

**Compensation Policy,**  
**Human Resource Management Practices**  
**and Takeovers**\*

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Comments Welcome

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## Abstract

This paper considers the role of compensation policy and human resource management practices in mergers and acquisitions. First, it considers the importance of different aspects of these two employee-side characteristics for distinguishing acquired and acquiring firms. Second, it examines which individuals from which firms remain with the newly created entity after the takeover. Using a unique employer-employee linked data set for France, we find that acquired firms tend to under pay and under reward seniority relative to acquiring firms and they also tend to employ workers whose average job seniority is lower. Despite the minimal differences ex ante in the characteristics of the workforces of acquired and acquiring firms, the human resources department seems to be quite active in the post-takeover period, with employees of the taken over firm being much less likely to remain with the new entity after takeover than those of the acquiring firm. The workers with characteristics that earn high returns in the market are also those who are more likely to stay after the takeover occurs, while employees of acquiring firms that less generously rewarded seniority before the takeover are more likely to remain with the successor firm afterwards, as are those of acquired firms that rewarded seniority particularly well. These results are consistent with Jensen and Meckling's (1976) model of takeovers as a means of controlling the actions of managers.

## Résumé

Ce papier considère le rôle de la politique de rémunération et des pratiques en matière de gestion des ressources humaines dans le cadre des fusions et des acquisitions. D'abord, on évalue l'importance de ces facteurs du côté employés de l'entreprise pour la discrimination entre les entreprises acquéreurs et les entreprises acquises. Ensuite, on se focalise sur quels employés restent avec l'entreprise (ré)constituée après la transaction. Exploitant une base de données liée employeur - employé française unique, nous trouvons que les entreprises acquises sous-paier leurs employés et rémunèrent moins bien l'ancienneté que les entreprises acquérantes, et elles emploient des individus avec une ancienneté moyenne inférieure à celle des entreprises qui les achètent. Malgré la faible importance des caractéristiques individuelles pour la discrimination entre les deux sortes d'entreprises, on trouve que les facteurs individuels sont très importants pour la détermination de qui reste, avec les employés de l'entreprise acquise étant nettement moins souvent présent dans la nouvelle entreprise après la transaction que ceux de l'entreprise acquérante. Les individus avec les caractéristiques les plus valorisés par le marché sont aussi ceux qui restent avec la nouvelle entité, tout comme ceux des entreprises achetées qui rémunéraient bien l'ancienneté et ceux des entreprises acheteurs qui rémunéraient moins bien l'ancienneté ex-ante. Ces résultats sont cohérents avec la théorie des fusions et acquisitions de Jensen et Meckling (1976) qui les considèrent comme une manière pour le marché de contrôler les actions des dirigeants.

JEL Codes/ Codes JEL : G34, J21, J23, J31, J63, L29, M51

# 1 Introduction

Why are certain firms targets of takeovers, and what happens to their employees after a takeover? The popular press and the CEOs involved often talk of “synergies” between the firms involved in the transaction, with the idea being that the new entity can generate the same level of production at reduced cost. The cost reductions often involve “rationalizing” activities undertaken by both firms, such as purchasing, warehousing, human resource management and, in some cases, production. Such rationalization typically involves layoffs and/or early retirements as part of the proposed cost reduction, and thus two interesting questions (from a popular press standpoint) arise: were the compensation or human resource management policies<sup>1</sup> of the acquired firm the reason for its being targeted for takeover, and which employees are let go in the aftermath?

The literature in economics starts from the concept that one firm may decide to purchase another if it believes that the net cost of the takeover is inferior to the present discounted value of the rents it could earn after acquiring the other firm. Such rents can be generated through an increase in market power, by eliminating inefficiencies, by taking advantage of increasing returns to scale in certain activities, or by simply identifying firms that are “undervalued” by the market. Most of the popular press’s “synergy” and “rationalization” stories are linked to exploiting increased returns to scale, and it is these objectives that are the focus of this paper.

We exploit a large French data set covering all asset transfers over a certain size<sup>2</sup> between statistically identified enterprises to identify firms which divest

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<sup>1</sup> By “Human Resource Management Policies”, we mean the hiring and separation policies of a firm that determine its structure of employment at any point in time.

<sup>2</sup> The threshold levels were 50 million French Francs in 1990, 10 million in 1991 and 8 million from 1992 through 1999, which (using the June 30 exchange rate or the closest date) is roughly equivalent to

themselves of assets (which includes being acquired in their entirety) and firms which are the beneficiaries of asset transfers (including the acquisition of another firm). As our data allow us to identify the type of asset transfer, we limit our attention to mergers (neither preexisting firm exists ex-post) and acquisitions (one of the preexisting firms continues to exist after the transaction). This information is merged into a linked employer-employee data set that also contains balance sheet and income statement information on the enterprises involved in the transaction. The resulting data allow us to characterize the firms involved in merger and acquisition activity and follow their employees over time, in particular across the merger/acquisition period.

After briefly discussing the theoretical framework underlying the analysis in section 2, section 3 briefly describes the data sets involved, the construction of the analysis samples and provides some motivating descriptive statistics. Section 4 describes the time path of certain key variables for acquired and acquiring firms in the periods preceding and following the takeover, and compares them with a control group of firms with no modification-of-structure activity, while section 5 provides a parametric analysis of the determinants of mergers and acquisitions as well as the structure of post-takeover layoffs. Section 6 situates the results in the theoretical framework and concludes.

## 2 Theoretical Framework

This section focuses on the reasons for takeovers discussed in the economics literature and briefly outlines the theory concerning why compensation policy and human resource management practices might be interesting variables to consider. One

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\$8.9M, \$1.6M, \$1.6M, \$1.4M, \$1.5M, \$1.6M, \$1.6M, \$1.4M and \$1.3M for each year between 1990 and 1998, respectively ([http://www.federalreserve.gov/releases/H10/hist/dat96\\_fr.htm](http://www.federalreserve.gov/releases/H10/hist/dat96_fr.htm)).

major advantage of our data is that they allow us to measure a large number of management decision variables (as we have access to balance sheet and income statement information as well as data on each firm's work force). We can thus control for many alternative explanations for takeovers while focusing in detail on the firm's compensation policy and human resource management practices.

## ***2.1 Mergers and Acquisitions in the Literature***

Mergers and acquisitions have most often (and reasonably) been analyzed by the corporate finance literature. The most common approach<sup>3</sup> (Manne (1965), Jensen and Meckling (1976), Jensen (1984, 1986, 1988)) treats takeovers as a means by which the market exerts control over managerial decisions. If a manager's decisions are considered to be suboptimal by the market, in the sense that they do not maximize shareholder value, then an outsider can acquire the firm, fire the manager, replace him or her with a better manager, and realize efficiency gains. Since the stock market value of the firm is based upon the realized (and inefficient) decisions of the incumbent management, there is an opportunity for an outsider to profit from a takeover.

An implication of this theory is that there are some aspects of a firm that are observable by outsiders and which make it more likely to be the target of a takeover attempt than the average firm. Another implication is that this quantity should change between the period preceding the takeover and the period following the takeover. Although the theory is sufficiently general to accommodate inefficient decisions in

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<sup>3</sup> This is not the only motivation for takeovers addressed in the literature. Alternative explanations for takeovers include: attainment of a "critical mass", or alternatively the exploitation of increasing returns to scale (Bradley, Desai and Kim (1983)); diversification for the acquiring firm (Matsusaka, 1993); increasing market power (Eckbo (1983), Borenstein, 1990) or alternatively exercising of a threat needed to maintain tacit collusion (Compte, Jenny and Rey (2002)).

investment strategy, capital structure choices (Modigliani-Miller notwithstanding) and research and development spending, the popular press (at the least) suggests that a commonly considered aspect of the firm may be the compensation structure or the human resource management policies adopted by its managers.

Among the (relatively few) papers that analyze the employment and compensation aspects of firms involved in takeovers,<sup>4</sup> Bertrand and Mullainathan (1998) explicitly consider the link between the compensation policy adopted by U.S. firms and their risk of being taken over. By exploiting differences in takeover legislation, they show that firms that are relatively protected from the risk of takeover tend to increase wages relative to more exposed firms. This is consistent with the Jensen and Meckling hypothesis, insofar as the higher wages paid to the workers are not justified through extra effort exerted by workers (an efficiency wage-type effect) or by changes in human resource management practices that involve retaining more productive workers.

