Talent in Distressed Firms: Investigating the Labor Costs of Financial Distress

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ABSTRACT

The importance of skilled labor and the inalienability of human capital may expose firms to the risk of losing talent in critical times. Using detailed employer-employee matched data from Sweden, we document that firms lose their most skilled workers as they become financially distressed. Consequently, firms that rely more on talent choose more conservative capital structures. In a quasi-experimental setting—employing a change in Swedish labor law that exogenously increases the mobility of workers—we find that as the risk of losing talent increases, firms reduce financial leverage.

I. Introduction

> *"For embattled employees of RadioShack, Wet Seal and other companies facing bankruptcy, the time to find a new job is long before the company goes under. […] 'The best time to find a job, is when you have a job,' says Tim Sackett, president of HRU Technical Resources, an information technology and engineering staffing firm in Lansing, Mich. 'If you aren't going to wait around, it's best to leave early. Outside companies know the best talent leaves, or gets recruited the quickest, so if you're the last one to jump ship, most people will believe you're mediocre talent.'"*
> ("When should workers at troubled companies jump ship?" by Quentin Fottrell, MarketWatch, February 5, 2015.)

Ever since Modigliani and Miller's famous irrelevance theorem, financial economists have devoted considerable effort towards understanding the nature of the frictions that affect firms' financial choices. While there is a clear consensus that the financial structure of a firm matters and has real effects, the various trade-offs are still under investigation. One prominent theory, the trade-off theory of capital structure, contrasts the advantages of debt, such as the interest tax shield, with the disadvantages of high leverage, such as costs of financial distress. In theory, such costs are understood to include both direct (e.g., legal and advisory fees typically incurred during bankruptcy), as well as indirect costs (e.g., loss of customers, suppliers, employees). While the notion of these costs is quite precise theoretically, empirically identifying various channels has proven to be challenging.[1]

In this paper, we examine how the onset of financial distress affects firms' ability to retain high-skilled labor in the organization. A reduced ability by financially distressed firms to retain such workers could be viewed as a cost of financial distress. We employ unique micro-level data from Sweden to shed light on this issue. Our employee-employer matched dataset contains detailed information on firm and individual worker characteristics, such as cognitive and non-cognitive skills, age, gender, education, employment histories, as well as compensation. This allows us to paint an exhaustive picture of the evolution of the labor force of firms approaching distress, including meaningful proxies for talent.

We define and measure talent as a set of cognitive and non-cognitive abilities that are generally applicable in different tasks and jobs. While human capital is multifaceted, we are particularly interested in talent for several reasons. First, prior studies have shown that cognitive and non-cognitive skills are important determinants of schooling, education, and occupational choices, as

[1] Altman (1984), Cutler and Summers (1988), Andrade and Kaplan (1998), Almeida and Philippon (2006), and Korteweg (2010) are some valiant attempts at capturing these overall costs.

well as employment outcomes (e.g., Heckman, Stixrud, and Urzua 2006); such skills are also highly valued in the labor market (e.g., Lindqvist and Vestman 2011), and are key drivers of firm productivity and value creation (e.g., Abowd et al. 2005). Furthermore, workers with these skills may be particularly indispensable in critical times such as financial distress, when the firm faces unique challenges. The firm may have to implement new and, compared to its usual "modus operandi", unconventional approaches that talented workers may find easiest to adapt to and master. Second, due to our unique data, we can accurately measure talent, while other dimensions of human capital are, by their nature, less precisely measured. For example, long tenure in the firm may indicate the existence of firm-specific human capital that may be important to the firm. However, workers with long tenure may also be "legacy" workers that are apathetic, unmotivated, and resistant to change.[2] Another example is education. As pointed out by Philippon and Reshef (2014), there is significant variation in human capital within similar educational groups and the skills associated with any particular level of education may change over time. Finally, while we focus much of our motivation and discussion on talent, we do describe how the composition of the workforce changes with respect to a wide variety of worker characteristics in firms that become financially distressed.

The notion that loss of talent could be a potential cost of financial distress is not new. The property rights view pioneered by Grossman and Hart (1986) and Hart and Moore (1990) provides a framework for analyzing how inalienability of human capital affects the financing capacity of firms.[3] 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).[4]

Whether talented employees are the first to desert the sinking ship is not a priori obvious. While a highly liquid market for talented workers may lead to them exiting first, it may also make them more patient, since the cost of staying with the firm is lower (e.g., lower wage discounts). To the extent that talented workers are also employed in more strategic roles, this would also accord them with some informational advantage that allows them to separate financial distress from economic distress, which in turn would have a further bearing on the decision. Knowledge that

[2] This may be particularly relevant in the Swedish context where dismissal laws are more restrictive than in the US, and the cost of firing increases with worker tenure (see Section 3 and the Appendix for a discussion of the relevant Swedish labor regulations).

[3] Essentially, human capital introduces a contractual incompleteness that stems from the fact that, in the absence of slavery, firms do not own human capital, workers do.

[4] There is anecdotal evidence such as the Saatchi and Saatchi case (e.g., Rajan and Zingales 2000) that also supports this view. When US fund managers who 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.

distress is solely financial would perhaps make them more enduring. Other factors such as reputational damage (attribution of blame) may also play a role in their decision. This theoretical ambiguity that arises from the different economic forces makes for an interesting empirical investigation.

The paper is conceptually divided into two parts. In the first part, we investigate whether talented employees are indeed more prone to abandon firms that approach financial distress. Given the importance of talent for firm productivity and value (e.g., Abowd et al. 2005), the possibility of talented workers leaving a firm that experiences financial distress makes levered firms "fragile", by exposing them to an additional source of risk that unlevered firms do not have to bear. In the second part, we analyze the consequences of this possible labor fragility for the ex-ante financial policy of firms. Specifically, we investigate whether firms that rely to a larger extent on a high-talent workforce have lower leverage, a prediction consistent with a trade-off theory of capital structure.

We find that when firms become financially 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.

A key challenge in such an empirical analysis is separating demand and supply side factors that lead to a change in labor composition. A move towards a labor force composition that is less reliant on talent may be the optimal behavior of a profit-maximizing firm that experiences financial distress. To distinguish demand and supply side effects, we focus our analysis on voluntary departures. While we do not have direct information on which departures are voluntary and which are forced (firing), we use two independent approaches to identify instances of voluntary departures. In the first approach, we examine whether the employee who left the firm was unemployed for a period of time. Our conjecture is that forced departures would, to some extent, be associated with unemployment, while voluntary departures would be less likely to result in unemployment spells.[5]

Our second approach exploits an institutional feature of labor laws in Sweden. Firms with 10 or more employees are required by law to follow a last in first out (LIFO) rule when it comes to laying off workers.[6] We use this rule to identify voluntary departures. The algorithm we use can

[5] Our results that talented employees are more likely to leave the firm early and that there is no increase in the incidence of unemployment for these workers, relative to less talented employees, provide support for this conjecture.

[6] As discussed in Section III.B, both anecdotal and systematic evidence suggest that LIFO regulations de facto impact the human resources policies of firms and that there are significant costs associated with deviations from the rule.

be best understood using a simple example. Suppose that a firm has 100 employees and we observe that 20 employees leave the firm. Because we know the joining date of these employees, we can determine whether these job separations adhere to the LIFO rule or not. Any deviations from this rule would provide us with a proxy for voluntary departures. We find that talented employees are more likely to leave voluntarily as they "jump the queue" and leave earlier than the LIFO order would imply. Taken as a whole, our results point to talented workers voluntarily "jumping ship" in times of financial distress.

Another challenge is to empirically separate financial distress from economic distress: do talented employees leave because the firm ceased to be economically viable, or is it specifically because the firm is financially distressed and may go bankrupt? We address this point in two ways. First, we study firms' ex ante leverage choices. Because it is the costs of financial distress and not economic distress that matter for leverage, any effect on leverage of a firm's degree of reliance on talent would be indicative of financial distress driving our results. Consistent with this conjecture, we find that firms that rely more on a highly skilled and consequently highly mobile labor force operate with a more conservative capital structure. This result is obtained not only in the cross-section, but is also confirmed in a quasi-experimental setting where we analyze the impact of an exogenous change in the mobility of workers on the financial policies of talent-intensive firms.

Our second approach to identify the effect of financial distress—above any effect that economic distress may have—is to examine a quasi-experimental setting that focusses on a sub-sample of export-intensive firms. The idea underlying the test is that a large, exogenous decrease in the value of exports due to unfavorable exchange rate movements is likely to be detrimental to all exporting firms, but will only increase the likelihood of financial distress for exporters that were highly levered ex ante, allowing us to distinguish between financial and economic distress. To implement the test, we determine an exporter's exposure to a set of currencies, depending on the exporting firm's trade partners at the start of the sample period. We define a shock as a large depreciation of the currencies of the trading partners relative to the domestic currency (Swedish Kronor). First, we validate the premise of our quasi-experiment by documenting that the likelihood of a firm going bankrupt within three years following a shock increases, but only if the firm is highly leveraged. After confirming that the setting is indeed helpful in disentangling the effects of financial and economic distress, we study the effects of this shock on the likelihood of talented workers leaving. We find that following a large negative export shock, talented workers of highly leveraged firms subject to the shock are significantly more likely to leave the firm for employment elsewhere. This is further evidence that our main results are indeed driven by financial and not economic distress. In addition, by observing the shock that led to bankruptcy, this test helps in

ruling out the concern that labor market forces (such as key employees leaving the firm) were driving the bankruptcy filing in the first place.[7]

Our paper connects several strands of literature in finance. It contributes to the literature that analyzes 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 fragility that a firm's reliance on talent introduces and by establishing such 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.[8] Within the labor and finance literature, our work is most closely 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; Kim 2015). Our work also relates to Graham, Kim, Li, and Qiu (2013), who find a significant loss in the wages of workers employed by firms at the time of bankruptcy; to Donangelo (2014), who documents an asset pricing impact of labor mobility; and to Caggese, Cunat, and Metzger (2016), who argue that financial constraints distort firms' firing decisions.

Our paper adds to the recent work of Brown and Matsa (2016), who use data from an online job search portal to examine how the onset of financial distress affects a firm's ability to hire workers. They find that not only do distressed firms receive fewer applications, but the average quality of the applicants is also lower, thus providing evidence on the labor costs of financial distress. While their findings are informative, lack of micro-level data on individuals prevents them from providing more direct evidence on talent composition around distress. For example, absent the ability to observe the quality of the applicants, indirect proxies (often generated at the zip-code level) are employed.

Our paper complements Brown and Matsa (2016) in several ways. First, we provide very direct evidence on the characteristics of workers that leave and join distressed firms. The granularity of

[7] The shock and empirical setup is broadly similar to Caggese, Cunat, and Metzger (2017). One major difference is that while we focus on voluntary turnover in our tests (proxied by transitions in employment from one firm to another without any unemployment in between), Caggese et al. (2017) study involuntary turnover proxied by transitions into unemployment.

