Talent in Distressed Firms: Labor Fragility and Capital Structure

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ABSTRACT

The importance of skilled labor and the impossibility of corporate ownership of human capital expose firms to fragility stemming from possible loss of talent. Using detailed employer-employee matched data from Sweden, we document that firms lose their most skilled workers as they approach financial distress. Consequently, firms that rely more on talent operate with more conservative capital structures. In a quasi-natural experiment setting—employing a change in Swedish labor law that exogenously impacts the mobility of workers—we document that as the risk of loss of talent increases, financial leverage decreases.

I. Introduction

Corporations have considerably changed in recent decades. One important aspect of this development relates to the growing importance of human capital in the modern firm. This change in firms had aggregate effects. The demand for skilled labor has increased sharply since at least the 1970s, leading to substantial widening of the wage gap between skilled and unskilled workers (e.g., Katz and Murphy 1992, Acemoglu 2002). For example, in Sweden (whose GDP per capita exceeds that of the US and UK), the labor share going to the top talent in the economy more than doubled in the last two decades (Figure 1). Explanations for this trend include a skill bias in recent technological changes such as the advent of IT (e.g., Autor, Levy, and Murnane 2003), as well as increased international competition through trade and the resulting specialization in the global workforce (e.g., Wood 1998). Consistent with these trends, the most skilled workers have been shown to have a disproportionate positive impact on firm productivity and firm value (Abowd et al. 2005).

According to a property rights view of the world (Grossman and Hart 1986, Hart and Moore 1990), human capital introduces a contractual incompleteness that stems from the fact that, in the absence of slavery, firms don't own human capital, workers do. In this paper, we argue that the inalienable nature of human capital and the dependence of organizations on this intangible asset may expose firms to an additional degree of fragility, as labor can potentially hold up the firm (Williamson 1975, Williamson 1985). This creates new governance and organizational challenges.

A recent survey of business professionals suggests that this is not merely a theoretical possibility: "talent and skill shortages" were identified as the second most important risk facing modern organizations, only topped by the risk of "loss of customers" and ranking above other risks such as "changing legislation" (Lloyds Risk Index 2011). In addition, there is anecdotal evidence such as the Saatchi and Saatchi case (see, e.g., Rajan and Zingales 2000) that also supports this view. When US fund managers that owned 30% of Saatchi and Saatchi vetoed the award of a generous compensation package to the firm's chairman Maurice Saatchi, he and his brother Charles left the firm, taking with them several key senior executives and key accounts.

Firms may thus be wary of talented workers' ability to switch jobs in critical times and may employ different strategies to mitigate the risk associated with the mobility of key human capital. For example, the technology firms Apple, Google and several others recently settled a "no poaching" lawsuit for $415 million that ended allegations that these companies colluded in order to restrict labor mobility of key talent (Lobel 2013). Furthermore, firms frequently include contractual clauses designed to deal with labor fragility. Venture capital and private equity firms commonly use "key man" clauses that prevent fund managers to make new investments if certain key principals fail to devote a pre-specified amount of time to the partnership. Key employee retention plans (KERPs) are often used to try to prevent the exit of

top talent from organizations in times of change, such as times of economic or financial distress. Finally, non-compete clauses are common features of labor contracts aimed at limiting the ability of key employees to work for competitors (e.g., Marx, Strumsky, and Fleming 2009).[1]

In this paper, we examine labor force mobility in times of financial distress, the organizational fragility that labor mobility imposes, and the implications for financial policies. There are two major obstacles to examining these questions. First, micro-level data on individuals that are likely to generate labor-induced fragility in firms are not readily available.[2] The second hindrance relates to concerns of endogeneity; specifically, firms that rely on a more mobile labor force (e.g., more talented workers) may differ in many other dimensions from firms that do not. We overcome these challenges in two ways. First, we use an employee-employer matched dataset on Swedish firms and workers that contains detailed information on firm and individual characteristics, such as age, gender, education, measures of cognitive and non-cognitive skills, employment histories, as well as non-censored compensation. This allows us to paint an exhaustive picture of the labor force characteristics of firms approaching distress, including meaningful proxies for talent. Second, to address the endogeneity concerns, we employ a quasi-natural experiment in which we exploit a change in the Swedish labor law that generated an exogenous shock to worker mobility of some firms, but not others. Using this setting, we test whether talent-intensive firms change their financial policy as worker mobility changes for exogenous reasons.

The paper is conceptually divided into two parts. In the first part, we investigate sources of labor fragility in organizations. We do so by studying which employees present the biggest risk of abandoning firms that approach financial distress. In the second part, we analyze the consequences of this labor fragility for the financial policy of firms. We find that when firms become distressed, there is a significant loss of talent, as workers with the highest skills abandon the firm. The most talented workers in the organization are 30% more likely to leave as the firm approaches distress, relative to the average worker. Further, we find that the intake of talented employees in distressed firms does not increase commensurably. This deterioration in the talent pool of the organization in times of distress has consequences for financial policies. Firms that rely more on a highly skilled and highly mobile labor force operate with a more conservative capital structure. We first document the negative relationship between the talent-intensity of a firm's labor force and leverage in the cross-section of firms. We then confirm this effect in a quasi-experimental setting by analyzing the impact of an exogenous change in the mobility of workers on the financial policies of talent-intensive firms. We find that as the

[1] Overall, such measures taken by firms may help explain the secular decline in labor mobility observed over the last two decades as documented in Davis and Haltiwanger (2014).

[2] While employee-employer matched datasets have become more commonly used, measuring talent remains difficult. Education, which is often available in such datasets, is at best an indirect and imperfect measure of talent (e.g., Philippon and Reshef 2014; Abowd et al. 2005). Furthermore, while wages may in principle serve as a market-based measure of talent, they are often "top-coded" in datasets (such as, for example, in the case of the US Current Population Survey, CPS), which limits their usefulness to identify the most talented individuals in an economy.

mobility of talent increases, leverage decreases. This test also allows us to attribute a causal interpretation to our findings.

Our paper relates to two strands of literature in finance. First, our paper contributes to the literature that analyses the capital structure of firms and its determinants (for a recent review of this literature see Graham and Leary 2011). In particular, our paper adds to the literature that documents and measures costs of financial distress (e.g., Weiss 1990, Andrade and Kaplan 1998, Maksimovic and Phillips 1998, and Hortaçsu et al. 2013) by providing evidence of the added degree of firm fragility induced by labor and by establishing labor fragility as an important determinant of capital structure. More broadly, the paper also adds to the growing literature that studies the interactions between finance and labor.[3] Within the labor and finance literature, our work is most related to research that studies the interaction between labor and capital structure (e.g., Perotti and Spier 1993; Berk, Stanton and Zechner 2010; Matsa 2010; Agrawal and Matsa 2013; Simintzi, Vig and Volpin 2014). In particular, our work relates to Graham, Kim, Li, and Qiu (2013) who find a significant loss in the wages of workers that are employed by firms at the time of bankruptcy, and to Brown and Matsa (2016) who report that financial firms experiencing financial distress have difficulty attracting new employees.

Our paper differs from the extant literature in several ways: first, we document a new form of labor cost of distress—the difficulty of retaining talent as firms approach distress. Brown and Matsa (2016) find that distressed financial firms have trouble hiring talented employees. This would not be a severe problem if firms were not losing their most talented employees in times of distress. However, what our findings show is that firms keep attracting highly skilled workers at the same pace as non-distressed firms, but fail in retaining their top talent. We thus see our results as being complementary to the findings in Brown and Matsa (2016). Second, we directly link financial policies to this form of labor cost of distress and find that firms that rely more on highly talented workers operate with lower leverage. To the best of our knowledge, we are the first to link this form of labor cost of distress to financial policy. Third, our analysis includes a rich set of individual characteristics which allow us to study which aspects of the labor pool (for example, worker age and experience in the firm) make it more fragile. And fourth, we document workers' employment history after the departure of distressed firms along several dimensions and find that they are relatively more likely to stay in the same industry and same geographical region, and tend to join relatively smaller and younger firms. Overall, relative to the previous literature, we are able to paint a richer picture of how the labor composition changes around bankruptcy and how this relates to financial policies.

[3] Several ways in which labor forces shape financial policies of firms have been documented. For example, the internal allocation of capital in conglomerates is, to a large extent, determined by features of the internal labor market of these firms (Silva 2013). Tate and Yang (2015) document that diversified firms have more active internal labor markets than focused firms. Other research analyzes how financial policies affect labor outcomes (e.g., Agrawal and Tambe 2014).

The rest of the paper is organized as follows. Section II discusses the data sources and the variable construction. In section III we study how the composition of labor changes as firms approach distress. Section IV investigates whether firms internalize the labor-induced fragility when choosing their capital structure. In addition to cross-sectional leverage regressions, we examine how an exogenous shock to labor mobility affects capital structure in talent-intensive firms. In section V, we discuss robustness tests and alternative interpretations of our results. Finally, section VI concludes.

II. Data and Variables

II.A Main Data Sources

The main dataset used in our analysis is obtained by matching longitudinal data on socio-economic outcomes for Swedish individuals during 1990-2011, the *Longitudinal Database on Education, Income and Occupation* (LISA) from *Statistics Sweden* (SCB), with data from military enlistment records, and firm-level data from *Serrano*. LISA contains detailed employee-employer matched information for the whole Swedish population. For individuals that are over 16 years of age, the plethora of data available in LISA include a large set of socio-economic information, such as age, gender, employment, uncensored wages, and social security benefits. This dataset also allows us to track individuals over time and study their career paths.

A distinguishing strength of the Swedish data is the possibility to link the information from LISA to measures of cognitive, noncognitive, and leadership skills using data from military records. The military data cover the years 1968-2011 and are obtained from *The National Archives* and *The National Service Administration*. Between 1968 and 2009, all Swedish males aged 18 or over were required to participate in enlistment tests for one to two days. Since 2010, both the participation in the tests and military service itself have no longer been compulsory. The enlistment test consisted of four parts, assessing cognitive ability, non-cognitive ability, physical ability and health status. Whether someone had to do military service was determined by the health status, and in which capacity was determined by the joint outcome of all the tests. The cognitive ability test consisted of four parts: synonyms, inductions, spatial reasoning, and technical comprehension. Each part was graded on a scale from 0 to 40; the combined score from the four parts was converted to a cognitive ability score from one to nine on the Stanine scale.[4] Noncognitive ability was assessed through a structured interview with a psychologist, who graded test-takers on psychological abilities using the Stanine scale.[5] In addition, leadership ability was assessed by the psychologist for all test-takers that received an average or above average score on the cognitive ability test. Lindqvist and Vestman (2011) show that these measures relate to labor market outcomes in a meaningful way.

[4] The Stanine scale is a method of scaling test scores resulting in approximately normally distributed data with a mean of 5 and a range from 1 to 9.

[5] For a more detailed account on the military enlistment tests see Lindqvist and Vestman (2011).

The Swedish firm-level data are from the *Serrano* database. Serrano includes financial statement data as well as detailed information on bankruptcy filings. The data are adjusted for split financial years as well as accounting periods of different lengths and are converted to calendar year values for both stock and flow data. The data cover both privately and publicly held firms.

II.B Sample Construction

We work with three samples that we use to answer different questions. Our first sample is used to study changes in the composition of the labor force as firms approach bankruptcy. We start with all Swedish limited liability firms and categorize them into two groups: the treatment group and the control group. Firms that constitute our *treatment group* are those that experience a bankruptcy event during our sample period, have non-missing accounting data and have more than five employees five years prior to bankruptcy. We also require firms to have at least one employee during each of the five years leading up to the bankruptcy event. We define a bankruptcy event as either filing for bankruptcy under the Swedish bankruptcy code or filing for reorganization under the Swedish Company Reconstruction Code. If there are multiple bankruptcy events for a single firm, we only use the first event in our analysis.

We then use a matching algorithm to construct our *control group*, which provides a counterfactual for the firms in the treatment group in the absence of bankruptcy. Five years prior to bankruptcy, each of the firms in the treatment group is matched to a firm that is similar but that does not file for bankruptcy during our sample period. Specifically, we match control firms to treatment firms using a nearest neighbor algorithm for a set of firm characteristics within strata for calendar year and 2-digit SNI industry[6] (Imbens et al. 2004). We use the following firm characteristics for the matching: log of total assets, number of employees, net leverage (total debt minus cash, divided by total assets), profitability (operating income divided by total assets), average worker wage, and average combined talent score (noncognitive plus cognitive score). Because our firm-level accounting data start in 1998 and our matching procedure is performed five years prior to the start of bankruptcy, our final sample includes bankruptcy events from 2003 to 2011. Table 1 compares characteristics of firms in the treatment and control group. Not surprisingly, treatment and control firms do not differ significantly with regard to the characteristics that we match on. The matching, however, also leads to similarity of treatment and control firms along dimensions that we can observe but do not match on, which suggests that the firms may not be too dissimilar with respect to characteristics that are not observable to us.[7]

[6] SNI is the Swedish Standard Industrial classification, which is based on the second revision of the EU's standard industry classification NACE.

[7] Our findings are robust to several different ways of constructing the control group, including matching on different sets of characteristics and using firms in the treatment group that are not yet treated as control for the firms that are close to bankruptcy. We discuss the robustness of our results along this and other dimensions in section V of the paper.

Figure 2 shows the distribution of corporate bankruptcies across industries for our sample. The total number of bankruptcies in our sample is 3,245; the number and frequency of bankruptcies is highest in the manufacturing industry, while it is lowest in the financial sector.[8] Figure 3 shows the distribution of bankruptcies over time for our sample. All years of our sample are well represented in terms of bankruptcy events, with 2006 and 2007 being the years with lowest number of bankruptcies, and 2009 and 2010 the years with the highest number of bankruptcies.

We match firms with their employees using the employee-employer links from LISA. For the regressions studying labor transitions into and out of financially distressed firms, the sample consists of workers employed by the firm in at least one of the five years leading up to bankruptcy. The sample spans the years 1998 to 2010 (using bankruptcies from 2003 to 2011). To better capture voluntary turnover decisions by workers, we exclude workers that transition into unemployment and focus on workers that leave to work for other firms.[9]

For the cross-sectional leverage tests, our sample covers the years 1998-2010 and consists of all Swedish limited liability firms. Finally, the sample used in the leverage tests exploiting a 2001 labor law change is constructed as follows. As before, we focus on limited liability firms. The 2001 law change allowed firms with less than 11 employees to exempt two employees from LIFO (last-in-first-out) rules, so these firms constitute our treatment group. We restrict the sample to the period 1998 to 2004, where 1998-2000 is the baseline period and 2001-2004 is the treatment period. In the analysis, we focus on firms around the 11 employee threshold, that is, firms with at least 5 employees and at most 15 employees.

II.C Variables

The two main variables we use to study employee mobility are *Leave* and *Join*. *Leave* is a dummy variable that takes the value of one in the year a worker leaves the firm and zero otherwise. We identify leavers by verifying whether the main source of income comes from a different employer in the next year, indicating a change in employment. Similarly, *Join* is a dummy variable that takes the value of one in the year an employee joins a new firm. We identify joiners by verifying whether the main source of income came from a different employer in the previous year.

The variable *Close to Bankruptcy* identifies the treatment period. Our definition of being close to bankruptcy is the time period from three to one years prior to the bankruptcy event. Figure 4 informs our choice of treatment period; the figure shows the share of workers leaving and joining firms as they approach bankruptcy. On average, the labor force appears stable until

[8] Note that this category excludes commercial banks, which are a separate category of limited liability companies ("Bankaktiebolag") and for which regulations differ compared to other limited liability companies. Examples of activities pursued by the financial firms included in the sample are: financial leasing, investments, private equity, venture capital, brokerage services, and financial advisors.

[9] As part of our analysis we also report results in which we focus only on workers that transition to unemployment.

about four years prior to the onset of bankruptcy, and begins to contract thereafter. For treatment firms, *Close to Bankruptcy* takes the value of one in the years t-3, t-2, and t-1 relative to the beginning of the bankruptcy, and it takes a value of zero in the years t-4 and t-5. For the control firms, *Close to Bankruptcy* is equal to zero throughout. Our tests can thus be interpreted as difference-in-differences estimates, where we compare the probability of some workers leaving (or joining) distressed firms close to bankruptcy (t-3 to t-1) relative to "normal" times (t-5 and t-4), and relative to the control group of firms during the same time period.

One of the main goals of this paper is to study the evolution of key talent in the organization and how an organization's reliance on talent may affect financial policies. We construct four different measures of talent in firms: *Talent Cognitive, Talent Combined, Talent Leadership,* and *Talent Wage*. *Talent Cognitive* is based on the cognitive skills of males obtained from their military records; it is a dummy variable that takes the value of one if an individual has a score in the top five percent of the distribution of cognitive skill scores at the firm-year level, and takes the value of zero otherwise. *Talent Leadership* is defined accordingly using the scores from the leadership tests, while *Talent Combined* uses the sum of cognitive and noncognitive test scores. Approximately 0.7% of the military test-takers are volunteering females, which are excluded from regressions that employ a talent measure based on military test scores as an explanatory variable. Males with incomplete tests or missing test scores are also excluded. In all tests using military test scores, to adjust for the possibility of changes in test standards over time, we include fixed effects for the enlistment period as defined by the testing authority: 1969-1982, 1983-1997, 1998-2001, 2002-2008 and 2009-2010.

The fourth measure of talent we construct is based on wages, which reflect the market price of talent. *Talent Wage* is a dummy variable that takes the value of one if an individual's annual real gross wage five years before the bankruptcy event is at or above the 95th percentile in the firm-year distribution of wages. This wage-based talent measure has the advantage, relative to our measures based on skills determined by the military authority, that it is available for males and females alike.

Ln(Years of Education) is the natural logarithm of an individual's years of schooling.[10] *Ln(Wage)* is defined as the natural logarithm of gross wage paid by the main employer.[11] We define two variables measuring work experience: *Experience in Company* is the number of years spent at the current firm, and *Experience in Industry*, the number of years spent working in the current industry. Both variables are censored due to the start of available employment histories in

[10] More specifically, for each individual, *years of education* is the number of scheduled schooling years required by an individual to obtain his/her highest earned degree, regardless of how many years it actually took the person to complete the degree (the latter information is unavailable): 12 years for a high school graduate, 15 years for an individual with a bachelor degree, etc.

[11] In the year that an employee changes employment, the database may report more than one main source of income from more than one employer. To avoid the mis-measurement of the wage variable, we take the maximum of the wage in the year the employee leaves a firm and the prior year. Similarly, when an employee joins a new firm, we use the maximum of the wage during the year an employee joins a firm and the subsequent year.

1990. Individual-level information on occupational tasks is available from 2001 onwards. This information is reported using the Swedish Standard Classification of Occupations 1996 (SSYK), which is the Swedish version of the International Standard Classification of Occupations (ISCO-88(COM)). We follow Tåg (2013) and construct a measure of hierarchy by mapping the occupational codes into four different levels of hierarchy: CEOs and directors; senior staff; supervisors; and clerks and "blue-collar" workers.

We include *industry* × *year* fixed effects in most of our specifications as a non-parametric way to control for time-varying unobservables at the industry level. Industry dummies are defined using the Swedish Standard Industrial classification (SNI). An SNI code consists of a letter and five digits. The SNI classification was changed twice during our sample period, in 2002 and 2007; we therefore map the industry codes prior to 2007 to SNI2007. We use the SNI codes to define the following industries: agriculture, manufacturing, transportation and utilities, construction and mining, finance, commerce, professional services, and other services.

In our analysis of leverage we define *Leverage* as the sum of short- and long term debt minus cash, divided by total assets. *Tangibility* is property, plant and equipment divided by total assets. *Profitability* is EBITDA divided by sales, and *Growth* is defined as industry level sales growth over the next three years. In these firm-level regressions, our talent measures are: *Avg. Talent Cognitive,* which is the average cognitive skill score of the employees working in a given firm in a given year; *Avg. Talent Leadership*, *Avg. Talent Combined*, and *Avg. Talent Wage* are defined analogously but use, respectively, leadership scores, combined cognitive and noncognitive scores, and wages. In our leverage analysis we exclude financial firms and winsorize variables at the 1st and 99th percentiles.

