Unlocking the Value of Mergers and Acquisitions in Minimizing Employment Risks

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Abstract

This study explores the link between employment risks and mergers and acquisitions (M&As). It utilizes labor market density as a measure of employment risks and finds that these risks make firms less attractive as targets but more likely to engage in acquisitions, particularly when acquiring firms face financial constraints. This effect on targetiveness is longer lasting than on acquisitiveness. Firms tend to acquire targets in non-local labor markets, especially when they lack political ties. Moreover, employment risk's impact on M&A likelihood is stronger for human capital-intensive firms facing labor market friction. Additionally, we show that these acquiring firms perform well post-M&A and improve firms' total factor productivity, indicating that acquisitions help mitigate employment risks and enhance corporate competitiveness, especially in emerging markets.

Keywords: M&As; Employment risks; human capital intensity; China

JEL: G30; G32; G34

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1. Introduction

Recent studies highlight the crucial role of employees in influencing firms' performance. Factors such as local labor market density and the alignment of values between employees and corporations can enhance firm performance and increase employee commitment (Zhao, 2018; Rice and Schiller, 2022). Additionally, a growing body of research explores the potential risks associated with unemployment, such as unpredictability of employee mobility and labor market frictions, with significant implications for corporate policies (Cao and Rees, 2020; Lee et al., 2018; Lee et al., 2022; Ellul et al., 2023) and corporate performance (Lin et al., 2018; Shen et al., 2021). Despite this, considering the inherent uncertainties associated with labor retention and recruitment, which pose significant challenges for firms in securing the necessary workforce (See Figure 1, Figure 2), the exploration of effective strategies for addressing and managing uncertainties in employment risks on firm level, with the goal of optimizing corporate value, remains a relatively unexplored area.

[Insert Figure 1]

[Insert Figure 2]

This study aims to tackle this question by investigating the impact of employment risk on firm mergers and acquisitions (M&As) activities, with the goal of enhancing their overall business value. M&As can be seen as a potent and valuable growth strategy that swiftly confers competitive advantages, including technological innovation (Bena and Li, 2014; Cornaggia, 2015), improvements in labor welfare (Wittman, 1991), and reinforcement of a company's internal labor market (Gehrke et al., 2021). In line with prior research, our primary contribution

lies in examining the propensity of firms to engage in M&A activities when confronted with employment risks, considering both the attractiveness of the target firm and the acquisitiveness of the acquiring firm. We then seek to determine whether these M&A transactions have the potential to reduce labor market friction and enhance the firms' capacity to attract and retain employees post-M&As. This assessment encompasses the evaluation of factors such as human capital efficiency, firm performance, stakeholder benefits, and financial leverage.

Despite current studies on how firms manage employee-related risks, there remains a lack of consistent definition or measurement to capture the employment risks. In a broader sense, employment risks encompass the overall uncertainties associated with labor-related factors at the firm level, including a company's ability to attract and retain the necessary skilled and unskilled workforce. Previous research primarily relied on external shocks such as new employment regulations or financial crises to approximate the risks tied to human capital (Lee et al., 2022; Ellul et al., 2023). However, these approaches only capture external variations in these labor-related risks surrounding these events, which have limitations in capturing the dynamic nature of labor risk over time. In expanding this existing body of literature, we directly construct a time-varying proxy, labor market density, for measuring employment risks. [2]

[2] "Labor market density" measures job opportunities in a geographic area (or a firm's proximity area) relative to job seekers. In denser labor markets, firms might face stronger employment risks as they can easily obtain employees but also easily lose essential workers. In contrast, firms in low-density labor markets might experience a more fixed workforce. Some studies show that the aggregation of labor is primarily demonstrated through two dimensions: the rise of employment prospects and the generation of workforce (Peck, 1996). In addition, Zhao et al. (2018) and Lee et al. (2022) find that firms near schools and universities can attract and retain employees, positively impacting corporate performance. Consistent with previous study, we gauge local market density at two distinct levels: one being the natural logarithm of the total number of firms or universities within a 60-mile radius of the sample firm in each year. We determine the latitude and longitude of universities for the given year through web crawling and text parsing algorithms that match the location descriptions in the text. The latitude and longitude data of firms are sourced from the CSMAR database. We manually collected university data from the China Education Online website, accessible at https://gkcx.eol.cn/school/search.