[8] Several ways in which labor forces shape the 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 2016). Ouimet and Zaroutski (2016) provide evidence for acquisition of labor as a motive for M&As. Tate and Yang (2015a) document that diversified firms have more active internal labor markets than focused firms and that, as a consequence, firms may diversify in order to create active internal labor markets (Tate and Yang 2015b). Other research analyzes how financial policies affect labor outcomes (e.g., Agrawal and Tambe 2016, Benmelech, Bergman and Seru 2011).

our data allows us to measure talent, our main characteristic of interest, very precisely. As we can also measure other individual traits (such as tenure, age, gender etc.), we can provide ancillary evidence documenting the characteristics of workers that leave and join financially distressed firms. Second, we focus on both the ability of firms to attract workers as well as the ability of firms to retain them. Failing to attract talent to the organization (as documented by Brown and Matsa 2016) would not be a severe problem if firms were not losing their most talented employees in times of financial distress. However, our findings show that firms keep attracting highly skilled workers at the same pace as less talented employees, but fail to retain their top talent. Furthermore, in contrast with Brown and Matsa (2016) who acknowledge that they "(…) must assume that the quality of the applicant pool and the quality of the person hired are affected similarly", we focus on realized departures and hiring outcomes. This provides a more complete picture as a job posting may not capture the intensity of the search or the change in the nature of the contract that may be offered by firms in times of distress. Finally, we link firms' ex-ante reliance on talent to their capital structure choices.[9] Overall, relative to the previous literature, we are able to paint a considerably richer picture of how labor composition changes around bankruptcy and how this relates to financial policies.

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 talent pool of the firm changes as firms become financially distressed. Section IV investigates whether firms internalize the fragility induced by their reliance on talent when choosing their capital structures. In addition to cross-sectional leverage regressions, we examine how an exogenous shock to labor mobility affects capital structure in talent-intensive firms. Furthermore, in order to separate financial and economic distress, we study how an exchange rate shock affects the talent pool in firms with different degrees of financial leverage. In Section V, we discuss robustness tests and additional 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 the *Serrano* database. LISA contains detailed employee-employer matched information for the whole Swedish population. For individuals aged 16 years or older, a large set of socio-economic information, such as age, gender,

[9] Our work thus also complements Hanka (1998), who documents a negative correlation between leverage and employment.

employment, uncensored wages, and social security benefits are available. This dataset, thus, also allows us to track individuals over time and to study career paths.

A distinguishing strength of the Swedish data is the possibility of linking the information from LISA to measures of cognitive, non-cognitive, and leadership skills using 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.[10] 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 their health status, and the capacity in which they served 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.[11] Non-cognitive ability was assessed through a structured interview with a psychologist, who graded test-takers on psychological abilities using the Stanine scale. In addition, leadership ability was assessed by the psychologist, for all test-takers who 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.

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 employ four data samples in our analysis. With our first sample, we explore 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 first group, which we term *bankruptcy* group, contains firms 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;

[10] Since 2010, both participation in the tests and military service itself have no longer been compulsory.
[11] 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.

if there are multiple bankruptcy events for a single firm, we only use the first event in our analysis.[12]

We then use a matching algorithm to construct a second group of firms, the *non-bankruptcy* group, which provides a counterfactual for the firms approaching bankruptcy in the absence of bankruptcy. Five years prior to bankruptcy, each of the firms in the *bankruptcy* group is matched to a firm that is similar but that does not file for bankruptcy during our sample period. Specifically, we match *non-bankruptcy* firms to *bankruptcy* firms using a nearest neighbor algorithm for a set of firm characteristics within strata for calendar year and 2-digit SNI industry[13] (Imbens et al. 2004). We use the following firm characteristics for the matching: natural logarithm of total assets, number of employees, financial leverage (total debt minus cash, divided by total assets), profitability (EBITDA divided by total assets), average worker wage, and average talent score (non-cognitive 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 *bankruptcy* and *non-bankruptcy* groups. Unsurprisingly, *bankruptcy* and *non-bankruptcy* firms do not differ significantly with regard to the characteristics on which we match. The matching, however, also leads to similarity of *bankruptcy* and *non-bankruptcy* firms along dimensions that we can observe but on which we do not match. This suggests that the firms may not be too dissimilar with respect to characteristics that are not observable to us.[14]

Figure 1 shows the distribution of corporate bankruptcies across industries for our sample. The total number of bankruptcies in our sample is 3,470; the number and frequency of bankruptcies is highest in the manufacturing industry, while it is lowest in the financial sector.[15] Figure 2 shows the distribution of bankruptcies over time for our sample. All sample years are well represented in terms of bankruptcy events, with 2006 and 2007 being the years with the lowest numbers of bankruptcies, and 2009 and 2010 the years with the highest numbers of bankruptcies.

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[12] The median number of employees in *bankruptcy* firms five years prior to bankruptcy is 14.

[13] SNI is the Swedish Standard Industrial classification, which is based on the second revision of the EU's standard industry classification NACE. There are 88 2-digit SNI industries, making them finer than 2-digit SIC industries, and coarser than 3-digit SIC industries.

[14] Our findings are robust to several different ways of constructing the *non-bankruptcy* group, including matching on different sets of characteristics and using firms in the *bankruptcy* group that are *not yet bankrupt* to provide a counterfactual for the firms that are close to bankruptcy. We discuss some of these alternative specifications in Section V.

[15] 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.

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 2011 (using bankruptcies from 2003 to 2011).

Our second sample covers the years 1999 to 2008 and consists of all Swedish limited liability firms. We employ this sample in the cross-sectional leverage tests.

The third sample we employ is used in leverage tests that exploit a 2001 labor law change. It is constructed as follows. As before, we focus on limited liability firms. The 2001 law change allowed firms with less than 11 employees to be exempted from LIFO (last-in-first-out) rules, so these firms constitute our *treatment* group. We restrict the sample to the 1999 to 2003 period, where 1999-2000 is the baseline period and 2002-2003 is the *treatment* period (we omit the year of the law change, 2001, from the analysis). In the analysis of leverage around the LIFO law change, we focus on firms around the 11 employee threshold, that is, firms with at least 5 employees and at most 15 employees.

Finally, our fourth sample consists of a set of relatively export-intensive firms. For all limited liability firms, we have information on their annual value of exports as well as all their trading partners during the years 2001 to 2010. Firms enter this sample the first year in which their exports amount to at least 10% of total sales. Moreover, we require firms to be in the sample for at least five consecutive years and to have an average exports-to-sales ratio equal to or above 0.1 during the sample period. We focus on export-intensive firms to insure that a currency-related shock could plausibly push them towards distress. By focusing only on export-intensive firms, we also condition on any unobservable characteristics that could be correlated with exporting activity, thus limiting concerns related to omitted variables.

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 to work for another employer, 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 period of interest, from three to one years prior to the bankruptcy event. Figure 3 suggests that our choice is meaningful; the figure shows the share of workers leaving and joining firms as they approach bankruptcy. On average, the labor force appears stable until about four years prior to the onset of bankruptcy and begins to contract thereafter. For *bankruptcy* firms, *Close to bankruptcy* takes the value of one in the years t-3, t-2, and

t-1 relative to the bankruptcy filing, and it takes a value of zero in the years t-4 and t-5. For the *non-bankruptcy* 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 *non-bankruptcy* group of firms during the same time period.

Our measure of talent is based on the cognitive and non-cognitive test scores of males obtained from their military records: *Talent* is a dummy variable that takes the value of one if an individual has a combined score in the top five percent of the distribution of such scores at the firm-year level, and it takes the value of zero otherwise. We thus define talent with reference to the distribution of skills within the firm. We do so because the average level of talent varies across firms and industries, and we are interested in understanding whether within each organization, the most talented workers are the ones most likely to jump ship as the firm becomes financially distressed.[16] Approximately 0.7% of the military test-takers are volunteering females, who are excluded from the regressions employing talent as an explanatory variable.[17] Males with incomplete tests or missing test scores are also excluded. In all tests relying on military test scores, to adjust for the possibility of changes in test standards over time, we include fixed effects for the enlistment period as reported by the testing authority: 1969-1982, 1983-1997, 1998-2001, 2002-2008 and 2009-2010. To be able to construct meaningful measures of talent, in the specifications where we use military test scores, we require each firm to have at least three military test-takers in employment. For robustness, we construct four additional measures of talent based on, respectively, cognitive skills, leadership skills, wages, and the combined cognitive and non-cognitive skills of the brothers of the workers in the sample. We discuss these measures in Section VI and Appendix B.

[16] If, instead, we defined talent in an "economy-wide" way based on absolute scores (that is, without reference to the distribution of skills within a given firm), some firms may consist of an exclusively low-talent workforce, while other firms may consist of an exclusively high-talent workforce. We note, however, that we do obtain similar results when we define talent in such a way–for example, by defining talented workers as those that with high ability relative to the distribution of skills in the whole economy. We report robustness tests related to the definition of talent in the appendix.

[17] We do so because self-selected test takers may not be representative of the population. For example, they may be especially interested in pursuing a military career and their civilian career decisions may thus be less informative. Our results, however, remain unchanged if we include female test-takers in our sample.

Ln(Years of education) is the natural logarithm of an individual's years of schooling.[18] *Lag Ln(Wage)* is defined as the natural logarithm of gross wage paid by the main employer, lagged by one year.[19] We define two variables measuring work experience: *Experience in company* is the number of years spent at the current firm, and *Experience in industry* is the number of years spent working in the current industry. Both variables are censored due to the start of available employment histories in 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 the interaction between industry and year dummies (*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). 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, divided by total assets. *Tangibility* is property, plant and equipment divided by total assets. *Profitability* is EBITDA divided by sales, and *Firm age* is the number of years since incorporation. In these firm-level regressions, our talent measure is *Firm talent*, a dummy variable that takes the value of one if the firm-year average of the combined cognitive and non-cognitive skill scores of the employees working in the firm is above the median value for all firms in the respective year. Note that in order to conduct firm-level cross-sectional analysis we cannot use the within-firm talent measure we employ in the first part of the paper; the reason is that all firms have some workers that are at the top of the talent distribution within the firm. We thus use the talent distribution across firms in our firm-level analysis. In the leverage analysis we exclude financial firms and winsorize variables at the 1st and 99th percentiles.

[18] 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.

[19] In the year when an employee changes employment, the database may report more than one main source of income from more than one employer. To avoid 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.

In tests examining the effects of a change in Swedish labor laws on the mobility of workers, we study the following two variables of interest: *Leave rate*$_{ft}$, defined as the number of workers of firm *f* that leave the firm between *t-1* and *t* (this includes both transitions to other firms, as well as transitions to unemployment), divided by the total number of workers of firm *f* at *t-1*; and *Join rate*$_{ft}$, 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*. The other variables are defined as before.

In the tests studying the effects of exogenous currency shocks on exporting firms, we employ the following variables. We first construct a vector of the exposure of a firm to different currencies, *Export exposure*; to insure that a currency shock is truly exogenous to the firm's and workers' actions, we fix the export exposure as of the first year that firm *f* enters the sample. The elements of this vector contain the firm's exports in EUR, USD, GBP, NOK, and DKK divided by the total exports of that firm (in Swedish Kronor) in that year:[20]

$$Export\ Exposure_f = \left(\frac{Exports\ in\ EUR}{Total\ Exports} \quad \dots \quad \frac{Exports\ in\ DKK}{Total\ Exports}\right)$$

We then construct an annual exchange rate movement index by calculating the scalar product between the *Export exposure* vector and a vector of exchange rate changes between the current and the previous year for the five currencies considered (the exchange rate in the currency vector is quoted as SEK per foreign currency). Finally, our main variable of interest is the *Exchange rate shock* dummy variable, which takes the value of one when a firm suffers a negative shock to the value of its exports, that is, when the firm (given its export exposure) experiences negative exchange rate movements. Specifically, the dummy takes the value of one when (i) the annual exchange rate movement index (the scalar product between the *Export exposure* vector and the currency vector) is negative, indicating an appreciation of the Swedish Krona vis-à-vis the exporter's relevant trading partner currencies;[21] and (ii) the index is in the bottom 10% of the sample in that year. To differentiate between high leverage and low leverage firms, we construct the dummy variable *High leverage* that is equal to one if the firm, in the year that it enters the sample, has leverage above the median. We note that both *Export exposure* as well as *High leverage* are defined using historical information and are hence not subject to endogeneity concerns such as firms adjusting leverage or the choice of their trade partners as a consequence of a negative

[20] Exports denominated in these five currencies account for more than two thirds of total Swedish exports during our sample period. We focus on these top five export currencies to simplify the analysis. The distribution of exports during our sample period is as follows: 38% of exports (by value) are to Eurozone countries, 9% are to Norway, 9% to US, 8% to UK, 6% to Denmark. Other countries make up 30% of the exports, the biggest three being China (2.5%), Poland (2%), and Russia (1.5%).