## ***2.2 The Role of Compensation Policy and Human Resource Management Practices***

Compensation policy and human resource management practices can be at the origin of important inefficiencies in production. The existence of severance pay and institutional constraints to layoffs<sup>5</sup> may make the desired adjustments to be undertaken by the acquiring firm slower to implement, but both technology and the scope for effort-induced productivity gains can drive takeover decisions.

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<sup>4</sup> Other papers include Brown and Medoff (1988) and Gokhale, Groshen and Neumark (1995).

<sup>5</sup> See Bender, Dustmann, Mergolis and Meghir (2002) for a discussion of these constraints in France and Germany.

Human resource management practices determine which workers are present in a firm at any given time. Given a firm's technological choices, there may be an optimal workforce structure necessary to fully exploit capital-labor complementarities. This structure can be a function of the education level of the workers, the occupational structure or the innate (unobservable) abilities of the workforce, such as its flexibility or speed of learning new techniques or markets. If any of these measures is inappropriately chosen, there may be a margin for earning rents by changing the structure of employment to better match the technology of production and distribution.

Similarly, an acquiring firm may decide to change the technology present in an acquired firm. In this case, the existing workforce structure may be inappropriate for the new technology, and adjustments will likely take place. In either case, such a situation will be manifest by a disparity between acquired firms and the market (conditional on the sector of activity, which serves as a proxy for the relevant technologies). This disparity should, after the takeover, be reduced by selectively retaining individuals that best match the new or existing technology and laying off the rest.

In the case of compensation policy, the question is more subtle. The most direct situation, discussed in Bertrand and Mullainathan (1998), is when a firm pays workers more than "necessary"<sup>6</sup> such that an acquiring firm can earn rents by simply reducing compensation (for a given workforce). Alternatively, the acquiring firm can decide to slow the rate of increase of wages if it considers the returns to seniority offered by the incumbent management team excessive.

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<sup>6</sup> Bertrand and Mullainathan (1998) cite an excessive desire to reduce turnover, cost of exerting effort in collective bargaining and desire to improve workplace relations as possible reasons for a manager's deciding to overpay workers.

On the other hand, it is also possible that effort- or investment-inducing compensation can lead to higher productivity and earnings that exceed the additional compensation costs. This is the argument behind the efficiency wage literature (Shapiro and Stiglitz, 1984) and the bonding literature (Lazear, 1979), among others. In this setting, the acquiring firm may decide to come in and change compensation policy by either paying more to everyone up front or by providing higher raises. An acquiring firm which implemented such a policy would expect to elicit more effort from the workers and thereby improve productivity and profits.

### **3 The Data**

This paper exploits 4 different French data sets, all provided by France's National Institute for Statistics and Economic Studies (INSEE). The different sources of enterprise data have the advantage of using a common identifier for the enterprises involved, and the linked employer-employee data uses the same firm identifier as well as an individual identifier which is also common to the remaining individual data set. As a result, all four data sets can be merged, providing an extensive amount of information all in one place.

#### ***3.1 The MDST Data***

The first, and most original, data set is called the Modification of Structure, or MDST, file. This file is part of the SUSE 3 system (INSEE, 1995) and although it began in 1986, this paper only exploits data from 1993 to 1999, which includes 12,226 observations involving 17,078 distinct firms.



The objective of the data collectors is to cover all asset transfers of a minimum size (see footnote 2), providing the identifier of the firm (or firms) that transferred away the assets and the identifier of the firm (or firms) that received the assets. Asset transfers are categorized according to the point of view of the ceding (cédante, or CD below) and benefiting (bénéficiaire, or BF below) firm and a small number of variables (including the effective date of the transaction) concerning the transaction are included with each record. Table 1 provides a breakdown of the different types of asset transfers covered by the MDST data. These data are used to date transactions, identify taken over and taking over firms and to know the identifier of the successor firm in any such transaction. In the interest of generating cleanly interpretable results, all firms that were involved in more than one MDST transaction (of any type) during the 1991-1999 period covered by the data were eliminated from the analyses.<sup>7</sup>

The analysis undertaken here focuses on transactions classified as either mergers or acquisitions, which corresponds to any of the following codes in table 1: 23, 31 or 33 for the transferring enterprise; 24 or 43 for the receiving enterprise. The effective date of the transaction, as opposed to the announcement date, is used for dating purposes as the acquiring firm can only directly influence managerial decisions after the transaction becomes effective.<sup>8</sup> All firms that are listed as ceding firms in transactions defined by one of the above-listed codes are considered to be “taken over” and all firms for which the firm identifier is listed as the benefiting firm are

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<sup>7</sup> These firms are not treated as BF or CD firms in our analyses, and thus the observations associated with individuals employed by these firms do not enter into our calculations as being in taken over or taking over firms. This exclusion restriction eliminates 13 percent of the firm identifiers in the MDST sample. However, if an individual was employed by a firm whose only MDST activity was to have been taken over by another firm, and the acquiring firm had undertaken several MDST transactions, the post-takeover data is retained for the analyses.

<sup>8</sup> Most stock-market based analyses of takeovers attempt to focus on announcement dates, as the market factors expected future decisions into the price at that point in time, and thus one avoids having a biased estimate of the pre-takeover price. Apart from the fact that this variable is more often missing than the effective date (which is available for all records in the data), it is not relevant for the means by which this paper tests the theoretical model.

considered to be the “taking over” firms. One implication of this strategy is that, in a true “merger of equals”, the taking over firm will not have existed prior to the transaction.<sup>9</sup> In all other cases where one of the pre-existing firms’ identifiers is maintained after the transaction, this firm is considered to be the taking over firm, and individuals who were employed by a taken over firm prior to the transaction and by the taking over firm after the transaction are considered to have stayed with the new entity through the takeover.

### **3.2 The FUTE Data**

The second data source is called the FUTE data, and is also drawn from the SUSE 3 system (INSEE, 1995). The FUTE data set contains all of the information available on a firm’s balance sheet, income statement and statement of flow of funds. In addition, it contains additional variables drawn from the Annual Enterprise Survey (EAE), in particular concerning employment, and information drawn from the firm’s tax returns. This data set provides the largest number of firm variables in the SUSE 3 system, although it does not sample all firms.<sup>10</sup> The data cover the period 1989-2000, which generates 1,225,700 observations, of which 922,500 come from the 1991-1999 period common with the MDST data. This amounts to roughly 102,500 firms per year. Given the thresholds of the MDST data, all firms not in the “sample” (see

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<sup>9</sup> Note that, in this case, a single transaction will generate several MDST records, one for each pre-merger firm with that firm’s identifier listed as the CD firm. The identifier listed as the BF firm in each of these records will be the same, and will correspond to the identifier of the (newly created) firm that spring from the merger. The fact that all of the records correspond to a single transaction can be established by their sharing of a common transaction identification code.

<sup>10</sup> The sampling scheme depends on whether the data was part of the “sample” of firms whose data is sent to INSEE before the full treatment of all firms (for the purpose of generating advance indicators) or not. A firm that is part of the “sample” appears in the FUTE data if it has more than 10 employees, more than 3.5M French Francs in sales or more than 5M French Francs in assets. The non-sample firms are included in the FUTE if they have over 20 employees, over 100M francs in sales or over 200M francs in assets. Although the “sample” covered less than 5% of all French enterprises in 1992, it represented 76% of employment and 82% of sales by all French firms (INSEE, 1995).

footnote 2) will appear in MDST when taken over, although it is possible that some “sample” firms will be excluded in the case of a takeover. Conversely, there may be MDST firms that are not covered by the FUTE as they are not part of the “sample” and are too small to be non-“sample” firms.

The FUTE data provide the control variables that we use to control for other reasons for takeovers besides compensation policies or human resource management practices. In particular, the analysis uses transformations of the following variables: total assets, total fixed assets, depreciation and amortization, total debt, research and development expenses, value added and total employment.

### **3.3 The DADS-EDP Data**

The final two data sources are the Annual Declarations of Social Data (DADS) and the Permanent Demographic Sample (EDP). A detailed description of both of these data sets and their basic construction is provided in the data appendix to Abowd, Kramarz and Margolis (1999). The data used here cover the period from 1991 through 1999.