When examining the likelihood of M&A activities being influenced by employment risks, we can approach it from two angles, considering the target and acquirer aspects. On the one hand, M&As can be seen as a strategy to address their own employment-related vulnerabilities, manifested in the increased likelihood of acquisitions when firms face employment risks. According to resource-based theory,[3] long-term sustainable advantage can often be attributed to a company's human assets, which possess tacit knowledge and social complexity that are challenging for competitors to replicate (Coff, 1997; Wright et al., 2001). From this perspective, an acquirer that is affected by employment risks may be inclined to acquire an external target as a strategy to safeguard their consistently valuable human capital, including advantages in research and development (R&D). In this context, M&A activity aims to mitigate employment risk, enhance the firms' competitive edge, and ultimately boost overall value following the merger.

Conversely, it is conceivable that a rise in employment risks might make firms less likely to be targets of acquisition. According to neoclassical economic growth theory, a high level of labor input can lead to lower equilibrium levels of capital goods and productivities (Ricardo, 1951).[4] When we consider the trade-off between the expenses associated with acquiring a

[3] Resource-based theory posits that possessing strategic resources provides organizations a significant opportunity to establish a competitive edge over rivals (Barney, 1991). These resultant competitive advantages contribute value to the firm, fostering sustained profitability, especially over the long term. The theory underscores the importance of a firm's capacity to acquire, develop, and deploy valuable and rare resources that are challenging for competitors to imitate or replace. Resource heterogeneity encompasses tangible assets (such as physical capital and technology), intangible assets (including brand reputation and intellectual property), and human assets (like skilled employees).

[4] The conventional growth theory classifies labor as regular workers, distinct from the traditional concept of human capital as perceived in resource-based theory. In contrast, endogenous growth theory regards labor as human capital imbued with technical knowledge pivotal for innovation and subsequent economic growth. Consequently, when addressing employment risk, our indicators, labor market density concerning both firms and universities, encompass not only regular workers (aligning with the traditional view of labor) but also human capital (representing skilled labor).

potential target[5] and the costs linked to employment risks,[6] it is plausible that the acquiring firm would face greater costs in adapting to their internal labor dynamics before, during, and after the merger compared to the expenses related to employment risks. This could potentially result in a reduced equilibrium level of productivities, financial constraints, and, consequently, a lower firm value (Adra et al., 2020). In this context, given the substantial costs involved in personnel adjustments, acquiring firms might be less inclined to pursue mergers with firms that have higher levels of employment risk.

This study focuses on China whose institutional framework offers an intriguing backdrop for investigating employment risks linked to M&A activities within a specific country. Several key factors motivate this choice. Firstly, the extensive involvement of the Chinese government in economic activities and its control over the allocation of limited resources, including labor, often leads to resource misallocation (Hsieh and Klenow, 2009). Consequently, Chinese firms encounter unique challenges related to labor scarcity due to the distinct institutional intervention in China. Secondly, China's labor market exhibits significant disparities (Feder et al., 1990; Caliendo et al., 2019). The allocation of social welfare, educational, and medical resources is biased toward coastal regions with more rapid economic development (Selden and You, 1997; Zhao et al., 1999). As a result, there is an imbalance in the distribution of labor, with varying degrees of labor scarcity experienced in different regions of the country.[7] Thirdly,

[5] As an illustration, this cost should encompass the expenses related to acquiring the potential target, as well as the costs associated with adapting human capital, including fees for employee dismissal, wage adjustments, and employee training, post-acquisition.
[6] This cost may involve the increased expenses associated with higher wages and benefits, which arise due to the heightened risk of labor turnover for the firms (Abowd and Ashenfelter, 1981).
[7] Firms situated in regions with higher levels of economic development often encounter challenges in attracting employees, while those in less developed areas struggle with a shortage of available workers (Knight, 1999).