[21] This restriction is necessary because during our sample period, there are some years in which the Swedish Krona mostly depreciated against other currencies.

currency shock. Finally, the variable *Bankrupt within 3 years* takes the value of one if a given firm *f* in year *t* goes bankrupt within the next three years; it takes the value of zero otherwise.

We report summary statistics in Table 2. Panel A shows the variables of the sample that analyzes characteristics of workers in 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 *bankruptcy* group and *non-bankruptcy* group firms. Panel C shows summary statistics for the sample of firms used in the cross-sectional analysis of leverage. Panel D reports summary statistics for the sample of firms used in the labor mobility and leverage analysis around the 2001 labor law change. The samples from Panel C and D do not include worker characteristics and each observation corresponds to a firm-year. Finally, Panels E and F report summary statistics for the variables used in the tests studying the effects of an exchange rate shock on export-intensive firms; Panel E reports statistics for the firm-level sample, while Panel F shows summary statistics for the employee-employer matched sample.

Figure 4 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 non-cognitive 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 5 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 due to the relatively large number of small firms in the Swedish economy which tend to have flat hierarchical structures and less talented CEOs (see also Adams, Keloharju and Knupfer 2016).

III. Evolution of labor force composition around bankruptcy

III.A Composition of workers leaving distressed firms

We begin our empirical analysis by studying the evolution of the labor force composition in firms approaching bankruptcy. Specifically, we study the selection and characteristics of workers who leave and of those who 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 a firm becomes financially distressed, the loss of key talent (defined as a set of innate cognitive and non-cognitive abilities that are generally applicable in different tasks and jobs) is likely to be especially critical for the firm's ability to survive and create value.[22] 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. Furthermore, because more talented workers may be thought to have more influence on the performance of the firm, the cost they would face by being associated with a failed enterprise may be larger than for the average worker. On the other hand, talented workers may be better able to hedge bankruptcy risk. The availability of outside options may differ for high- and low-skilled workers. If more talented workers face a more liquid labor market, then staying in the firm longer could be less risky for them. The theoretical ambiguity that arises from the different economic forces makes it an interesting empirical question whether talented workers are indeed more likely to abandon distressed firms early. Figures 7 and 8 show graphical evidence of these effects. Figure 7 shows that, relative to *non-bankruptcy* firms, the fraction of talented workers leaving increases as the firm approaches bankruptcy. Figure 8 further corroborates this evidence by showing that the fraction of highly talented workers who join the firms in the *bankruptcy* group does not increase relative to *non-bankruptcy* firms as firms approach bankruptcy, indicating an overall deterioration of the talent pool in *bankruptcy* 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:

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

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 one if the firm is in close proximity to bankruptcy (within three years) and zero otherwise. The coefficient θ measures the increase in the probability of a 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 prior to bankruptcy events: matrix X in the regression equation above includes age, experience in the company, experience in the industry, log of years of education and the log of wage (lagged by one year to avoid endogeneity). The coefficients δ measure how being in proximity to bankruptcy alters the selection of workers who decide to abandon the firm in these dimensions. In order to account for time-invariant differences in turnover across firms that may

[22] Abowd et al. (2005) find that the most skilled workers in a firm have a disproportionately positive impact on firm productivity and market value. Consistent with this notion, in Figure 6 we document an increase in the talent wage premium in Sweden over the last two decades.

occur for reasons other than bankruptcy, the matrix Ψ includes firm fixed effects. We also include year-industry fixed effects in our baseline specification 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. In column one, 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. This estimate implies that for firms in the *bankruptcy* group, the probability of workers leaving is 5.6 percentage points higher when firms are close to distress relative to normal times. In columns two and three we analyze the composition of workers who leave *bankruptcy* 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 find that male workers with high talent have a 1.6 percentage point higher probability of leaving the firm as it approaches bankruptcy than less "talented" workers. Relative to the average effect of 5.6%, this estimate implies that the most talented employees are 30% more likely to leave the firm approaching distress than the average employee.[23] The specification reported in column 3 is similar to that reported in column 2 but is augmented by a wide range of worker characteristics. 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 4, we add the interaction between lagged wage and *Close to bankruptcy* to the regression and find that higher paid workers are also more likely to leave when the firm is close to distress. In column 5, we repeat the specification of column 3 but add firm-by-year fixed effects, and our results remain qualitatively similar.

In columns 6 and 7 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 (in column 6), and also the interaction between hierarchy fixed effects and the variable *Close to bankruptcy* (in column 7). The sample size here is reduced, as the hierarchy measure is only available from 2001 onwards (see Section II). Our results show that within a given hierarchical level, highly talented employees are significantly more likely to abandon the firm as it approaches distress. The results in columns 6 and 7 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.

[23] Fahlenbrach, Low and Stulz (2015) find a qualitatively similar pattern for outside directors.

III.B Voluntary vs. involuntary turnover

In periods of distress, firms facing financial constraints may have to dismiss their most talented employees, as they may also be the most expensive. 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. We address this concern in two ways.

At the outset it should be noted that our findings cannot be driven by the desire of firms to fire their most expensive workers in times of distress, as we control for wages in our tests. We also interact *Ln(Wage)* with *Close to bankruptcy* to allow firms to be especially cost-sensitive prior to bankruptcies. In other words, to be consistent with our results, if firms were choosing between two similarly paid workers to lay off, they would choose to let go of the more talented worker. Instead, the most natural explanation for our findings is that we are capturing the decision of talented workers to voluntarily leave firms.

To further distinguish between voluntary and involuntary turnover, we examine whether workers transition into unemployment after exiting the distressed firm. In the tests reported in Table 3, the variable *Leave* only identifies workers that leave to work for another firm; we do this to better capture voluntary turnover.[24] To further address the concern that what we are interpreting as workers voluntarily abandoning the firm may instead reflect firms laying off their most skilled workers, we do an additional test. In columns 1 and 2 of Table 4, we repeat the analysis of Table 3, but focus on workers that leave the firm and become unemployed. Specifically, the dependent variable *Unemployed* takes a value of one only if a worker leaves and transitions into unemployment. We would expect that workers that become unemployed are more likely to have been laid off than those that abandon the firm and do not experience a spell of unemployment. In column 1, we find that there is an increase in the number of workers of *bankruptcy* firms that transition to unemployment, relative to *non-bankruptcy* firms. However, as can be seen in column 2, this effect is not more pronounced for highly talented workers, as the coefficient on the interaction term *Close to bankruptcy x Talent* is economically and statistically insignificant. This suggests that firms are not simply laying off their most talented employees when approaching distress.

Finally, we turn to our sharpest test addressing the question of whether the results in Table 3 reflect voluntary or involuntary turnover. This test exploits a feature of the Swedish labor law that restricts firms in their ability to fire workers. When dismissing workers, firms with more than 10 employees have to follow a last-in-first-out (LIFO) rule that constrains their ability to unilaterally lay off the most skilled workers. In columns 3 and 4 of Table 4 we repeat our analysis for the

[24] See Section II for more details on the sample construction and variable definitions. Given that some skilled workers may find alternative employment immediately after dismissal, we may still be capturing some involuntary turnover via our variable *Leave*.

subsample of firms with more than 10 employees. Because these firms are bound by LIFO rules that restrict their ability to select which workers to fire and which workers to retain, it is 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 Table 3. 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.

In firms that are restricted by LIFO regulation, workers that are fired follow the inverse order in which they joined the firm. In contrast, voluntary exits may "jump the queue" and leave even if they were not in the order dictated by LIFO. We test whether talented workers are more likely to be the ones that "jump the queue" and leave "out of order", that is, we test whether long-tenure talented employees are more likely to leave even before the firm dismisses employees with shorter tenure. Finding that talented workers are those more likely to not follow the LIFO order would be another piece of evidence pointing to these workers leaving voluntarily, instead of being fired by the firm. In columns 5 and 6 of Table 4 we construct the indicator variable *Jumped the queue* which takes the value of one if the worker leaves and deviates from the job separation order implied by the LIFO rule. The algorithm we use can be best understood using a simple example. Suppose that a firm has 100 employees and we observe that 20 employees leave the firm. Because we know the joining date of these employees, we can determine whether these job separations adhere to the LIFO rule or not. Any deviations from this rule would provide us with a proxy for voluntary departures. In these regressions we focus only on *bankruptcy* firms—that is, firms that become bankrupt—and only retain workers in the sample that leave firms in the period t-3 to t-1 relative to bankruptcy to join other firms. We find that the most talented employees of the firm do not wait their turn to be fired. Instead they tend to leave sooner than what their tenure would predict if the firm was laying off workers according to a LIFO rule.

One worry that could arise is that LIFO is not enforced and, as such, *de facto* it is not a restriction on firing. Anecdotal evidence suggests that deviating from LIFO rules is costly for firms and that these rules affect firms' human resources decisions.[25] Further, we present evidence that the LIFO rule does indeed affect the firing decisions of firms. We examine a 2001 law change that exempted firms with *10 or fewer employees* from LIFO rules. Until 2001, following the 1982 Employment Protection Act, all firms were required to follow a last-in-first-out (LIFO) policy if they wished to lay off workers. However, on January 1st, 2001, new legislation came into effect that relaxed this requirement for firms with less than 11 employees.

[25] See, for example, the article *"Storbolagen tappar talangerna i krisen"* published by Veckans Affärer online on the 9th of October 2009 (http://www.va.se/nyheter/2009/09/10/storbolagen-tappar-talangerna-i-krisen/).

In Table B-1 of the appendix, we test whether the relaxation of LIFO rules led to dismissals being less correlated with workers' tenure in the company. If LIFO rules are binding, we expect that after they are relaxed firms would have greater flexibility in retaining the most recent employees and would lay off workers with longer tenure in the firm–in which case, the worker who was the last in is not necessarily the first out. We first examine this issue in a subsample of firms with 10 or fewer employees; that is, firms that become exempt from LIFO rules starting in 2001. We find that (i) consistent with LIFO rules, employees with shorter tenures are more likely to leave than workers with longer tenure, and that (ii) the average firm tenure of workers who leave firms increases after 2001 for firms that become exempt from LIFO rules. We confirm this effect in regressions where we focus on worker transitions to unemployment; such separations are more likely to be dismissals and may thus provide a more direct test of the importance of LIFO rules. Finally, instead of restricting the analysis to firms with 10 employees or less, we also include firms above the threshold of 10 employees and test whether there is a differential effect between *treated* and *control* firms. Consistent with the notion that LIFO rules are a binding restriction limiting the ability of firms to select which workers to lay off, we find that after the reform, firms not bound by LIFO lay off workers with longer tenure relative to firms with more than 10 employees where LIFO remained in place.

