and 2011, foreign PE funding was associated with the greater usage of temporary workers. Again, this might reflect a more short term orientation, and a greater reliance on contingent labor.

Our results highlight that, particularly since the onset of the economic crisis, it is not so much the fact of being funded by PE which is important, but the origin of the investors. Our results thus differ from those of Bacon et al. (2012), which suggest some adaptation of Anglo-Saxon PE firms to local host country contexts.

Conclusions

Before drawing conclusions we note that that this study has some limitations, which open up opportunities for future research. While REPONSE has many of the key qualities that are desirable for an analysis providing a national representative sample of establishments, there are attributes that are less desirable. This applies to the measure of employment variation which allows only knowing, for each job category, whether employment declines, if it is stable or increases. It could also be useful to have additional data or other database to identify more precisely the identity of PE investors. As we have shown, most foreign investment is from LME countries but it would be valuable to have that detailed and to be able to separate those investors out. Our study only encompasses a limited time period; we recognize that the effects of PE investment over the medium and longer term may be rather different.

In spite of the above limitations, we believe our analysis represents a significant contribution to the on-going debate about private equity and employment which we hope will inspire other scholars to study the 'country effect' of private equity.

As Wood and Wright (2009, 2010) note, whilst there is a common tendency to make generalizations as to the consequences of PE takeovers, the industry is characterized by a great deal of diversity. What we encountered here is that investment by PE from the foreign countries (mainly Liberal Market Economies) was associated with more job losses, and the greater usage of temporary workers. Investment by French PE was generally not, and the differences in terms of job losses between French and LME PE became more accentuated in the aftermath of the financial crisis. This would reflect first of all the role of the French state within indigenous French PE. It is likely that the French state exerted whatever levers were at its disposal to mitigate job losses in the aftermath of the crisis. Again, governments may use their financial resources to encourage what they might perceive as best practices in work and employment. It is also possible that the French PE sector had a greater notion of responsibility to its immediate social environment than an outside entrant. They are also likely to have a better or more nuanced understanding of the benefits and complementarities flowing from present practices and, hence, the risks associated with jettisoning them.

Although it has been commonly argued that all developed economies are undergoing moves towards liberalization, this study highlights the limitations of this process. Indeed, whether by inaction or active policy intervention, it is evident that the French PE sector has refrained from acting as a pioneer of liberalization. Rather, when it comes to pressures towards more contingent and insecure employment, the major driver for change appears to be exogenous. The behavior of foreign PE would appear to be in line with the role of LME MNCs, who appear to be more active in the dissemination of their country of origin model abroad than their counterparts from CMEs (c.f. Almond et al 2011; Gooderham et al. 1999).

This study was motivated by three issues: that of the impact of PE on the overall workforce of firms in which it invests; that of the impact of PE on different job categories, and the differences in impact between French PE and PE from liberal markets investing in France. This study adds to the literature

by bringing to bear detailed establishment level evidence from France, not only about overall employment but also about different job categories.

Our findings have important practical and theoretical implications. From a practical perspective, the findings suggest that PE funding is likely to impact on managerial decision making and autonomy; foreign (mainly LME) PE appears more likely to promote more hardline HRM practices even if the company they invest in is located within a different institutional regime (c.f. Boselie and Koene 2010).

Theoretically, this paper contributes to the extant PE literature in several ways. To the best of our knowledge, it is the first paper that studies the effect of foreign PEs on employment in the country of domicile. The transfer of management practices from a country of origin to a host country is an issue for many scholars. Most research shows at least partial adaptation of owners to local institutional context (Almond et al. 2011; Brewster et al. 2008; Farndale et al. 2008; Ferner et al. 2004; Gooderham et al. 1999), including the paper of Bacon et al. (2012) focused on private equity. Our results highlight the very different effects of French and foreign PE on employment in French establishments; as we have seen, the latter are significantly more likely to engage in job shedding, especially since the crisis. It can be argued that this may not only reflect the influence of the state, but also the extent to which French players would be more likely to possess information on the nature and benefits of the complementarities flowing from existing practices, and/or more responsive to informal conventions. There is obviously a need to replicate this evidence in other societies in order for us to understand more fully the impact of PE on jobs.

In France, in line with the findings of Lichtenberger and Siegel (1990), non-production employees were more likely to be affected by job shedding than production workers. It therefore seems important also to take into account the different job categories when analyzing the employment consequences of PE funding.