The DADS data used here constitute a 1/25<sup>th</sup> random sample of the French population. The data consist of employer records filed with the government on behalf of employees for the purposes of calculating retirement benefits (among other things), and thus contain identifiers for both the individual and the employing firm. The data provide information on total gross earnings and number of days worked during the course of each year for each employer for whom a sampled individual worked, as well as information on the age and sex of the individual, the département (geographic region) in which the person worked, the sector of the employer and the occupation and type of job (e.g. full or part time employment) of the employee. They also provide

the first and last days worked during each year, a criterion upon which we base our analysis sample. As each employment spell (other than self-employment and central government employment) generates an observation in the DADS, these data not only provide us with a large source of linked employer-employee data, but a potentially a 24 year panel on the individual side.<sup>11</sup> The linked panel aspect is also what allows us to calculate job seniority for each sample individual.<sup>12</sup>

One weakness of the DADS data is the lack of individual specific information, notably the absence of data on education. The EDP data, which cover roughly 1/10 of the individuals in the DADS data, help to remedy this situation. The EDP data consist of information drawn from census reports, birth reports, marriage declarations and death reports in which a sample individual can be identified. The paper uses the information on highest degree obtained (available in the census reports) to measure education for individuals in the DADS-EDP overlap, and it imputes education to the remaining 9/10 of the sample on the basis of a multinomial logit model.<sup>13</sup>

The DADS-EDP merged data are used to estimate returns to observable and unobservable individual specific characteristics for all 8,312,486 individuals in the sample as well as a firm-specific fixed effect and a firm-specific intercept for all 778,979 firms in our data. More precisely, a model of the form

$$W_{it} = X_{it}\beta + \eta educ_i + \alpha_i + \phi_{J(i,t)} + \gamma_{J(i,t)} Seniority_{it} + \varepsilon_{it}$$

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<sup>11</sup> The dimension of the panel on the firm side depends on the appearance of a sampled individual in a firm. Firms with at least one sample individual in each of the years of our data will also be available for 26 years. Given the sampling scheme, if there were a purely random redistribution of individuals across firms each year, there would be a better than 50% change that a firm with at least 17 employees will have at least one sample individual in any given year. Given that individuals tend not to switch employers every year, the probability of having a sample individual in year t+1 given the presence of such an individual in year t is significantly higher.

<sup>12</sup> Left-censoring of job spells is dealt with by estimation of the pre-sample job seniority using data drawn from yet another source, the Salary Structure Survey. See Abowd, Kramarz and Margolis (1999) for details.

<sup>13</sup> See Abowd, Kramarz and Margolis (1999) for details. Results of the multinomial logit estimation on the extended sample are available upon request.

is estimated, where  $X_{it}\beta$  captures the return to observable, time varying individual characteristics (except seniority) for an individual  $i$  at date  $t$ ,  $\eta educ_i$  captures the return to (time invariant) education,  $\alpha_i$  captures the return to time invariant unobserved individual characteristics,  $\phi_{J(i,t)}$  captures the firm specific fixed component of compensation for the firm  $j$  in which individual  $i$  was employed at date  $t$ ,  $\gamma_{J(i,t)} Seniority_{it}$  captures the firm specific return to job seniority and  $\varepsilon_{it}$  is a model disturbance.<sup>14</sup> These data also provide an estimate of the distributions of these characteristics within firms in which DADS individuals are observed. The firm-specific fixed effects and returns to seniority, as well as the residuals from the earnings equations, are considered to be measures of the firm's compensation policy. The returns to observable and unobservable characteristics, as well as the distribution of the observable characteristics, constitute the measures of the human resource management practices that are used in our analyses.

### **3.4 The Merged Data**

As noted above, the DADS and EDP data share a common individual identifier, and the MDST, FUTE and DADS data share a common enterprise identifier. This allows us to merge all of the data together into a single data base whose sampling scheme depends both on the individual selection criterion of the DADS data and the firm selection criterion of the FUTE data. Given all of these criteria, our data will tend to under sample small firms in general, and the MDST sampling scheme implies that we will miss the smallest asset transfers, although the 8M French Franc threshold does not seem particularly high. The FUTE sampling

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<sup>14</sup> See Abowd, Kramarz and Margolis (1999) for details of the estimation method. We apply the persons-first, firms-first projection technique in our estimations.

scheme implies that there may be some smaller asset transfers that escape our analyses as well (due to a lack of FUTE data) when one of the firms involved is not part of the early “sample”.<sup>15</sup>

Table 2 provides some basic descriptive statistics for the full, merged sample and the various subsamples considered here. Of the over 4.7 million observations initially available<sup>16</sup>, 23% correspond to individuals in a CD firm and 14% correspond to individuals in a BF firm.<sup>17</sup> Note, however, that many of these transactions are not takeovers, as only 7% of the observations come from firms involved in takeovers. Among the observations corresponding to takeovers, there seems to be a peak in the number of available observations for takeovers occurring in 1998, which could simply correspond to a few large takeovers (covering many DADS sampled workers) taking place in that year relative to others.

As has been noted elsewhere,<sup>18</sup> the importance of the sub-high school technical or professional degrees in France is also clear in our data, with observations corresponding to such individuals making up roughly 20 percent of the sample.<sup>19</sup> Our sample is over 60 percent male (with men being slightly overrepresented in takeover firms), and average job seniority varies from 5 years in taken over firms to 5.7 years in acquiring firms, although there is significant variation in the data.

Our data suggest several important first-order differences between acquired and acquiring firms. In particular, individuals employed by acquired firms are, on

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<sup>15</sup> Note that the inability to match one partner in an MDST transaction to the FUTE data does not mean that all data from all other (sufficiently large or “sample”) firms is eliminated.

<sup>16</sup> It is worth recalling that an observation is a unique individual-firm-year combination containing information from all 4 data sources.

<sup>17</sup> Note that these observations may correspond to several years before or after the takeover actually takes place, an aspect of our data that we exploit in sections 4 and 5.

<sup>18</sup> See, for example, Margolis and Simonnet (2002).

<sup>19</sup> Recall that the education variable is only available in the data for 1/10 of the DADS sampled individuals and is imputed for the remaining 9/10. Thus although our technique allows us to construct unbiased estimators of the probability of obtaining each given diploma (and it is these probabilities that are used for the imputed individuals), our results concerning the role of education should be interpreted with care.

average, “better” than those employed elsewhere, as measured by returns to time invariant characteristics (both observable and unobservable). On the other hand, their time-varying characteristics are much less well rewarded in firms that are taken over than elsewhere. In terms of compensation policy, taken over firms tend to pay slightly more on (employment-weighted) average than other firms, although they reward seniority less well. That said, there remains significant variability in firm compensation policy with respect to all three components<sup>20</sup> and in the firm accounts variables as well.

#### **4 Changes in Compensation Policies and Human Resource Management Practices around Takeover Dates**

In addition to simply being able to measure the existence of a takeover event, one of the major advantages of our data is the linked employer-employee panel aspect. This allows us to observe how certain key variables evolve in the period leading up to the takeover and it also allows us to characterize the evolution of some of these variables in the post-takeover period.

For these analyses, the sample is divided into two groups, namely acquired and acquiring firms. Observations are classed in the first group, firms that were taken over, when they correspond to a person in the taken over firm in the years prior to the takeover and when that same person remains with the taking over firm in the years following the takeover. Observations are classed in the second group, taking over firms, when they correspond to individuals employed both before and after the transaction with the taking over firm.

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<sup>20</sup> Such a result was also highlighted by Margolis (1996).

The graphical analysis is performed with respect to a reference year, the year preceding the takeover, for each of the 8 possible takeover years (1992-1999). As the DADS data provides a random sample of the population, this approach has the advantage of allowing us to describe the distribution of firm characteristics in firms of each type at any point preceding or following the transaction.<sup>21</sup> It has the disadvantage, however, of including individuals who are not present at the time of takeover, and thus does not allow us to characterize the differences between firm types that may affect the probability of takeover.<sup>22</sup>

Figure 1 traces the evolution of the log of real full year equivalent compensation costs (gross earnings plus employer payroll taxes) for the years around the takeover.<sup>23</sup> Each point on a curve represents the average over the corresponding observations relative to the average at  $t-1$ . For example, the point on the taken over curve at  $t-2$  in figure 1 corresponds to the difference in average log full year equivalent compensation cost between people in taken over firms who were employed with the taken over firm in  $t-2$  and people in taken over firms who were employed with the taken over firm in  $t-1$ .