We report summary statistics in table 2. Panel A shows the variables of the sample that analyzes characteristics of workers of firms that experience a bankruptcy event during the time-period 2003-2011 (that is, the sample period is 1998-2010). Panel B shows summary statistics on worker characteristics for firms that experience a bankruptcy event during the time-period 2006-2011 (that is, the sample period is 2001-2010), for which we have occupational data for the workers during all five years leading up to bankruptcy. Both panels include workers from both treatment group and control group firms. Panel C shows summary statistics for the sample of firms used in the cross-sectional analysis of leverage. Finally, panel D reports summary statistics for the sample of firms used in the leverage analysis around the 2001 labor law change.

Figure 5 shows the talent allocation across industries in Sweden. Each panel in the figure represents a different talent measure: we use cognitive skill scores, combined cognitive and noncognitive skill scores, leadership scores and average wages to compare the talent-intensity of different industries. The industries with the highest average scores are finance, professional services (which includes, among others, workers in IT, R&D, law, and consulting), and services (which includes workers in the education and health care sectors). Figure 6 reports the talent distribution across different levels of hierarchies. The figure shows that the two highest levels

of hierarchies tend to have more talented workers. Perhaps somewhat surprisingly, the third layer of hierarchy ("senior staff" members) tends to have more talented workers on average than the top layer ("CEOs and directors"); this is likely due to the relatively large number of small firms in the Swedish economy which tend to have less talented CEOs (see also Adams, Keloharju and Knupfer 2015).

III. Evolution of Labor Force Composition around Bankruptcy

III.A Main results

We begin our empirical analysis by studying the evolution of the composition of the labor force of firms approaching bankruptcy. Specifically, we study the selection and characteristics of workers that leave and of those that join firms prior to bankruptcy events. Workers with different characteristics may have different preferences and incentives to leave (or join) firms approaching bankruptcy. Moreover, mobility of workers may be determined by the extent to which their human capital can be generally applied in the economy.

Among all workers that may be lost as firms approach bankruptcy, the loss of key talent is likely to be especially critical for the ability of firms to create value.[12] There are several reasons why the most talented workers may decide to leave the firm early, in anticipation of bankruptcy. One possibility is that these workers are better able to predict the likelihood of bankruptcy of their firm and may thus time their exit decision better. Another reason could be related to their higher employability outside of the firm. If more talented workers face a more liquid labor market, they are able to explore an outside option that allows them to avoid the disruption caused by bankruptcy. Finally, because more talented workers may have higher career ambitions, the cost they would face by being associated with a failed enterprise may be larger than for the average worker. Figures 7 and 8 show graphical evidence of these effects at work. Figure 7 shows that, relative to control firms, the fraction of talented workers leaving (classified using our measures *Talent Cognitive*, *Talent Leadership*, *Talent Combined* and *Talent Wage*) increases as the firm approaches bankruptcy. Figure 8 further corroborates this evidence by showing that the fraction of highly talented workers that join the firms in the treatment group does not increase relative to control firms as firms approach bankruptcy, indicating an overall deterioration of the talent pool in treatment firms as they approach distress.

We formally test whether proximity to bankruptcy is correlated with an increase in the probability that talented workers leave the firm by estimating the following specification:

$$Leave_{ift} = \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot (Talent_{ift}) \cdot (Close\ to\ Bankruptcy_{ft}) + \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift}$$

where *Leave* is a dummy variable that takes the value of one in the year the worker leaves the firm and zero otherwise, and *Close to Bankruptcy* is a dummy variable that takes the value of

[12] Abowd et al. (2005) find that the most-skilled workers of a firm have a disproportionate positive impact on firm productivity and market value.

one if the firm is in close proximity to bankruptcy (within three years) and zero otherwise. We use four different measures of talent in our analysis: *Talent Cognitive*, *Talent Leadership*, *Talent Combined*, and *Talent Wage* (for details see section II). The coefficient θ measures the increase in probability of a highly talented worker leaving the firm as it approaches distress.

We also include a set of individual worker characteristics that could affect the probability of leaving around bankruptcy events: matrix X in the regression equation above includes age, experience in the company, experience in the industry, log of years of education, log of wage, and a dummy variable for females (in the regressions using the wage-based skill measure, in which females are included). The coefficients δ measure how being in close proximity to bankruptcy alters the selection of workers that decide to abandon the firm in these dimensions. In order to account for time-invariant differences in turnover across firms that may occur for reasons other than bankruptcy, the matrix Ψ includes firm fixed effects. Ψ also includes year-industry fixed effects that account for the evolution of the optimal composition of workers at the industry level. Our results are thus not driven by the possibility that, for example, industries where there are more bankruptcies are also those where more talented employees are leaving. Finally, we note that we cluster standard errors at the firm-level.

Results are reported in table 3, panel A. We find that being in close proximity to bankruptcy is associated with an increase in the probability of a worker leaving the firm, as the coefficient β is positive, and statistically and economically significant. The estimate in column one implies that for firms in the treatment group, the probability of workers leaving is 5.7% higher when firms are close to distress relative to normal times. In columns two to five we analyze the composition of workers that leave treatment firms close to distress. An important pattern that emerges is the increase in the propensity of talented workers to leave as the firm approaches bankruptcy. In column two we measure talent using cognitive skill scores for males and find that male workers with high cognitive skills have a 1.8 percentage point higher probability of leaving the firm as it approaches bankruptcy than less "talented" workers. Relative to the average effect of 5.7% this estimate implies that the most talented employees are 32% more likely to leave the firm approaching distress than the average employee.[13] Moreover, we find that workers with more experience in the company—perhaps those that have invested more in firm-specific skills—are relatively less likely to leave as the firm approaches bankruptcy. Workers with more experience in the industry are more likely to do so.

In column three we replace the variable *Talent Cognitive* with the variable *Talent Leadership* as a measure of talent. We find that workers with more pronounced leadership skills are associated with an increase of 1.7 percentage points in the probability of abandoning the firm close to distress relative to normal times; this implies that their probability of abandoning soon-to-be bankrupt firms is 30% higher than that of the average worker. In column four we use a composite measure that combines the cognitive and noncognitive scores and find a

[13] Fahlenbrach, Low and Stulz (2014) find a qualitatively similar pattern for outside directors.

similar pattern.[14] Workers that score high in a combination of cognitive and noncognitive skills are associated with a 2 percentage point increase in the probability of abandoning the firm close to distress, which corresponds to an effect that is 35% higher than that of the average employee.

Even though the measures of skill employed so far are accurate and economically meaningful, they are only available for males. To address this limitation and to extend our analysis to include females, we also report results using our talent measure *Talent Wage*. As wages are the market price for talent, we expect to find a similar pattern using this variable. We now also include the variable *Female* in the matrix of individual characteristics X and study whether gender affects the propensity to leave distressed firms. We report the results from this specification in column five of table 3, panel A. The estimates confirm the findings of columns two to four: the estimate of θ implies that key talent sees an increase of 1.8 percentage points in the probability of leaving as the firm approaches distress. Relative to the 5.7% average increase in the propensity to leave treatment firms as they approach bankruptcy in the sample that includes females (not reported in a table), highly talented employees are 31% more likely to leave prior to the bankruptcy than the average worker. We also observe that as the firm approaches distress, females are not statistically different from males in their likelihood of abandoning the firm as the coefficient on the interaction term *Close to Bankruptcy* × *Female* is negative but statistically insignificant.

In panel B of table 3 we repeat the previous analysis, but include a set of more stringent fixed effects: fixed effects for the level of hierarchy at which a worker is employed. The sample size here is reduced as the hierarchy measure is available only from 2001 onwards (see section II). Our results show that even within different hierarchical levels of firms, highly talented employees are significantly more likely to abandon the firm as it approaches distress. The results in panel B of table 3 alleviate concerns that what we are capturing is simply a reorganization of the activities of the firm where some hierarchical levels shrink more than others. Instead, our results imply that even after taking this potential confounding effect into account, firms that approach bankruptcy have a lower ability to retain their key talent in the organization.

In periods of distress, firms facing financial constraints may have to dismiss their most talented employees as they may be the most expensive too. Therefore, there may be the concern that what we are interpreting as workers voluntarily leaving soon-to-be bankrupt firms may instead reflect reorganization efforts initiated by the firm. It is unlikely that this is driving the results in our setting for several reasons. First, the Swedish labor law includes regulations, such as last-in-first-out (LIFO) rules that constrain firms' ability to unilaterally lay off the most skilled workers. Second, in the sample used for the tests reported in table 3, we exclude

[14] Both cognitive and noncognitive skills are important determinants of behavior and economic achievement (e.g. Heckman, Stixrud and Urzua 2006), as well as labor market outcomes (Lindqvist and Vestman 2009).

workers that transition into unemployment and focus on workers that leave to work for other firms. We do this in order to better capture voluntary turnover decisions by workers.[15] Finally, we control for wages in our tests; if firms were firing workers (instead of workers voluntarily leaving), our results would imply that for each level of worker wages, firms are firing their most talented workers. In other words, to be consistent with our results of table 3, if firms were choosing between two similarly paid workers to lay off, they would choose to let go of the more skilled worker. Instead, the most natural explanation for our finding is that we are capturing the decision of talented workers to voluntarily leave firms.

In order to further address the concern that what we are interpreting as workers voluntarily abandoning the firm may instead be a deliberate decision by the firm to lay off their most skilled workers, we do an additional test. We study whether the pattern we document is similar for workers that leave the firm to become unemployed. We would expect that workers who transition towards unemployment are more likely to have been laid off than those that abandon the firm and don't experience an unemployment spell. In panel C of table 3, we repeat the analysis of panel B, but focus on those workers that leave the firm and become unemployed. We find that the coefficients associated with the talent measures are economically and statistically insignificant when focusing on this group of workers. In addition, in panel D of table 3 we repeat our analysis for the subsample of firms with more than 10 employees. These firms are bound by Last In First Out rules that restrict their ability to select which workers to fire and which workers to retain. This restriction imposed by Swedish labor law makes it difficult to argue that firms simply fire the most talented workers as part of a reorganization around bankruptcy. The results are similar to those reported in panel A. This evidence further strengthens our interpretation that the most skilled workers "jump ship", as opposed to the view that organizations approaching bankruptcy have a reduced need for talent and as such fire highly skilled employees.

Next we turn to the analysis of which workers join firms approaching distress. If firms are not able to retain talent but are still able to attract it, the overall talent pool in the organization may be unaffected by the imminent threat of bankruptcy. In table 4, we analyze the ability of firms that approach bankruptcy to attract highly talented workers, by estimating the following specification:

$$Join_{ift} = \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot \left(Talent_{ift}\right) \cdot \left(Close\ to\ Bankruptcy_{ft}\right) + \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift}$$

This specification differs in two ways from the tests of table 3. First, the left-hand side variable is in this case an indicator that takes the value of one in the year the worker *joins* the firm and zero otherwise. Second, we exclude from matrix X the variable that measures experience in the firm as by definition new joiners would have zero experience in the firm they join.

[15] See section II for more details on the sample construction. Given that some skilled workers may find alternative employment soon after dismissal, we may still be capturing some involuntary turnover in our sample.

Results are reported in panel A of table 4. The first important aspect to note in column one is that the estimate of β is now negative (although only marginally statistically significant), which implies that firms start having difficulties attracting employees as they approach bankruptcy. The estimate in column one implies that treatment firms have a 1.43% lower probability that a worker joins the firm close to bankruptcy relative to normal times. Additionally, we find that the characteristics of workers that join such firms also change. In particular, workers with more experience in the industry are more likely to join the firm. However, regarding top talent, measured using *Talent Cognitive* (column two), *Talent Leadership* (column three), *Talent Combined* (column four) and *Talent Wage* (column five), we find that being close to bankruptcy does not enhance the ability of firms to attract highly skilled individuals. Despite the loss of talent documented in table 3, treatment firms are unable to replace the lost human capital by attracting highly skilled employees in sufficiently larger numbers. We find similar results when we add hierarchy fixed effects to the regression (panel B).

Overall the results in this section provide evidence regarding the impact of bankruptcy on the ability of firms to attract and retain talent. As firms approach bankruptcy, the key talent in the organization is disproportionately more likely to leave the firm and this effect is not balanced by an increased ability of firms to attract highly skilled labor. Our results imply that even prior to bankruptcy the pool of human capital available in the firm considerably deteriorates.

III.B Placebo test

Even though our treatment and control firms look very similar on observable characteristics (see table 1), it is impossible to rule out the possibility that they are fundamentally different in terms of unobservables. To alleviate this concern, we conduct the following placebo test: we retain the composition of the treatment and control groups and estimate the same specifications as the ones used in tables 3 and 4, but now conduct the analysis on the years t-8 to t-4 relative to bankruptcy. In these tests, we define the placebo treatment period to be the period t-6 to t-4 (instead of t-3 to t-1 as in our main analysis).[16] That is, our main variable of interest *Close to bankruptcy* is modified and takes the value of one in years t-6, t-5 and t-4 relative to bankruptcy and zero otherwise.

The idea underlying the test is the following. If treatment and control firms are different even in the absence of bankruptcy, we would expect to find differences in the ability of treatment firms to attract and retain talent a number of years before bankruptcy, relative to control firms. On the other hand, if treatment and control firms are comparable absent "treatment", we would expect to find no difference in the ability of treatment firms to attract and retain talent relative to the control group, when focusing on a period that is further away from bankruptcy.

In table 5 we report the results of this placebo test. We find no evidence that, in the absence of the bankruptcy event, treatment and control firms behave differently with regard to attraction

[16] This analysis is effectively testing the common trends assumption of our difference-in-difference test design.

and retention of talent. This lends support to our identifying assumption that the control group provides a good counterfactual for the evolution of talent in treatment firms in the absence of bankruptcy.

III.C Employee exits of financially distressed firms: where do the workers go?

In order to deepen our understanding of the impact of financial distress on the rest of the economy, we track workers that leave soon-to-be bankrupt firms and analyze their new occupations. We test i) whether workers that leave firms approaching bankruptcy remain in the same industry, ii) whether they remain in the same geographic location, iii) whether they transition to small or large firms, iv) whether they have a tendency to join young or more established firms, and, finally, v) whether such workers start new firms. With these tests we aim to shed light on potential general equilibrium effects of bankruptcies and paint a more complete picture of the impact of corporate bankruptcies on the allocation of human capital in the economy.

The first test studies whether an increase in the number of firms approaching bankruptcy leads to an increase in the supply of talent to other firms in the same industry, or whether instead these workers tend to change industry. As before, we compare the career path of workers in treatment firms to those of firms in the control group (firms that don't experience a bankruptcy event during our sample period). For this analysis, we only retain workers in the sample that leave treatment and control firms, and test whether the workers that leave treatment firms behave differently from those that leave control firms. Panel A of table 6 shows the results from estimating the following OLS specification:

$$\begin{aligned} Same\ Industry_{ift} &= \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot \left(Talent_{ift}\right) \cdot \left(Close\ to\ Bankruptcy_{ft}\right) \\ &+ \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift} \end{aligned}$$

where *Same Industry* is a dummy variable that takes the value of one if the worker transitions to a new job that is in the same industry as her old job, and zero otherwise. The other variables are the same as in tables 3 and 4. We find that when workers leave a firm, there is a 40% probability that they stay in the same industry of the firm they worked at before. Moreover, those that leave firms close to distress are 6 percentage points more likely to stay in the same industry (column 1). Next, in columns 2 to 5 we study which characteristics of workers make them more prone to remain in the same industry. The results suggest that older workers, those with more experience in the company, more years of education, and women are less likely to stay in the same industry, while workers with more experience in the industry are more likely to remain. In addition, more talented workers, as measured by our four measures of skill, are also more mobile across industries. Interestingly, the interactions of the variable *Close to Bankruptcy* and the work experience variables are statistically significant. This implies that while on average workers with more experience in the company (industry) are less (more) likely to remain in the same industry, this effect is attenuated for workers that leave distressed firms.

Next, we test whether talented workers that leave firms approaching bankruptcy tend to join firms in the same geographical region as their original firm. Panel B of Table 6 shows the results from estimating the following OLS specification:

$$New\ Region_{ift} = \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot \left(Talent_{ift}\right) \cdot \left(Close\ to\ Bankruptcy_{ft}\right) + \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift}$$

where *New Region* is a dummy variable that takes the value of one if the worker transitions to a geographical region that is different from the one of his old job, and zero otherwise.[17] As in panel A, we start by computing the average probability that a worker changes location in the absence of any controls and fixed effects, and find that on average workers have a 5.6% probability of moving across regions when changing jobs. This probability is lower for workers leaving firms close to distress by 1.3 percentage points. Next, in columns 2 to 5 we test which characteristics make workers less likely to move geographically. Our findings suggest that older workers and workers with more experience in the company are less likely to leave their original region, while more educated workers are more likely to move. When it comes to talent, we find that for most of our measures, more talented workers are more likely to move to a new region. The exception is *Talent Wage*, which is negatively correlated with the probability of changing location. As in panel A, we find few differences between workers that leave firms close to distress and other firms. The only variable that is consistently significant across specifications is education, implying that highly educated workers are relatively less likely to move geographically when they abandon a firm close to distress.

The tests that follow shed light on the flow of human capital from distressed firms to young, entrepreneurial firms. Entrepreneurship is crucial for economic growth and job creation.[18] Financial and economic distress may constitute disastrous events for the firms directly affected as well as their stakeholders. However, from a Schumpeterian perspective, distressed firms may contribute necessary human capital to those firms that are the "lifeblood" of the economy. In the following tests, we therefore study whether workers that leave distressed firms contribute to entrepreneurship—either indirectly, by joining young, small firms, or directly, by starting their own companies.

We first ask whether talented workers that leave firms approaching distress have a tendency to join relatively small firms. Panel C of table 6 shows the results from estimating the following OLS specification:

$$New\ Firm\ Size_{ift} = \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot \left(Talent_{ift}\right) \cdot \left(Close\ to\ Bankruptcy_{ft}\right) + \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift}$$

[17] There are 21 Swedish regions ("Län"), defined for administrative purposes.

[18] A recent US study found that business startups account for about 20 percent of US total job creation while high-growth businesses—which are disproportionately young firms—account for almost 50 percent of total job creation (Decker, Haltiwanger, Jarmin, and Miranda 2014).

where *New Firm Size* is defined as the log of the number of employees of the first firm workers join after leaving the original firm. We start by observing (in column 1) that on average, workers that leave firms tend to join firms that have around 122 employees. Importantly, we find that workers leaving firms approaching distress tend to join firms that are about 31% smaller than the average size of firms that workers in this sample join. In columns 2 to 5 we find that age, experience in the company, and experience in the industry are characteristics of workers that negatively correlate with the size of the new firm, while female and more educated workers tend to join larger firms. We find mixed results when it comes to talent. When measuring talent with our variable *Talent Wage* we find a positive relationship with firm size, while our other measures of talent are negatively related to new firm size. Moreover, regarding the difference-in-differences effect, we find that workers that leave soon to be distressed firms are more likely to join smaller firms if they are more talented, have more years of schooling and are female.

Next, we investigate whether leavers tend to join firms that are relatively young. Panel D of table 7 shows the results from estimating the following OLS specification:

$$\begin{aligned} New\ Firm\ Age_{ift} &= \alpha + \beta \cdot Close\ to\ Bankruptcy_{ft} + \theta \cdot \left(Talent_{ift}\right) \cdot \left(Close\ to\ Bankruptcy_{ft}\right) \\ &+ \mu \cdot Talent_{ift} + X'_{ift}\gamma + Close\ to\ Bankruptcy_{ft} \cdot X'_{ift}\delta + \Psi_{ft} + \varepsilon_{ift} \end{aligned}$$

where *New Firm Age* is defined as the age of the first firm workers join after leaving the original firm. We start by observing (in column 1) that, on average, when workers leave firms they tend to join firms that are on average 22 years old. In addition, workers that leave firms approaching distress tend to join firms that are younger than average by around two and a half years. When in columns 2 to 5 we include firm and industry-year fixed effects and estimate our difference-in-differences model, we find that workers that are older and have more experience in the company are more likely to join younger firms, while female workers and those that have more years of schooling tend to join older firms. We do not find a significant relationship between talent and the age of firms joined. Furthermore, we find no significant difference between the age of the firms joined by workers that leave soon-to-be bankrupt firms relative to other leavers.