China boasts the world's largest labor market, with a labor force population exceeding 822 million and substantial fluctuations in labor supply and demand since the early 2000s (Zhu 2012; Wei et al., 2017). This vast labor market provides a unique context for exploring the impact of increased employment risks on corporate M&A activities at the microeconomic level and how individual companies respond to these risks while adjusting their human capital strategies.

We first explore how employment risks influence a company's M&A endeavors. Leveraging a comprehensive dataset consisting of 26,092 firm-year observations from 3,601 distinct firms spanning the period from 2007 to 2020, we observe that employment risk plays a noteworthy role. It significantly raises the likelihood of firms engaging in acquisitions while diminishing their attractiveness as potential targets. Our findings hold up under rigorous scrutiny, as we control for various firm-level and macroeconomic variables, and apply the instrumental variable method to ensure the robustness of our results.

This is followed by a deeper analysis into the ramifications of M&As influenced by employment risks by examining the distinct scenarios in which various firm characteristics come into play. Drawing from prior research that highlights financial constraints as hindrances to investment and growth in developed economies (Hubbard, 1997; Cull, 2015), we identify a noteworthy trend. Firms facing higher levels of financial constraints exhibit a greater propensity to engage in M&A activities. In addition, we find that employment risks have a consistently negative impact on M&A activities up to three years, the effect on targetiveness is longer lasting than on acquisitiveness. Furthermore, we demonstrate that the impact of

employment risks on a company's probability of pursuing M&A is particularly pronounced for firms with a high degree of reliance on human capital. This aligns with previous studies that suggest a firm's level of dependence on human capital influences its corporate investment objectives (Chang and Jo, 2019; Cao and Rees, 2020).

Our results also reveal that acquiring firms with limited political connections are more inclined to acquire potential targets when confronted with employment risks. This finding aligns with earlier research, indicating that firms without political ties encounter less government intervention and have fewer political resources (Fan et al., 2007). Consequently, they face heightened competition in the acquisition of human capital within the labor market.

Finally, we shift our focus to assess how employment risks might influence post-M&A outcomes. In particular, we examine the impact of employment risks on a firm's market competitiveness and financial performance following the M&As deals. Our findings indicate that acquiring firms experience a positive post-M&A performance when confronted with employment risks. Additionally, we present evidence suggesting that firms grappling with employment risks can expedite the acquisition of human capital through M&A activities, thus enhancing their post-M&A performance and efficiency through their total factor productivity.

Our study contributes to the existing literature in several ways. First, there is a substantial body of research in the fields of accounting and finance that explores the impact of potential labor risk-taking on corporate policies (Qiu and Wang, 2021), corporate valuation (Shen, 2021; Lee et al., 2022), capital structure (Sanati, 2018), and CEO compensation (Garmaise, 2011; Ellul et al., 2023). Much of this research focuses on high-skilled employment risks, which can

drive up costs associated with skilled labor (Qiu and Wang, 2021), subsequently affecting firm policies and value (Cao and Rees, 2020; Shen, 2021). To broaden the scope of this research strand, our study contributes by enriching the literature on relative labor risks in corporate M&A decision-making. We do so by analyzing employment risks that encompass both skilled and unskilled labor, thus offering more comprehensive evidence on how employment risks, stemming from labor market frictions, impact corporate investment behaviors. Furthermore, our study provides new insights into strategies for improving the economic consequences of employment risks, thereby contributing to a more holistic understanding of labor-related risk management in corporate decision-making.

Furthermore, our research introduces fresh insights into the risk factors that come into play when making decisions regarding mergers and acquisitions. Existing literature suggests that M&A decisions and their consequences are shaped by a range of factors, including corporate social responsibility (Arouri et al., 2019), creditor rights (Acharya et al., 2014), and external risks such as policy uncertainty (Cotei et al., 2021). To enhance this area of study, our research places a particular emphasis on examining the role of employment risks in the decision-making processes related to M&A. We also assess the post-M&A outcomes and the efficacy of M&A activities in managing employment risks, thereby offering a novel perspective on the array of risk factors that affect M&A decisions and their impact on firm performance.