Finally, if LIFO rules are limiting the choice set of firms in a meaningful way, we would expect firms to try to avoid them. In that regard, after the law change we would expect firms to keep the number of employees below the threshold of 10 employees in order to avoid triggering LIFO rules. Figure 9 provides evidence that this is indeed the case. While before 2001 there is a smooth distribution of firms around the size cutoff of 11 employees, after 2001 there is evidence of "bunching", with the mass of firms right below the cutoff increasing and the mass of firms with 11 or more employees shrinking.

In sum, the evidence we provide in this subsection lends support to our interpretation that the effects documented in Table 3 are most consistent with high talent workers voluntarily abandoning firms that become financially distressed.

III.C Selection of workers joining distressed firms

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 5, we analyze the ability of firms that approach bankruptcy to attract highly talented workers, by estimating the following specification:

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

This specification differs in two ways from the tests of Table 3. First, the dependent variable is 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. We also add the variable *Other municipality* to test whether the firm is less likely to attract workers for whom the adjustment costs are larger; this variable is an indicator that is equal to one if a worker moves to a new municipality.

Results are reported in Table 5. The first important aspect to note in column one is that the estimate of β is now negative, which implies that firms attract less employees as they approach bankruptcy. The estimate in column 1 implies that *bankruptcy* firms have a 1.41% lower fraction of new employees close to bankruptcy relative to normal times. Additionally, we find that the characteristics of workers who join such firms also change. In particular, workers with more experience in the industry are more likely to join the firm. Consistent with the results in Brown and Matsa (2016) we find that firms approaching distress are less able to attract workers from distant geographic locations, for whom relocation may be too costly given the riskiness of the firm. However, regarding top talent, 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, *bankruptcy* 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 the interaction of lagged wage and *Close to bankruptcy* (column 4), when we add firm-by-year fixed effects (column 5), and when we add hierarchy fixed effects and the interaction of hierarchy fixed effects and *Close to bankruptcy* to the regression (columns 6 and 7, respectively).

The fact that we do not find a decrease in the hiring rate of talented employees relative to less skilled workers for firms approaching distress also suggests that financially distressed firms do not *choose* to operate with lower levels of talent. If that were the case, firms would not only dismiss their most talented employees, they would also stop hiring talented employees. In fact, if firms were aiming to voluntarily reduce the number of talented workers they employ, the natural first step would be to stop hiring talent even before starting to lay off their most skilled workers. Instead, what we find is that firms keep hiring talented employees at the same rate as less talented employees. Our results imply that even prior to bankruptcy, the pool of human capital available in the firm considerably deteriorates.

III.D Placebo test

Even though our *bankruptcy* and *non-bankruptcy* firms look very similar on observable characteristics (see Table 1), we cannot 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 *bankruptcy* and *non-bankruptcy* groups and estimate the same specifications as the ones used in Tables 3 and 5, but now 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).[26] 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 *bankruptcy* and *non-bankruptcy* firms are different even in the absence of bankruptcy, we would expect to also find differences in the ability of *bankruptcy* firms to attract and retain talent a number of years before bankruptcy, relative to *non-bankruptcy* firms. On the other hand, if *bankruptcy* and *non-bankruptcy* firms are comparable absent bankruptcy, we would expect to find no difference in the ability of *bankruptcy* firms to attract and retain talent relative to the *non-bankruptcy* group, when focusing on a period that is further away from bankruptcy.

In Table 6, we report the results of this placebo test. The coefficients on the interactions of our placebo treatment dummy *Close to bankruptcy* and the different worker characteristics are economically very small and statistically insignificant. The sole exception is with respect to *Age* which is lower for workers who join firms that will later become bankrupt, relative to workers who join firms that do not experience a bankruptcy during our sample period. Importantly, we find no evidence that, in the absence of the bankruptcy event, *bankruptcy* and *non-bankruptcy* firms behave differently with regard to retention (column 1) and attraction (column 2) of talent. This lends support to our identifying assumption that the *non-bankruptcy* group provides a good counterfactual for the evolution of talent in *bankruptcy* firms in the absence of bankruptcy.

IV. Talent and capital structure

IV.A Cross-sectional leverage tests

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. However, the previous results may be driven by economic distress or by financial distress. The analysis so far does not distinguish between the two. If our results were solely driven by economic distress, the reliance of the firm on highly mobile, highly skilled workers should not affect capital structure. On the other hand, if what we are capturing is financial distress, a trade-off theory of capital structure would predict that firms that face a higher ex-post risk of talent leaving as the firm approaches distress should choose a more conservative capital structure ex-ante.[27]

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

[27] It should be noted that the risk of loss of talent during normal times may also have an effect on capital structure (Hart and Moore 1994). This channel is also consistent with our story.

We test whether the extent of the reliance of firms on talent shapes financial decisions by analyzing the ex-ante capital structure choices of firms in the cross-section. 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 (and the associated labor fragility) at the firm level is a determinant of capital structure by estimating the following regression:

$$\boldsymbol{Leverage_{ft} = \alpha + \beta \cdot Firm\ talent_{ft} + X'_{ift}\gamma + \Psi_t + \varepsilon_{ift}}$$

The matrix of controls X in these tests includes standard controls used in capital structure regressions: *Tangibility*, *Profitability*, *Ln(Assets)*, and *Firm age*. Our firm-level talent measure is *Firm talent* which takes the value of one if the firm-year average of the combined cognitive and non-cognitive skill scores of the employees working in the firm in a given year is above the median value for all firms in the respective industry and year. The matrix Ψ includes year fixed effects in columns 1 and 2, and industry-by-year fixed effects in column 3 to control for macroeconomic determinants of leverage, so our coefficients can be interpreted as cross-sectional comparisons.

Table 7 reports the results. In column 1 we regress *Leverage* on *Firm talent* and year fixed effects, and in column 2, we include additional controls. The results confirm the notion that the skill level of the labor force is an important determinant of leverage decisions. In both columns, leverage is negatively correlated with the average skill of the employees of the firm. If a firm is above the industry-year median of average firm talent as measured by *Firm talent*, it is associated with a 1.2 percentage point decrease in leverage (column 2). Relative to the average level of leverage in the sample (13.7%), this represents a 9% decrease in leverage for the average firm. In column 3, we add to the specification industry-by-year fixed effects to identify cross-sectional differences in leverage within firms in the same industry and year. Our estimate of 0.5 percentage point decrease in leverage represents a 4% decrease in leverage for firms whose labor force is composed of workers with higher cognitive and non-cognitive skills, relative to their peer firms that operate in the same industry with lower-skilled personnel.

To alleviate concerns that our results are driven by spurious correlation, we include in the estimation year fixed effects, industry-by-year fixed effects, as well as several controls for other important determinants of leverage. 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 an effort to improve identification, we next turn to a quasi-experiment setting where we exploit exogenous variation in the mobility of key employees and study how the financial leverage of affected firms responds.

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. As discussed in Section III.B, while prior to 2001 all firms were bound by LIFO rules, the 2001 reform exempted firms with *10 or fewer employees* from this restriction. 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.[28] As such, we can think of this law change as being both exogenous and unanticipated by firms.

In our empirical analysis we exploit the timing of the law change to examine differential effects of the law on two groups—firms that have 10 or fewer employees (the "treatment" group) and firms that have more than 10 employees (the "control" group). Since we have no reason to believe that the labor market is segmented around the 10 employee threshold, both groups could be affected by the law change. Thus, even though we refer to these groups as *treatment* and *control* groups, we acknowledge the slight abuse of terminology, but exercise caution in interpreting our regression results below.

We restrict the sample to the 1999 to 2003 period. The years 1999 and 2000 are the baseline period and 2002 and 2003 are the *treatment* period (we exclude the year that the law was changed, 2001, from our analysis, to provide a clear before-after comparison of the effects of the law). We further restrict the sample to firms around the 10 employee threshold and therefore focus on firms with at least 5 employees and at most 15 employees.

Labor Mobility

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 might lead to more layoffs. However, laxer labor regulation may 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 affected by the reform that experience a permanent reduction in layoff costs in 2001 to increase the rate of hiring

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

and firing after the implementation of the reform, relative to the *control* group of firms not affected by the reform.[29] We test this hypothesis by estimating the following OLS regression:

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

where *Leave rate*$_{ft}$ is the number of workers of firm *f* that leave the firm between *t-1* and *t* (this includes both transitions to other firms, as well as transitions to unemployment), divided by the total number of workers of firm *f* at *t-1*. The matrix of controls *X* includes *Ln(Assets)*, *Tangibility*, *Profitability,* and *Firm age,* as well as year fixed effects. The variable *Post* takes the value of one in the years 2002 and 2003, and zero in the years 1999 and 2000. *Treated* is an indicator variable that is one if the firm is at or below the 10 employee threshold in 2000, and 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. Column 1 shows that in *treated* firms, more workers leave after 2001 relative to the baseline period. In column 2 we repeat this analysis, but focus on highly skill-intensive firms. Specifically, we retain only firms with above-median firm talent, defined as the firm-level average of the (combined) cognitive and non-cognitive skill scores of the firm's employees. We can see that the coefficient β_3 is significant (with a p-value of 0.061 in column 1 and a p-value of 0.051 in column 2) and positive in both 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 column 2 are larger than those in column 1, which suggests that this effect may be particularly pronounced for talent-intensive firms.

Next, we analyze whether after 2001, *treated* firms increase the worker hiring rate. We employ the same regression specification as before when studying the effect of the law change on job separations, but use the variable *Join rate*$_{ft}$ as the dependent variable. *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*. Results are reported in columns 3 and 4 of Table 8. In column 3, we report the difference-in-differences coefficient β_3 for the full sample, while in column 4 we focus on the sub-sample of talent-intensive firms (as in the specification reported in column 2). We find that the coefficient of interest is positive in both columns, implying that *treated* firms hire more workers after 2001, relative to the *control* group. Moreover, the effect seems to be somewhat stronger for firms that rely more heavily on talent, as the coefficient β_3 in column 4 is larger than that in column 3. Our results are also in line with previous studies that have found qualitatively similar effects of

[29] The increase in labor mobility in treated firms could also spill over and impact the mobility of workers in control firms, which would bias our estimates towards zero.

changes in labor laws on labor mobility in Sweden (von Below and Thoursie 2010) and in the US (e.g., Autor et al. 2007).[30]

Leverage

Having established that the 2001 change in Swedish labor law increased mobility of talented employees, we next turn to the analysis of the impact of this law on firms' financial policies. In light of our previous results, we conjecture that an increase in human capital mobility would increase the fragility of affected organizations, particularly in the case of talent-intensive firms. As a response to the heightened labor fragility they face, we would expect such firms to reduce their leverage after the law change. The expected effects would be different for our so-called "treated" and "control" groups, and are expected to primarily materialize in our sub-sample of talent-intensive firms. To test this differential response, we employ the following regression model:

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

As before, leverage is defined as short term plus long term debt divided by assets. We report the results of these tests in columns 5 and 6 of Table 8. In column 5, we first analyze the impact of the 2001 law change on leverage in the whole sample and find a negative, albeit insignificant coefficient. In the regression in column 6, we restrict the analysis to firms that rely more heavily on talent, following the same definition as in columns 2 and 4. We find that on average, *treated* firms that rely more on talent decrease leverage after 2001.