Finally, in panel E of table 6 we replace the dependent variable *New Firm Age* with the variable *Entrepreneur*, a dummy that takes the value of one if after leaving the original firm, the worker becomes an entrepreneur and starts her own firm. Overall, in our sample of workers that leave firms in the treatment or control group during our sample period, we find a 4.4% probability of a worker starting a new firm immediately after leaving the original firm. Moreover, those that leave firms close to distress are also slightly more likely to start a new firm, although this relationship is not statistically significant in our sample.[19] We also examine which individual characteristics are more conducive to entrepreneurship and find that older workers and those

[19] Babina (2015) documents a positive relationship between firm financial distress and entrepreneurship in distressed industries.

with more experience in the original firm are more likely to become entrepreneurs, while women are less likely to do so. In addition, more talented workers are more likely to start a new firm, although this effect seems to be partly mitigated for talented workers that leave firms close to distress (the coefficients on the interaction between *Close to bankruptcy* and the talent measures are however not statistically significant at conventional levels).

Overall, the results presented in table 6 help us better understand the full impact of distress on the future careers of workers and in the process allow us to capture general equilibrium effects of bankruptcies. We find that workers that leave soon-to-be bankrupt firms are relatively more likely to stay in the same industry and same geographical region, and that they tend to join relatively smaller and younger firms. They are also marginally more likely to start a new company (although on average the effect on entrepreneurship is not always statistically significant). We also find that talented workers seem to be more mobile across industries and across geographical regions. Such workers are also more likely to start a new firm. As a whole, we find that workers in treatment firms close to bankruptcy do not tend to behave very differently from workers that leave control firms.

IV. Labor Fragility and Capital Structure

IV.A Labor fragility and leverage in the cross-section of firms

Overall, the analysis in the previous section provides evidence that labor may bring an added degree of fragility to the organization. As firms approach tumultuous times, key human capital leaves and, in doing so, may endanger the future of the company even further. In light of these results, a trade-off theory of capital structure would predict that firms that face a higher ex-post risk of key employees leaving the firm as it approaches distress should choose a more conservative capital structure ex ante. By financing with more equity relative to debt, firms face a lower probability of entering into financial distress which in turn reduces the risk of loss of key talent to the organization. In addition, the ability of firms to borrow may be limited by the inalienability of the human capital that is critical for the organization (Hart and Moore 1994).

We test whether these forces shape financial decisions by analyzing the capital structure choices of firms. Firms whose most talented employees are more likely to leave in times of financial distress face large (indirect) costs of financial distress and as such are expected to have lower leverage. In that sense, the employee composition of a firm and in particular a firm's degree of reliance on highly skilled labor would be an additional factor shaping the financial policy of firms. We formally test whether talent intensity at the firm level is a determinant of capital structure by estimating the following regression:

$$Leverage_{ft} = \alpha + \beta \cdot Avg.Talent_{ft} + X'_{ift}\gamma + \Psi_t + \varepsilon_{ift}$$

The matrix of controls *X* in these tests includes the standard controls used in capital structure regressions: *Tangibility*, *Profitability*, and *Ln(Assets).* To capture investment opportunities, we

also include the variable *Growth*.[20] Our talent measures are: *Avg. Talent Cognitive*, which is the average cognitive skill score of the employees working in a given firm in a given year; *Avg. Talent Leadership*, *Avg. Talent Combined*, and *Avg. Talent Wage* are defined similarly but use, respectively, leadership scores, combined cognitive and noncognitive scores, and wages. The matrix Ψ includes year fixed effects to control for other macroeconomic determinants of leverage, so our coefficients can be interpreted as cross-sectional comparisons.

Table 7 reports the results. The results in column one confirm the notion that the skill level of the labor force is an important determinant of leverage decisions. Leverage is negatively correlated with the average skill of the employees of the firm, as measured by the variable *Avg. Talent Cognitive*. A one standard deviation increase in the average talent in the organization as measured by *Avg. Talent Cognitive* is associated with a 0.9 percentage point decrease in leverage. Relative to the average level of leverage in the sample of 11.5%, a one percentage point decrease represents a 8% decrease in leverage for the average firm. We repeat the analysis for our remaining measures of talent in columns two to four. Overall, we find a similar negative association between talent in the organization and leverage, with magnitudes similar to those from column 1.

In sum, the results in this section suggest that labor-induced fragility associated with the inalienability of human capital helps explain corporate financial decisions. Firms whose most skilled labor force is more prone to leave in times of distress operate with more conservative capital structures. This can be rationalized as follows. Firms that rely more heavily on highly skilled and highly mobile human capital face an added source of fragility and have stronger incentives to avoid financial distress. Consistent with a trade-off theory of capital structure, firms for whom these labor costs of distress are large choose lower leverage. The ability to borrow may also be affected by the labor composition of firms. A lender may (rightly) fear that in case of distress the recovery value of a firm that is heavily dependent on highly mobile human capital is low, and as such, not be willing to lend to such a firm.

Although our tests are suggestive of a causal relation between labor composition and capital structure, they are not conclusive in this regard. To alleviate the concern that our results are driven by spurious correlation, we include in the estimation year fixed effects, several controls for other important determinants of leverage, and different measures of talent. However, certain endogeneity concerns may remain. For example, it could be that firms with lower leverage attract more talented workers and not that the dependence of the firm on this type of highly mobile workers is the driver of the choice of capital structure. In order to rule out this reverse causality argument and other potential endogeneity concerns, we next turn to a quasi-natural experiment setting where we exploit exogenous variation in the mobility of key employees and study how the financial leverage of affected firms responds.

[20] Share price data are not available to a sufficient extent to include the asset market-to-book ratio in the regressions.

IV.B Impact of Talent Mobility on Leverage: Evidence from a 2001 Labor Law Reform in Sweden

In this section we use the implementation of a labor law reform in Sweden in 2001 as a source of exogenous variation for the mobility of talented workers, and analyze the response of Swedish firms in terms of their financial policies.

Until 2001, following the 1982 Employment Protection Act (EPA), all firms were required to follow a last-in-first-out (LIFO) policy in case they wished to lay off workers. This meant that if firms wished to reduce their labor force, they were restricted in their ability to choose exactly which workers to keep and which workers to let go. However, on January 1st, 2001, a new legislation came into effect that relaxed this requirement. In particular, the 2001 law change allowed firms with *10 employees or less* to be exempted from LIFO rules. Importantly for our study, the political situation was such that until late in 2000 it was not clear whether the reform would be implemented and exactly which firms would be eligible to loosen the LIFO requirement.[21] As such, we can think of this law change as being both exogenous and unanticipated by firms.

In our empirical analysis we make use of both the timing of the law change as well as the threshold of 10 employees to conduct a difference-in-differences analysis of the impact of the relaxation of the LIFO rule for some firms on labor mobility and leverage. We restrict the sample to the period 1998 to 2004, where 1998, 1999 and 2000 are the baseline period and 2001, 2002, 2003 and 2004 are the treatment period. We further restrict the sample to firms around the 10 employee threshold and focus on firms with at least 5 employees and at most 15 employees.

We start with the analysis of the impact of the relaxation of the LIFO rule in 2001 on the mobility of workers. Theory suggests that the relaxation of layoff restrictions would have the effect of increasing separations and increasing hires (e.g., Lazear 1990). It is natural to expect that a relaxation of layoff restrictions may lead to more layoffs. Laxer labor regulation may however also lead to an increase in the hiring rate because the commitment associated with a new hire is lower when layoffs are less costly. In our setting we would thus expect firms that are affected by the reform, and experience a permanent reduction in the layoff costs in 2001, to increase the rate of hires and layoffs after the implementation of the reform, relative to the control group of firms that is not affected by the reform. We test this hypothesis by estimating the following OLS regression:

$$Leave\ Rate_{ft} = \beta_1 \cdot Post_t + \beta_2 \cdot Treated_f + \beta_3 \cdot Post_t \times Treated_f + X'_{ft}\gamma + \Psi_f + \varepsilon_{ft}$$

where *Leave Rate*$_{ft}$ is defined as the number of workers of firm *f* that leave the firm between *t-1* and *t*, divided by the total number of workers of firm *f* at *t-1*. The matrix of controls *X* includes *Size*, *Tangibility*, *Profitability*, and *Growth*, as well as year fixed effects. The variable *Post* takes

[21] See, for example, Lindbeck et al. (2006) and von Below and Thoursie (2010) for a discussion of the political economy of the law.

the value of one in the years 2001 to 2004 and zero in the years 1998 to 2000. *Treated* is an indicator variable that takes the value of one if the firm is at or below the 10 employee threshold in 2000 and takes the value of zero if in the year 2000 the firm has more than 10 employees. Additionally, the matrix Ψ includes a set of firm fixed effects that controls for firm level time invariant characteristics. Results are reported in table 8, panel A. Column 1 shows that in treated firms, more workers leave after 2001 relative to the baseline period. In column 2 we redo the analysis but focus on highly skill-intensive firms. Specifically, we keep only firms with an average cognitive skill score at or above the 75 percentile of average cognitive skills in the sample used in column 1. Similarly, in columns 3 and 4, we restrict the sample to firms with high-skill workers as measured by leadership skills and combined (cognitive plus noncognitive) skills, respectively. Finally, in column 5, we use average firm wages to define talent-intensive firms: the sample is limited to firms with average wages at or above the 75th percentile. We can see that the difference-in-differences coefficient β_3 is significant and positive in all specifications; this suggests that after the law change, treated firms are more likely to have workers leaving compared to firms not affected by the law change. The magnitudes in columns 2—5 are larger than those of column 1, which suggests that this effect may be particularly pronounced for firms with a high fraction of talented workers.

Next, we analyze whether after 2001, treated firms increase the hiring rate of workers. We estimate the following OLS model:

$$Join\ Rate_{ft} = \beta_1 \cdot Post_t + \beta_2 \cdot Treated_f + \beta_3 \cdot Post_t \times Treated_f + X'_{ft}\gamma + \Psi_f + \varepsilon_{ft}$$

where *Join Rate*$_{ft}$ is defined as the number of workers that join firm *f* between *t-1* and *t* divided by the number of workers of firm *f* in *t-1*. Otherwise the regression is similar to the specification above studying the effect of the law change on job separations. Results are reported in panel B of table 8. In column 1, we report the difference-in-differences coefficient β_3 for the full sample. In column 2 we repeat the analysis for the companies in the highest quartile of average cognitive skills, in column 3 we focus on firms in the highest quartile of average leadership skills, and in column 4 we include firms in the highest quartile of combined (cognitive plus noncognitive) skills. Finally, in column 5 we focus the analysis on firms with average wages at or above the 75th percentile. We find that the coefficient of interest is positive in all columns of panel B, implying that treated firms have a more active hiring behavior after 2001, relative to the control group. Moreover, the effect seems to be stronger for firms that rely more heavily on talent as the coefficients in columns 2 to 5 are larger than that of column 1.

These results confirm the notion that the 2001 law change in Sweden led to an increase in labor mobility and that this was true not only for the lowest skilled workers but particularly so for talented workers. Our results are also in line with previous studies that found qualitatively similar effects of changes in labor laws on labor mobility in Sweden (von Below and Thoursie 2010) and in the US (e.g., Autor et al. 2007).

Having established that the 2001 change in Swedish labor law has an impact in terms of increased mobility of talented employees, we next turn to the analysis of the impact of this law

on firm's financial policies. In light of our previous results we conjecture that an increase in the mobility of talented workers would increase the fragility of organizations, especially those that more heavily rely on highly skilled labor. As a response to the heightened labor fragility they face, we would expect such firms to reduce their leverage after the law change.

To test this hypothesis, we employ the following regression model:

$$Leverage_{ft} = \beta_1 \cdot Post_t + \beta_2 \cdot Treated_f + \beta_3 \cdot Post_t \times Treated_f + X'_{ft}\gamma + \Psi_f + \varepsilon_{ft}$$

As before, leverage is defined as short term plus long term debt minus cash holdings, all divided by assets. In column 1 of table 9 we start by analyzing the impact of the 2001 law change on leverage in the whole sample and find a negative, albeit insignificant coefficient. Next, in columns 2 to 5, we restrict the analysis to firms that rely more heavily on talent. As in table 8, we define such firms as those at or above the highest quartile of average firm talent. In column 2 we focus on firms with average cognitive skill scores at or above the top 25th percentile in the sample and find that firms in this group significantly decrease their leverage after the law change. We also find significant effects of the law when we define talent-intensive firms based on the leadership and the combined (cognitive and noncognitive) scores. These results are reported in columns 3 and 4, respectively. Finally, in column 5 we focus on the firms that have average wages in the top quartile of the distribution and find that on average these firms also decrease leverage after 2001, although not in a statistically significant manner.

Comparing the results in columns 2 to 5 of table 9 with those in column 1, an interesting pattern emerges. Consistent with the notion that talent is the key characteristic that makes firms fragile, the magnitudes found in columns 2 to 5 are larger than those in column 1 (and statistically significantly so). Moreover, using a variety of measures for talent, we find that results tend to be statistically significant only for firms that more heavily rely on talent.[22] This suggests—consistent with our theoretical predictions—that the risk associated with higher mobility of talent is especially important in determining the capital structure of firms that more heavily rely on talent.

IV.C External Validity

One concern that may arise with our analysis so far is that our results could be specific to the setting we examine. In other words, the importance of labor fragility for firms may be particularly pronounced in Sweden. In order to establish that we are not capturing a "Sweden effect", in Appendix B we extend our analysis to the U.S. and show that leverage is negatively impacted by labor fragility. We first construct measures of labor fragility by industry using Swedish microdata and match it to Fama-French 12 industries in a panel of US firms. We find that in the cross-section, firms that operate in industries where labor fragility is higher have

[22] We note that our estimates of the effect of talent mobility on leverage could be understated because firing restrictions could make labor a relatively fixed cost. This would imply that when firing restrictions are relaxed, operational leverage decreases which would create room for financial leverage to increase (Simintzi et al. 2014).

lower leverage. We confirm this effect using changes in the enforceability of non-compete clauses across US states that exogenously affect the degree of talent mobility. Overall, we find that as labor fragility increases, leverage decreases.

In addition, we analyze the role of labor as a governance mechanism and find that when other governance measures are weak, the threat of key talent leaving the firm may be an important source of managerial incentives, in which case reducing talent mobility may negatively impact value. These tests and an extended description of the methodology can be found in Appendix B.

V. Discussion

In section III, we document that firms that approach bankruptcy lose key talent. A potential concern that may arise is that the direction of causality is not clear-cut. Specifically, in our results we cannot distinguish whether workers leave because they anticipate bankruptcy events from the possibility that the loss of the most talented workers is what ultimately causes the firm to go bankrupt. However, we note that even if it is the case that talent loss causes distress (rather than vice versa), our results still underscore the importance of labor induced fragility in firms. Therefore, the implications of our findings on key talent mobility for the leverage decisions of firms remain valid.

Furthermore, we cannot clearly distinguish between financial and economic distress (the literature in finance has devoted much effort to studying this distinction; see, e.g., Andrade and Kaplan 1998). Our results suggest that financial and economic distress may be highly correlated for firms facing labor costs of distress because of labor-induced fragility. Indeed, by losing their key employees, firms that approach financial distress may become economically distressed.

Finally, we note that our results in section III are robust to different ways of constructing the control group. In particular, our results are robust to the following: (1) an alternative sample where we construct the control group by matching on additional labor force characteristics (specifically, additionally matching on variables average worker age, leadership score, and cognitive and non-cognitive scores); and (2) an alternative sample where we use only firms in the treatment group; in this case, we use firms that have not been treated *yet* as a control group for those being treated. This addresses the criticism that treatment firms may be inherently low quality firms (or differ among other unobservable dimensions that are also correlated with leverage) relative to those in the control group. Overall, the results we obtain using these alternative methods confirm our main findings and underline the robust nature of our results. In order to conserve space we report these robustness tests in the internet appendix that accompanies the paper.

VI. Conclusion

Modern corporations rely heavily on talented employees. In the new enterprise, human capital surpasses physical capital in terms of its importance for value creation and as a source of

competitive advantage (Rajan and Zingales 2000). However, the reliance on human capital and the high mobility of skilled labor also expose firms to an added degree of fragility.

In this paper, we study labor-induced fragility in corporations by analyzing the evolution of the labor force composition as firms approach bankruptcy. We document a decrease in the ability of firms to retain talent as they approach distress. We then study how labor fragility affects financial policies. We find that the dependence of firms on highly skilled labor is associated with lower leverage in the cross-section of firms. Using a change in Swedish labor law as a source of exogenous variation for labor mobility we find that when mobility of talented workers increases, leverage decreases. This test confirms our cross-sectional results and allows us to interpret our findings in a causal manner.

Overall, the results in this paper suggest that firms' reliance on human capital may involve an additional level of risk related to the possibility of loss of key talent. By establishing a causal link between this form of labor-induced fragility and capital structure, our findings highlight the importance of studying the interplay between finance and labor, a topic that remains a fruitful area for future research.

Appendix A – Institutional Background

A.I Bankruptcy Law in Sweden

There are two main laws in Sweden that relate to corporate bankruptcy: the Swedish bankruptcy code ("Konkurslag (1987:672)") and the Swedish Company Reconstruction Code ("Lag (1996:764) om företagsrekonstruktion"). According to Swedish bankruptcy law, insolvency occurs when a debtor permanently loses the ability to service its debt. Either the insolvent firm itself or a creditor can file for bankruptcy. If a creditor files, the filing has to be approved by court. If a firm enters bankruptcy, it is always liquidated. At the start of bankruptcy, the control rights of the firm are transferred to a trustee whose main objective is to sell the firm's assets at the highest possible price. The trustee is bound by law to consider public interests, such as employment considerations. Employees are treated as unsecured senior claimants and are entitled to compensation for any unpaid wages from the year prior until one month after the bankruptcy filing. If employees are not paid in full, their wage and related claims (such as vacation pay and pension contributions) are reimbursed up to a maximum statutory amount (171,200 SEK in 2011) by the government under the Wage Guarantee Act ("Lönegarantilag (1992:497)").

Under the Company Reconstruction Code, an administrator is appointed to oversee the reorganization and to set up a reorganization plan which must be approved by the creditors[23]. Debt write-downs are limited and have to offer secured claimants full recovery and ensure at least 25% recovery to unsecured creditors. The envisaged duration of the reorganization procedure must not exceed one year. Since 2005, the Wage Guarantee Act has also been applicable to company reorganizations. For further details see Smith and Strömberg (2005).

A.II Employment Protection Legislation

The main Swedish labor law is the Employment Protection Act ("Lag (1982:80) om anställningsskydd"). According to this law, employee contracts can be terminated either collectively due to shortage of work or for individual-specific reasons. Acceptable reasons for collective redundancies include financial difficulties, strategic reorganization, or geographical relocation, but not if the employer can provide other work in the firm for affected employees. Permissible individual-specific firing reasons are, for example: disclosing sensitive information to competitors, criminal activity against the firm, assault of other workers, and disciplinary issues (e.g., skipping work, sexual harassment, bullying). The required period of notice for termination ranges from one to six months and depends on the tenure of the worker.[24] The worker is entitled to retain pay and other benefits during the notice period;

[23] If the recovery for unsecured claimants is more than 50% it requires 3/5 approval, ¾ approval if recovery is more than 25% and unanimity if recovery is less than 25%. Unanimity is always required from secured claimants.

[24] The minimum period of notice is one month if an individual has been employed by the firm for less than two years, two months if an individual has been employed between two and four years, increasing up to six months for individuals which have been employed for more than ten years.

severance pay is not required by the law.[25] The order of priority of terminations follows a "Last In, First Out" policy.[26]

Swedish labor law leaves certain aspects of labor regulation to be decided through collective agreements between employers and unions (Rönnmar, 2006). The unionization rate was 67.5% in 2011, a decline from 81.3% in 1998.[27] Collective agreements are applicable to unionized and non-unionized workers alike, and typically differ across industries and for blue-collar and white-collar workers.[28]

Overall, Swedish labor protection can be characterized as comparable to Continental Europe while being less stringent than Southern Europe, but more stringent than regulation in Anglo-Saxon countries.[29] Sweden has considerably liberalized labor regulation during the last two decades (Cahuc 2010). Reforms have primarily been related to temporary forms of employment; legalization of temporary work agencies in 1993 and an introduction of fixed-term employment in 2007 are among the most noticeable changes.