The first thing worth noting about figure 1 is the increasing profile of average compensation in the period leading up to the takeover for acquiring firms, while that of acquired firms remains flat or even slightly decreasing. Such a difference may be related either to different human resource management practices (acquiring firms are

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<sup>21</sup> Appendix Figures 1 and 2 show the same graphs but condition on the individual's having been employed in a taken over or taking over firm in the year preceding the transaction. This approach has the advantage of addressing a well-defined population that (in principle) should have been present in the firm at the time of the takeover. The disadvantage is that the distribution of firm characteristics described by such a sample will be subject to the vagaries of the firm's human resource management policy, in that (for example) the estimated seniority distribution in the post-takeover period will be based on those workers retained across the takeover, which the theory suggests may be a selected sample.

<sup>22</sup> This question is addressed in section 5.1 below.

<sup>23</sup> The takeover year is excluded from the analyses because the DADS data provides one observation per individual per firm per year, and it would be impossible to partition the takeover year information into pre- and post-takeover for acquiring firms.



continuously improving the quality of their work forces, and paying accordingly) or compensation policies (average compensation increases faster than inflation in firms that take others over, while it barely keeps pace with inflation in acquired firms). In either case, it suggests that these variables might be useful for identifying *ex ante* which firms may be taken over and which will take others over.

The second interesting aspect is jump in average compensation post-takeover. Again, either human resource management practices (the acquiring firm lays off the “worst” workers from the combined pool) or compensation policy (it installs or increases its efficiency wage) may be at work. In order to distinguish the origin of the difference, one needs to follow individual workers post-takeover in order to see whether it is the worker’s characteristics or the characteristics of their (previous) employers that most affect the probability of staying employed.<sup>24</sup>

In order to take a closer look at human resource management policy, figure 2 performs a similar exercise as figure 1, but this time considering average job seniority. In this case, there seems to be very little to distinguish taken over and taking over firms in the pre-takeover period. On the other hand, the post-takeover behavior in average seniority is intriguing. It suggests that, whereas there may be some early excessive departures by more senior workers (perhaps taking advantage of early retirement proposals) or short-term reductions in hiring, the pre-takeover level of average seniority is soon reestablished. This suggests that there may indeed exist an optimal level of average seniority or mix of seniority levels<sup>25</sup> and that acquiring firms attempt to return to this level after having “digested” the work force of the firm (or firms) they have acquired.

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<sup>24</sup> This sort of analysis is undertaken in section 5.2 below.

<sup>25</sup> The standard deviation of average seniority in the pre- and post-takeover period among observations of individuals employed in acquiring firms is similar (observation-weighted average standard error of 7.57 in the pre-takeover period and 7.47 in the post-takeover period).

## **5 Which Firms Are Targets, Which Are Acquirers, and Who Stays On?**

The previous section provided several indices as to possible factors that may be associated with employment in a taken over or a taking over firm, and several determinants of which workers are laid off following a takeover. This section pursued the analysis with a series of simple logit regressions, which provide a cleaner view of the role of the various possible determinants of takeover and layoff activity.

### ***5.1 Which Firms Are Targets? Which Firms are Acquirers?***

The economic models of Section 2 imply that unsuitable compensation policies and human resource management practices may make a firm the target of a takeover, while the acquiring firm may already be engaging in the sorts of compensation policies and human resource management practices that it intends to impose upon the firms it acquires. Table 3 provides the results of a set of logit regressions that address this issue in more detail.

Table 3 explicitly considers the probability of a firm's being taken over or taking over another firm. The first column models the determinants that make a firm engaged in MDST activity more likely to be taken over than taking over another firm. In other words, this column serves to highlight the characteristics that differ between acquired and acquiring firms, with a positive coefficient implying that the corresponding coefficient is overrepresented in the population of acquired firms (relative to its distribution in acquiring firms). The second column performs the same sort of analysis but uses firms with no MDST activity as a reference when considering

the characteristics of acquired firms. The third column models the determinants of the probability of being an acquiring firm, relative to the set of stable (non-MDST) firms. All data are measured in the year immediately preceding the takeover event, with one observation per firm. Although there are many significant coefficients in columns 2 and 3, we will only comment those that shed light on the sources of differences between taken over and taking over firms as shown by significant coefficients in column 1.

The comparison of taken over with acquiring firms suggests that there is little to distinguish the hiring policies of the two sorts of firms, with the only difference being that acquired firms tend to have a less senior workforce, either due to faster hiring of new workers in acquired firms or slower hiring in acquiring firms.<sup>26</sup> Column 3 suggests that this is primarily due to acquiring firms having significantly higher seniority on average, which could explain the drop in average seniority at  $t+1$  in figure 2 and the subsequent rebound as the acquiring firm reduces hiring to reestablish its previous, above-average level of seniority.

Table 3 also makes clear that the compensation policies of taken over firms are significantly less generous than those of firms that take others over. Perhaps surprisingly, both acquired and acquiring firms are more generous than non-MDST firms, however it appears that taking over firms are further from the non-MDST norm than acquired firms. The higher-than-normal firm fixed effects and seniority returns may imply that taken over firms already utilize efficiency wage-type techniques to motivate their workers, but the fact that their firm-specific fixed and seniority-based

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<sup>26</sup> The fact that the coefficient on age is not significant implies that differences in retirement ages for a comparably experienced work force are not driving this relation.

components of compensation are much lower than that of BF firms suggests that these may be dimensions targeted for change by the acquirer after the takeover occurs.<sup>27</sup>

Concerning the controls for differences in firm accounts, we find several sources of differences between acquired and acquiring firms. Taken over firms tend to be smaller (although both are bigger than typical non-MDST firms), more indebted<sup>28</sup> (although, again, both types of firms involved in takeovers have less debt-heavy capital structures) and yet earn a higher return on assets than acquiring firms that are comparable on other dimensions. Although return on assets is a difficult variable for management to control, these results suggest that the overall hiring and capital structure decisions made by acquired firms may be other types of observable characteristics that attract corporate suitors.

## **5.2 *Who Stays, Who Goes?***

Having addressed the issue of which firms are subject to takeovers and which firms undertake them, we now turn to the question of which employees are retained after the takeover occurs. As was noted in the introduction, this aspect of takeovers is among the most prominently discussed in the popular press, and the Jensen and Meckling (1976) approach in the economics literature suggests that inadequate human resource management policies could lead an acquiring firm to lay off, either selectively or en masse, the employees of the acquired firm. Other theories of

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<sup>27</sup> This result is consistent with the findings of Bertrand and Mullainathan (1998), in that they suggest that firms that pay above market fear takeovers except when protected by legislation. We find that firms that pay above what non-MDST firms pay are, in fact, more likely to be taken over. However, we find that the firms that do the actual acquiring are even more profligate; considering such firms is not within the scope of Bertrand and Mullainathan's study.

<sup>28</sup> It is worth noting that acquired firms tend to have a more debt-heavy capital structure than acquiring firms yet a higher return on assets. This suggests that the extra fear of bankruptcy induced by the higher level of debt does not necessarily incite managers to adopt more cautious, lower return investment strategies, as one might expect if managers were the firm's true residual claimants.

takeovers, in particular those stressing synergies or increasing returns to scale, would also suggest that combining several firms into one could lead to efficiency gains through a reduction in the resources (including employees) required to maintain the combined level of production. These theories do not necessarily imply that all layoffs will occur in the acquired firm, unlike the Jensen and Meckling (1976) approach, which is reassuring since the results in table 3 suggest that there is relatively little to distinguish the work forces of acquired and acquiring firms *ex ante*.

In this light, table 4 presents logit regressions of the probability that a person employed in the year preceding the takeover will still be employed in years  $t+1$ ,  $t+2$  and  $t+5$  following the takeover. The control variables are all measured in the year preceding the takeover and table 4 presents the share of individuals that, given presence in a particular year in a non-MDST firm, are still with that firm 2, 3 and 6 years later. These latter figures are provided as a reference for evaluating the importance of separations in the each type of firm.

The first thing to note from table 4 is that it is the employees of taken over firms that bear the brunt of the layoffs. Whereas the time path of retention among employees of acquiring firms closely resembles that of non-MDST firms, there is a much sharper drop that would otherwise have been expected in employment in  $t+1$  for ex-employees of taken over firms. Such a sharp drop in employment in acquired firms does not, however, imply at all of the selective labor force adjustment in the newly created entity is coming through separations from employees in taken over firms; taking over firms may also decide that, given the new labor resources available, the overall pool of workers (which includes its own employees) needs to be retooled.