Additionally, our study adds depth to the body of literature focusing on the influence of labor-related factors on M&A activities. Prior research in this field has primarily explored how

labor protections, such as collective bargaining by labor unions and managerial compensation coordination, impact M&A decisions (Acharya et al., 2011; Bena and Li, 2014; Ahmad et al., 2019; Ellul et al., 2023). Our empirical analysis extends this line of inquiry by integrating the principles of resource based theory and neoclassical economic theory. This broader perspective enables us to elucidate the relationship between employment risks and firms' M&A decisions, as well as to investigate whether M&A activities can effectively mitigate employment risks. By doing so, our research enhances the understanding of how labor factors interact with M&A decisions and their outcomes, providing a more comprehensive view of the relationship between labor and corporate strategies.

Finally, our study contributes to the literature on employment risks in emerging markets. Existing research predominantly explores the impact of labor-related challenges on corporate behaviors in the United States and other developed countries, with relatively few studies concentrating on emerging markets. For instance, studies by Agrawal and Masta (2013) and Faccio and O'Brien (2021) have employed cross-country or U.S.-focused data analyses, demonstrating the substantial influence of potential labor friction on corporate financing decisions. However, considering factors like weak law enforcement and regional disparities in developed countries (Bian and Huang, 2009), firms operating in emerging markets often encounter more pronounced employment risks than their counterparts in developed nations. Therefore, our study offers unique insights by focusing on the Chinese economy, contributing fresh evidence regarding the impact of employment risks on investment behaviors. Moreover,

these findings can have broader implications for enterprises in emerging markets that share similar market dynamics and challenges with China.

The remainder of the study is organized as follows. Section 2 presents the literature review and develops the hypothesis. Section 3 describes our data and sample. Section 4 and 5 provides the results and conclusion, respectively.

2. Literature Review and hypothesis development

2.1 The impact of employment market friction and risk-taking

The majority of existing literature has focused on investigating labor market frictions, specifically examining factors like labor risk-taking incentives and their impact on corporate activities. These factors are often assessed using external variations, as documented by Gormley (2013), Shue and Townsend (2013), Belo et al. (2017), and Ellul et al. (2023).

Recent research, on the other hand, places a spotlight on the relationship between labor market frictions and firm behavior, as evident in the work of Agrawal and Matsa (2013), Png (2017), and Lee et al. (2022). In the United States and other developed nations, Agrawal and Matsa (2013) explored how changes in state unemployment insurance laws affect labor layoff costs and discovered that higher unemployment rates subsidize greater firm leverage. Png (2017) examined the impact of state adoption of the Uniform Trade Secrets Act (UTSA) on research and experimental development activities among U.S. firms from 1979 to 1998, revealing a positive influence of the UTSA on these behaviors. Shen (2021) determined that labor market frictions, approximated through U.S. green card applications, have a detrimental effect on firm value, particularly for companies with elevated labor adjustment costs. In

emerging markets like China, Wei et al. (2020) leveraged the introduction of the Communist Party of China's Rule No. 18 as an exogenous shock to demonstrate that disruptions in political connections result in increased labor costs, particularly for firms exposed to higher skilled risks.

Furthermore, a subset of studies has delved into the impact of labor market friction on investment behaviors, as highlighted by Sanati (2018) and Jeffers (2019). For instance, Sanati (2017) uncovered that labor mobility diminishes firms' reliance on debt and their willingness to take investment risks, employing state-level disturbances to support their findings. Their research also presents evidence that firms can make strategic decisions regarding investments and financing, adjust their labor force by skill and mobility, and adapt to labor-related disruptions. In line with the findings of Sanati (2018), Jeffers (2019) extends this understanding by providing additional evidence that labor frictions, such as non-compete agreements that restrict disclosure, exert a positive influence on firms' investment decisions, particularly in the case of knowledge-intensive enterprises.

2.2 Hypotheses Development

It is documented that the impact of labor friction, specifically relevant labor risks, displays inconsistency in its influence on corporate investment behavior (Sanati, 2018; Jeffers, 2019), especially within the context of M&A decisions (Dessaint et al., 2017). Furthermore, it remains an open question whether employment risks affect M&A activities and whether firms can fortify their labor capital, their capacity to attract and retain employees, and their competitive advantages through M&A endeavors when confronted with external labor frictions. Therefore, we postulate that the effect of employment risks may manifest in two distinct aspects.