[25] http://www.doingbusiness.org/data/exploreeconomies/sweden/labor-market-regulation

[26] Firms with ten employees or less can set aside two employees, with particular importance for future activities, from this rule. When a firm has more than one operational unit, the order is determined separately within each unit. If more than one unit operates in the same geographical location, a common order for the location is determined. Workers that have been laid off have rights of priority for re-employment up to nine months after their contracts were terminated.

[27] Trade Union Density statistics retrieved from https://stats.oecd.org .

[28] The 1997 reform of the Employment Regulation Act exemplifies this difference. In the reform, the order of priority of termination was changed from an age-dependent rule to one depending on tenure. The change was immediately implemented for blue-collar workers belonging to the engineering union, while it was implemented with a lag up to four years for all white-collar workers and for blue-collar workers in the construction and retail industries (Heyman and Skedinger, 2011).

[29] See figure 1 in Skedinger (2011) for a comparison of regions. In 2008 Sweden had an EPR coefficient of 2.52. The OECD average was 2.02 while USA had 0.49, France 2.6, Germany 2.72 and UK had 1.248. *Source:* OECD Employment Protection Database, 2013 update. www.oecd.org/employment/protection

Appendix B - External Validity

A potential concern with our analysis is that our results could be specific to the setting we study. To establish that we are not capturing effects that are unique to the Swedish setting, in this appendix we extend our analysis to the US. We show that leverage is negatively impacted by labor fragility. In addition, we analyze the role of labor as a governance mechanism and find that when other governance measures are weak, the threat of key talent leaving the firm may be a source of incentives for the management.

B-I Variables and data sources

Our main setting employs US state-level changes in the enforceability of non-compete agreements as a quasi-natural experiment to study the effect of restrictions on the mobility of employees on firms' capital structure decisions. As the main explanatory variable, we use a time-varying state-level index that measures the extent to which non-compete clauses are enforced by courts in a given U.S. state. The index (henceforth *NCC index*) is from Bird and Knopf (2014), who apply the same methodology to the index construction as Garmaise (2011) and extend the latter author's index from 1992 back to 1976; the index is thus available for the years 1976-2004. The *NCC index* is based on a series of twelve questions analyzed by Malsberger (2008) that characterize the strength of each U.S. state's enforcement of non-compete clauses. Higher index values imply that a state's courts enforce more restrictive covenants not to compete. While it can theoretically range from zero to twelve, the index in practice takes values ranging from zero (e.g., California) to nine (Florida after 1996) during our sample period. Figure B-1 plots the *NCC index* for the eight U.S. states that changed the enforceability of non-compete clauses. For example, Florida increased the enforceability in 1990 as well as in 1996. The figure shows that there is not only considerable cross-sectional variation in index values--and thus in the extent of non-compete agreement enforceability--across states, but also meaningful time-series variation within states.

Non-compete clauses are primarily expected to matter in industries with high potential labor mobility of key employees. Therefore, following Garmaise (2011), we study how the enforceability of non-compete agreements interacts with *In-state Competition*, defined as in-state industry sales divided by total industry sales, where industry is defined at the two-digit NAICS level.[30] The variable *In-state competition* proxies for the labor mobility of key employees *within* the industry. To capture the notion that key workers' mobility may transcend industry boundaries, we employ the measure of inter-industry worker mobility presented in Donangelo (2014). This measure of labor mobility captures the extent to which skills are portable *across* industries. While our sample starts in 1976, the labor mobility measure is available only from 1990 onwards. To have sufficient overlap in our tests, we first match the industry-level mobility measure to the firms in our sample; we then take the time-series average of the

[30] We use historical industry information; if not available, we replace missing historical NAICS with current NAICS.

mobility measure at the state level. The resulting measure, LM_s, thus captures the average inter-industry mobility of workers in a given state. We also examine whether changes in the enforceability of non-compete clauses matter differently in industries with different degrees of labor fragility. To this end, we first map Swedish industries into the Fama-French 12 (henceforth FF12) industry classification. To measure fragility, for each industry and year, we divide the number of Swedish workers with a combined cognitive and non-cognitive test score of at least 16 (out of possible 18) by the number of test takers. To reduce the effect of compositional changes in the sample, we focus on thirty year old individuals in each year. We then transfer this measure into our U.S. sample by matching it to firms based on their FF12 industry classification. As in the case of labor mobility discussed above, we calculate the time-series average of the labor fragility measure at the state level to obtain the variable LF_s.

In our analysis, we also examine the effect of changes in the enforceability of non-compete clauses on firm value for firms with different external corporate governance. As a proxy for corporate governance, we use a state-level index of antitakeover (business combination) laws as in Bertrand and Mullainathan (2003).[31]

All our other variables are from Compustat North America. We use the following leverage measures as dependent variables: *Book Leverage* is the sum of long-term and short-term debt divided by total assets; *Market Leverage* is total debt divided by the sum of total debt and market equity; *Net Debt* is long-term plus short-term debt minus cash and marketable securities, divided by total assets. We employ the following control variables: *Ln(Tobin's Q)* is the natural logarithm of the market-to-book ratio, computed as the ratio of (book value of assets plus market value of equity minus book value of common equity) to the book value of assets; *Ln(Assets)* is the natural logarithm of total assets; *Profitability* is EBITDA divided by sales; *Tangibility* is net property, plant and equipment divided by total assets. We also construct measures of financial constraints: in different specifications, we employ an index based on a regression in Kaplan and Zingales (1997) as used in Lamont, Polk, and Saá-Requejo (2001), henceforth *KZ-index*; an index based on Whited and Wu (2002), henceforth *WW-index*; and an index based on Hadlock and Pierce (2010), henceforth *HP-index*.[32] For all three indices, higher index values denote more constrained firms.

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[31] We use the coding of business combination laws from Gormley and Matsa (2015), who extend the coding reported by Bertrand and Mullainathan (2003) to account for the adoption of business combination laws in three additional states: Oregon in 1991, Iowa in 1997, and Texas in 1997.

[32] The indices are constructed as follows; unless noted otherwise, abbreviations in italics refer to Compustat data items. *l.* is the lag operator. The *KZ-index* for a given firm-year is defined as -1.001909*[(*ib+dp*)/*l.ppent*] + 0.2826389*[(*at+prcc_f*csho-ceq-txdb*)/*at*] + 3.139193*[(*dltt+dlc*)/(*dltt+dlc+seq*)] - 39.3678*[(*dvc+dvp*)/*l.ppent*] - 1.314759*(*che*/*l.ppent*). The *WW-index* is defined as -0.091*[(*ib+dp*)/*at*] - 0.062**div* + 0.021*(*dltt*/*at*) - 0.044*[ln(*at*)] + 0.102**indsg* - 0.035*[(*sale-l.sale*)/*l.sale*], where *div* is a dummy variable indicating years in which a firm pays cash dividends (*dv*), and *indsg* is the firm's 3-digit NAICS industry sales growth. The *HP-index* is defined as -0.737**size* + 0.043**size*^{2} - 0.040**age*, where *size* is the natural log of inflation-adjusted (to 2004) book assets (*at*), and *age* is the number of years the firm has been on Compustat with a non-missing stock price (*prcc_f*); we set age equal to missing for years prior

Following convention, we exclude firms from the financial activities sector (NAICS 52 and 53), as well as utilities (NAICS 22) from the sample. We winsorize all variables (except the NCC index) at the 99th percentile; *Profitability*, *In-state Competition*, *Ln(Tobin's Q)*, *Ln(Assets)*, *Net Debt*, and all three financial constraints indices are also winsorized at the first percentile (the minimum of the other explanatory variables is zero). Summary statistics on these variables are reported in table B-1.

B-II Labor fragility and leverage in the cross-section of US firms

We first test whether a measure of labor fragility constructed using Swedish microdata helps to understand the cross-section of leverage decisions of U.S. firms. We match all industries in Sweden to FF12 industries and calculate the average skills by FF12 industry every year.[33] Figure B-2 depicts the relationship between U.S. firm leverage and industry-level labor fragility. For the sample period 1990-2005, it plots the average annual book leverage by FF12 industry against the industry-level labor fragility measure, and shows a linear fit. There is a robustly negative association between leverage and labor fragility at the industry level. In table B-2, we analyze the relationship between leverage and labor fragility in the U.S. more formally using the following model:

$$Leverage_{fit} = \alpha + \beta \cdot Labor\ Fragility_{it} + X'_{ift}\gamma + \Psi_t + \varepsilon_{ift}$$

where *Leverage* is *Book Leverage* in column 1, *Market Leverage* in column 2 and *Net Debt* in column 3. The matrix X denotes a set of control variables (*Ln(Assets)*, *Profitability*, *Ln(Tobin's Q)*, and *Tangibility*) and Ψ_t denotes year fixed effects. All explanatory variables are lagged. In these regressions, we measure industry (i) at the FF12 level; as our coefficient of interest is β, we cluster standard errors at the FF12 industry level. Our estimates, reported in table B-2, suggest an economically large and statistically significant relationship between labor fragility and leverage. The estimate of -0.98 in column 1 implies that an increase in fragility by one standard deviation is associated with a reduction in leverage as a fraction of the book value of assets by about 3.6 percentage points; given a sample average of book leverage of 27.9% (see table B-1), this corresponds to reduction in leverage of about 13%.

B-III Evidence from Exogenous Changes in Enforcement of Non-Compete Clauses across U.S. States

Non-compete clauses (also called covenants not to compete) are contractual restrictions in employment contracts aimed at limiting an employee's ability to work for a competing firm or start a competing business. They are commonly used to reduce employee turnover and limit

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to a firm's first non-missing stock price. Following Hadlock and Pierce (2010), in calculating the *HP-index*, *size* is replaced with ln($4,500 million) and *age* with thirty-seven years if the actual values exceed these thresholds.

[33] Specifically, for each industry and year, we divide the number of Swedish workers with a combined cognitive and non-cognitive test score of at least 16 (out of possible 18) by the number of test takers in a given industry and year. We find similar results with different talent-based measures (such as measures based on cognitive or non-cognitive skills only, as well as wages).

the transfer of trade secrets and firm knowledge to competitors (e.g., Kaplan and Stromberg 2003; Marx, Strumsky, and Fleming 2009). The extent to which these clauses are enforceable differs across U.S. states. For example, while California invalidates most types of non-compete clauses in employment contracts, most states' courts enforce some forms of covenants not to compete. Moreover, there are considerable differences between U.S. states with regard to the types of clauses that are enforceable. For example, state courts differ regarding the extent to which restrictions on the dealings of former employees with former clients of the firm are permitted, the required compensation for non-compete clauses, and the geographic and temporal scope of such clauses.

We hypothesize that a firm chooses a more conservative capital structure if it faces a higher risk of rival firms poaching its most talented employees, or talented employees leaving to pursue other opportunities. As we documented in the main body of the paper, this risk may be particularly severe when the firm is in financial distress. Consequently, we expect that a reduction in the risk of loss of talented employees should be reflected in higher debt ratios. To identify this effect, we use plausibly exogenous variation in the enforceability of non-compete clauses in employment contracts across US states and years (see figure B-1). The idea is that the risk of poaching and loss of talented employees can be (partly) mitigated by non-compete clauses in employment contracts, if such clauses are enforced by the applicable state's courts. Garmaise (2011) shows that the state-level non-compete enforceability laws indeed reduce executive mobility.

B-III.A Effect on Leverage

Our main methodology is similar to Garmaise (2011), who argues that non-compete clauses typically have limited geographical scope and hence, that the extent to which state enforcement of non-compete clauses matters for firms depends on the competition faced within a given state.[34] We therefore expect the effect of the enforceability of non-compete clauses to matter primarily in cases where firms face considerable in-state competition.

We estimate the following firm-level regressions:

$$Leverage_{ft} = \theta \cdot (NCC\ Index_{st}) \cdot (In-state\ Competition_{jst}) + \beta \cdot NCC\ Index_{st} + \varphi \cdot In-state\ Competition_{jst} + X'_{jft}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where the subscripts *f, j, s*, and *t* denote firm, industry, state, and year, respectively. θ is our coefficient of interest, given by the interaction of the non-competition index with in-state competition. As dependent variables, we use *Book Leverage, Market Leverage,* and *Net Debt.* Matrix *X* includes our control variables *Ln(Assets), Profitability, Tangibility*, and *Ln(Market-to-Book)*. Matrix Ψ includes firm fixed effects, to control for state- and firm-level time-invariant unobserved factors; Ψ also includes year-industry fixed effects to control for time-varying industry shocks. All our explanatory variables are lagged by one year. We cluster standard

[34] We use the location of firms' headquarters in order to assign the relevant state.

errors at the state level. Our sample period is 1976-2005 (determined by the availability of the *NCC Index* from Bird and Knopf 2014 and Garmaise 2011).

Columns 1—3 in table B-3 report the results of the leverage tests. We find that while firms in competitive industries have lower leverage (consistent with the findings in, for example, Valta 2012), tougher enforcement of non-compete clauses by state courts mitigates this effect. In terms of economic magnitudes, consider an increase in the NCC index from zero to four; this corresponds to a change from no enforceability of non-compete clauses to the median level of enforceability encountered in the sample. According to the estimates in column one, with other variables kept constant at their sample means, an increase in the NCC index from zero to four increases debt by 1.03% of total assets; average debt in the sample is 28% of assets, so this implies an increase in leverage of about 4%. Column two examines the effect on market leverage. A change in the NCC index by four units increases market leverage by 1.1%. Finally, the dependent variable used in column three is net debt. We find that an increase in the NCC index by four units increases net debt by about 1.3% of total assets; with average net debt in the sample of about 12.4% of total assets, this implies an increase in net debt of about 10.5%.

So far we used the variable *In-state competition* as a way to proxy for the mobility of key employees within the industry. However, workers could also switch jobs to a different industry. To capture the notion that worker mobility may transcend industry boundaries, we employ the proxy of worker mobility presented in Donangelo (2014), which measures the extent to which skills are portable across industries. We estimate the following model:

$$Leverage_{ft} = \theta \cdot (NCC\ Index_{st}) \cdot (LM_s) + \beta \cdot NCC\ Index_{st} + X'_{jft}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

The variable *LM* is constructed by taking the average of the variable labor mobility from Donangelo (2014) at the state level.[35] The coefficient of interest is θ and measures the degree to which labor mobility may exacerbate the impact of non-compete clauses on leverage. Table B-4, columns 1—3, presents the results. Consistent with table B-3, we find that restricting the mobility of workers through tougher enforcement of non-compete clauses leads to an increase in leverage for firms in states with high cross-industry labor force mobility. The coefficient in column 1 implies that the effect of non-compete enforceability on firm leverage is different in high and low labor mobility states: while the effect is negative in states with low inter-industry mobility (such as the state of Louisiana, where $LM_s = -0.360$), it is positive in states with higher mobility (such as the state of Massachusetts, where $LM_s = 0.546$) .

Next, we confirm the robust nature of our findings by employing in this setting the measures of labor fragility constructed using Swedish micro-data. We first match the FF12 industry to the sample of U.S. firms and then average the measures of labor fragility by state. We then re-estimate the model by replacing *LM* with *LF* (our measure of labor fragility). The results are presented in columns 4—6 of table B-4. They show that increases in the enforceability of non-

[35] We abuse notation and call our variable *LM,* which is the same variable name used in Donangelo (2014). For additional details regarding the construction of this measure please refer to that article.

compete agreements have a positive and significant effect on two of our three leverage measures in states in which labor fragility is high.

Our results on leverage so far are consistent with two interpretations. First, consistent with a trade-off model of capital structure, the present value of labor costs of financial distress is reduced through increased enforceability of non-compete agreements, and firms may thus find it optimal to adjust leverage upwards. Second, the firm's debt capacity may increase following increases in the enforceability of non-compete clauses: key workers are less likely to leave in times of distress, thus increasing firms' recovery values in bankruptcy and creditors' ex ante willingness to lend. In an attempt to evaluate the relative strength of the two potential effects, we compare leverage decisions of two groups of firms: financially constrained firms and firms that are not constrained. If an adjustment in leverage is primarily observed in the group of financially unconstrained firms, then it is more plausible that the first mechanism dominates; in contrast, if one observes that leverage is mainly adjusted by financially constrained firms, this would indicate that changes in enforceability of non-compete agreements primarily affect firms' debt capacity.

We use three synthetic indices that measure financial constraints (*KZ-index*, *WW-index*, and *HP-index*) to group firms into constrained and unconstrained firms. We categorize a firm as constrained (unconstrained) in a given year if the relevant financial constraints index takes on a value that is higher (lower) than the sample median. Results are reported in table B-5; panel A shows results for firms categorized as unconstrained, while panel B shows the sub-sample of financially constrained firms. Columns 1—3 use the *WW-index* to categorize firms, columns 4—6 use the *KZ-index*, and columns 7—9 employ the *HP-index*. Overall, the results show that following an increase in enforceability of non-compete clauses, it is primarily financially unconstrained firms that increase leverage and debt issuance; this lends support to the trade-off theory argument.

B-III.B Effect on Firm Value

We now test whether unilaterally enhancing the contract space for firms through the possibility of restricting the mobility of key employees has a discernible effect on firm value. The effect is theoretically ambiguous. On the one hand, there may be a decrease in firm value due to a reduction of the threat of key employees leaving, a threat that keeps the moral hazard of the top management at check (see Acharya, Myers, and Rajan 2012). On the other hand, a reduction in labor fragility through increased enforceability on non-compete clauses should limit exposure of firms to inefficient talent loss in times of distress, thereby increasing firm value. We test the effect of the change in enforceability of non-compete clauses on firm value in column 1 of table B-6. The results show that in highly competitive industries, an increase in the enforceability of non-compete clauses increases firm value as measured by Tobin's Q. In such industries, the scope for bottom-up corporate governance (Landier, Sauvagnat, Sraer and Thesmar 2013) is limited as product market competition fulfils that role (Giroud and Mueller 2010). In that case, limiting labor mobility has a positive impact on firm value as it reduces the

scope for inefficient talent exits. On the other hand, when product market competition is weak, the possibility of talent leaving has an important governance role and reducing mobility negatively impacts firm value.

In order to further investigate whether labor fragility can act as an internal governance force in organizations, we also analyze whether the impact of restricting labor mobility on firm value depends on other corporate governance forces. In particular, we divide our sample into two groups: firms that operate in a state that adopted business combination laws (*BC*=1) and firms whose state did not adopt such legislation (*BC*=0). Business combination laws are laws that limit the effectiveness of the market for corporate control as a governance mechanism by imposing obstacles to takeovers. These anti-takeover laws have been used in the past to study how governance affects managerial actions and value (e.g., Bertrand and Mullanaithan 2003, and, more recently, Gormley and Matsa 2015). We propose that when external governance is relatively strong, there is little room for internal governance to create value, in which case exogenous reductions of labor fragility are expected to have positive valuation effects. However, when external governance is weak, the implicit (and credible) threat that key employees may abandon the firm in case of distress may incentivize the management to keep to the straight and narrow, and, thus, exogenous reductions of labor fragility may have negative value consequences. We thus expect that increases in the enforceability of non-compete clauses lead to an increase in value for firms incorporated in states without business combination laws, while it is expected to lead to a decrease in value for firms for which the anti-takeover laws are applicable. To test this hypothesis we estimate the following model for both the states where *BC*=1 and those where *BC*=0:

$$Ln(Tobin's\ Q)_{ft} = \theta \cdot (NCC\ Index_{st}) + X'_{jft}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

The results are presented in columns 2 and 3 of table B-6. Column 2 shows the impact of increasing the enforceability of non-compete clauses on Tobin's Q when business combination laws are not present. The positive coefficient implies that in this scenario, when external governance is stronger, reducing labor fragility leads to an increase in firm value. On the other hand, the estimates in column 3 show that when external governance is weak, reducing mobility and consequently reducing labor fragility may negatively impact value. In this case, the threat of loss of key employees could act as an important governance mechanism that puts the moral hazard of top management in check. Limiting the credibility of such threats could have a net negative impact on firm value.