Table 4 suggests that, whereas there is relatively little to distinguish taken over firms from taking over firms in the year preceding the takeover, there is an important

selection of workers taking place following the transaction. Certain sorts of workers are disproportionately retained and, almost everywhere, when a characteristic significantly affects retention in both sorts of firms, the sign is the same. For example, it appears that younger workers disproportionately separate from both acquired and acquiring firms in the year following the takeover, although this distinction fades as the separation date recedes (for ex-employees of the acquired firm) while it even inverses after 5 years in taking over firms.

Table 4 makes it clear that human resource management policy is one of the first, and most important, aspects to be changed in the post-transaction period. In particular, the newly formed entity keeps the “best” workers, be they defined by the market value of their observable or unobservable fixed characteristics or the market value of their time-varying observable characteristics, and the others leave. Likewise, it appears that the least senior workers are the first to go, and the early departures by recent pre-takeover hires are not compensated by increased medium-term departures of workers with more seniority.<sup>29</sup> Skilled blue collar workers are increasingly disproportionately represented among those who stay on with both sorts of firms after the takeover, which may suggest a shift in the production technology.<sup>30</sup>

In terms of compensation policy, it appears that workers who were previously employed in relatively more generous firms (especially in terms of seniority returns) that were taken over are more likely to stay with the post-takeover firm, relative to those whose pre-takeover firm was stingier. On the other hand, despite a short-term variation in the same direction, those individuals employed by acquiring firms whose compensation policy was relatively less generous in terms of seniority returns are the

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<sup>29</sup> Fallick (1996) notes that more senior workers are less likely to be displaced in any setting, including those where takeover are not involved.

<sup>30</sup> Our results only control for the sector of activity at a relatively aggregated level, so there is still a margin for variation in technology across firms within sector.

more likely to stay. Given the characterizations of taken over and taking over firms derived from the results of table 3, such an effect may reflect incompatibilities in corporate cultures. If individuals in the acquiring firm are used to deferred compensation incentive mechanisms or more intense firm-specific human capital investment while those in the acquired firm are used to less incentive pay or weaker investment in firm-specific human capital, the combination of the two opposing corporate cultures may induce some individuals to quit voluntarily. This clash will be less violent, on average, when the acquired firm rewards seniority relatively well (among the set of CD firms) and when the purchasing firm has a more moderate deferred compensation structure. In these settings, one might expect to see more individuals staying with the combined firm than in the opposite cases.

The results concerning the remaining control variables are more or less expected. Employees of larger firms that are taken over are more likely to be laid off, as are those of more indebted firms. On the other hand, employees of taken over firms that spent more on research and development are more likely to stay, as are those whose employers were increasing their investment in fixed assets. Relatively little stands out as significant among acquiring firms, although it seems that acquiring firms that spent more on research and development or had a good return on assets are more likely to keep their employees than those whose R&D spending was lower or whose return on assets was less impressive.

## **6 Conclusion**

So far, this paper has characterized the types of workers and firms that are involved in merger and acquisition activity and has discussed the determinants of post-takeover employment. The focus has been on compensation and human resource

management policies, as our data are drawn from several sources, including a linked employer-employee data set which makes these issues accessible.

Acquired firms tend to under pay and under reward seniority relative to acquiring firms and they also tend to employ workers whose average job seniority is lower. Despite the minimal differences ex ante in the characteristics of the workforces of acquired and acquiring firms, the human resources department seems to be quite active in the post-takeover period. Worker retention is based on sex (women stay more), age (younger people leave sooner, older people later), job seniority (more senior workers are more likely to stay) and occupation (skill blue collar workers are increasingly overrepresented among stayers). Furthermore, the workers with characteristics that earn high returns in the market are also those who are more likely to stay after the takeover occurs. Concerning compensation policy, employees of acquiring firms that less generously rewarded seniority before the takeover are more likely to remain with the successor firm afterwards, as are those of acquired firms that rewarded seniority particularly well.

These results are consistent with Jensen and Meckling's (1976) model of takeovers as a means of controlling the actions of managers. If the acquiring firm believes that it is maximizing shareholder value, the differences in behavior between acquired and acquiring firms prior to the takeover can provide hints about areas in which an acquiring firm might see an opportunity to improve upon what it perceives as suboptimal decisions made by the managers in the (soon to be) acquired firm.

However, some other possibilities for improvement, notably in terms of the structure of the workforce, may not be visible ex ante (and thus not related to the probability of takeover) but become the object of much attention ex post. These



“problems” may be resolved by layoffs of inappropriate hires or by the provision of incentives to leave

More clearly, it does appear that employees of firms that are taken over but whose compensation practices most closely resemble those of acquiring firms are more likely to stay with the post-takeover firm. Since acquired firms with the most radically different compensation policies from their acquirers will be the ones that undergo the most upheaval, our results also suggest a role for voluntary departures and, perhaps, provide empirical evidence of the effects of a clash in corporate cultures when very different firms merge.

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**Table 1**  
**Types of Asset Transfers Covered by the MDST Data**

Perspective of the Characterization					
Overall		Transferring Enterprise		Receiving Enterprise	
Code	Definition	Code	Definition	Code	Definition
01	Change of Operator or Legal Structure	12	Change of Operator or Legal Structure Quasi-Constant Structure (Without Change of Owner or Legal Structure)	11	Change of Operator or Legal Structure Quasi-Constant Structure (Without Change of Owner or Legal Structure)
09	Change of Identifier for Unknown Reason	19	Investment in Another Enterprise	19	Received Investment by Another Enterprise
20	Partial Investments Between Enterprises	22	Acquisition by Another Enterprise	21	Acquired Another Enterprise
30	Acquisition of One or Several Enterprises	23	Partiel Divestiture	24	Complicated Change of Structure, Enterprise Still Exists
40	Partial Divestiture of One or Several Enterprises	25	Transformation into Holding Company after Partial Divestiture	29	Creation Due to a Partial Divestiture
50	Total Divestiture (Breaking Up) of an Enterprise	27	Transformation into Leasing Company after Partial Divestiture	41	Creation Due to a Total Divestiture
60	Merger of One or Several Enterprises	28	Complicated Change of Structure, Enterprise Still Exists	42	Creation by Merger of Several Enterprises Created in N-1 and Participating in a Complicated Change of Structure
70	Transformation into Holding Company	29	Acquisition by Another Enterprise	43	
80	Transformation into Leasing Company	31	Ceased to Exist in N-1 Due to Divestiture	49	
90	Complicated Change of Structure	32	Ceased to Exist in N-1 Due to Merger		
		33	Acquisition in N-1		
		39			

Source: SUSE 3 Codebook, pp. 293-295.