There are several channels through which the 2001 LIFO law change could impact leverage of *treated* firms. On the one hand, by removing the LIFO constraint, the law gave firms with less than 10 employees more operational flexibility, which may have increased debt capacity (Simintzi et al. 2014). On the other hand, because this law change increased the liquidity of the labor market, post 2001, *treated* firms became more exposed to the risk of loss of talent. In addition, the labor law change, by relaxing firing restrictions, could have also affected the unemployment risk for workers of *treated* firms. While the direction of the effect on unemployment risk is not certain,[31] a potential increase in unemployment risk could lower leverage (Agarwal and Matsa 2013). In sum,

[30] A potential concern with the analysis in columns 1 to 4 of Table 8 is that we use normalized changes as dependent variables. While economically meaningful, the use of these variables implies that one more worker changing firm represents a larger share of workers in smaller (treated) firms than in larger (control) firms. This raises the concern that a mechanical relationship may be driving our findings in columns 1 to 4 of Table 8. We therefore confirm our results on the increase in labor mobility in treated firms after 2001 by using an alternative specification: we perform our analysis in a sample where each unit of observation is an employee-count—year. That is, we aggregate workers from all firms into employee-sized bins, and run difference-in-differences regressions with this aggregated sample. These specifications, which are not subject to the above-mentioned concern and are reported in the appendix to conserve space, confirm our findings (see Table B-4 in Appendix B).

[31] More labor market liquidity (conditional on being fired) may lower unemployment risk. On the other hand, a possible increase in the likelihood of getting fired could increase unemployment risk.

the 2001 labor law change increases the labor fragility of *treated* firms, while the effect on unemployment risk for the workers of these firms is more ambiguous. Because an increase in unemployment risk and an increase in labor fragility have directionally similar effects on leverage, our results could be partly driven by a change in unemployment risk, and not only by an increase in risk of loss of talent.

IV.C Talent mobility and financial distress: evidence from exogenous currency shocks in export-intensive firms

Our evidence so far suggests that firms that become bankrupt (compared to a matched sample of firms that do not go bankrupt) lose talent, and that, perhaps as a consequence, firms that rely more on talent tend to choose lower leverage. The latter result on leverage suggests that the former findings on talent loss close to bankruptcy may be due to financial distress. However, to insure that our results are not driven by economic distress, we conduct an additional analysis.

We examine a quasi-experimental setting that focusses on a sample of export-intensive firms with (ex-ante) different capital structures. The idea underlying the test is that a large, exogenous decrease in the value of exports due to changes in exchange rates is likely to be detrimental to all affected firms, but will only increase the likelihood of financial distress for highly levered exporters, allowing us to distinguish between financial and economic distress. The richness of our data allows us to construct firm-level exposures to different currencies, as we observe the value of exports by country of destination. We can thus exploit, for identification purposes, the fact that a depreciation of the dollar would impact the demand of firms that export to the US, while not directly affecting firms that only export to Norway, for example. We describe the sample and variable construction in detail in Section II.

First, as a validation of our estimation strategy, we estimate the following firm-level regressions:

$$\boldsymbol{Bankrupt\ within\ 3\ years_{ft}} = \boldsymbol{\alpha + \beta \cdot High\ Leverage_f \times Exchange\ rate\ shock_{ft} + X'_{ift}\gamma + \Psi + \varepsilon_{ift}}$$

where *Bankrupt within 3 years* is a dummy variable indicating whether a firm goes bankrupt within the next three years; *High Leverage* is equal to one if the firm (in the year that it enters the sample) has leverage above the industry median; and *Exchange rate shock* is an indicator variable which takes the value of one when a firm suffers a negative shock to the value of its exports due to unfavorable exchange rate changes. Because different firms export to different markets, the exogenous variation that we exploit varies both over time and across firms even within the same industry, which allows us to control for firm and industry-by-year fixed effects (matrix $\boldsymbol{\Psi}$). Finally, X is a set of time-varying firm controls.

We present results of this test in Table 9. We find that exporting firms with high leverage (but not those with low leverage) are more likely to file for bankruptcy in the three years following an

unfavorable exchange rate shock. Specifically, in column 1 we find that an exchange rate shock is associated with a 1.7 percentage point increase in the probability that a highly levered firm files for bankruptcy in the following three years. In column 2, we include a set of firm controls and find a quantitatively similar result. The results reported in Table 9 help us to distinguish economic from financial distress: they show that a negative exchange rate shock, while plausibly harmful to the bottom line of all affected exporters, only leads to financial distress in those firms that were highly leveraged *ex-ante*.[32]

After confirming that the setting is helpful in disentangling the effects of financial and economic distress, we study the impact of this shock on the likelihood of talented workers leaving. For this worker-level analysis, we employ a matched employer-employee sample (see section II.B for details). The coefficient of interest in these tests is on the interaction between *High leverage*, the *Exchange rate shock*, and a dummy variable for high talent workers. In these worker-level tests, the dependent variable is *Leave*, a dummy variable that takes the value of one in the year the worker leaves the firm and zero otherwise. We report results in Table 10. In column 1, we find that the probability that a talented worker leaves a firm following an unfavorable exchange rate shock increases in the case of highly levered firms, as the interaction of *Exchange rate shock*, *High leverage* and *Talent* is positive and statistically significant. In column 2, we include additional controls for experience in company, experience in the industry, worker age, the logarithm of the years of education, and lagged wage, and find a similar result. In column 3, we add to the specification of column 2 the interactions between *Exchange rate shock*, *High leverage* and *Experience in the company* and *Lag Ln(Wage)*. We find that while talented workers are more likely to leave highly levered firms following the exchange rate shock, we do not find such effects in the case of workers with longer tenure or those with higher wages. Finally, in column 4, we interact all the remaining worker characteristics (*Age*, *Experience in industry*, and *Ln(Years of education*) with *High leverage* and *Exchange rate shock* and confirm that when highly levered firms suffer a currency shock, their most talented workers are more likely to subsequently abandon the firm. On the other hand, the

[32] One concern that may arise is that leverage, even if fixed to take the value as of the beginning of the sample period, is not exogenously determined. In particular, if firms weigh the advantages of debt against the expected costs of financial distress, then we would expect firms with lower expected costs to be more highly levered. Expected costs of financial distress can be low for two (non-mutually exclusive) reasons: low probability of distress and low costs given distress. If highly levered firms have low probability of distress but face high costs given distress, one could be worried that an unanticipated shock that leads to financial distress could be associated with high ex-post costs of distress. This could lead to an over-estimation of expected costs. However, in our sample, highly levered firms are in fact more (not less) likely to file for bankruptcy, which implies that in order for them to face lower expected costs of financial distress, they would need to have lower costs given distress. This implies that under this framework, if anything, we may be underestimating the costs of financial distress. In that sense, our tests could be measuring a lower bound of the labor costs of financial distress.

estimates on the interactions between *High leverage*, *Exchange rate shock*, and the remaining worker level characteristics yield statistically insignificant coefficients.

This quasi-experimental setting assures us that the effects we are documenting are not originating from the labor market; instead, we can trace the origin of the employment effects back to exogenous exchange rate movements. Furthermore, this analysis also increases our confidence that our results are driven by financial rather than economic distress.

V. Robustness and additional discussion

In the tests discussed above, we use a combination of cognitive and non-cognitive skills as our main measure of talent. Our results are robust to several different ways of measuring talent. In particular, we find similar results when measuring talent using more narrow talent measures reflecting only cognitive skills or leadership ability. Furthermore, even though the measures of skill based on military test scores 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 repeat our tests using a talent measure based on wages (which can be interpreted as the market price of talent), as well as a measure of talent based on the level of cognitive and non-cognitive skills of the brothers of the females in the sample.[33] The results are also robust to using an absolute classification of talent (the "raw" combined cognitive and non-cognitive test score), instead of the within-firm relative classification we employ. We report a replication of our previously discussed findings with these alternative measures of talent in Appendix B.

One worry that could arise in our study is that the effects we document are specific to Sweden. As a way to address this concern, in Appendix C, we conduct a set of tests on the relation between leverage and the mobility of talented workers in the United States: employing a quasi-natural experiment that uses staggered changes in the enforceability of non-compete clauses in labor contracts across U.S. states, we find that as the risk of loss of talented workers is reduced, firms increase their leverage.

Finally, our results on leverage are consistent with two interpretations. First, consistent with a trade-off model of capital structure, the present value of labor costs of financial distress may lead firms to optimally demand less leverage. Second, financiers may not supply debt to firms that rely heavily on talent. In an attempt to evaluate the relative strength of the two potential channels, we use our U.S. sample to study the effect of changes in enforceability of non-compete agreements on 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

[33] In these tests we can also include a dummy variable for gender in the matrix of individual characteristics and study whether gender affects the propensity to leave or join distressed firms.

one observes that leverage is mainly adjusted by financially constrained firms, this would indicate that changes in labor fragility (resulting from changes in the enforceability of non-compete agreements) primarily affect firms' debt capacity. Using three different indices to measure financial constraints, we find that following an increase in the enforceability of non-compete clauses, it is only financially unconstrained firms that increase leverage, while there is no change in leverage in the group of financially constrained firms. This lends support to the trade-off theory argument. We discuss these results in detail in Appendix C.

VII. 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; Abowd et al. 2005). However, the reliance on human capital and the high mobility of skilled labor also expose firms to an added degree of risk. In critical times, due to ample outside options in the labor market, talented employees may leave the firm and seek employment elsewhere. This risk of losing talent may, in turn, affect firms' capital structure decisions: the possibility of talented workers leaving in times of financial distress constitutes an additional source of risk that unlevered firms do not have to bear, because financial distress only affects levered firms. Hence, firms that rely to a larger extent on talent face higher costs of financial distress and may consequently choose to operate with lower leverage.

In this paper, we analyze 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 financial distress. We then study how this risk of losing talent affects ex ante financial policies. We find that the dependence of firms on highly skilled labor is associated with lower leverage in the cross-section of firms. Furthermore, using a change in Swedish labor law as a source of exogenous variation for labor mobility, we find that when the mobility of talented workers increases, leverage decreases. This setting confirms our cross-sectional results and allows us to interpret our findings in a causal manner. To ensure that our findings are indeed driven by financial distress, we also employ a quasi-experiment that uses exogenous currency shocks in a sample of export-intensive firms with different capital structures. We find that following a large negative export shock, talent becomes more prone to leave the firm, but only if the exporter experiencing the negative shock is highly leveraged. We interpret this as further evidence that our main results are indeed driven by financial and not economic distress.

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 link between this talent-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.

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Table 1: **Summary statistics – comparing matched bankruptcy and non-bankruptcy firms**

This table presents the summary statistics for the characteristics of the firms in the *bankruptcy* and *non-bankruptcy* groups at *t-5* relative to the start of the bankruptcy. 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 the two groups. Firms in the bankruptcy group are those that file for bankruptcy between 2003 and 2011. The variables, as well as the matching procedure used to construct the control group, are described in detail in Section II of the paper.

	Non-bankruptcy			**Bankruptcy**			**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 score	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. experience in company (n. m.)	3,470	4.7289	2.6212	3,470	3.8195	2.5328	0.0000
Avg. experience in industry (n. m.)	3,470	6.0846	2.6954	3,470	5.6791	2.6484	0.0000
Avg. years of education (n. m.)	3,470	10.9991	1.1893	3,470	11.0387	1.1573	0.1593

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; Panel B presents summary statistics for individuals in the sub-sample used when controlling for hierarchy fixed effects. Panel C reports the summary statistics for the firms in our cross-sectional study of capital structure. Panel D reports the summary statistics for the characteristics of firms in the sample used to study the impact of the 2001 LIFO law change. Panel E reports summary statistics for the characteristics of firms in the sample of exporting firms. Finally, Panel F reports summary statistics for the characteristics of workers in the sample of exporting firms. For details, see Section II of the paper.