B-III.C Discussion

In this section, we employed a natural experiment setting that exploited the staggered change in enforceability of non-compete agreements across U.S. states. As these changes were primarily adopted through precedent-setting decisions by state courts, they can be considered

to be unexpected and exogenous for the firms located in a given state.[36] Stronger enforceability of non-compete clauses reduces the risk that talented workers abandon the firm in financial distress by limiting such workers' outside employment options. The results in this section suggest that as the risk of loss of talented workers (both in "normal" times, as well as in times of financial distress) is reduced through stronger enforceability of non-compete clauses, firms increase their leverage. This is consistent with a trade-off model of capital structure, in which the present value of labor costs of financial distress is reduced through non-compete agreements, and firms thus find it optimal to adjust leverage upwards.

The impact of labor mobility on firm value is ambiguous. When effective governance mechanisms are in place, either through strong discipline imposed on the firm in the product market or through an unhindered market for corporate control, labor fragility negatively affects firm value, and legal restrictions on the mobility of human capital (through state courts' enforcement of non-compete agreements) have a positive impact on firm value. In contrast, when external governance is weak, the threat of key employees leaving the firm may act as a powerful governance force, in which case increasing labor fragility increases firm value.

[36] The change in the rules governing the enforcement of non-compete clauses in Florida resulted from the actions of the state legislature, not from a court (Garmaise 2011). We note that our results are robust to the exclusion of the state of Florida from the sample.

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Table 1: **Matching summary statistics**

This table presents the summary statistics for different characteristics of the firms in the treatment and control groups at *t-5* relative to the start of the bankruptcy. The first three columns refer to the control group, while columns 4 to 6 refer to the treatment group. In the last column we report the p-value from the t-test of the difference between the means of the characteristics of firms in treatment and control groups. Firms in the treatment group are those that file for bankruptcy between 2003 and 2011. The matching procedure used to construct the control group is described in detail in section II of the paper.

	Control			**Treatment**			**Difference**
Variable	**Obs.**	**Mean**	**SD**	**Obs.**	**Mean**	**SD**	**t-test (p-val.)**
Ln(Assets)	3,470	8.5592	1.1508	3,470	5.5184	1.1855	0.1452
Return on Assets (%)	3,470	0.0898	0.2216	3,470	0.0835	0.2332	0.2488
Leverage	3,470	0.1000	0.2908	3,470	0.1062	0.2977	0.3774
Number of Employees	3,470	24.0902	112.9628	3,470	26.1329	115.7061	0.4568
Avg. combined skill	3,470	9.7133	1.7842	3,470	9.7060	1.8315	0.8671
Avg. wage	3,470	1976.2940	684.5137	3,470	1978.4160	710.9671	0.8992
Avg. age (not matched)	3,470	38.1062	6.3096	3,470	37.4265	6.5233	0.0000
Avg. cognitive (n. m.)	3,470	4.7859	1.1415	3,470	4.7757	1.1493	0.7107
Avg. company experience (n. m.)	3,470	4.7289	2.6212	3,470	3.8195	2.5328	0.0000
Avg. education years (n. m.)	3,470	10.9991	1.1893	3,470	11.0387	1.1573	0.1593
Avg. industry experience (n. m.)	3,470	6.0846	2.6954	3,470	5.6791	2.6484	0.0000
Avg. leadership (n. m.)	3,239	4.9885	1.1167	3,242	4.9833	1.1051	0.853

Table 2: **Summary statistics**

This table reports summary statistics for the different samples used in the paper. Panel A presents the summary statistics for individuals included in our analysis of the selection of workers who leave or join firms approaching bankruptcy in Sweden; panel B presents the sub-sample used when controlling for hierarchy fixed effects. Panel C reports the summary statistics for the firms in our study of capital structure. Panel D reports the summary statistics for the firms included in the law change quasi-experiment analysis discussed in section IV of the paper. The construction of the different samples and variables are explained in section II of the paper.

Panel A: Individual characteristics - baseline sample (1998–2010)

	All individuals			Only military test takers		
Variable	**Obs.**	**Mean**	**SD**	**Obs.**	**Mean**	**SD**
Leave	886,015	0.2234	0.4166	361,474	0.2052	0.4038
Join	886,015	0.2663	0.4420	361,474	0.2423	0.4285
Talent Cognitive				361,474	0.1489	0.3560
Talent Leadership				361,474	0.1431	0.3501
Talent Combined				361,474	0.1325	0.3390
Talent Wage	886,015	0.0714	0.2576			
Age	886,015	38.1656	13.5114	361,474	35.4999	10.1390
Experience in company	886,015	5.1924	4.8518	361,474	5.3451	4.8122
Experience in industry	886,015	6.8395	4.8678	361,474	7.2770	4.8580
Ln(Years of education)	886,015	2.3929	0.2174	361,474	2.4283	0.1602
Ln(Wage)	886,015	7.3162	0.9635	361,474	7.5454	0.7994
Female	886,015	0.3062	0.4609			

Table 2: **Summary statistics [continued]**

Panel B: Individual characteristics (2001–2010)

	All individuals			Only military test takers		
Variable	**Obs.**	**Mean**	**SD**	**Obs.**	**Mean**	**SD**
Leave	530,161	0.1813	0.3853	228,208	0.1719	0.3773
Join	530,161	0.2032	0.4024	228,208	0.1908	0.3930
Talent Cognitive				228,208	0.1370	0.3438
Talent Leadership				228,208	0.1330	0.3296
Talent Combined				228,208	0.1240	0.3296
Talent Wage	530,161	0.0786	0.2691			
Age	530,161	40.4301	12.7247	228,208	37.6361	9.7416
Experience in company	530,161	6.0932	5.2419	228,208	6.1817	5.1761
Experience in industry	530,161	8.2235	5.0727	228,208	8.5868	4.9998
Ln(Years of education)	530,161	2.4090	0.2144	228,208	2.4370	0.1587
Ln(Wage)	530,161	7.5448	0.7078	228,208	7.7164	0.5715
Female	530,161	0.2942	0.4557			

Panel C: Firm characteristics - full sample (1998-2010)

Variable	**Obs.**	**Mean**	**SD**
Leverage (%)	230,254	11.4713	27.0710
Lag Avg. Cognitive Score	230,254	4.8799	1.0656
Lag Avg. Leadership Score	216,222	5.0733	1.0297
Lag Avg. Combined Score	230,254	9.8595	1.0656
Lag Avg. Wage	230,254	1806.6330	624.2867
Lag Tangibility	230,254	0.3098	0.2517
Lag Profitability	230,254	0.0723	0.1011
Lag Size	230,254	9.1056	1.4192
Growth	230,254	5.2845	4.2349

Panel D: Firm characteristics - quasi–experiment sample (1998–2004)

	Full sample			High talent firms		
Variable	**Obs.**	**Mean**	**SD**	**Obs.**	**Mean**	**SD**
Leave rate	89,544	0.3803	0.4872	18,596	0.4054	0.5034
Join rate	89,544	0.3838	0.4914	18,596	0.4128	0.5040
Leverage (%)	89,544	0.7572	30.5750	18,596	-5.8041	29.5767
Ln(Assets)	89,544	8.5160	0.9307	18,596	8.6310	1.0062
Tangibility	89,544	0.2469	0.2363	18,596	0.1757	0.2001
Profitability	89,544	0.0765	0.1460	18,596	0.0721	0.1839
Growth	89,544	7.5625	2.9374	18,596	7.5840	2.7075

Table 3: **Selection of workers that leave firms approaching distress**

This table shows the composition of workers that leave firms approaching distress. In panel A we report coefficients from estimating the following OLS regression:

$$\begin{aligned} Leave_{ift} &= \alpha + \beta \cdot \text{Close to Bankruptcy}_{ft} + \theta \cdot \left(\text{Talent}_{ift}\right) \cdot \left(\text{Close to Bankruptcy}_{ft}\right) + \mu \cdot \text{Talent}_{ift} + \gamma \cdot X'_{ift} \\ &+ \delta \cdot \text{Close to Bankruptcy}_{ft} \cdot X'_{ift} + \Psi_{ft} + \varepsilon_{ift} \end{aligned}$$

Leave, the dependent variable, is a dummy variable that takes the value of one in the year the worker leaves the firm and zero otherwise. *Close to Bankruptcy* is a dummy variable that takes the value of one if the firm is in close proximity to bankruptcy (within three years) and zero otherwise. *Talent* is *Talent Cognitive* in column 2, *Talent Leadership* in column 3, *Talent Combined* in column 4, and *Talent Wage* in column 5. The matrix X includes *Age*, *Experience in Company*, *Experience in Industry* and a *Female* dummy. Ψ includes firm fixed effects and year-industry fixed effects. The regressions in columns 1 to 4 also include military enrollment period fixed effects. The sample used in panel A spans the period 1998–2010. In panel B we add hierarchy fixed effects to the specifications in panel A; due to data availability our sample period in panel B is 2001–2010. In panel C we use the same specification as in panel B, but the sample only includes workers that transition into unemployment. In panel D we use the same specification as in panel A with a sample that only includes firms with more than 10 employees. The sample and variable construction is detailed in section II of the paper. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Full sample

	(1)	(2)	(3)	(4)	(5)
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0567***	0.0223	0.0173	0.0230	0.0426*
	(0.006)	(0.045)	(0.045)	(0.046)	(0.026)
Close to bankruptcy × Talent		0.0183***	0.0166***	0.0201***	0.0178***
		(0.005)	(0.006)	(0.005)	(0.005)
Talent		0.0009	0.0139***	0.0113***	0.0219***
		(0.002)	(0.003)	(0.002)	(0.003)
Close to bankruptcy × Age		0.0003	0.0003	0.0003	-0.0007***
		(0.000)	(0.000)	(0.000)	(0.000)
Age		-0.0031***	-0.0032***	-0.0031***	-0.0024***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Company		-0.0022**	-0.0022**	-0.0022**	-0.0027***
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in Company		-0.0088***	-0.0088***	-0.0088***	-0.0077***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in Industry		0.0045***	0.0045***	0.0045***	0.0050***
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in Industry		0.0008	0.0008	0.0008	-0.0019***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of Education)		-0.0011	0.0013	-0.0011	0.0082
		(0.018)	(0.018)	(0.018)	(0.011)
Ln(Years of Education)		0.0434***	0.0385***	0.0388***	-0.0083
		(0.011)	(0.011)	(0.011)	(0.005)
Close to bankruptcy × Female					-0.0039
					(0.003)
Female					-0.0234***
					(0.002)
Ln(Wage)		-0.0706***	-0.0707***	-0.0706***	-0.0876***
		(0.002)	(0.002)	(0.002)	(0.001)
Firm and Industry × Year F.E.	Yes	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	Yes	No
Observations	361,474	361,474	361,474	361,474	886,015
R-squared	0.154	0.175	0.176	0.176	0.176

Table 3: **Selection of workers that leave firms approaching distress [continued]**

Panel B: Controlling for hierarchy fixed effects

	(1)	(2)	(3)	(4)
Talent measure:	Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0733	0.0681	0.0702	0.0519
	(0.063)	(0.063)	(0.063)	(0.039)
Close to bankruptcy × Talent	0.0211***	0.0209***	0.0177***	0.0206***
	(0.006)	(0.007)	(0.006)	(0.005)
Talent	-0.0038	0.0108***	0.0109***	0.0003
	(0.003)	(0.003)	(0.003)	(0.003)
Close to bankruptcy × Age	-0.0004	-0.0004	-0.0004	-0.0011***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	-0.0026***	-0.0027***	-0.0027***	-0.0013***
	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Company	-0.0035***	-0.0035***	-0.0035***	-0.0038***
	(0.001)	(0.001)	(0.001)	(0.001)
Experience in Company	-0.0066***	-0.0066***	-0.0066***	-0.0052***
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in Industry	0.0059***	0.0059***	0.0059***	0.0063***
	(0.001)	(0.001)	(0.001)	(0.001)
Experience in Industry	-0.0008	-0.0007	-0.0008	-0.0029***
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of Education)	-0.0148	-0.0125	-0.0134	0.0074
	(0.025)	(0.025)	(0.025)	(0.017)
Ln(Years of Education)	0.0532***	0.0482***	0.0475***	0.0098*
	(0.013)	(0.013)	(0.013)	(0.006)
Close to bankruptcy × Female				0.0015
				(0.004)
Female				-0.0213***
				(0.002)
Ln(Wage)	-0.0439***	-0.0441***	-0.0440***	-0.0620***
	(0.004)	(0.004)	(0.004)	(0.002)
Firm and Industry × Year F.E.	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	No
Hierarchy F.E.	Yes	Yes	Yes	Yes
Observations	228,208	228,208	228,208	530,161
R-squared	0.142	0.142	0.142	0.125

Table 3: **Selection of workers that leave firms approaching distress [continued]**

Panel C: Workers transitioning into unemployment

	(1)	(2)	(3)	(4)	(5)
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0076***	0.0459**	0.0472**	0.0449**	0.0313**
	(0.003)	(0.021)	(0.021)	(0.021)	(0.015)
Close to bankruptcy × Talent		0.0014	0.0019	-0.0003	-0.0003
		(0.003)	(0.003)	(0.003)	(0.003)
Talent		-0.0105***	-0.0107***	-0.0112***	-0.0008
		(0.002)	(0.002)	(0.002)	(0.002)
Close to bankruptcy × Age		0.0002	0.0002	0.0002	0.0005***
		(0.000)	(0.000)	(0.000)	(0.000)
Age		0.0007***	0.0007***	0.0006***	0.0006***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in company		-0.0006	-0.0006	-0.0007	-0.0009
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in company		-0.0057***	-0.0057***	-0.0057***	-0.0063***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in industry		0.0004	0.0004	0.0004	-0.0001
		(0.000)	(0.000)	(0.000)	(0.000)
Experience in industry		-0.0021***	-0.0021***	-0.0021***	-0.0013***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Ln(Years of education)		-0.0181**	-0.0186**	-0.0176**	-0.0152***
		(0.008)	(0.008)	(0.008)	(0.006)
Ln(Years of education)		0.0064	0.0058	0.0066	0.0059*
		(0.006)	(0.006)	(0.006)	(0.003)
Close to bankruptcy × Female					0.0079***
					(0.002)
Female					0.0035***
					(0.001)
Ln(Wage)		-0.0491***	-0.0489***	-0.0490***	-0.0245***
		(0.004)	(0.004)	(0.004)	(0.002)
Firm and Industry × Year F.E.	Yes	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	Yes	No
Hierarchy F.E.	Yes	Yes	Yes	Yes	Yes
Observations	228,208	228,208	228,208	228,208	530,161
R-squared	0.087	0.114	0.114	0.114	0.081

Table 3: **Selection of workers that leave firms approaching distress [continued]**

Panel D: Firms with more than 10 employees

	(1)	(2)	(3)	(4)	(5)
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0452***	0.0560	0.0513	0.0576	0.0502*
	(0.006)	(0.044)	(0.045)	(0.045)	(0.027)
Close to bankruptcy × Talent		0.0127**	0.0095	0.0150***	0.0103**
		(0.005)	(0.006)	(0.005)	(0.005)
Talent		0.0024	0.0193***	0.0151***	0.0422***
		(0.003)	(0.003)	(0.003)	(0.003)
Close to bankruptcy × Age		-0.0001	-0.0001	-0.0001	-0.0008***
		(0.000)	(0.000)	(0.000)	(0.000)
Age		-0.0024***	-0.0024***	-0.0024***	-0.0020***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in company		-0.0029***	-0.0029***	-0.0029***	-0.0031***
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in company		-0.0083***	-0.0083***	-0.0083***	-0.0074***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in industry		0.0048***	0.0049***	0.0049***	0.0052***
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in industry		0.0008	0.0008	0.0008	-0.0014**
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of education)		-0.0125	-0.0102	-0.0129	0.0023
		(0.018)	(0.018)	(0.018)	(0.011)
Ln(Years of education)		0.0705***	0.0648***	0.0654***	0.0118**
		(0.010)	(0.010)	(0.010)	(0.005)
Close to bankruptcy × Female					-0.0024
					(0.004)
Female					-0.0280***
					(0.002)
Ln(Wage)		-0.0974***	-0.0976***	-0.0974***	-0.1085***
		(0.002)	(0.002)	(0.002)	(0.001)
Firm and (Industry × Year) F.E.	Yes	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	Yes	No
Observations	308,321	308,321	308,321	308,321	758,128
R-squared	0.143	0.174	0.174	0.174	0.183

Table 4: **Selection of workers that join firms approaching distress**

This table shows the composition of workers that join firms approaching distress. In panel A we report coefficients from estimating the following OLS regression:

$$\begin{aligned} Join_{ift} &= \alpha + \beta \cdot \text{Close to Bankruptcy}_{ft} + \theta \cdot (\text{Talent}_{ift}) \cdot \big(\text{Close to Bankruptcy}_{ft}\big) + \mu \cdot \text{Talent}_{ift} + \gamma \cdot X'_{ift} \\ &+ \delta \cdot \text{Close to Bankruptcy}_{ft} \cdot X'_{ift} + \Psi_{ft} + \varepsilon_{ift} \end{aligned}$$

Join, the dependent variable, is a dummy variable that takes the value of one in the year the worker joins the firm and zero otherwise, *Close to Bankruptcy* is a dummy variable that takes the value of one if the firm is in close proximity to bankruptcy (within three years) and zero otherwise. *Talent* is *Talent Cognitive* in column 2, *Talent Leadership* in column 3, *Talent Combined* in column 4 and *Talent Wage* in column 5. The matrix X includes *Age*, *Experience in Industry* and a *Female* dummy. Ψ includes firm fixed effects and year-industry fixed effects. The regressions in columns 1 to 4 also include military enrollment period fixed effects. The sample used in panel A spans the period 1998–2010. In panel B of the table we add hierarchy fixed effects to the specifications in panel A; due to data availability our sample period in panel B is 2001–2010. The sample and variable construction is detailed in the data section of the paper (section II). Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Full sample

	(1)	(2)	(3)	(4)	(5)
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.0143*	-0.1306***	-0.1338***	-0.1316***	-0.0531***
	(0.008)	(0.042)	(0.042)	(0.042)	(0.020)
Close to bankruptcy × Talent		0.0042	-0.0011	0.0028	0.0023
		(0.006)	(0.006)	(0.005)	(0.004)
Talent		-0.0100***	-0.0067**	-0.0048*	0.0258***
		(0.003)	(0.003)	(0.003)	(0.002)
Close to bankruptcy × Age		-0.0003	-0.0002	-0.0003	-0.0002
		(0.000)	(0.000)	(0.000)	(0.000)
Age		0.0006**	0.0006**	0.0005**	-0.0016***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Industry		0.0058***	0.0058***	0.0058***	0.0046***
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in Industry		-0.0365***	-0.0365***	-0.0365***	-0.0381***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of Education)		0.0316	0.0331*	0.0321*	0.0033
		(0.019)	(0.019)	(0.019)	(0.009)
Ln(Years of Education)		-0.0376***	-0.0393***	-0.0399***	-0.0405***
		(0.010)	(0.010)	(0.010)	(0.005)
Close to bankruptcy × Female					-0.0033
					(0.003)
Female					-0.0140***
					(0.002)
Ln(Wage)		-0.0530***	-0.0528***	-0.0528***	-0.0532***
		(0.002)	(0.002)	(0.002)	(0.001)
Firm and Industry × Year F.E.	Yes	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	Yes	No
Observations	361,474	361,474	361,474	361,474	886,015
R-squared	0.197	0.273	0.273	0.273	0.292

Table 4: **Selection of workers that join firms approaching distress [continued]**