<b>Table 2</b> <b>Descriptive Statistics by Sample</b> <b>(Means with Standard Deviations in Parentheses)</b>				
Variable	Full Merged	Taken Over	Taking Over	Non-MDST
<i>Compensation Policy</i>				
Firm-Specific Fixed Effect	-0.2625 (1.1482)	-0.2647 (1.1535)	-0.3899 (1.1048)	-0.2372 (1.2136)
Firm-Specific Seniority Returns	0.0304 (0.1106)	0.0297 (0.1373)	0.0423 (0.1047)	0.0294 (0.1203)
Residual from Earnings Decomposition	0.4519 (1.3777)	0.4449 (1.3936)	0.5805 (1.3266)	0.4116 (1.4203)
<i>Human Resource Management Policy</i>				
Male	0.6279 (0.4834)	0.6244 (0.4843)	0.6288 (0.4831)	0.6099 (0.4878)
Potential Experience	35.7730 (188.5210)	17.5417 (50.3258)	34.0846 (177.4968)	35.8572 (189.8203)
Job Seniority	5.8269 (7.4934)	5.0017 (6.5075)	5.6813 (7.1808)	5.4976 (7.0535)
Skilled Blue Collar	0.2129 (0.4094)	0.2003 (0.4002)	0.2066 (0.4049)	0.2174 (0.4125)
Unskilled Blue Collar	0.2436 (0.4292)	0.2497 (0.4328)	0.2288 (0.4201)	0.2431 (0.4290)
No Education	0.2896 (0.1417)	0.2767 (0.1320)	0.2865 (0.1406)	0.2926 (0.1415)
Vocational-Technical School (Pre-High School Level)	0.2019 (0.0846)	0.2050 (0.0808)	0.2029 (0.0839)	0.1995 (0.0838)
Baccalauréat (High School Diploma)	0.0645 (0.0233)	0.0657 (0.0230)	0.0645 (0.0231)	0.0644 (0.0232)
2 year post-High School Education	0.0447 (0.0429)	0.0463 (0.0438)	0.0456 (0.0438)	0.0443 (0.0426)
Advanced Tertiary Education	0.0296 (0.0481)	0.0313 (0.0506)	0.0296 (0.0473)	0.0285 (0.0464)
Return to Fixed Unobservable	40.6667	186.6629	41.5949	45.5802
Individual-Specific Characteristics Returns to Education	(2698.3400) -337.1106 (1349.3200)	(1142.9300) -203.5033 (967.6717)	(2540.4000) -302.8781 (1287.0200)	(2716.9600) -346.2025 (1356.2200)
Returns to Other Observable (Time-Varying)	300.2416	20.7426	265.1449	304.3872
Individual-Specific Characteristics	(2973.4500)	(777.2543)	(2791.4100)	(2993.7000)
<i>Firm Accounts</i>				
Total Employment	12809.1500 (34081.9100)	1023.2200 (1884.7600)	1280.8500 (2861.9800)	5128.8300 (19524.1000)
Research & Development Expenditures/Fixed Assets	0.0021 (0.0214)	0.0027 (0.0248)	0.0028 (0.0235)	0.0023 (0.0237)
Fixed Assets Net of Depreciation and Amortization	2.0325E+07 (9.6752E+07)	8.5511E+05 (3.8695E+06)	4.4168E+06 (2.9708E+07)	9.7075E+06 (8.1311E+07)
Increase in Value of Fixed Assets (Fixed assets-DEFLCAP <sub>1991</sub> )	2.7268E+07 (1.2293E+08)	8.2850E+05 (3.7873E+06)	5.1214E+06 (3.1830E+07)	1.0250E+07 (8.4299E+07)
Total Debt/Total Assets	0.5924 (2.7539)	0.5970 (0.2332)	0.5510 (0.2222)	0.6118 (3.4793)
Return on Assets	0.0251 (1.8062)	0.0268 (0.0913)	0.0275 (0.0967)	0.0263 (2.2841)
Value Added per Worker	0.4519 (1.3777)	0.4449 (1.3936)	0.5805 (1.3266)	0.4116 (1.4203)
<i>MDST Related</i>				
Ceding Enterprise	0.2295 (0.4205)	1.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Benefiting Enterprise	0.1390 (0.3460)	0.0000 (0.0000)	1.0000 (0.0000)	0.0000 (0.0000)
Takeover Enterprise	0.0684 (0.2524)	1.0000 (0.0000)	1.0000 (0.0000)	0.0000 (0.0000)
Transaction year=1993	0.0914 (0.2882)	0.0629 (0.2428)	0.0830 (0.2760)	.
Transaction year=1994	0.0732 (0.2605)	0.1164 (0.3207)	0.1131 (0.3167)	.
Transaction year=1995	0.0984 (0.2979)	0.0942 (0.2921)	0.1323 (0.3388)	.
Transaction year=1996	0.0815 (0.2735)	0.1271 (0.3331)	0.1117 (0.3150)	.
Transaction year=1997	0.2931 (0.4552)	0.1865 (0.3895)	0.1629 (0.3693)	.
Transaction year=1998	0.2014 (0.4010)	0.2195 (0.4139)	0.1984 (0.3988)	.
Transaction year=1999	0.1514 (0.3584)	0.1919 (0.3938)	0.1885 (0.3911)	.
Number of Observations	4715715	145147	177266	2978034
Sources: MDST, FUTE, DADS and EDP data and Author's Calculations.				
Notes: Standard deviations of point estimates for estimated variables (ALPHA, PEFFIND, XBETA, PHI, GAMMA and EPSILON2).				
Each observation is a unique individual-enterprise-year combination with data from at least FUTE and DADS. DEFLCAP, INVCAP and VA_L are measured in thousands of French Francs. The full merged sample (column 1) is divided into 6 sub-samples: Multiple transaction firms (excluded), single CD non-takeover firms (excluded), single CD takeover firms (column 2), single BF non-takeover firms (excluded), single BF takeover firms (column 3) and non MDST firms (column 4).				

**Table 3**  
**Logit Regressions: Characterization of Firms Relative to MDST Activity**  
**(Coefficients with Standard Errors in Parentheses)**

Probability Modeled Comparison Group	P(Taken Over) Acquiring Firms	P(Taken Over) Control Firms	P(Taking Over) Control Firms
<b><u>Human Resource Management</u></b>			
Male	0.0640 (0.1695)	0.0591 (0.0752)	-0.0018 (0.1093)
Age	-0.0513 (0.0464)	0.0799 *** (0.0192)	0.1068 *** (0.0283)
Job Seniority	-0.0200 *** (0.0076)	0.0035 (0.0038)	0.0156 *** (0.0052)
Skilled Blue Collar	0.1046 (0.1369)	-0.2882 *** (0.0646)	-0.3773 *** (0.0942)
Unskilled Blue Collar	0.1127 (0.1362)	0.1574 ** (0.0635)	0.0533 (0.0931)
Return to Fixed Unobservable Individual-Specific Characterisitics	0.1006 (0.0870)	0.5885 *** (0.0419)	0.5182 *** (0.0610)
Returns to Education	0.1007 (0.0870)	0.5884 *** (0.0419)	0.5181 *** (0.0610)
Returns to Observable (Time-Varying) Individual-Specific Characterisitics	0.0998 (0.0870)	0.5876 *** (0.0420)	0.5177 *** (0.0610)
<b><u>Compensation Policy</u></b>			
Firm-Specific Fixed Effect	-0.2510 *** (0.0896)	0.1274 *** (0.0451)	0.3086 *** (0.0660)
Firm-Specific Seniority Returns	-0.4903 * (0.2535)	1.0721 *** (0.1610)	1.5635 *** (0.2410)
Residual from Earnings Decomposition	-0.1319 (0.0886)	-0.0290 (0.0421)	0.0834 (0.0620)
<b><u>Firm Accounts</u></b>			
Total Employment	-3.700E-04 *** (8.700E-05)	8.400E-05 *** (2.200E-05)	5.650E-04 *** (6.900E-05)
Research & Development Expenditures/Fixed Assets	1.3243 (0.8891)	-0.2689 (0.4464)	-1.5376 ** (0.7798)
Fixed Assets Net of Depreciation and Amortization	9.576E-09 (2.898E-08)	6.393E-08 *** (1.623E-08)	7.336E-08 *** (2.228E-08)
Increase in Value of Fixed Assets (Fixed assets-DEFLCAP <sub>1991</sub> )	-1.920E-08 (2.765E-08)	-6.450E-08 *** (1.473E-08)	-5.470E-08 ** (2.147E-08)
Total Debt/Total Assets	0.7992 *** (0.1445)	-0.6958 *** (0.0689)	-1.2857 *** (0.1041)
Return on Assets	1.5702 *** (0.3449)	0.8427 *** (0.1303)	-0.0566 (0.1528)
Value Added per Worker	3.700E-05 (4.200E-05)	-7.300E-07 (1.086E-06)	-8.160E-07 (2.763E-06)
Log Likelihood	-3461.1875	-13681.967	-7593.843
Pseudo-R Square (Rescaled)	0.0398	0.2402	0.1929
Number of CD Firms	3937	3937	1778
Number of Firms	5715	123681	121522

Sources: MDST, FUTE, DADS and EDP data and Author's Calculations.