Table 1. Univariate difference in means tests 2011

	Difference in Means Tests between funded and non funded establishments			Difference in Means Tests between establishments funded by French PE and establishments funded by foreign PE		
Employment reduction:	Non funded	Funded by PE	t-stat : equal means	Funded by French PE	Funded by foreign PE	t-stat : equal means
Overall workforce	0.271	0.370	-2.769***	0.287	0.464	-2.469**
Managers	0.147	0.202	-1.897*	0.148	0.261	-1.881*
First-line managers and technicians	0.129	0.208	-2.794***	0.181	0.237	- 0.884
Office and clerical worker	0.211	0.311	-2.957***	0.258	0.370	-1.576
Skilled and unskilled workers	0.309	0.401	-1.944*	0.361	0.433	-0.745

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Table 2. Univariate difference in means tests 2005

	Difference in Means Tests between funded and non funded establishments			Difference in Means Tests between establishments funded by French PE and establishments funded by foreign PE		
	Non funded	Funded by PE	t-stat : equal means	Funded by French PE	Funded by foreign PE	t-stat : equal means
Employment reduction:						
Overall workforce	0.235	0.370	-3.365***	0.301	0.462	- 1.875*
Managers	0.113	0.200	-2.824***	0.222	0.169	0.719*
First-line managers and technicians	0.116	0.252	-4.214***	0.231	0.280	- 0.592
Office and clerical worker	206	0.277	-1.850*	0.236	0.333	-1.203
Skilled and unskilled workers	0.288	0.433	-3.090***	0.368	0.510	-1.469

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Table 3. Probit models of the likelihood of being funded by private equity (2011)

	Model 1 French or Anglo-Saxon PE	Model 2 French PE	Model 3 Anglo-Saxon PE
Industry			
Construction	-0.070	0.187	-0.395
	(0.193)	(0.215)	(0.304)
Wholesale and retail trade, accommodation and catering	-0.240**	-0.003	-0.408***
	(0.112)	(0.136)	(0.146)
Information and communication	0.444**	0.803***	-0.424
	(0.189)	(0.202)	(0.335)
Scientific and technical activities, administrative and support services	0.095	0.047	0.116
	(0.131)	(0.166)	(0.157)
Others	Ref.	Ref.	Ref.
Parent firm size			
Less than 50 employees	Ref.	Ref.	Ref.
50 - 99 employees	0.356*	0.355*	0.277
	(0.186)	(0.209)	(0.298)
100 - 199 employees	0.580***	0.475**	0.649**
	(0.184)	(0.215)	(0.271)
200 - 499 employees	0.828***	0.686***	0.834***
	(0.182)	(0.213)	(0.267)
500 - 999 employees	0.824***	0.687***	0.809***
	(0.200)	(0.238)	(0.285)
1000 - 4999 employees	1.048***	0.925***	0.929***
	(0.200)	(0.236)	(0.285)
5000 employees and more	0.940***	0.747***	0.910***
	(0.217)	(0.264)	(0.300)
Age of the establishment			
Less than 5 years	Ref.	Ref.	Ref.
5 to 9 years	0.326	0.535	-0.011
	(0.289)	(0.372)	(0.358)
10 to 19 years	0.392	0.567	0.064
	(0.269)	(0.353)	(0.329)
20 to 49	0.191	0.281	0.054
	(0.263)	(0.348)	(0.316)
50 and more	-0.052	0.019	-0.088
	(0.272)	(0.361)	(0.327)
Mono-unit	0.047	0.217	-0.173
	(0.1109)	(0.132)	(0.142)
Union representative	0.149	0.083	0.170
	(0.108)	(0.130)	(0.142)
Constant	-2.119***	-2.651***	-2.196***
	(0.305)	(0.392)	(0.396)
Observations	1607	1607	1607
Log likelihood	-498.076	-323.102	-286.588
Pseudo R^2	0.096	0.083	0.115
Prob>chi2	0.0000	0.0000	0.0000

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Table 4. Probit models of the likelihood of being funded by private equity (2005)