Panel B: Controlling for hierarchy fixed effects

	(1)	(2)	(3)	(4)
Talent measure:	Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.1492***	-0.1526***	-0.1491***	-0.0740**
	(0.050)	(0.049)	(0.049)	(0.029)
Close to bankruptcy × Talent	0.0017	-0.0038	0.0012	-0.0020
	(0.008)	(0.007)	(0.007)	(0.004)
Talent	-0.0097***	-0.0045	-0.0031	0.0237***
	(0.004)	(0.003)	(0.004)	(0.003)
Close to bankruptcy × Age	-0.0002	-0.0002	-0.0002	-0.0002
	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.0012***	0.0012***	0.0012***	-0.0006***
	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Industry	0.0050***	0.0050***	0.0050***	0.0034***
	(0.001)	(0.001)	(0.001)	(0.001)
Experience in Industry	-0.0294***	-0.0294***	-0.0294***	-0.0298***
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of Education)	0.0380*	0.0394*	0.0381*	0.0137
	(0.023)	(0.022)	(0.022)	(0.009)
Ln(Years of Education)	0.0013	-0.0010	-0.0013	-0.0033
	(0.010)	(0.010)	(0.010)	(0.005)
Close to bankruptcy × Female				0.0015
				(0.004)
Female				-0.0113***
				(0.002)
Ln(Wage)	-0.0464***	-0.0463***	-0.0463***	-0.0420***
	(0.004)	(0.004)	(0.004)	(0.002)
Firm, Industry × Year FE	Yes	Yes	Yes	Yes
Enrollment Period FE	Yes	Yes	Yes	No
Hierarchy FE	Yes	Yes	Yes	Yes
Observations	228,208	228,208	228,208	530,161
R-squared	0.233	0.233	0.233	0.235

Table 5: **Placebo test**

This table shows a placebo test. We replicate the analysis of panel A of table 3 and panel A of table 4 but for a placebo event period. More specifically, we keep the composition of treatment and control groups but define the sample period as *t-8* to *t-4* relative to bankruptcy. Further, the variable *Close to bankruptcy* takes a value of one in periods *t-6* to *t-4* (instead of *t-3* to *t-1* as in our main analysis) for firms that eventually go bankrupt. In panel A of this table we present the placebo analysis of the composition of workers leaving firms in the treatment group. In panel B we present the placebo results of the composition of workers that join treatment firms. The regressions in columns 1 to 3 include military enrollment period fixed effects. The sample used spans the period 1998–2007. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Workers leaving bankrupt firms

	(1)	(2)	(3)	(4)
Talent measure:	Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.0036	-0.0023	-0.0019	0.0226
	(0.053)	(0.053)	(0.052)	(0.031)
Close to bankruptcy × Talent	-0.0012	0.0015	0.0007	0.0081
	(0.005)	(0.005)	(0.006)	(0.005)
Talent	0.0060**	0.0189***	0.0154***	0.0442***
	(0.003)	(0.003)	(0.003)	(0.002)
Close to bankruptcy × Age	-0.0002	-0.0002	-0.0002	-0.0004
	(0.000)	(0.000)	(0.000)	(0.000)
Age	-0.0021***	-0.0021***	-0.0021***	-0.0017***
	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Company	-0.0004	-0.0004	-0.0004	-0.0004
	(0.001)	(0.001)	(0.001)	(0.001)
Experience in Company	-0.0093***	-0.0094***	-0.0093***	-0.0084***
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in Industry	0.0009	0.0010	0.0009	0.0009
	(0.001)	(0.001)	(0.001)	(0.001)
Experience in Industry	0.0013*	0.0013*	0.0013*	-0.0011*
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Education years)	0.0039	0.0033	0.0032	-0.0033
	(0.020)	(0.020)	(0.019)	(0.010)
Ln(Education years)	0.0709***	0.0662***	0.0668***	0.0097*
	(0.012)	(0.012)	(0.012)	(0.005)
Close to bankruptcy × Female				-0.0037
				(0.004)
Female				-0.0280***
				(0.002)
Ln(Wage)	-0.1004***	-0.1006***	-0.1004***	-0.1089***
	(0.003)	(0.003)	(0.003)	(0.002)
Firm, Industry × Year F.E.	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	No
Observations	245,573	245,573	245,573	589,558
R-squared	0.166	0.167	0.141	0.166

Table 5: **Placebo test [continued]**

Panel B: Workers joining bankrupt firms

	(1)	(2)	(3)	(4)
Talent measure:	Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.0814	-0.0838	-0.0770	-0.0176
	(0.053)	(0.053)	(0.053)	(0.035)
Close to bankruptcy × Talent	0.0029	-0.0012	0.0090	-0.0021
	(0.006)	(0.006)	(0.006)	(0.005)
Talent	-0.0121***	-0.0071**	-0.0101***	0.0142***
	(0.003)	(0.003)	(0.003)	(0.003)
Close to bankruptcy × Age	-0.0002	-0.0002	-0.0002	-0.0003
	(0.001)	(0.001)	(0.001)	(0.000)
Age	0.0006**	0.0006**	0.0006**	-0.0014***
	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in Industry	0.0054***	0.0054***	0.0054***	0.0043***
	(0.002)	(0.002)	(0.002)	(0.001)
Experience in Industry	-0.0437***	-0.0438***	-0.0438***	-0.0448***
	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Education years)	0.0166	0.0177	0.0147	-0.0050
	(0.018)	(0.018)	(0.019)	(0.009)
Ln(Education years)	-0.0174	-0.0197	-0.0184	-0.0294***
	(0.014)	(0.014)	(0.014)	(0.006)
Close to bankruptcy × Female				0.0001
				(0.004)
Female				-0.0153***
				(0.002)
Ln(Wage)	-0.0431***	-0.0429***	-0.0430***	-0.0475***
	(0.003)	(0.003)	(0.003)	(0.002)
Firm, Industry × Year F.E.	Yes	Yes	Yes	Yes
Enrollment Period F.E.	Yes	Yes	Yes	No
Observations	245,573	245,573	245,573	589,558
R-squared	0.326	0.326	0.326	0.344

Table 6: **Destination of workers that leave bankrupt firms**

In this table we analyze the destination of workers that leave treatment and control firms. We report coefficients from estimating the following OLS regression:

$$\begin{aligned} Y_{ift} &= \alpha + \beta \cdot \text{Close to Bankruptcy}_{ft} + \theta \cdot (\text{Talent}_{ift}) \cdot \left(\text{Close to Bankruptcy}_{ft}\right) + \mu \cdot \text{Talent}_{ift} + \gamma \cdot X'_{ift} \\ &+ \delta \cdot \text{Close to Bankruptcy}_{ft} \cdot X'_{ift} + \Psi_{ft} + \varepsilon_{ift} \end{aligned}$$

In panel A, Y is *Same industry*, a dummy variable that takes the value of one if the worker's new job is in the same industry of his previous job. Panel B reports the results when *New region* is used as the as dependent variable, where *New region* is a dummy variable that takes the value of one when a worker takes a job in a different geographic region. In panel C, *New firm size* is the dependent variable and it is defined as $Ln\,(Number\ of\ employees)$ of the new firm. In panel D, Y is *New firm age* which is defined as the age of the workers' new firm. In panel E the dependent variable is *Entrepreneur*, a dummy variable that takes the value of one if a worker becomes an entrepreneur after leaving. The regressions in columns 2 to 4 include military enrollment period fixed effects. The sample spans 1999-2011. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Industry composition

	(1)	(2)	(3)	(4)	(5)
Dependent variable:		Same industry			
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0584***	-0.0315	-0.0450	-0.0404	0.0290
	(0.009)	(0.067)	(0.067)	(0.067)	(0.035)
Close to bankruptcy × Talent		0.0142	-0.0032	0.0026	-0.0013
		(0.010)	(0.010)	(0.010)	(0.011)
Talent		-0.0146**	-0.0218***	-0.0210***	-0.0168**
		(0.007)	(0.007)	(0.007)	(0.008)
Close to bankruptcy × Age		0.0004	0.0004	0.0004	0.0000
		(0.000)	(0.000)	(0.000)	(0.000)
Age		-0.0028***	-0.0028***	-0.0028***	-0.0012***
		(0.001)	(0.001)	(0.001)	(0.000)
Close to bankruptcy × Experience in company		0.0066***	0.0066***	0.0066***	0.0055***
		(0.002)	(0.002)	(0.002)	(0.001)
Experience in company		-0.0095***	-0.0095***	-0.0095***	-0.0108***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in industry		-0.0036**	-0.0036**	-0.0036**	-0.0023**
		(0.002)	(0.002)	(0.002)	(0.001)
Experience in industry		0.0235***	0.0235***	0.0235***	0.0220***
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of education)		0.0128	0.0189	0.0169	-0.0073
		(0.026)	(0.026)	(0.026)	(0.014)
Ln(Years of education)		-0.0518***	-0.0503***	-0.0491***	-0.0426***
		(0.019)	(0.019)	(0.019)	(0.011)
Close to bankruptcy × Female					-0.0008
					(0.007)
Female					-0.0310***
					(0.004)
Ln(Wage)		0.0571***	0.0572***	0.0570***	0.0486***
		(0.004)	(0.004)	(0.004)	(0.002)
Constant	0.3927***	0.1618*	0.1573*	0.1550*	0.0505
	(0.007)	(0.093)	(0.093)	(0.093)	(0.066)
"Old" firm, (year × "old" industry) F.E.	No	Yes	Yes	Yes	Yes
Enrollment period F.E.	No	Yes	Yes	Yes	No
Observations	202,299	81,758	81,758	81,758	202,299
R-squared	0.003	0.272	0.272	0.272	0.226

Table 6: **Destination of workers that leave bankrupt firms [continued]**

Panel B: Geographic mobility

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			New region		
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.0133***	0.1571***	0.1587***	0.1608***	0.0684***
	(0.002)	(0.027)	(0.027)	(0.027)	(0.015)
Close to bankruptcy × Talent		-0.0066	-0.0058	-0.0020	0.0039
		(0.005)	(0.005)	(0.006)	(0.004)
Talent		0.0131***	0.0071*	0.0137***	-0.0081***
		(0.004)	(0.004)	(0.004)	(0.003)
Close to bankruptcy × Age		0.0001	0.0001	0.0001	0.0004***
		(0.000)	(0.000)	(0.000)	(0.000)
Age		-0.0019***	-0.0018***	-0.0019***	-0.0015***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in company		0.0008	0.0008	0.0008	0.0003
		(0.001)	(0.001)	(0.001)	(0.000)
Experience in company		-0.0014***	-0.0014***	-0.0014***	-0.0011***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in industry		-0.0007	-0.0007	-0.0007	-0.0008**
		(0.001)	(0.001)	(0.001)	(0.000)
Experience in industry		0.0003	0.0002	0.0002	0.0002
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Ln(Years of education)		-0.0650***	-0.0658***	-0.0667***	-0.0338***
		(0.011)	(0.011)	(0.011)	(0.006)
Ln(Years of education)		0.1327***	0.1359***	0.1325***	0.0922***
		(0.008)	(0.008)	(0.008)	(0.005)
Close to bankruptcy × Female					-0.0025
					(0.002)
Female					-0.0011
					(0.002)
Ln(Wage)		-0.0099***	-0.0102***	-0.0100***	-0.0032***
		(0.002)	(0.002)	(0.002)	(0.001)
Constant	0.0561***	-0.1761***	-0.1814***	-0.1745***	-0.1078***
	(0.001)	(0.027)	(0.027)	(0.027)	(0.017)
"Old" firm, (year × "old" industry) F.E.	No	Yes	Yes	Yes	Yes
Enrollment period F.E.	No	Yes	Yes	Yes	No
Observations	203,653	82,289	82,289	82,289	203,653
R-squared	0.001	0.111	0.111	0.111	0.061

Table 6: **Destination of workers that leave bankrupt firms [continued]**

Panel C: Size of new firm joined

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			New firm size		
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-0.3080***	0.9518***	1.0281***	0.9658***	0.6598***
	(0.049)	(0.343)	(0.342)	(0.344)	(0.189)
Close to bankruptcy × Talent		-0.1708***	-0.0765	-0.1536***	0.0168
		(0.053)	(0.055)	(0.056)	(0.053)
Talent		0.1028***	0.0675*	0.0815**	-0.2638***
		(0.037)	(0.038)	(0.039)	(0.040)
Close to bankruptcy × Age		0.0034	0.0033	0.0033	0.0021
		(0.002)	(0.002)	(0.002)	(0.001)
Age		-0.0167***	-0.0166***	-0.0166***	-0.0136***
		(0.003)	(0.003)	(0.003)	(0.001)
Close to bankruptcy × Experience in company		-0.0082	-0.0083	-0.0082	-0.0080
		(0.008)	(0.008)	(0.008)	(0.006)
Experience in company		-0.0238***	-0.0238***	-0.0238***	-0.0190***
		(0.006)	(0.006)	(0.006)	(0.004)
Close to bankruptcy × Experience in industry		0.0054	0.0057	0.0056	0.0084
		(0.008)	(0.008)	(0.008)	(0.005)
Experience in industry		-0.0083	-0.0084	-0.0084	-0.0234***
		(0.007)	(0.007)	(0.007)	(0.005)
Close to bankruptcy × Ln(Years of education)		-0.4122***	-0.4488***	-0.4199***	-0.2908***
		(0.135)	(0.134)	(0.135)	(0.077)
Ln(Years of education)		1.4739***	1.4910***	1.4839***	0.9436***
		(0.097)	(0.097)	(0.097)	(0.058)
Close to bankruptcy × Female					-0.1263***
					(0.030)
Female					0.5485***
					(0.022)
Ln(Wage)		-0.2443***	-0.2453***	-0.2450***	-0.1681***
		(0.017)	(0.017)	(0.017)	(0.010)
Constant	4.7798***	3.2634***	3.2393***	3.2528***	4.0937***
	(0.034)	(0.373)	(0.373)	(0.373)	(0.252)
"Old" firm, (year × "old" industry) F.E.	No	Yes	Yes	Yes	Yes
Enrollment period F.E.	No	Yes	Yes	Yes	No
Observations	203,653	82,289	82,289	82,289	203,653
R-squared	0.003	0.201	0.201	0.201	0.165

Table 6: **Destination of workers that leave bankrupt firms [continued]**

Panel D: Age of new firm joined

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			New firm age		
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	-2.4171***	2.2077	2.6313	2.4736	0.7499
	(0.280)	(3.338)	(3.329)	(3.345)	(1.794)
Close to bankruptcy × Talent		-0.3535	0.2966	-0.0062	-0.2829
		(0.488)	(0.491)	(0.510)	(0.538)
Talent		0.2916	0.2962	0.5012	-0.4021
		(0.335)	(0.344)	(0.352)	(0.433)
Close to bankruptcy × Age		-0.0278	-0.0291	-0.0286	-0.0113
		(0.022)	(0.022)	(0.022)	(0.010)
Age		-0.0158	-0.0162	-0.0163	-0.0272***
		(0.026)	(0.026)	(0.026)	(0.008)
Close to bankruptcy × Experience in company		-0.0568	-0.0578	-0.0576	-0.0746
		(0.081)	(0.081)	(0.081)	(0.055)
Experience in company		-0.1506***	-0.1511***	-0.1511***	-0.1124***
		(0.058)	(0.058)	(0.058)	(0.035)
Close to bankruptcy × Experience in industry		-0.0558	-0.0544	-0.0552	-0.0078
		(0.068)	(0.068)	(0.068)	(0.044)
Experience in industry		0.0981*	0.0976*	0.0978*	0.0204
		(0.055)	(0.055)	(0.055)	(0.033)
Close to bankruptcy × Ln(Years of education)		-0.4351	-0.6335	-0.5563	-0.2690
		(1.323)	(1.316)	(1.324)	(0.716)
Ln(Years of education)		5.7920***	5.7935***	5.6995***	3.4975***
		(0.824)	(0.821)	(0.818)	(0.458)
Close to bankruptcy × Female					0.1522
					(0.243)
Female					0.8012***
					(0.161)
Ln(Wage)		-0.7506***	-0.7532***	-0.7473***	-0.5683***
		(0.148)	(0.148)	(0.148)	(0.078)
Constant	21.8132***	15.3504***	15.3869***	15.5612***	17.5236***
	(0.217)	(3.004)	(3.003)	(2.989)	(1.950)
"Old" firm, (year × "old" industry) F.E.	No	Yes	Yes	Yes	Yes
Enrollment period F.E.	No	Yes	Yes	Yes	No
Observations	191,356	77,038	77,038	77,038	191,356
R-squared	0.003	0.147	0.147	0.147	0.094

Table 6: **Destination of workers that leave bankrupt firms [continued]**

Panel E: Entrepreneurship

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			Entrepreneur		
Talent measure:		Cognitive	Leadership	Combined	Wage
Close to bankruptcy	0.0002	-0.0806***	-0.0766***	-0.0808***	-0.0327**
	(0.002)	(0.029)	(0.029)	(0.029)	(0.014)
Close to bankruptcy × Talent		-0.0042	-0.0011	-0.0060	0.0049
		(0.005)	(0.006)	(0.006)	(0.007)
Talent		0.0126***	0.0181***	0.0196***	0.0457***
		(0.003)	(0.004)	(0.004)	(0.005)
Close to bankruptcy × Age		-0.0006**	-0.0006**	-0.0006**	-0.0006***
		(0.000)	(0.000)	(0.000)	(0.000)
Age		0.0021***	0.0021***	0.0021***	0.0017***
		(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in company		-0.0014*	-0.0015*	-0.0015*	-0.0012**
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in company		0.0054***	0.0054***	0.0054***	0.0044***
		(0.001)	(0.001)	(0.001)	(0.000)
Close to bankruptcy × Experience in industry		0.0007	0.0007	0.0007	0.0002
		(0.001)	(0.001)	(0.001)	(0.001)
Experience in industry		-0.0002	-0.0002	-0.0002	0.0005
		(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of education)		0.0390***	0.0373***	0.0392***	0.0208***
		(0.012)	(0.012)	(0.012)	(0.006)
Ln(Years of education)		-0.0106	-0.0112	-0.0130*	0.0087**
		(0.007)	(0.007)	(0.007)	(0.004)
Close to bankruptcy × Female					0.0007
					(0.002)
Female					-0.0182***
					(0.001)
Ln(Wage)		0.0072***	0.0070***	0.0072***	0.0028***
		(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.0444***	-0.0720***	-0.0699***	-0.0662***	-0.0685***
	(0.001)	(0.024)	(0.024)	(0.024)	(0.015)
"Old" firm, (year × "old" industry) F.E.	No	Yes	Yes	Yes	Yes
Enrollment period F.E.	No	Yes	Yes	Yes	No
Observations	203,653	82,289	82,289	82,289	203,653
R-squared	0.000	0.162	0.162	0.162	0.104

Table 7: **Labor force composition and capital structure**

This table shows the relationship between labor force composition and leverage. We report coefficients from estimating the following OLS model on the sample of Swedish firms:

$$\text{Leverage}_{ft} = \alpha + \beta Talent + X'_{ft}\gamma + \varepsilon_{ft}$$

Talent is *Avg. Cognitive* in column 1, *Avg. Leadership* in column 2, *Avg. Combined* in column 3 and *Avg. Wage* in column 4. All specifications include lagged *Tangibility*, *Profitability*, *Size* and *Growth* as controls, as well as year fixed effects (see matrix X in the equation above). The sample and variable construction is discussed in the data section of the paper (section II). Robust standard errors clustered at the firm level are reported in parentheses. Statistical significance at 1%, 5% and 10% is market with ***, ** and * respectively.