On the one hand, firms exposed to high labor employment risks are more likely to assume the role of acquirers. Prior research has underscored the significant role of M&A as a resource acquisition strategy, particularly within the domain of human resource management (Younge et al., 2015). For instance, Chen et al. (2021) have highlighted that the desire to acquire human capital stands as a primary motivation for pursuing acquisitions, specifically to retain key technicians, top executives, and employees. In line with Chen et al. (2021), Gehrke et al. (2021) have contributed additional evidence by demonstrating that mergers enable acquiring firms to hire younger and more cost-effective employees while establishing internal labor markets. Furthermore, existing resource-based theories suggest that the preservation of long-term sustainable advantages is rooted in human capital assets, characterized by tacit knowledge and social complexity that are challenging to imitate (Coff, 1997; Wright et al., 2001). In line with this perspective, human capital can be viewed as an enduring asset for augmenting corporate competitive advantage, thereby motivating high labor risk-taking firms to pursue acquisition activities.

On the other hand, amidst the uncertainty surrounding employment risks, it is plausible that firms exposed to labor employment risks are less likely to be acquired. This hypothesis can be explained through the neoclassical economic growth theory, which posits that an increase in a factor of production, such as labor input or external production costs, leads to lower equilibrium levels of capital goods and productivity, ultimately reducing the growth rate (Ricardo, 1951; Romer, 1990). It has been pointed out that acquirers should consider the trade-off between the relevant cost of human capital acquired through an acquisition and the

standalone cost of firm production, viewed from the perspective of external expenses (Hitt et al., 1990).

For instance, Hitt et al. (1990) provided foundational evidence of a trade-off between growth through acquisition and firm innovation. They emphasized that acquisitions can sometimes serve as a substitute for innovation, while the acquisition process itself, especially during the bidding phase, can lead to increased diversification, affecting managers' time allocation and risk preferences. Corroborating Hitt et al. (1990), Puranam et al. (2003) indicated that established acquiring firms tend to acquire technology-based entrepreneurial firms with a focus on gaining innovation, despite facing trade-offs in the cost of integrating new technology. Considering the uncertainty in the valuation of the target, Ouimet (2013) found that the acquisition process involves a trade-off between minority acquisitions and complete integration.

Building on the insights from these studies, acquiring firms may need to weigh the cost of acquiring a potential target against the risks associated with labor employment when deciding to pursue an acquisition. This is particularly relevant when the high cost of adjusting to their internal labor input following the merger exceeds the cost incurred due to the employment risk. This trade-off may potentially result in a lower equilibrium level of productivity, financial constraints, and ultimately a reduced firm value (Adra et al., 2020). Therefore, our argument suggests that acquiring firms are less likely to merge with target firms that exhibit high labor risk-taking tendencies in order to minimize the employment-related risks.

These firms may need to carefully balance the cost of labor input in M&As against the cost of labor input in their development while preserving productivity.

Based on the arguments presented, we can postulate the following hypotheses:

H1: *When firms face higher employment risk, they are more likely to acquire the target.*

H2: *When firms face higher employment risk, they are less likely to be acquired.*

These hypotheses encapsulate the expected relationships between employment risk and the roles firms assume in M&A transactions. ***H1*** suggests that firms exposed to elevated employment risk are inclined to become acquirers, driven by the motivation to secure human capital and maintain competitive advantages. In contrast, ***H2*** posits that firms confronting higher employment risk are less likely to be the targets of acquisition, as they may need to carefully weigh the cost of labor input in M&A against the potential risks and expenses associated with their existing labor force.

3. Sample Selection, Methodology and Descriptive Statistics

3.1 Data and sample selection

Our initial sample includes all listed companies on both the Shanghai Stock Exchange and the Shenzhen Stock Exchange from 2007 to 2020, comprising 46,771 firm-year observations. Following the existing studies, we exclude 1,473 firm-year observations flagged with either ST or *ST, 1,003 firm-year observations from the financial industry, and 19,676 firm-year observations with missing information. The final sample consists of 26,092 firm-year observations, corresponding to 3,601 unique firms. All the data of firm financial ratio, M&As

deals, and corporate governance are obtained from the Chinese Stock Market and Accounting Research (CSMAR) database.