	Model 1 French or Anglo-Saxon PE	Model 2 French PE	Model 3 Anglo-Saxon PE
Industry			
Industrial sector	0.050	-0.176	0.452**
	(0.116)	(0.132)	(0.179)
Construction	-0.747**	-0.929**	-0.089
	(0.312)	(0.398)	(0.415)
Wholesale and retail trade	-0.386**	-0.786***	0.360
	(0.162)	(0.219)	(0.230)
Others	Ref.	Ref.	Ref.
Parent firm size			
Less than 50 employees	Ref.	Ref.	Ref.
50 - 99 employees	0.114	0.267	-0.201
	(0.211)	(0.235)	(0.372)
100 - 199 employees	0.144	0.064	0.273
	(0.212)	(0.258)	(0.306)
200 - 499 employees	0.338	0.308	0.341
	(0.205)	(0.247)	(0.303)
500 - 999 employees	0.448**	0.334	0.494
	(0.217)	(0.258)	(0.316)
1000 - 4999 employees	0.337	0.288	0.331
	(0.227)	(0.267)	(0.331)
5000 and more	-0.231	0.020	-0.500
	(0.263)	(0.300)	(0.415)
Age of the establishment			
Less than 10 years	Ref.	Ref.	Ref.
10 to 19 years	-0.144	-0.281	0.463
	(0.200)	(0.213)	(0.438)
20 to 49	0.001	-0.235	0.729*
	(0.178)	(0.189)	(0.410)
50 and more	0.014	-0.260	0.758*
	(0.190)	(0.208)	(0.416)
Mono-unit	-0.202	-0.180	-0.134
	(0.123)	(0.147)	(0.162)
Union representative	0.341**	0.132	0.639***
	(0.132)	(0.151)	(0.212)
Constant	-1.519***	-1.343***	-3.271***
	(0.224)	(0.243)	(0.492)
Observations	1320	1320	1320
Log likelihood	-378.481	-258.486	-191.931
Pseudo R^2	0.089	0.074	0.148
Prob>chi2	0.0000	0.0000	0.0000

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Table 5. Propensity score matching – effect of PE on employment reduction and temporary workers presence (2011 and 2005)

	Effect of PE - 2011			Effect of PE - 2005		
Employment reduction:	Effect	SE	OS	Effect	SE	OS
Overall workforce						
Nearest-neighbour matching	0.067	0.053	0	0.052	0.054	0
Kernel matching (normal/Gaussian)	0.086**	0.039	0	0.101**	0.044	0
Kernel matching (Epanechnikov)	0.087**	0.039	0	0.090**	0.043	0
Managers						
Nearest-neighbour matching	0.020	0.041	0	0.079*	0.044	0
Kernel matching (normal/Gaussian)	0.049	0.032	0	0.070*	0.037	0
Kernel matching (Epanechnikov)	0.047	0.033	0	0.062*	0.038	
First-line managers and technicians						
Nearest-neighbour matching	0.039	0.039	0	0.095*	0.050	0
Kernel matching (normal/Gaussian)	0.064*	0.034	0	0.116***	0.042	0
Kernel matching (Epanechnikov)	0.057	0.035	0	0.109**	0.043	0
Office and clerical worker						
Nearest-neighbour matching	0.060	0.051	0	-0.024	0.049	0
Kernel matching (normal/Gaussian)	0.079**	0.038	0	0.044	0.042	0
Kernel matching (Epanechnikov)	0.068*	0.039	0	0.033	0.045	0
Skilled and unskilled workers						
Nearest-neighbour matching	0.043	0.067	0	-0.020	0.060	0
Kernel matching (normal/Gaussian)	0.071	0.051	0	0.073	0.051	0
Kernel matching (Epanechnikov)	0.068	0.051	0	0.047	0.050	0
Temporary workers presence						
Nearest-neighbour matching	0.069	0.054	0	-0.005	0.058	0
Kernel matching (normal/Gaussian)	0.045	0.037	0	0.081*	0.043	0
Kernel matching (Epanechnikov)	0.029	0.040	0	0.050	0.043	0

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Notes: Standard errors for kernel matching algorithms (normal/Gaussian and Epanechnikov) are based on 1000 bootstrap replications. Standard errors for nearest-neighbour algorithms are based on the method proposed by Abadie and al. (2004).

OS (off support) indicates the number of treated individuals discarded because of missing common support.

Table 6. Propensity score matching – effect of French PE and foreign PE on employment reduction and temporary workers presence (2011)