	(1)	(2)	(3)	(4)
Dependent variable:		Leverage		
Avg. Cognitive	-0.843***			
	(0.103)			
Avg. Leadership		-0.322***		
		(0.104)		
Avg. Combined			-0.413***	
			(0.0666)	
Avg. Wage				-0.0020***
				(0.0002)
L.Tangibility	47.01***	47.17***	47.18***	46.77***
	(0.508)	(0.512)	(0.507)	(0.508)
L.Profitability	-39.62***	-38.59***	-39.44***	-38.86***
	(1.222)	(1.246)	(1.225)	(1.216)
L.Ln(Assets)	1.483***	1.273***	1.472***	1.785***
	(0.0828)	(0.0838)	(0.0830)	(0.0905)
Growth	0.117***	0.109***	0.131***	0.146***
	(0.0341)	(0.0352)	(0.0341)	(0.0340)
Year F.E.	Yes	Yes	Yes	Yes
Observations	230,254	216,222	230,254	230,254
R-squared	0.168	0.165	0.167	0.169

Table 8: **Impact of relaxation of LIFO rule on labor mobility**

This table analyzes the impact of the relaxation of the LIFO rule in 2001 on the mobility of workers. We report coefficients from estimating the following OLS model:

$$Y_{ft} = \beta_1 Post_t + \beta_2 Treated_f + \beta_3 Post_t \times Treated_f + \gamma X'_{ft} + \Psi_f + \varepsilon_{ft}$$

In panel A, the dependent variable is *Leave rate*, defined as the number of workers of firm f that leave the firm between *t-1* and *t*, divided by the total number of workers of firm f at *t-1*. In panel B, the dependent variable is *Join rate*, defined as the number of workers of firm f that join the firm between *t-1* and *t*, divided by the total number of workers of firm f at *t-1*. *Post* is a dummy variable indicating the period after the law change (2001–2004). *Treated* is a dummy variable that takes the value of one if the firms had 10 or fewer employees in 2000 and takes the value of zero otherwise. Column 1 reports the results for the full sample of firms while columns 2–5 report the results for highly skill-intensive firms. We define such firms as those that are at or above the 75th percentile of the distribution of a firm-averaged talent measure (cognitive skills in column 2, leadership in column 3, combined skills in column 4, and wages in column 5). All specifications include lagged *Tangibility*, *Profitability*, *Size*, and *Growth* as controls, as well as year and firm fixed effects. The sample covers the years 1998–2004 and includes firms with 5–15 workers. For further details on the variable construction and the sample see the data section of the paper (section II). Robust standard errors clustered at the firm level are reported in parentheses. Statistical significance at 1%, 5% and 10% is market with ***, ** and * respectively.

	(1)	(2)	(3)	(4)	(5)
Sample:	Full	Cognitive	Leadership	Combined	Wage
			Panel A: Leave rate		
Post × Treated	0.0158***	0.0232*	0.0209*	0.0190*	0.0199**
	(0.005)	(0.012)	(0.011)	(0.011)	(0.008)
L.Ln(Assets)	0.0170***	0.0133	0.0152	0.0156	0.0122
	(0.006)	(0.013)	(0.012)	(0.012)	(0.011)
L.Tangibility	-0.0707***	-0.1165***	-0.0843**	-0.1112***	-0.0440
	(0.018)	(0.045)	(0.042)	(0.042)	(0.032)
L.Profitability	-0.0862***	-0.0687**	-0.0716**	-0.0654**	-0.0507**
	(0.015)	(0.030)	(0.028)	(0.027)	(0.021)
Growth	0.0003	-0.0002	0.0036**	0.0048***	0.0033***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	89,544	18,596	20,223	21,198	21,683
Adjusted R-squared	0.598	0.592	0.524	0.541	0.227
			Panel B: Join rate		
Post × Treated	0.0794***	0.1118***	0.1098***	0.1085***	0.0915***
	(0.006)	(0.014)	(0.012)	(0.012)	(0.009)
L.Ln(Assets)	-0.0461***	-0.0568***	-0.0345***	-0.0422***	-0.0540***
	(0.007)	(0.014)	(0.013)	(0.013)	(0.011)
L.Tangibility	0.0492**	0.0956*	0.0621	0.0202	0.0302
	(0.019)	(0.049)	(0.045)	(0.043)	(0.031)
L.Profitability	0.1165***	0.1369***	0.1192***	0.1272***	0.1438***
	(0.015)	(0.030)	(0.029)	(0.028)	(0.021)
Growth	0.0009	0.0005	0.0037**	0.0027*	0.0049***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	89,544	18,596	20,223	21,198	21,683
Adjusted R-squared	0.609	0.583	0.522	0.548	0.236

Table 9: **Impact of talent mobility on leverage**

This table analyzes the impact of the relaxation of the LIFO rule in 2001 and consequent increase in labor mobility on the leverage of firms. We report coefficients from estimating the following OLS model:

$$\text{Leverage}_{ft} = \beta_1 Post_t + \beta_2 Treated_f + \beta_3 Post_t \times Treated_f + \gamma X'_{ft} + \Psi_f + \varepsilon_{ft}$$

Post is a dummy variable indicating the period after the law change (2001–2004). *Treated* is a dummy variable that takes the value of one if the firms had 10 or fewer employees in 2000 and takes the value of zero otherwise. Column 1 reports the results for the full sample of firms with at least 5 employees and at most 15 employees. Columns 2–5 report the results for the subset of highly skill-intensive firms, defined as being at or above the 75th percentile using the average of our four different talent measures. All specifications include lagged *Tangibility*, *Profitability*, *Size*, and *Growth* as controls, as well as year and firm fixed effects. The sample and variable construction is detailed in the data section of the paper (section II). Robust standard errors clustered at the firm level are reported in parentheses. Statistical significance at 1%, 5% and 10% is market with ***, ** and * respectively.

	(1)	(2)	(3)	(4)	(5)
Sample:	Full	Cognitive	Leadership	Combined	Wage
Dependent variable:			Leverage		
Post × Treated	-0.2244	-1.2727**	-1.2004**	-1.1793**	-0.2178
	(0.277)	(0.631)	(0.595)	(0.577)	(0.541)
L.Ln(Assets)	4.0218***	3.0091***	2.9369***	2.2199***	1.8962***
	(0.324)	(0.689)	(0.635)	(0.615)	(0.565)
L.Tangibility	31.0456***	29.0270***	32.9594***	29.9686***	30.3208***
	(1.046)	(2.689)	(2.657)	(2.644)	(2.527)
L.Profitability	-14.8358***	-10.9856***	-11.0134***	-10.4456***	-10.5232***
	(0.682)	(1.294)	(1.248)	(1.200)	(1.228)
Growth	0.0502*	-0.0435	0.0790	0.0568	0.1874***
	(0.030)	(0.072)	(0.067)	(0.067)	(0.070)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	89,544	18,596	20,223	21,198	21,683
Adjusted R-squared	0.831	0.807	0.811	0.807	0.794

Figure 1: **Talent wage premium**

The figure shows the evolution of the talent wage premium in Sweden between 1990 and 2011 for individuals that are 20 years or older. The sample includes all Swedish individuals that took military enlistment tests. The talent wage premium is obtained by estimating $w_{it} = \alpha_t T_{it} + \beta X_{it}$ using OLS. w_{it} is the log of total wage; matrix X_{it} includes a part-time job dummy, indicators for age interacted with year, and industry dummies. T_{it} is a talent dummy interacted with year dummies. $\hat{\alpha}_t$ is the talent wage premium. Talent is defined using cognitive, noncognitive, or leadership test scores. Individuals that obtained a score of 8 or 9 (on a scale ranging from 1–9) on the respective tests are defined as talented. The talent measures are from the military enlistment records.

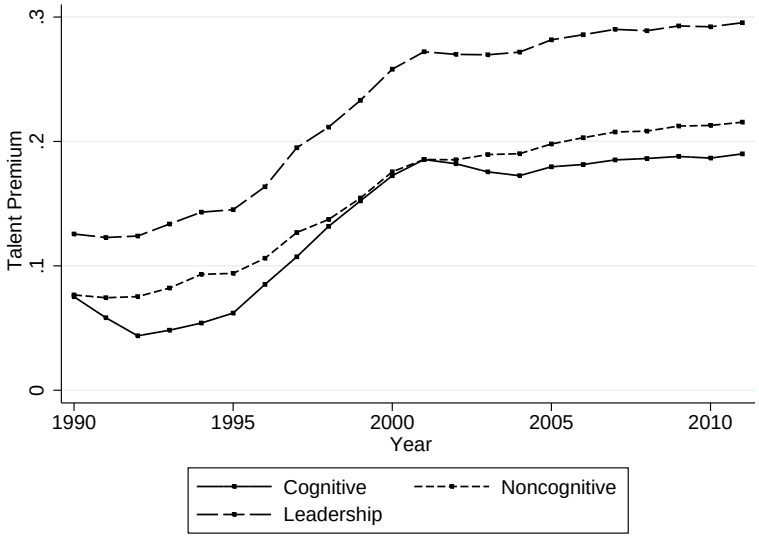

Figure 2: **Corporate bankruptcies across industries**

This figure shows the distribution of corporate bankruptcies across industries in our sample of Swedish limited liability firms. The total number of bankruptcies in our sample is 3,245. The sample spans the period 2003–2011.

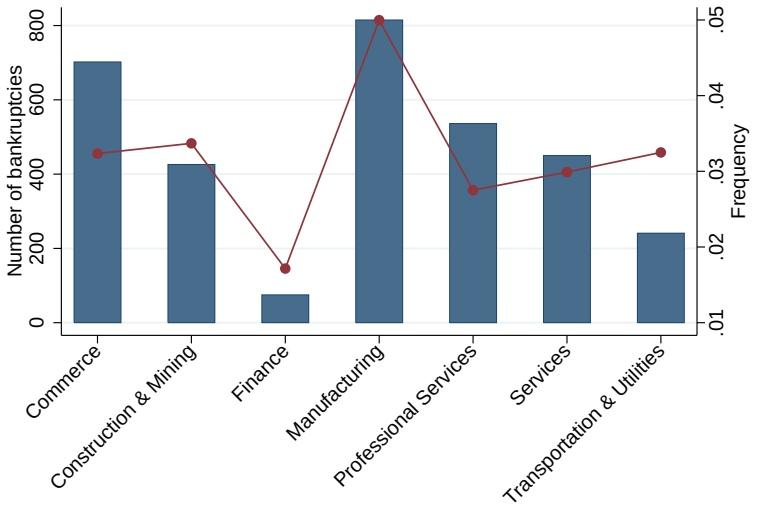

Figure 3: **Corporate bankruptcies over time**

This figure shows the distribution of corporate bankruptcies over time in our sample of Swedish limited liability firms. The total number of bankruptcies in our sample is 3,245. The sample spans the period 2003–2011.

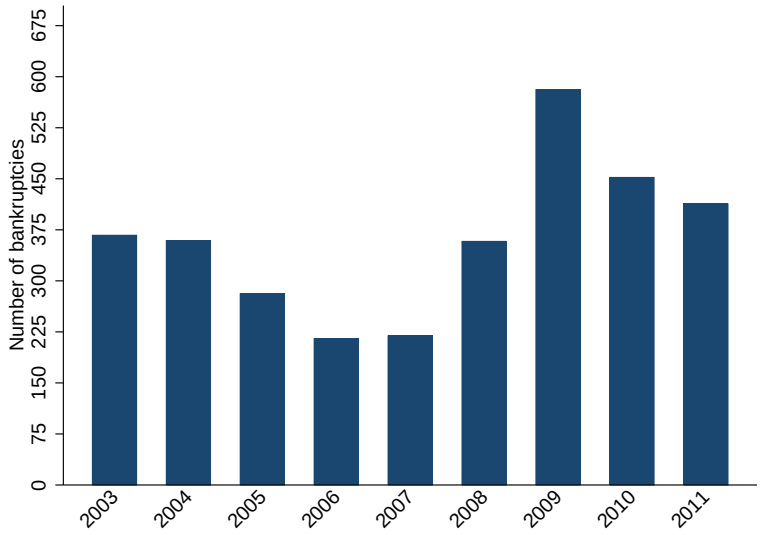

Figure 4: **Evolution of labor force in firms approaching distress**

This figure shows the share of workers leaving and joining firms as they approach bankruptcy. The timing is relative to the year the firm files for bankruptcy. The sample includes firms in the treatment group only.

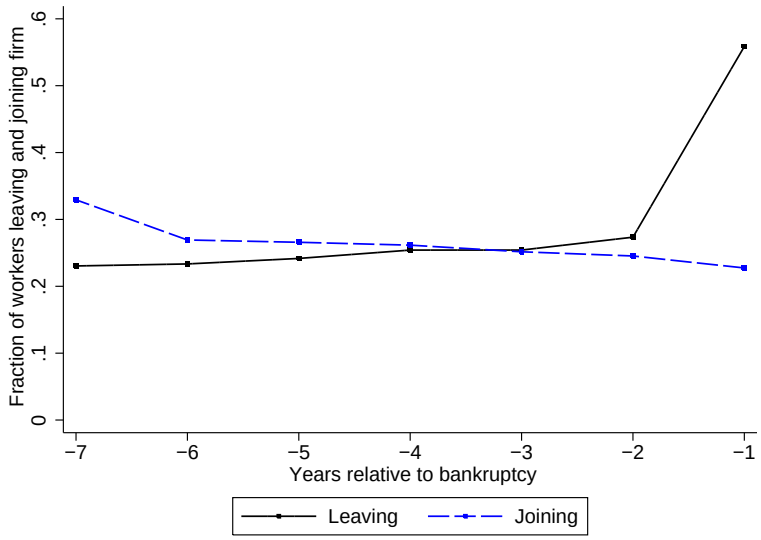

Figure 5: **Talent distribution across industries**

This figure shows the talent allocation across industries in Sweden. Each panel represents a different talent measure: average cognitive skill scores, average leadership scores, average combined cognitive and noncognitive skill scores, and average wages. The cognitive, noncognitive and leadership skill measures are from the military enlistment records. The sample spans the period 1998–2011.

Figure 6: **Talent distribution across hierarchy levels**

This figure shows the talent allocation across levels of corporate hierarchy in Sweden. Each panel represents a different talent measure: average cognitive skill scores, average leadership scores, average combined cognitive and noncognitive skill scores, and average wages. The cognitive, noncognitive and leadership skill measures are from the military enlistment records. Levels of hierarchy are constructed using employee-level occupational codes from Statistics Sweden. The sample spans the period 2001–2011.

Figure 7: **Talent leaving treatment and control firms**

This figure shows the share of talented workers leaving firms in the treatment and control groups. The timing is relative to the date the firm files for bankruptcy. Each panel represents a different talent measure: cognitive skill scores, combined cognitive and noncognitive skill scores, leadership scores, and wages. The cognitive, noncognitive and leadership skills measures are obtained from the military enlistment records. The sample construction and variables definition is discussed in detail in the data section of the paper (section II).

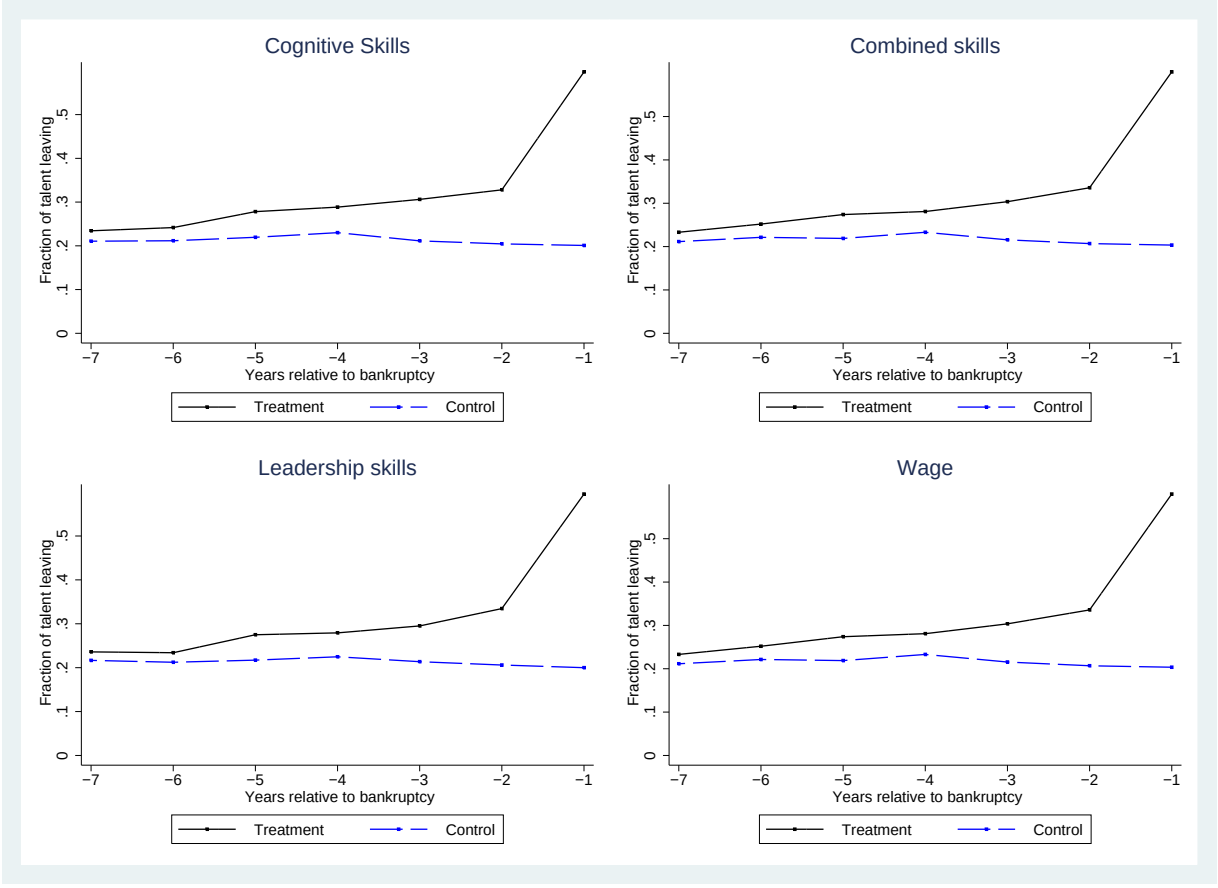

Figure 8: **Talent joining treatment and control firms**

This figure shows the share of talented workers joining firms in the treatment and control groups. The timing is relative to the date the firm files for bankruptcy. Each panel represents a different talent measure: cognitive skill scores, combined cognitive and noncognitive skill scores, leadership scores, and wages. The cognitive, noncognitive and leadership skills measures are obtained from the military enlistment records. The sample construction and variables definition is discussed in detail in the data section of the paper (section II).