3.2 Measurement of key variables

3.2.1 Measure of employment risks

Given that aggregation of labor is mainly manifested in two dimensions: the rise of employment prospects and the generation of workforce (Peck, 1996), we proxy employment risks in two ways. One is labor market density at firm level (*Ln_firm*), representing the opportunities of employment prospects, which is measured as the natural logarithm of the total number of firms within a 60-mile radius of the sample firm based on the sample firms' latitude and longitude. The other is labor market density at university level (*Ln_uni*), representing the continuity of labor generation, which is measured as the natural logarithm of the total number of universities within a 60-mile radius of the sample firm[8]. Consistent with Zhao (2018), Duchin et al. (2020), and Lee et al. (2022), the distance between the sample firms is calculated as follows:

Firstly, we defined R as the earth's radius:

$$R = earth\,radius \tag{1}$$

Next, we calculated the α as follow:

$$\alpha = [sin(\frac{X_2 - X_1}{360} * \Pi)]^2 + cos(\frac{Y1}{180} * \Pi) * cos(\frac{Y2}{180} * \Pi) * [sin(\frac{Y_2 - Y_1}{360} * \Pi)]^2 \tag{2}$$

[8]To gather information on employment risks at two different levels, namely the firm level and the university level, we employed distinct data collection methods. At the university level, we initiated the process by utilizing web crawling and text parsing algorithms to extract location details from the descriptions of university locations available on the China Education Online website. This yielded a comprehensive dataset comprising 14,047 labor market density observations spanning the years 2007 to 2020. Subsequently, we employed the addresses of these universities to cross-reference and obtain latitude and longitude information from the Baidu map. The second level of data collection, focusing on the firm level, involved gathering information from the Chinese Stock Market and Accounting Research Database (CSMAR) database.

where X and Y are the latitude and longitude of each sample firm, respectively. The distance between point A for a sample firm (X_1, Y_1) and point B (X_2, Y_2) for a firm/university is calculated as follow:

$$Distance = R * 2 * \alpha tan2(\sqrt{\alpha}, \sqrt{1-\alpha}) \tag{3}$$

3.2.2 Instrumental variable - labor mobility

Based on the measurement by Donangelo (2014), we define the *Labor_ mobility* at the firm level. First, the measurement of employee' concentration is given by:

$$CONC_{t,p} = (\frac{emp_{i,t,p}}{\sum_i emp_{i,t,p}})^2 \tag{4}$$

where $emp_{i,j,t}$ is the number of employees who are employed in industry *i* at time *t* at the firm *p*.

In the second stage, we aggregate the concentration measure, denoted as $CONC$, by firm. This aggregation is performed by weighting the concentration measure based on the wage expenses associated with each occupation.

$$LM_{i,t,p} = \left(\sum CONC_{i,t,p} \times \frac{emp_{i,t,p} \times wage_{i,t,p}}{\sum_i emp_{i,t,p}\, wage_{i,t,p}}\right)^{-1} \tag{5}$$

where $wage_{i,t,p}$ is a measure of the average annual wage paid to workers in industry *i* in year *t* at the firm *p*. Then, the variable of *Labor mobility* can be standardized.

3.3 Empirical model

3.3.1 The effect of employment risks and likelihood of M&A

Our primary analysis of the relationship between employment risks and firm's acquisitiveness probability is based on the following model:

$$Acquirer\_dummy_{i,t} = \alpha_0 + \alpha_1 \times EMP\_risks_{i,t-1} + \alpha_2 \times Control + IndustryFE + YearFE + \varepsilon_{i,t} \quad (6)$$

where *Acquirer_ dummy* is the dependent variable that takes the value of one if the firm announces at least one acquisition in the year (t+1), and zero otherwise. The key independent variable, *EMP_risks*, is employment risks measured by both *Ln_firm* and *Ln_uni*. Following previous literature on M&A, we control for several firm characteristics that affect corporate M&A probabilities, including *SOE, Ln_Age, ROA, Leverage, Cashflow, Mb_ratio*. The control variables are lagged by one year to circumvent possible reverse causality concerns. Appendix A shows the definitions of all the variables used in this study.