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

Variable	**Obs.**	**Mean**	**SD**
Leave	352,369	0.2047	0.4035
Join	352,369	0.2434	0.4292
Talent	352,369	0.1184	0.3231
Age	352,369	35.4668	10.1323
Experience in company	352,369	5.3305	4.8114
Experience in industry	352,369	7.2631	4.8544
Ln(Years of education)	352,369	2.4286	0.1599
Lag Ln(Wage)	352,369	7.0412	1.7735

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

Panel B: Individual characteristics (2001–2010)

Variable	Obs.	Mean	SD
Leave	222,752	0.1713	0.3768
Join	222,752	0.1919	0.3938
Talent	222,752	0.1104	0.3134
Age	222,752	37.5991	9.739
Experience in company	222,752	6.1692	5.177
Experience in industry	222,752	8.5739	4.9957
Ln(Years of education)	222,752	2.4373	0.1585
Lag Ln(Wage)	222,752	7.4013	1.2714

Panel C: Firm characteristics - cross-sectional leverage sample (1998-2011)

Variable	Obs.	Mean	SD
Leverage	344,094	0.1369	0.1859
High talent	344,094	0.5025	0.0500
Tangibility	344,094	0.2363	0.2361
Profitability	344,094	0.0694	0.1042
Size	344,094	9.2940	1.4246
Firm age	344,094	20.6305	16.0083

Panel D: Firm characteristics - LIFO sample (1999–2003)

	Full sample			High talent firms		
Variable	**Obs.**	**Mean**	**SD**	**Obs.**	**Mean**	**SD**
Leave rate	49,295	0.3847	0.5028	24,332	0.3881	0.485
Join rate	49,295	0.3987	0.5171	24,332	0.4033	0.4853
Leverage	49,295	0.1571	0.1978	24,332	0.1326	0.1833
Size	49,295	8.6000	0.9076	24,332	8.7020	0.9444
Tangibility	49,295	0.2507	0.2388	24,332	0.2000	0.2165
Profitability	49,295	0.0722	0.1530	24,332	0.0722	0.1737
Firm age	49,295	17.2033	12.6326	24,332	17.0039	12.9391

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

Panel E: Firm characteristics - export sample (2001–2010)

Variable	Obs.	Mean	SD
Bankrupt within 3 years	30,722	0.01904	0.1367
High leverage	30,722	0.4944	0.5000
Exchange rate shock	30,722	0.0793	0.2702
Tangibility	30,722	0.2146	0.1886
Profitability	30,722	0.0699	0.1322
Size	30,722	10.7362	1.4589
Firm age	30,722	29.7253	21.8676

Panel F: Worker characteristics - export sample (2001–2010)

Variable	Obs.	Mean	SD
Leave	1,635,720	0.1109	0.314
High leverage	1,635,720	0.2386	0.4263
Exchange rate shock	1,635,720	0.1090	0.3117
Talent	1,635,720	0.0583	0.2343
Age	1,635,720	37.854	9.8709
Experience in company	1,635,720	7.8162	5.5624
Experience in industry	1,635,720	9.8541	5.096
Ln(Years of education)	1,635,720	2.4706	0.1799
Lag Ln(Wage)	1,635,720	7.5490	1.3491

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

This table shows the composition of workers that leave firms approaching bankruptcy. 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 to work for another employer, 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 a dummy variable taking the value of one for the top 5% of talent (measured using combined cognitive and non-cognitive test scores) within a firm. The matrix X includes *Age*, *Experience in company*, *Experience in industry*, *Ln(Years of education)* and *Lag Ln(Wage)*. Ψ includes firm fixed effects and year-industry fixed effects. The regressions also include military enrollment period fixed effects. The sample used in column 1 through 5 spans the period 1998–2010. Due to data restrictions, our sample period in columns 6 and 7 is 2001–2010. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:				Leave			
Close to bankruptcy	0.0557***	0.0537***	0.0208	0.0188		0.0677	0.0688
	(0.006)	(0.006)	(0.051)	(0.051)		(0.067)	(0.054)
Close to bankruptcy × Talent		0.0164***	0.0160***	0.0166***	0.0096**	0.0132**	0.0113*
		(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)
Talent		0.0145***	0.0173***	0.0171***	0.0246***	0.0164***	0.0169***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Close to bankruptcy × Age			0.0005**	0.0003	0.0000	-0.0004	-0.0004
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age			-0.0040***	-0.0039***	-0.0037***	-0.0028***	-0.0028***
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in company			-0.0025**	-0.0028***	-0.0006	-0.0038***	-0.0038***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience in company			-0.0084***	-0.0083***	-0.0092***	-0.0062***	-0.0062***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Experience in industry			0.0045***	0.0041***	0.0023***	0.0061***	0.0061***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience in industry			0.0007	0.0009*	0.0015***	-0.0009	-0.0009
			(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of education)			-0.0019	-0.0101	-0.0061	-0.0123	-0.0116
			(0.020)	(0.019)	(0.017)	(0.027)	(0.022)
Ln(Years of education)			0.0089	0.0117	0.0106	0.0405***	0.0403***
			(0.013)	(0.012)	(0.013)	(0.014)	(0.013)
Close to bankruptcy × Lag Ln(Wage)				0.0046***			
				(0.002)			
Lag Ln(Wage)			-0.0202***	-0.0217***	-0.0219***	-0.0147***	-0.0147***
			(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Firm, Industry × Year FE	Yes	Yes	Yes	Yes	No	Yes	Yes
Enrolment Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Year FE	No	No	No	No	Yes	No	No
Hierarchy FE	No	No	No	No	No	Yes	No
Hierarchy × Close to Bankruptcy FE	No	No	No	Yes	No	No	Yes
Observations	352,369	352,369	352,369	352,369	352,369	222,752	222,752
Adjusted R-squared	0.137	0.138	0.153	0.153	0.226	0.123	0.123

Table 4: **Selection of workers that leave firms approaching bankruptcy: voluntary vs. involuntary departures**

This table shows the composition of workers that leave firms approaching bankruptcy. We report coefficients from estimating the following OLS regression:

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

In columns 1 and 2 the dependent variable is *Unemployed*, a dummy variable equal to one if a worker transitions to unemployment when leaving a firm. In columns 3 and 4 the dependent variable is *Leave*, a dummy variable equal to one in the year a worker leaves a firm to work for another employer. In columns 5 and 6 the dependent variable is *Jumped the queue*, a dummy variable equal to 1 if a worker leaves a firm and his tenure in the firm is higher than the tenure of the *n:th* worker ranked by tenure, where n is the number of workers leaving the firm that year. The other variables are defined in Table 3. In columns 1 to 4 the sample period spans 1998–2010. The sample underlying columns 3 to 6 only includes employees of firms with more than 10 workers. In columns 5 and 6 only workers leaving firms close to bankruptcy are included. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Unemployed		Leave		Jumped the queue	
Close to bankruptcy	0.0083***	0.0531***	0.0453***	0.0442		
	(0.002)	(0.019)	(0.006)	(0.052)		
Close to bankruptcy × Talent		-0.0019		0.0121**		
		(0.003)		(0.005)		
Talent		-0.0152***		0.0200***	0.0344***	0.0300***
		(0.001)		(0.003)	(0.010)	(0.010)
Close to bankruptcy × Age		-0.0001		0.0003		
		(0.000)		(0.0001)		
Age		0.0006***		-0.0037***		-0.0023***
		(0.000)		(0.000)		(0.001)
Close to bankruptcy × Experience in company		-0.0006		-0.0032***		
		(0.001)		(0.001)		
Experience in company		-0.0069***		-0.0079***		
		(0.000)		(0.001)		
Close to bankruptcy × Experience in industry		0.0004		0.0051***		
		(0.000)		(0.001)		
Experience in industry		-0.0029***		0.0003		0.0370***
		(0.000)		(0.001)		(0.002)
Close to bankruptcy × Ln(Years of education)		-0.0174**		-0.0126		
		(0.007)		(0.021)		
Ln(Years of education)		0.0113**		0.0183		0.0140
		(0.004)		(0.013)		(0.023)
Lag Ln(Wage)		-0.0049***		-0.0217***		0.0416***
		(0.000)		(0.001)		(0.002)
Firm, Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Enrolment Period FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	352,369	352,369	305,318	305,318	26,954	26,954
Adjusted R-squared	0.062	0.083	0.131	0.147	0.209	0.306

Table 5: **Selection of workers that join firms approaching bankruptcy**

This table shows the composition of workers that join firms approaching bankruptcy. 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. *Other municipality* is an indicator that is equal to one if a worker moves to a new municipality. The other variables are defined in Table 3. The sample used in column 1 through 5 spans the period 1998–2010. In column 5 we include firm-year fixed effects. In column 6 and 7 we add hierarchy fixed effects to the specification of column 3; due to data availability our sample period in column 6 and 7 is 2001–2010. Robust standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:				Join			
Close to bankruptcy	-0.0141*	-0.0148*	-0.0340	-0.0322		-0.1253***	-0.0838*
	(0.008)	(0.008)	(0.038)	(0.038)		(0.045)	(0.043)
Close to bankruptcy × Talent		0.0057	0.0065	0.0061	0.0046	0.0029	0.0019
		(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.006)
Talent		-0.0073**	-0.0052**	-0.0050*	0.0015	0.0004	0.0007
		(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Close to bankruptcy × Age			-0.0011***	-0.0010***	-0.0008***	-0.0006	-0.0007**
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age			0.0025***	0.0024***	0.0022***	0.0016***	0.0017***
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Close to bankruptcy × Experience in industry			0.0045***	0.0048***	0.0024***	0.0043***	0.0042***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience in industry			-0.0273***	-0.0274***	-0.0260***	-0.0226***	-0.0225***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Close to bankruptcy × Ln(Years of education)			0.0100	0.0156	0.0101	0.0375*	0.0210
			(0.017)	(0.016)	(0.014)	(0.020)	(0.021)
Ln(Years of education)			0.0418***	0.0399***	0.0388***	0.0029	0.0083
			(0.009)	(0.009)	(0.010)	(0.009)	(0.010)
Close to bankruptcy × Other municipality			-0.0101	-0.0121*	-0.0069	-0.0156*	-0.0157*
			(0.006)	(0.007)	(0.007)	(0.009)	(0.009)
Other municipality			0.0557***	0.0564***	0.0540***	0.0562***	0.0562***
			(0.004)	(0.004)	(0.004)	(0.006)	(0.006)
Lag Ln(Wage) × Close to bankruptcy				-0.0032**			
				(0.002)			
Lag Ln(Wage)			-0.1014***	-0.1004***	-0.0992***	-0.1088***	-0.1088***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm, Industry × Year FE	Yes	Yes	Yes	Yes	No	Yes	Yes
Enrolment Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Year FE	No	No	No	No	Yes	No	No
Hierarchy FE	No	No	No	No	No	Yes	No
Hierarchy × Close to Bankruptcy FE	No	No	No	Yes	No	No	Yes
Observations	352,369	352,369	352,369	352,369	352,369	222,752	222,752
Adjusted R-squared	0.183	0.183	0.368	0.368	0.410	0.311	0.311

Table 6: **Placebo test**

In this table, we replicate the analysis of Table 3 and Table 6 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 Table 3-5) for firms that eventually go bankrupt. In column 1 of this table we present the placebo analysis of the composition of workers leaving firms in the treatment group. In column 2 we present the placebo results of the composition of workers that join treatment firms. 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.