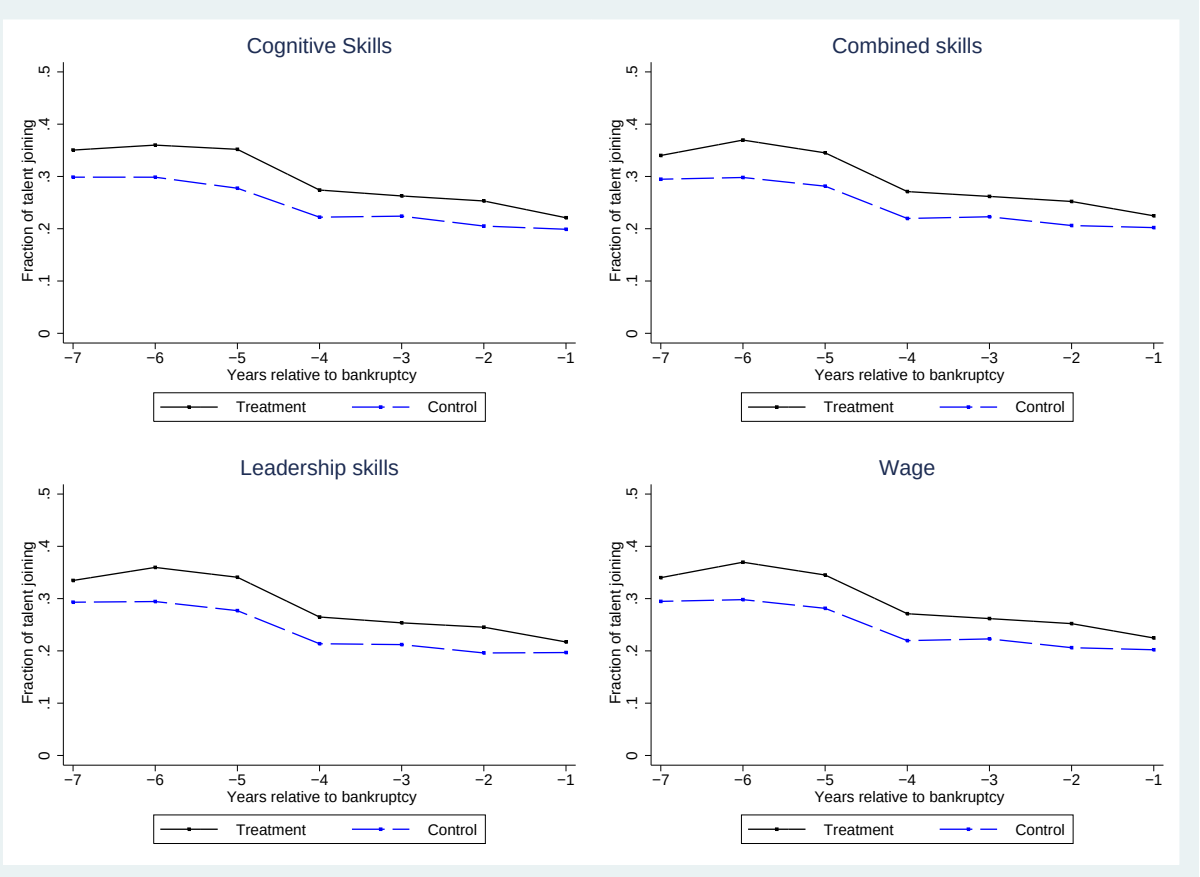

Table B-1: **Summary Statistics**

Book Leverage is the sum of long-term and short-term debt divided by total assets; *Market Leverage* is total debt divided by the sum of total debt and market equity; *Net Debt* is long-term plus short-term debt minus cash and marketable securities, divided by total assets. *Ln(Tobin's Q)* is the natural logarithm of the market-to-book ratio, computed as the ratio of (book value of assets plus market value of equity minus book value of common equity) to the book value of assets; *Ln(Assets)* is the natural logarithm of total assets; *Profitability* is EBITDA divided by sales; *Tangibility* is net property, plant and equipment divided by total assets. *In-state Competition* is in-state industry sales divided by total industry sales, where industry is defined at the two-digit NAICS level. *NCC index* is a time-varying state-level index that measures the extent to which non-compete clauses are enforced by courts in a given U.S. state. *KZ-index* is an index measuring financial constraints based on a regression in Kaplan and Zingales (1997) as used in Lamont, Polk, and Sa-Requejo (2001); *WW-index* is a financial constraints index based on Whited and Wu (2002); *HP-index* is an index measuring financial constraints, based on Hadlock and Pierce (2010). *Labor Fragility* is constructed as follows: using Swedish micro-data, for each FF12 industry and year, we first divide the number of workers with a combined cognitive and non-cognitive test score of at least 16 (out of possible 18) by the number of test takers in a given industry and year; we then merge these data into the US sample.

Variable	**Obs.**	**Mean**	**SD**
Book Leverage	119,175	0.279	0.317
Market Leverage	117,899	0.265	0.256
Net Debt	119,031	0.124	0.416
Ln(Tobin's Q)	127,237	0.498	0.678
NCC Index	127,904	3.826	2.155
In-state Competition	127,904	0.055	0.082
Ln(Assets)	127,904	4.246	2.198
Profitability	127,904	-0.489	2.990
Tangibility	127,904	0.298	0.227
WW-index	121,866	-0.206	0.135
KZ-index	120,819	-5.350	23.982
HP-index	127,904	-2.671	0.984
Labor Fragility	71,765	0.049	0.037

Table B-2: **Labor Fragility and the Cross-Section of Firm Leverage in the U.S.**

This table shows the relationship between labor fragility and firm leverage. We report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Y_{ft} = \theta \cdot \text{Labor Fragility}_{it} + X'_{ift}\gamma + \Psi_t + \varepsilon_{ft}$$

where Y_{ft} is the dependent variable for firm f in fiscal year t. We use as dependent variable *Book Leverage* in column 1, *Market Leverage* in column 2, and *Net Debt* in column 3. i denotes the industry, defined at the Fama-French 12 industry level, and s denotes the state. Ψ_t is a vector containing year fixed effects. X'_{ift} is a matrix containing the following control variables: *Ln(Assets)*, *Profitability*, *Tangibility*, and *Ln(Tobin's Q)*. We lag all explanatory variables by one year. The sample spans 1990–2005. The sample and variable construction is detailed in section B-I of Appendix B. Robust standard errors clustered at the Fama-French 12 industry level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) Book Leverage	(2) Market Leverage	(3) Net Debt
Labor Fragility	-0.9758***	-0.9480***	-1.9661***
	(0.149)	(0.124)	(0.347)
Ln(Assets)	-0.0172**	0.0015	-0.0113
	(0.007)	(0.003)	(0.010)
Profitability	-0.0046	-0.0013	0.0059
	(0.003)	(0.001)	(0.007)
Ln(Tobin's Q)	0.0541***	-0.1079***	0.0047
	(0.013)	(0.021)	(0.021)
Tangibility	0.2915***	0.1873***	0.5163***
	(0.069)	(0.051)	(0.127)
Year F.E.	Yes	Yes	Yes
Observations	71,765	71,296	71,743
R-squared	0.075	0.199	0.113

Table B-3: **Enforcement of Non-Compete Agreements and Leverage in the U.S.**
This table shows the relationship between labor fragility and firm leverage. We report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Y_{ft} = \theta \cdot (\text{NCC Index}_{st}) \cdot (\text{In-State Competition}_{ist}) + \beta \cdot \text{NCC Index}_{st} + \psi \cdot \text{In-State Competition}_{ist} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where Y_{ft} is the dependent variable for firm f in fiscal year t. We use as dependent variable *Book Leverage* in column 1, *Market Leverage* in column 2, and *Net Debt* in column 3. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state. Ψ_{ft} is a matrix containing firm fixed effects and industry $\times$ year fixed effects. X'_{ift} is a matrix containing the following control variables: *Ln(Assets)*, *Profitability*, *Tangibility*, and *Ln(Tobin's Q)*. We lag all explanatory variables by one year. The sample spans 1976–2005. The sample and variable construction is detailed in section B-I of Appendix B. Robust standard errors clustered at the state level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) Book Leverage	(2) Market Leverage	(3) Net Debt
NCC Index * In-state Competition	0.0466**	0.0484***	0.0589**
	(0.022)	(0.018)	(0.029)
NCC Index	-0.0033	-0.0004	-0.0032
	(0.003)	(0.003)	(0.002)
In-state Competition	-0.1733***	-0.1210**	-0.2608**
	(0.055)	(0.060)	(0.101)
Ln(Assets)	-0.0130**	0.0270***	0.0012
	(0.005)	(0.004)	(0.006)
Profitability	-0.0007	-0.0006**	0.0021**
	(0.001)	(0.000)	(0.001)
Ln(Tobin's Q)	0.0205***	-0.0681***	0.0047
	(0.003)	(0.005)	(0.004)
Tangibility	0.2381***	0.1899***	0.4563***
	(0.023)	(0.013)	(0.031)
Firm F.E.	Yes	Yes	Yes
Industry * Year F.E.	Yes	Yes	Yes
Observations	119,175	117,899	119,127
R-squared	0.589	0.679	0.653

Table B-4: **Enforcement of Non-Compete Agreements and Leverage in the U.S.: Labor Mobility and Labor Fragility**

This table shows the relationship between labor fragility and firm leverage. In columns 1 to 3 we report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Y_{ft} = \theta \cdot (\text{NCC Index}_{st}) \cdot (\text{LM}_s) + \beta \cdot \text{NCC Index}_{st} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where Y_{ft} is the dependent variable for firm f in fiscal year t. We use as dependent variable *Book Leverage* in column 1, *Market Leverage* in column 2, and *Net Debt* in column 3. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state. In columns 1–3, we interact the *NCC Index* with the state-level labor mobility measure LM_s.

In columns 4 to 6 we report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Y_{ft} = \theta \cdot (\text{NCC Index}_{st}) \cdot (\text{LF}_s) + \beta \cdot \text{NCC Index}_{st} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where Y_{ft} is the dependent variable for firm f in fiscal year t. We use as dependent variable *Book Leverage* in column 4, *Market Leverage* in column 5, and *Net Debt* in column 6. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state. In columns 4–6, we interact the *NCC Index* with the state-level labor fragility measure LF_s. In all columns Ψ_{ft} is a matrix containing firm fixed effects and industry × year fixed effects. X'_{ift} is a matrix containing the following control variables: *Ln(Assets)*, *Profitability*, *Tangibility*, and *Ln(Tobin's Q)*. We lag all explanatory variables by one year. The sample spans 1976–2005. The sample and variable construction is detailed in section B-I of Appendix B. Robust standard errors clustered at the state level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) Book Leverage	(2) Market Leverage	(3) Net Debt	(4) Book Leverage	(5) Market Leverage	(6) Net Debt
NCC Index * LM	0.0163***	0.0159***	0.0185***			
	(0.003)	(0.004)	(0.003)			
NCC Index * LF				1.0946***	0.4082	1.0532***
				(0.380)	(0.422)	(0.282)
NCC Index	-0.0032*	-0.0000	-0.0026*	-0.0453***	-0.0131	-0.0424***
	(0.002)	(0.003)	(0.001)	(0.015)	(0.016)	(0.011)
Ln(Assets)	-0.0131**	0.0269***	0.0011	-0.0130**	0.0270***	0.0012
	(0.005)	(0.003)	(0.006)	(0.005)	(0.003)	(0.006)
Profitability	-0.0007	-0.0006**	0.0021**	-0.0007	-0.0006**	0.0021**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
Ln(Tobin's Q)	0.0205***	-0.0681***	0.0048	0.0206***	-0.0681***	0.0049
	(0.003)	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)
Tangibility	0.2379***	0.1894***	0.4562***	0.2377***	0.1893***	0.4561***
	(0.023)	(0.014)	(0.031)	(0.023)	(0.014)	(0.031)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Industry * Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	119,177	117,901	119,129	119,177	117,901	119,129
R-squared	0.589	0.679	0.653	0.589	0.679	0.653

Table B-5: **Enforcement of Non-Compete Agreements and Leverage in the U.S: Financial Constraints**

This table shows the relationship between labor fragility and firm leverage for financially constrained and unconstrained firms. We report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Y_{ft} = \theta \cdot (\text{NCC Index}_{st}) \cdot (\text{In-State Competition}_{ist}) + \beta \cdot \text{NCC Index}_{st} + \psi \cdot \text{In-State Competition}_{ist} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where Y_{ft}, the dependent variable for firm f in fiscal year t, is a measure of leverage. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state. Ψ_{ft} is a matrix containing firm fixed effects and industry $\times$ year fixed effects. X'_{ift} is a matrix containing control variables. We lag all explanatory variables by one year. In the table below *Leverage controls* denotes the following set of variables: *Ln(Assets)*, *Profitability*, *Tangibility*, and *Ln(Tobin's Q)*. Panel A reports results for firms categorized as unconstrained, while Panel B shows the sub-sample of financially constrained firms. Columns 1–3 use the *WW-index* to categorize firms, columns 4–6 use the *KZ-index*, and columns 7–9 employ the *HP-index*. The sample spans 1976–2005. The sample and variable construction is detailed in section B-I of Appendix B. Robust standard errors clustered at the state level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: unconstrained firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Financial constraints measure:		WW-index			KZ-index			HP-index	
Dependent Variable:	Book Leverage	Market Leverage	Net Debt	Book Leverage	Market Leverage	Net Debt	Book Leverage	Market Market Leverage	Net Debt
NCC Index * In-state Competition	0.0570***	0.0844***	0.0598**	0.0660***	0.0607***	0.0758*	0.0681***	0.0874***	0.0765***
	(0.016)	(0.019)	(0.023)	(0.024)	(0.016)	(0.040)	(0.019)	(0.019)	(0.026)
NCC Index	-0.0019	-0.0022	0.0005	-0.0056	-0.0014	-0.0044	-0.0040	-0.0014	-0.0022
	(0.003)	(0.004)	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
In-state Competition	-0.2598***	-0.3292***	-0.2750**	-0.2902***	-0.2614***	-0.3738**	-0.2527***	-0.2708***	-0.3250**
	(0.061)	(0.071)	(0.104)	(0.071)	(0.063)	(0.155)	(0.073)	(0.070)	(0.131)
Leverage controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry * Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	56,431	56,431	56,415	53,266	53,266	53,266	60,651	60,651	60,640
R-squared	0.720	0.749	0.781	0.700	0.722	0.763	0.671	0.730	0.734

Panel B: constrained firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Financial constraints measure:		WW-index			KZ-index			HP-index	
Dependent Variable:	Book Leverage	Market Leverage	Net Debt	Book Leverage	Market Leverage	Net Debt	Book Leverage	Market Market Leverage	Net Debt
NCC Index * In-state Competition	0.0390	0.0358	0.0561	0.0142	0.0256	0.0274	0.0412	0.0059	0.0419
	(0.041)	(0.027)	(0.052)	(0.025)	(0.024)	(0.027)	(0.033)	(0.021)	(0.044)
NCC Index	-0.0072	-0.0061	-0.0096	0.0025	0.0008	0.0006	-0.0066	-0.0056	-0.0062
	(0.008)	(0.007)	(0.009)	(0.004)	(0.004)	(0.004)	(0.009)	(0.006)	(0.010)
In-state Competition	-0.1374	-0.0449	-0.2793*	0.0256	0.0437	-0.0563	-0.1130	0.0520	-0.1557
	(0.123)	(0.076)	(0.157)	(0.080)	(0.077)	(0.090)	(0.109)	(0.064)	(0.114)
Leverage controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry * Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54,471	54,471	54,451	55,751	55,751	55,751	51,974	51,974	51,948
R-squared	0.626	0.699	0.681	0.614	0.695	0.628	0.626	0.700	0.684

Table B-6: **Enforcement of Non-Compete Agreements and Firm Value**

This table reports regressions that estimate the relationship between labor fragility and firm value. In column 1 we report coefficients from estimating the following OLS model on the sample of U.S. firms:

$$Ln(Tobin's\,Q)_{ft} = \theta \cdot (\text{NCC Index}_{st}) \cdot (\text{In-State Competition}_{ist}) + \beta \cdot \text{NCC Index}_{st} + \psi \cdot \text{In-State Competition}_{ist} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where $Ln(Tobin's\,Q)_{ft}$ is the dependent variable for firm f in fiscal year t. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state.
In columns 2 and 3 we report coefficients from estimating the following OLS model:

$$Ln(Tobin's\,Q)_{ft} = \theta \cdot (\text{NCC Index}_{st}) + \psi \cdot \text{In-State Competition}_{ist} + X'_{ift}\gamma + \Psi_{ft} + \varepsilon_{ft}$$

where $Ln(Tobin's\,Q)_{ft}$ is the dependent variable for firm f in fiscal year t. i denotes the industry, defined at the two-digit NAICS level, and s denotes the state.
In all columns Ψ_{ft} is a matrix containing firm fixed effects and industry × year fixed effects. X'_{ift} is a matrix containing the following control variables: *Ln(Assets)*, *Profitability*, and *Tangibility*. The specification in column 1 uses the full sample, while the specification in column 2 focusses on states and years where no business combination laws have been passed. The sample underlying the regression in column 3 uses states and years where business combination laws have been passed. We lag all explanatory variables by one year. The sample spans 1976–2005. The sample and variable construction is detailed in section B-I of Appendix B. Robust standard errors clustered at the state level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Sample:	Full	BC=0	BC=1
Dependent Variable:		Ln(Tobin's Q)	
NCC Index * In-state Competition	0.1396***		
	(0.049)		
In-state Competition	-0.7035***		
	(0.170)		
NCC Index	-0.0208***	0.0125***	-0.0181***
	(0.006)	(0.005)	(0.006)
Ln(Assets)	-0.1884***	-0.1967***	-0.2238***
	(0.008)	(0.009)	(0.010)
Profitability	-0.0091***	-0.0092**	-0.0055***
	(0.001)	(0.003)	(0.001)
Tangibility	-0.1254***	-0.1673***	-0.1477***
	(0.018)	(0.024)	(0.033)
Firm F.E.	Yes	Yes	Yes
Industry * Year F.E.	Yes	Yes	Yes
Observations	127,237	47,087	75,734
R-squared	0.678	0.739	0.699

Figure B-1: **Time-Series Variation in the Non-Compete Enforcement Index**

This figure shows the eight U.S. states in which the enforceability of non-compete agreements changes during the sample period: Florida, Louisiana, Massachusetts, Michigan, Montana, Texas, Virginia, and Wyoming. The NCC Index takes on values from zero to nine, with zero denoting that a state's courts do not enforce non-compete agreements, and the highest score of nine indicating that a state jurisdiction enforces several types of non-compete clauses. The NCC Index data is from Bird and Knopf (2014), who extend the coding of Garmaise (2011) back to 1976.

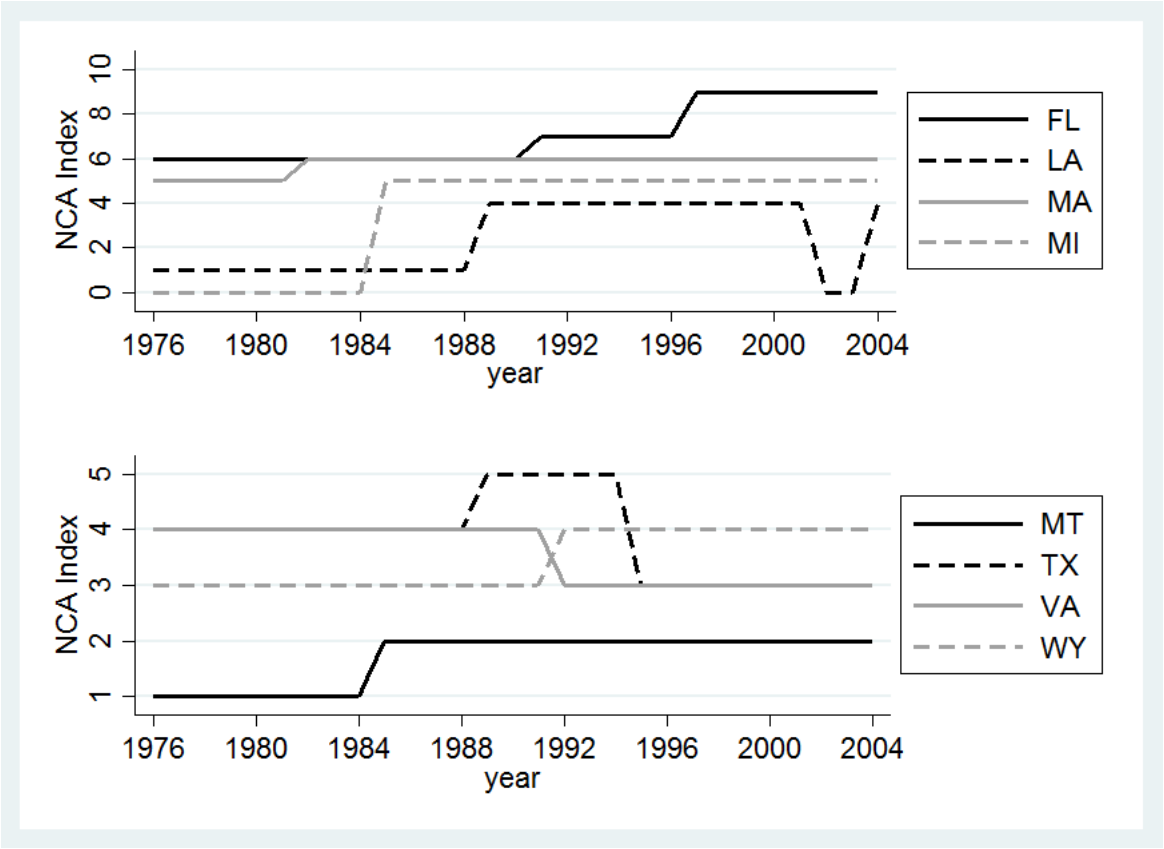

Figure B-2: **Labor Fragility and Firm Leverage**

This figure plots annual labor fragility against annual average book leverage at the Fama-French 12 (FF12) industry level. The labor fragility measure is constructed as follows: using Swedish microdata, for each FF12 industry and year, we divide the number of Swedish workers with a combined cognitive and non-cognitive test score of at least 16 (out of possible 18) by the number of test takers in a given industry and year. We then match these data to our sample of U.S. firms. Leverage is average book leverage at the FF12-industry and year level. The sample period is 1990-2005.