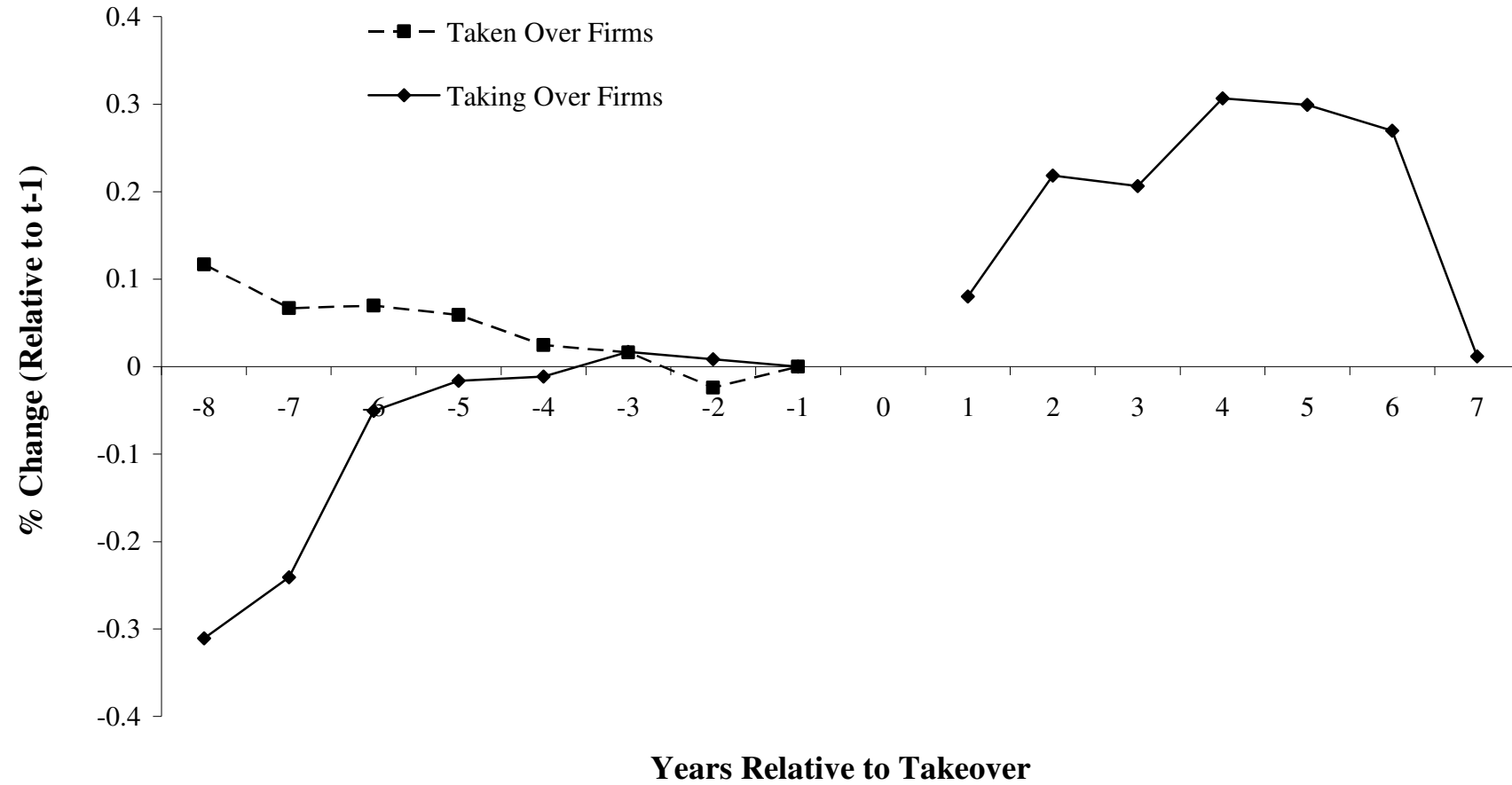
Notes: All models also include controls for 9 observation years, 10 sectors, Paris region, 8 educational categories, age<sup>2</sup>, age<sup>3</sup> and age<sup>4</sup>. \*\*\* indicates a coefficient significant at the 1% level, \*\* at the 5% level and \* at the 10% level.

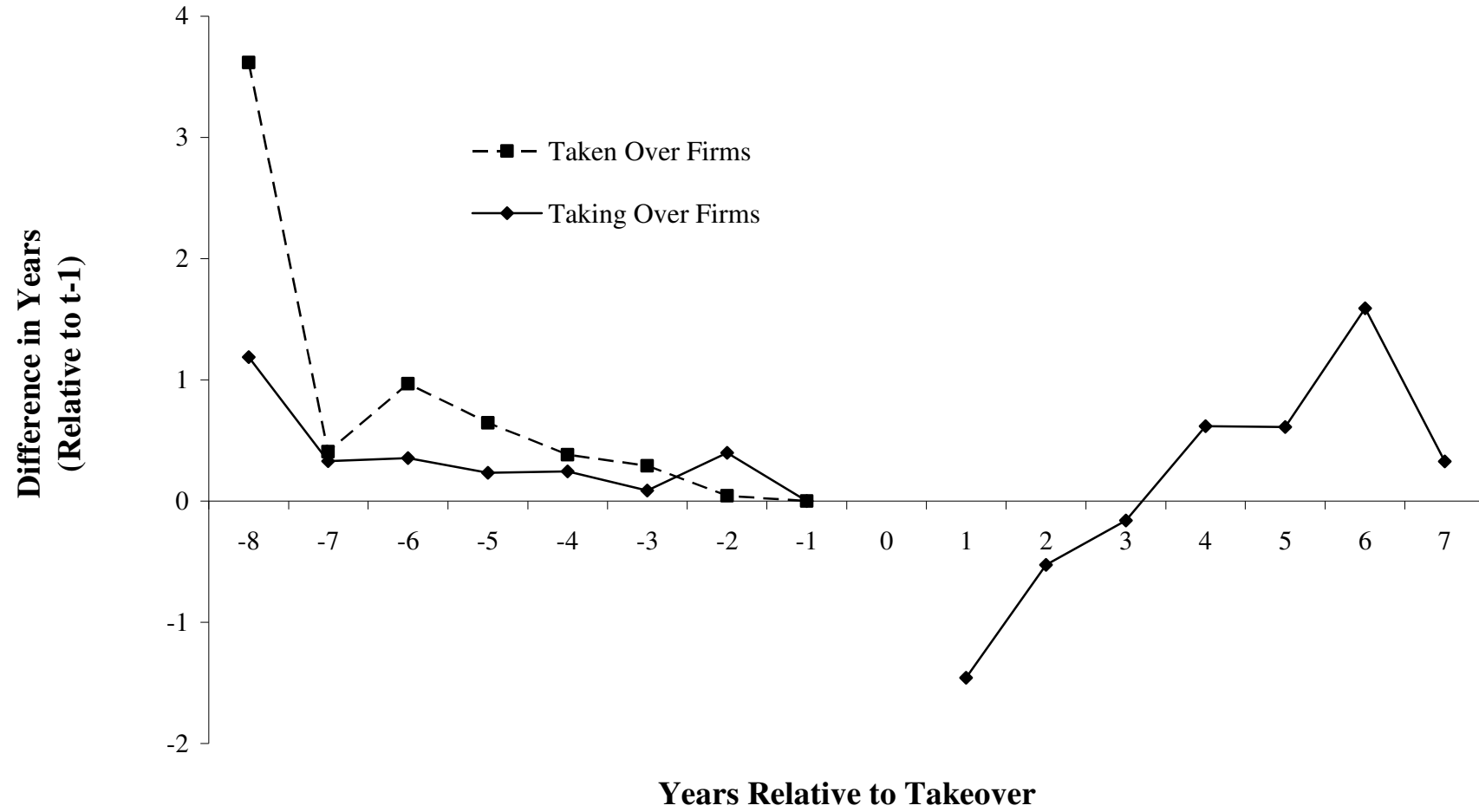
Table 4 Logit Regressions: Probability of Continued Employment (Coefficients with Standard Errors in Parentheses)						
Variable	Acquired Firms			Acquiring Firms		
	1 year after	2 years after	5 years after	1 year after	2 years after	5 years after
<b><u>Human Resource Management</u></b>						
Male	-0.2386 *** (0.0556)	-0.2316 *** (0.0689)	-0.1087 (0.1333)	0.0128 (0.0624)	0.0414 (0.0780)	0.0457 (0.1513)
Age	0.2207 *** (0.0159)	0.1058 (0.0968)	-0.0739 (0.2096)	0.3672 *** (0.0182)	-0.0660 (0.1069)	-0.4972 ** (0.2112)
Job Seniority	0.0322 *** (0.0029)	0.0412 *** (0.0033)	0.0525 *** (0.0064)	0.0942 *** (0.0041)	0.0827 *** (0.0042)	0.0776 *** (0.0072)
Skilled Blue Collar	0.2032 *** (0.0471)	0.3263 *** (0.0564)	0.4319 *** (0.1071)	0.1044 * (0.0599)	0.3531 *** (0.0692)	0.4703 *** (0.1203)
Unskilled Blue Collar	0.0186 (0.0490)	0.1458 ** (0.0596)	0.0443 (0.1148)	-0.0937 * (0.0559)	0.0784 (0.0681)	0.1676 (0.1244)
Return to Fixed Unobservable Individual-Specific Characteristics	0.2323 *** (0.0343)	0.4014 *** (0.0454)	0.7174 *** (0.0974)	0.3723 *** (0.0399)	0.4878 *** (0.0508)	0.6238 *** (0.1013)
Returns to Education	0.2322 *** (0.0343)	0.4014 *** (0.0454)	0.7174 *** (0.0974)	0.3724 *** (0.0399)	0.4879 *** (0.0508)	0.6237 *** (0.1013)
Returns to Observable (Time-Varying) Individual-Specific Characteristics	0.2324 *** (0.0344)	0.4004 *** (0.0483)	0.7168 *** (0.0995)	0.3726 *** (0.0399)	0.4855 *** (0.0512)	0.6235 *** (0.1016)
<b><u>Compensation Policy</u></b>						
Firm-Specific Fixed Effect	0.0389 (0.0344)	0.0905 * (0.0476)	0.4657 *** (0.1006)	0.2935 *** (0.0447)	0.1837 *** (0.0645)	0.3984 *** (0.1285)
Firm-Specific Seniority Returns	0.5338 *** (0.0861)	0.4657 *** (0.1114)	1.0490 *** (0.1976)	0.8697 *** (0.2438)	-1.1000 *** (0.3552)	-1.2053 * (0.7201)
Residual from Earnings Decomposition	0.0427 (0.0264)	0.0523 (0.0369)	0.0551 (0.0804)	0.1492 *** (0.0302)	0.0380 (0.0419)	0.0368 (0.0883)
<b><u>Firm Accounts</u></b>						
Total Employment	-9.500E-04 *** (3.100E-05)	-1.100E-03 *** (4.500E-05)	-1.000E-03 *** (6.800E-05)	5.808E-06 (2.000E-05)	4.690E-06 (2.400E-05)	-3.000E-05 (4.800E-05)
Research & Development Expenditures/Fixed Assets	0.8600 (0.6131)	1.6026 ** (0.6800)	2.8068 ** (1.2864)	1.7337 ** (0.7992)	-0.1627 (1.7661)	-0.7503 (4.4423)
Fixed Assets Net of Depreciation and Amortization	5.000E-09 (7.069E-09)	5.411E-08 *** (9.273E-09)	-1.170E-07 ** (5.472E-08)	1.259E-08 (1.223E-08)	-6.130E-11 (1.592E-08)	-2.260E-08 (2.947E-08)
Increase in Value of Fixed Assets (Fixed assets-DEFLCAP <sub>1991</sub> )	1.481E-08 ** (6.897E-09)	-2.330E-08 *** (7.979E-09)	2.255E-07 *** (5.123E-08)	-9.910E-09 (1.198E-08)	-3.870E-09 (1.441E-08)	7.839E-09 (2.390E-08)
Total Debt/Total Assets	-0.1729 ** (0.0771)	-0.2078 ** (0.0912)	-0.5388 *** (0.1863)	-0.0137 (0.1173)	0.1599 (0.1343)	0.5933 ** (0.2539)
Return on Assets	0.1273 (0.1786)	0.2464 (0.2151)	-0.7734 (0.5508)	2.2433 *** (0.2899)	1.9480 *** (0.3283)	2.4490 *** (0.4893)
Value Added per Worker	4.599E-06 (4.400E-05)	-4.000E-05 (3.800E-05)	-2.900E-04 * (1.610E-04)	-1.460E-06 (4.200E-05)	-5.000E-05 (8.700E-05)	-1.600E-04 (1.030E-04)
Log Likelihood	-11675.176	-8251.1885	-2421.8855	-7889.747	-5714.4045	-1812.4565
Pseudo-R Square (Rescaled)	0.3076	0.36	0.4901	0.5522	0.6601	0.714
Number of Individuals Still Employed	5735	3746	1002	8933	5943	1502
Number of Eligible Individuals	31637	31637	31637	18552	18552	18552
% Still Employed	18.13%	11.84%	3.17%	48.15%	32.03%	8.10%
% Still Employed in Non-MDST Firms	44.43%	30.68%	8.79%	44.43%	30.68%	8.79%