	(1)	(2)
Dependent variable:	Leave	Join
Close to bankruptcy	-0.0203	-0.0051
	(0.057)	(0.050)
Close to bankruptcy × Talent	-0.0031	0.0021
	(0.006)	(0.005)
Talent	0.0219***	0.0017
	(0.003)	(0.003)
Close to bankruptcy × Age	0.0003	-0.0014**
	(0.000)	(0.001)
Age	-0.0038***	0.0045***
	(0.000)	(0.001)
Close to bankruptcy × Experience in company	-0.0001	0.0071
	(0.001)	(0.005)
Experience in company	-0.0090***	-0.0421***
	(0.001)	(0.003)
Close to bankruptcy × Experience in industry	0.0011	-0.0015
	(0.001)	(0.003)
Experience in industry	0.0006	-0.0059***
	(0.001)	(0.002)
Close to bankruptcy × Ln(Years of education)	0.0048	0.0062
	(0.023)	(0.019)
Ln(Years of education)	0.0183	0.0102
	(0.017)	(0.009)
Lag Ln(Wage)	-0.0210***	-0.0914***
	(0.001)	(0.002)
Firm, Industry × Year FE	Yes	Yes
Enrolment Period FE	Yes	Yes
Observations	239,500	239,500
Adjusted R-squared	0.132	0.472

Table 7: **Cross-sectional leverage tests**

This table studies the relationship between the talent-intensity of firms and financial leverage. We report coefficients from estimating the following OLS model:

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

Firm talent is a dummy variable that takes the value of one if the firm-year average of the combined cognitive and non-cognitive skill scores of the employees working in the firm is above the median value of all firms in the respective year. All specifications include *Tangibility*, *Profitability*, *Ln(Assets)*, and *Firm age* as controls, as well as year fixed effects in columns 1 and 2, and industry-by-year fixed effects in column 3. 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)
Dependent variable:		Leverage	
Firm talent	-0.0537***	-0.0116***	-0.0053***
	(0.001)	(0.001)	(0.001)
Tangibility		0.4388***	0.4484***
		(0.003)	(0.004)
Profitability		-0.2076***	-0.2041***
		(0.006)	(0.006)
Ln(Assets)		-0.0022***	-0.0046***
		(0.001)	(0.001)
Firm age		-0.0004***	-0.0006***
		(0.000)	(0.000)
Year FE	Yes	Yes	Yes
Year × Industry FE	No	No	Yes
Observations	344,094	344,094	344,094
Adjusted R-squared	0.023	0.293	0.311

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

This table analyzes the impact of the relaxation of the LIFO rule in 2001 on the mobility of workers and financing decisions by firms. Columns 1-4 analyze the impact on labor mobility and columns 5-6 analyze the impact on leverage. We report coefficients from estimating the following OLS model:

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

In columns 1 and 2, 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 columns 3 and 4, 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*. In columns 5-6, the dependent variable is *Leverage*. *Post* is a dummy variable indicating the period after the law change. *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. Odd-numbered columns report the results for the full sample of firms while even-numbered columns report the results for highly skill-intensive firms. We define the latter type of firms as those that are at or above the 50th percentile of the distribution of a firm-averaged talent measure (which is based on combined cognitive and non-cognitive test scores). All specifications include *Tangibility*, *Profitability*, and *Ln(Assets)* as controls, as well as year and firm fixed effects. The sample period is 1999 to 2003 with the year of the law change, 2001, excluded. The sample consists of 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)	(6)
Dependent variable:	Leave rate		Join rate		Leverage	
Sample:	Full	Talented	Full	Talented	Full	Talented
Post × Treated	0.0121*	0.0180*	0.0481***	0.0549***	-0.0032	-0.0065**
	(0.006)	(0.009)	(0.007)	(0.010)	(0.002)	(0.003)
Ln(Assets)	-0.0310***	-0.0289**	0.1188***	0.1128***	0.0304***	0.0273***
	(0.009)	(0.013)	(0.009)	(0.013)	(0.003)	(0.004)
Tangibility	-0.0799***	-0.1203***	-0.0292	-0.0065	0.3368***	0.2974***
	(0.029)	(0.045)	(0.028)	(0.042)	(0.011)	(0.017)
Profitability	-0.1186***	-0.1368***	0.0495**	0.0470*	-0.1200***	-0.1136***
	(0.023)	(0.031)	(0.021)	(0.026)	(0.006)	(0.008)
Firm age	-0.0123	-0.0127	-0.0232***	-0.0246***	0.0010	0.0009
	(0.008)	(0.010)	(0.007)	(0.009)	(0.003)	(0.004)
Firm, Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49,295	24,332	49,295	24,332	49,295	24,332
Adjusted R-squared	0.635	0.653	0.640	0.665	0.843	0.828

Table 9: **Export shock and bankruptcy**

This table reports regressions studying the relationship between leverage, exchange rate shocks, and bankruptcy. We report coefficients from estimating the following OLS model:

$$\begin{aligned}\text{Bankrupt within 3 years}_{ft} &= \alpha + \beta_1 \cdot \text{High leverage}_f + \beta_2 \cdot \text{Exchange rate shock}_{ft} \\ &+ \beta_3 \cdot \text{High leverage}_f \times \text{Exchange rate shock}_{ft} + X'_{ft}\gamma + \Psi_{ft} + \varepsilon_{ift}\end{aligned}$$

Bankrupt within 3 years is a dummy variable that takes the value of one if the firm files for bankruptcy in the next three years, and zero otherwise. *High leverage* is a dummy variable that takes the value of one if the firm's leverage is above the median. *Exchange rate shock* is a dummy variable that takes the value of one in the year the firm suffers a severe exchange rate shock, and takes the value of zero otherwise. All specifications include *Tangibility*, *Profitability*, *Ln(Assets)*, and *Firm age* as controls as well as firm and industry-by-year fixed effects. 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)
Dependent variable:	Bankrupt within 3 years	
High leverage × Exchange rate shock	0.0166**	0.0164**
	(0.007)	(0.007)
Exchange rate shock	0.0031	0.0022
	(0.003)	(0.003)
Tangibility		0.0220
		(0.018)
Profitability		-0.0691***
		(0.014)
Ln(Assets)		-0.0122***
		(0.005)
Firm age		0.0327***
		(0.010)
Firm FE	Yes	Yes
Year × Industry FE	Yes	Yes
Observations	30,722	30,722
Adjusted R-squared	0.423	0.427

Table 10: **Export shock and labor mobility**

This table studies the composition of workers leaving firms following an exchange rate shock. We report coefficients from estimating the following OLS model:

$$\begin{aligned}\text{Leave}_{ift} &= \alpha + \beta_1 \cdot \text{High leverage}_f + \beta_2 \cdot \text{Exchange rate shock}_{ft} + \beta_3 \cdot \text{Talent}_{ift} \\ &+ \beta_4 \cdot \text{High leverage}_f \times \text{Exchange rate shock}_{ft} + \beta_5 \cdot \text{High leverage}_f \times \text{Talent}_{ift} \\ &+ \beta_6 \cdot \text{Exchange rate shock}_{ft} \times \text{Talent}_{ift} + \beta_7 \cdot \text{High leverage}_f \times \text{Exchange rate shock}_{ft} \cdot \text{Talent}_{ft} \\ &+ X'_{ft}\gamma + \Psi_{ift} + \varepsilon_{ift}\end{aligned}$$

Leave, the dependent variable, is a dummy variable that takes the value of one in the year the worker leaves the firm to work for another employer, and zero otherwise. *High leverage* is a dummy variable that takes the value of one if the firm's leverage is above the median. *Exchange rate shock* is a dummy variable that takes the value of one in the year the firm suffers a severe exchange rate shock, and takes the value of zero otherwise. *Talent* is a dummy variable taking the value of one for the top 5% of talent (measured using combined cognitive and noncognitive test scores) within a firm. In columns 2 to 4, the matrix X contains *Age*, *Experience in company*, *Experience in industry*, *Ln(Years of education)*, and *Lag Ln(Wage)*. In addition, in column 3 it contains the interactions between *High leverage*, *Exchange rate shock*, and *Experience in company* and *Lag Ln(Wage)*. In column 4, we add to matrix X the interactions between *High leverage*, *Exchange rate shock*, and *Age*, *Experience in industry*, and *Ln(Years of education)*. Ψ includes firm fixed effects and year-industry fixed effects. The regressions also include military enrollment period fixed effects. 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:	Leave			
Exchange rate shock × Talent × High leverage	0.0211***	0.0185**	0.0169**	0.0161**
	(0.008)	(0.008)	(0.008)	(0.008)
Exchange rate shock	0.0070	0.0075	0.0628*	0.0879
	(0.006)	(0.006)	(0.036)	(0.063)
Talent	0.0388***	0.0302***	0.0305***	0.0299***
	(0.002)	(0.002)	(0.002)	(0.002)
Exchange rate shock × Talent	-0.0123**	-0.0122**	-0.0113**	-0.0106**
	(0.005)	(0.005)	(0.005)	(0.005)
Exchange rate shock × High leverage	0.0043	0.0062	-0.0284	-0.0691
	(0.009)	(0.009)	(0.046)	(0.082)
Talent × High leverage	-0.0080**	-0.0040	-0.0050	-0.0024
	(0.003)	(0.003)	(0.003)	(0.003)
Exchange rate shock × High leverage × Experience in company			-0.0004	-0.0007
			(0.001)	(0.001)
Exchange rate shock × High leverage × Lag Ln(Wage)			0.0050	0.0045
			(0.005)	(0.005)
Exchange rate shock × High leverage × Age				-0.0005
				(0.001)
Exchange rate shock × High leverage × Experience in industry				0.0015
				(0.002)
Exchange rate shock × High leverage × Ln(Years of education)				0.0206
				(0.023)
Firm FE	Yes	Yes	Yes	Yes
Year X Industry FE	Yes	Yes	Yes	Yes
Enrolment Period FE	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes
Observations	1,636,608	1,635,720	1,635,720	1,635,720
Adjusted R-squared	0.114	0.136	0.136	0.136

Figure 1: **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 3,470. The sample spans the period 2003–2011.

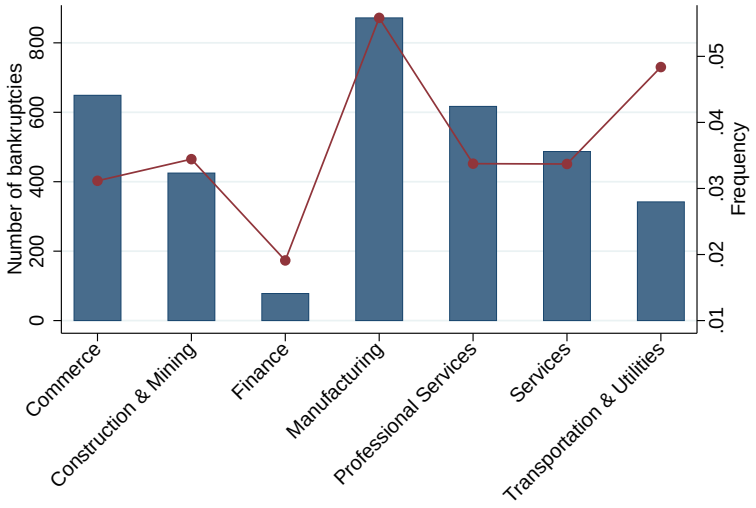

Figure 2: **Corporate bankruptcies over time**

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 3,470. The sample spans the period 2003–2011.