	Effect of French PE			Effect of foreign PE		
Employment reduction:	Effect	SE	OS	Effect	SE	OS
Overall workforce						
Nearest-neighbour matching	0.067	0.053	0	0.130	0.083	0
Kernel matching (normal/Gaussian)	0.011	0.050	0	0.173***	0.056	0
Kernel matching (Epanechnikov)	0.007	0.050	0	0.170***	0.056	0
Managers						
Nearest-neighbour matching	-0.055	0.051	0	0.064	0.064	0
Kernel matching (normal/Gaussian)	-0.007	0.040	0	0.110**	0.051	0
Kernel matching (Epanechnikov)	-0.013	0.041	0	0.113**	0.050	0
First-line managers and technicians						
Nearest-neighbour matching	-0.038	0.049	0	0.075	0.063	0
Kernel matching (normal/Gaussian)	0.037	0.045	0	0.097*	0.050	0
Kernel matching (Epanechnikov)	0.026	0.046	0	0.085*	0.052	0
Office and clerical worker						
Nearest-neighbour matching	0.015	0.066	0	0.139*	0.073	0
Kernel matching (normal/Gaussian)	0.037	0.048	0	0.132**	0.057	0
Kernel matching (Epanechnikov)	0.027	0.048	0	0.124**	0.056	0
Skilled and unskilled workers						
Nearest-neighbour matching	0.024	0.094	0	0.044	0.099	0
Kernel matching (normal/Gaussian)	0.051	0.072	0	0.107	0.066	0
Kernel matching (Epanechnikov)	0.028	0.074	0	0.121*	0.072	0
Temporary workers presence						
Nearest-neighbour matching	0.012	0.070	0	0.096	0.085	0
Kernel matching (normal/Gaussian)	-0.023	0.051	0	0.161***	0.052	0
Kernel matching (Epanechnikov)	-0.036	0.054	0	0.130**	0.054	0

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Notes: Standard errors for kernel matching algorithms (normal/Gaussian and Epanechnikov) are based on 1000 bootstrap replications. Standard errors for nearest-neighbour algorithms are based on the method proposed by Abadie and al. (2004).

OS (off support) indicates the number of treated individuals discarded because of missing common support.

Table 7. Propensity score matching – effect of French PE and foreign PE on employment reduction and temporary workers presence (2005)

	Effect of French PE			Effect of foreign PE		
Employment reduction:	Effect	SE	OS	Effect	SE	OS
Overall workforce						
Nearest-neighbour matching	-0.009	0.059	0	0.229**	0.093	0
Kernel matching (normal/Gaussian)	0.040	0.052	0	0.177***	0.067	0
Kernel matching (Epanechnikov)	0.035	0.053	0	0.125*	0.068	0
Managers						
Nearest-neighbour matching	0.097*	0.069	0	0.008	0.067	0
Kernel matching (normal/Gaussian)	0.098*	0.051	0	0.035	0.052	0
Kernel matching (Epanechnikov)	0.094*	0.049	0	0.015	0.054	0
First-line managers and technicians						
Nearest-neighbour matching	0.059	0.057	0	0.088	0.080	0
Kernel matching (normal/Gaussian)	0.010*	0.053	0	0.133**	0.067	0
Kernel matching (Epanechnikov)	0.093*	0.052	0	0.114*	0.067	0
Office and clerical worker						
Nearest-neighbour matching	-0.027	0.059	0	0.051	0.082	0
Kernel matching (normal/Gaussian)	0.010	0.052	0	0.098	0.063	0
Kernel matching (Epanechnikov)	0.004	0.055	0	0.072	0.069	0
Skilled and unskilled workers						
Nearest-neighbour matching	0.017	0.080	0	0.121	0.090	0
Kernel matching (normal/Gaussian)	0.042	0.063	0	0.145**	0.079	0
Kernel matching (Epanechnikov)	0.014	0.063	0	0.095	0.077	0
Temporary workers presence						
Nearest-neighbour matching	0.008	0.071	0	0.101	0.090	0
Kernel matching (normal/Gaussian)	0.028	0.064	0	0.184***	0.056	0
Kernel matching (Epanechnikov)	0.008	0.060	0	0.111**	0.051	0

*significance at the 10% level; **significance at the 5% level; ***significance at the 1% level

Notes: Standard errors for kernel matching algorithms (normal/Gaussian and Epanechnikov) are based on 1000 bootstrap replications. Standard errors for nearest-neighbour algorithms are based on the method proposed by Abadie and al. (2004).

OS (off support) indicates the number of treated individuals discarded because of missing common support.

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[i] In their *Guide on Private Equity and Venture Capital*, the EVCA (European Private Equity & Venture Capital Association) defines VC, strictly speaking, as "a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business. It has a particular emphasis on entrepreneurial undertakings rather than on mature businesses". PE is broader and also used to define the financing of mature businesses. Our study does not focus on early development (VC) but on mature businesses (PE).

[ii] We use the psmatch2 program for Stata provided by Leuven and Sianesi (2003) and the the nnmatch program on Stata proposed by Abadie and al. (2004).

[iii] See Heckman et al. (1997), Smith and Todd (2005), Imbens (2004), Caliendo and Kopeinig (2008) for overviews.