Sources: MDST, FUTE, DADS and EDP data and Author's Calculations.

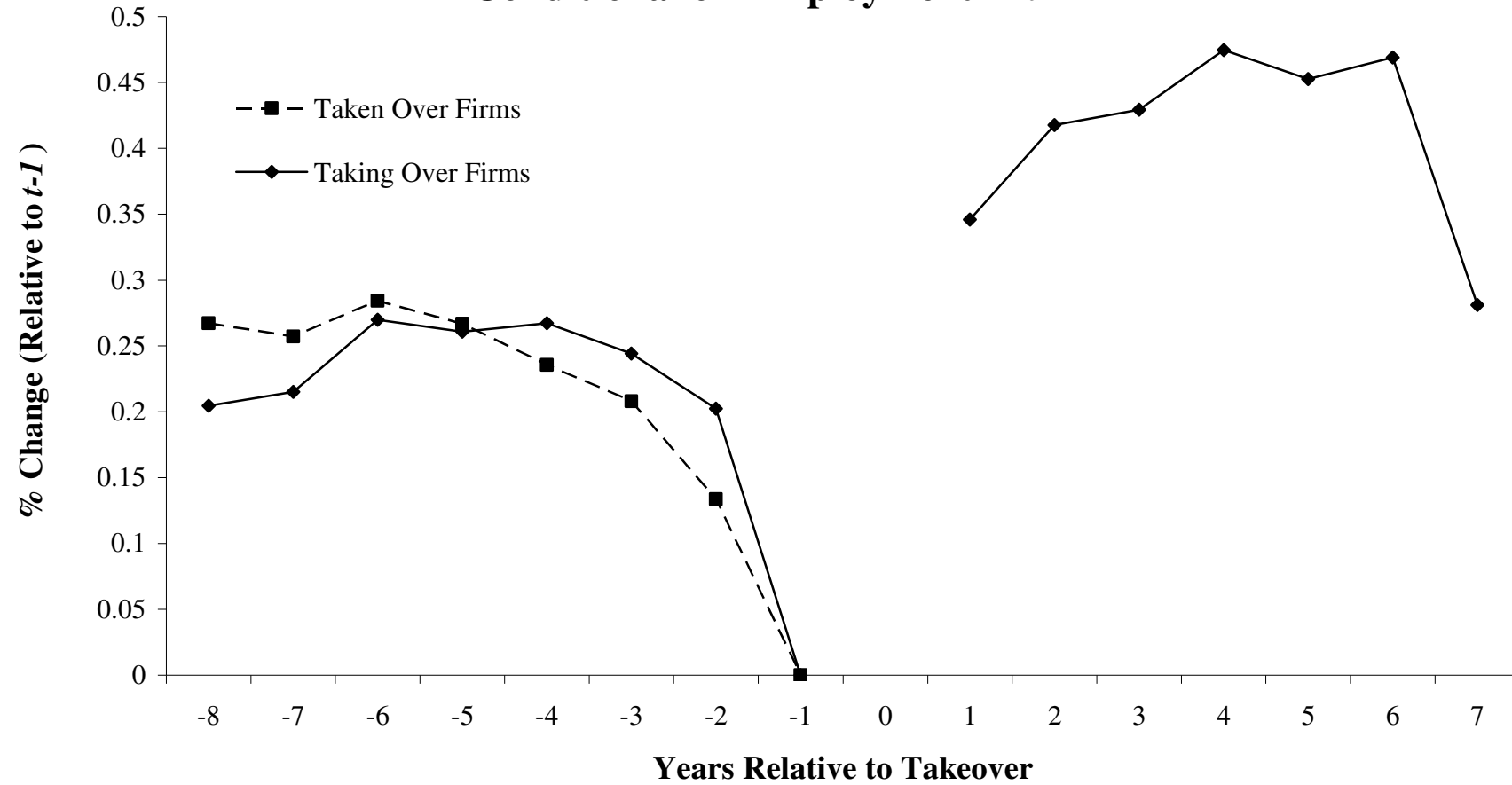
Notes: All models also include controls for 8 transaction years, 10 sectors, Paris region, 8 educational categories, age<sup>2</sup>, age<sup>3</sup> and age<sup>4</sup>. \*\*\* indicates a coefficient significant at the 1% level, \*\* at the 5% level and \* at the 10% level. Models estimate the probability that an individual employed by the firm in the year preceding the transaction is still employed with the firm at some point in the year, 2 years and 5 years after the transaction.



**Figure 1: Log Real FYE Compensation Cost**

**Figure 2: Job Seniority**

**Appendix Figure 1: Log Real FYE Compensation Cost  
Conditional on Employment in  $t-1$**



**Appendix Figure 2: Job Seniority  
Conditional on Employment in  $t-1$**