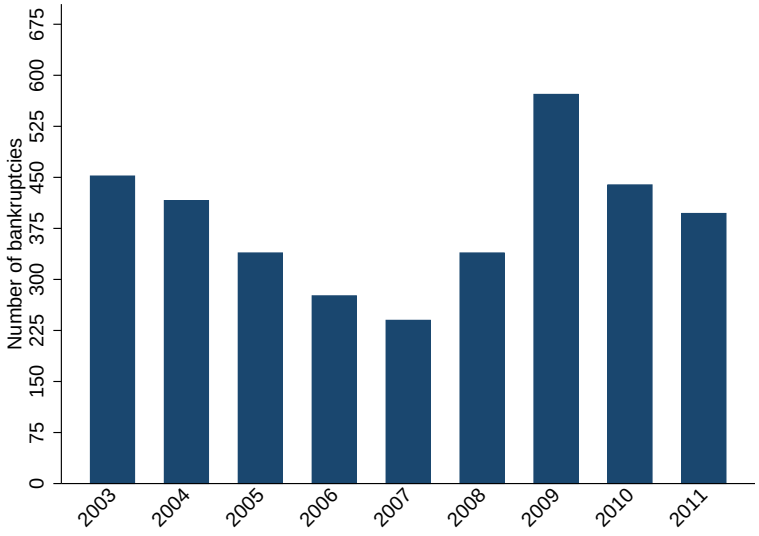

Figure 3: **Evolution of labor force in firms approaching distress**

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.

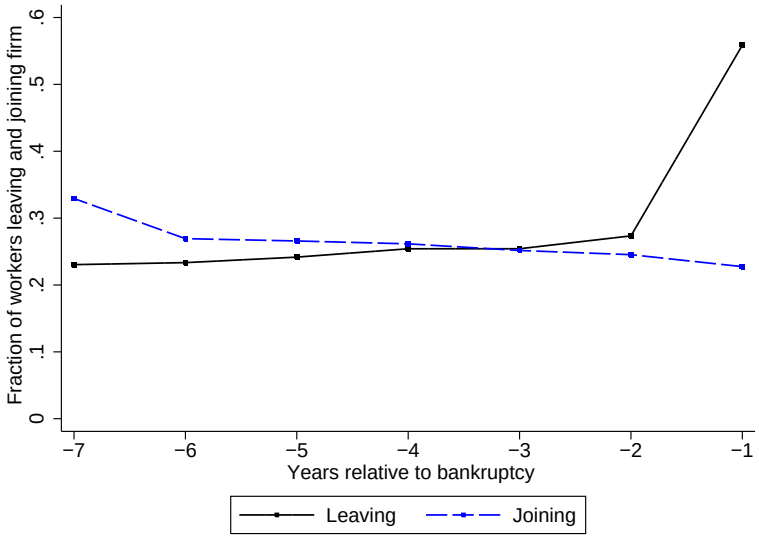

Figure 4: **Talent distribution across industries**

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 5: **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 6: **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.

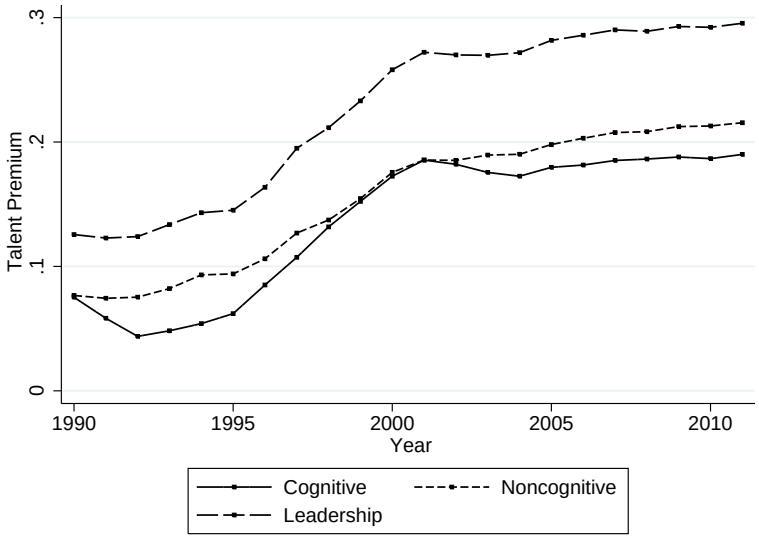

Figure 7: **Talent leaving treatment and control firms**

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).

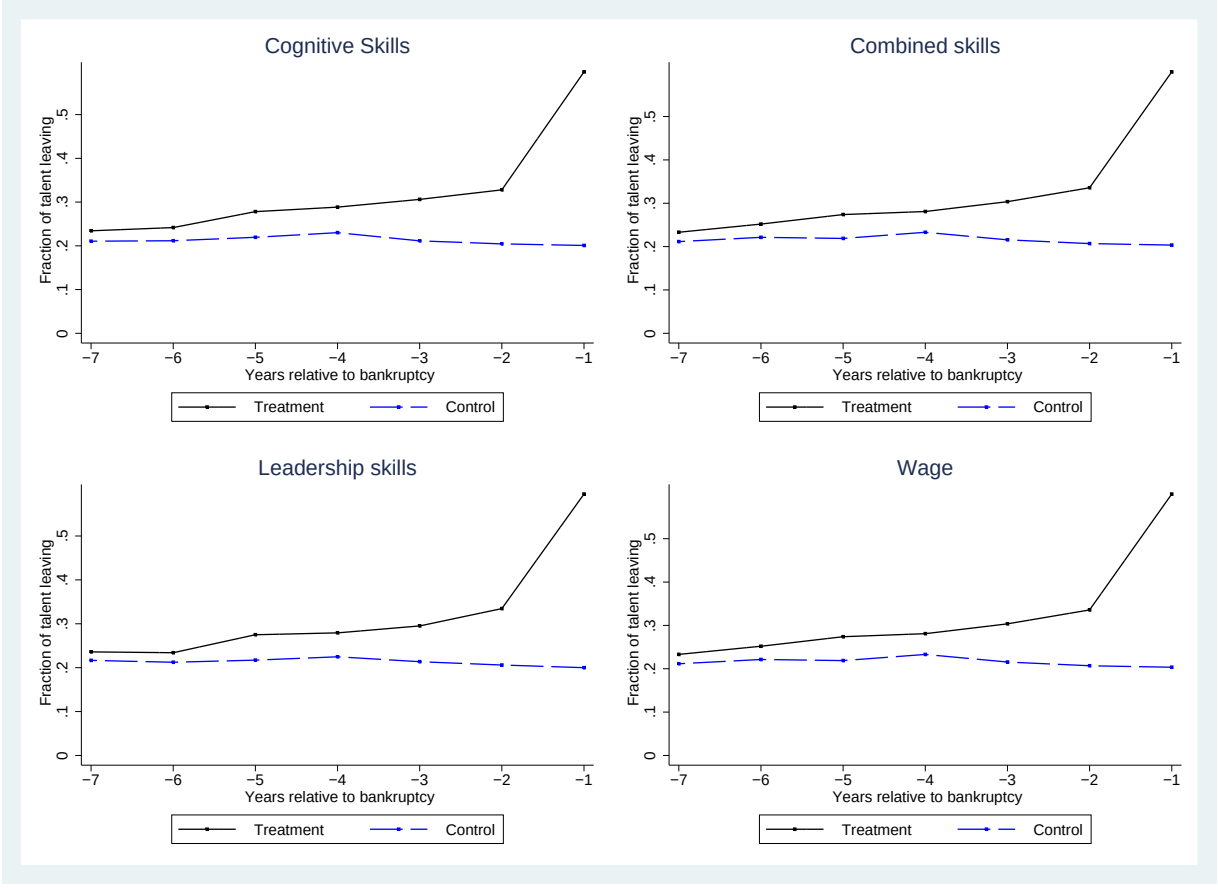

Figure 8: **Talent joining treatment and control firms**

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).

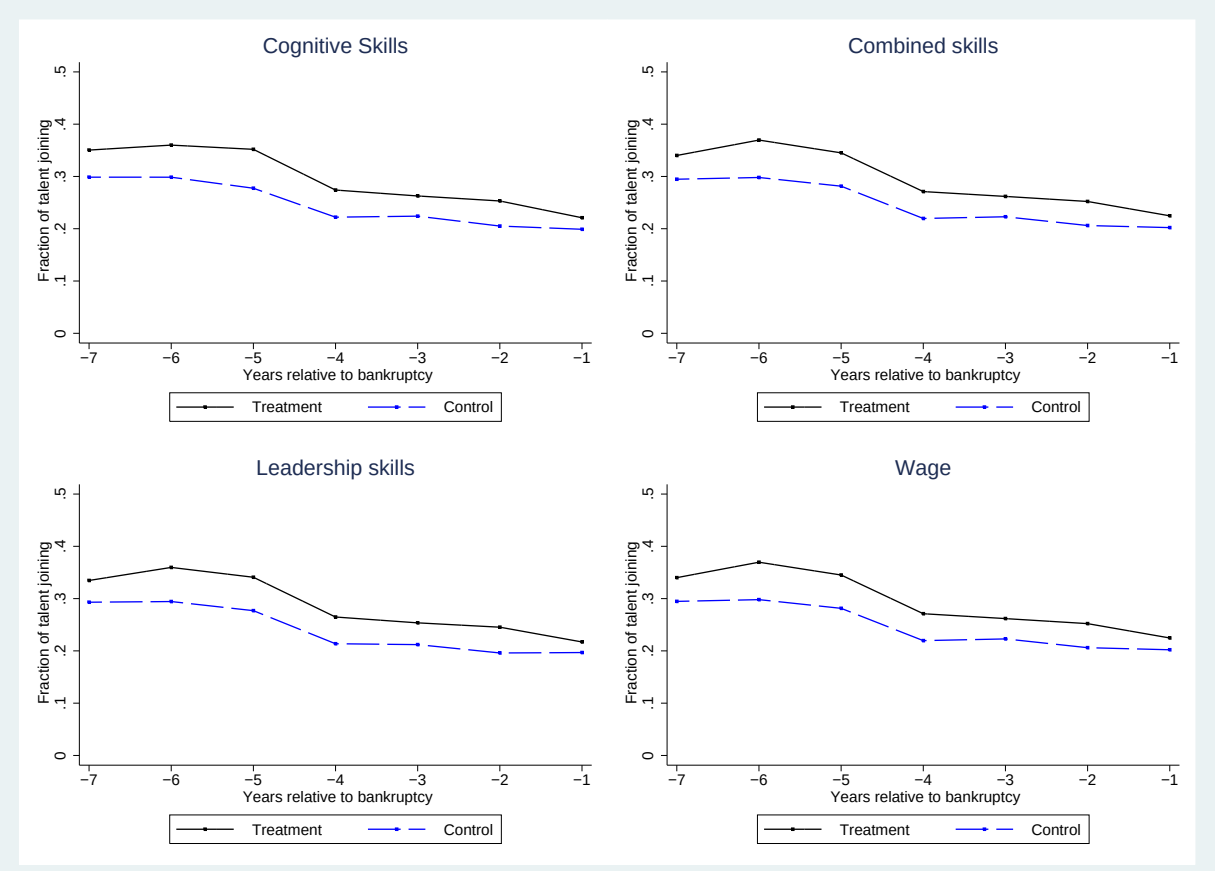

Figure 9: **Firm size distribution before and after the change in LIFO rule**

This figure shows the evolution of firm size distribution around the relaxation of the LIFO rule in 2001. The top panel shows the distribution of the number of firms in 2000 (before the law change) compared to 2004 (after the law change) by size bins from 8 to 15 employees. The bottom panel shows the evolution of the number of firms between 1998 and 2004; we separately plot the evolution of the count of firms slightly above and below the cutoff of 11 employees relevant for the law change. Firms with 9 and 10 employees are subject to the law change, and firms with 11 and 12 employees are not affected. The lines are normalized by the number of firms in 2000.