Next, to investigate whether labor firms are likely to be acquired when they face employment risks, we estimate the following model:

$$Target\_dummy_{i,t} = \alpha_0 + \alpha_1 \times EMP\_risks_{i,t-1} + \alpha_2 \times Control + IndustryFE + YearFE + \varepsilon_{i,t} \quad (7)$$

where $Target\_dummy$ is a dummy variable that equals one if a firm is merged by an acquiring firm in the year (t+1), and zero otherwise. All the other variables are defined the same as those in equation (6).

3.4 Summary statistics

Table 1 shows the summary statistics of all the variables in the total sample. The unconditional mean probability of the total sample's firms announcing acquisition activities in the subsequent year is 18.6 %, and the unconditional mean probability of the total sample's

firms announcing merger activities in the subsequent year is 6.5%. The mean and median values of the dependent variable *Ln_ firm* (*Ln_ uni*) are approximately 4.784 (3.879) and 4.771 (4.174), respectively. The standard deviation of *Ln_ firm* (*Ln_ uni*) is 1.726 (0.92). The average natural logarithm of firms' ages in our sample is 2.031. The SOE of an average firm accounts for 42%. On average, 20.5% of the firms in our sample have political connection.

[Insert Table 1 here]

Table 2 presents the Pearson correlation coefficients for all variables in our first baseline regression (Equation 6) from firm acquisitiveness. We find a positive and significant correlation between employment risks (*Ln_firm*, *Ln_uni*) and acquisition activities, indicating that firms' acquisition activities are generally associated with high employment risks. The correlations among other variables are consistent with our expectations. For example, we find that firms with lower SOE and lower ROA are more likely to face higher employment risks.

[Insert Table 2 here]

In addition, Table 3 reports the Pearson correlation coefficients for all variables in our second baseline regression (Equation 7) from firm targetiveness. We also find a negative and significant correlation between employment risks (*Ln_ firm*, *Ln_ uni*) and firm targetiveness, indicating that firms' targetiveness activities are generally associated with high employment risks. In sum, the correlations among the variables are consistent with our expectations.

[Insert Table 3 here]

4. Empirical results

4.1 The effect of employment risks on M&As activities

Table 4 presents the key findings regarding the link between employment risks and the likelihood of acquisition. In column (1), we present the outcomes of the baseline regression model, with the independent variable being local market density measured at the firm level (*Ln_ firm*). The coefficient of *Ln_firm* is positively substantial at 0.024 and statistically significant at the 1% level. In column (2), we re-estimate baseline regression model, utilizing local market density measured at the university level (*Ln_uni*) as the independent variable. Here, the coefficient of *Ln_uni* is also positive at 0.044 and statistically significant at the 1% level.

We further include control variables measuring the macro-economic conditions, such as the Herfindahl-Hirschman Index (*HHI*), GDP growth rate (*GDP_province growth*), Population (*Population*), Unemployment rate (*Unemployment rate*) and Minimum Average Wages (*Minimum Salary*) at the province level, in the acquisition baseline model. The estimation results of these augmented models are presented in columns (3) and (4). Remarkably, the coefficients of both *Ln_ firm* and *Ln_uni* remain positively significant, with values of 0.022 and 0.039, respectively, at the 1% and 5% levels, respectively. Economically, using the coefficient in columns (3) and (4) as the example, a one-standard-deviation increase in employment risks proxied by *Ln_ firm* and *Ln_uni* corresponds to a 20.4% and 19.3% rise in acquisition probability, respectively.[9]

[Insert Table 4 here]

[9] Based on column 3 (4) of Table 3, is calculated as the coefficient (0.022) 0.039 multiplied by the standard deviation of 1.726(0.92) divided by M&As likelihood 0.186.

Table 5 presents the primary findings related to firm targetiveness, as determined by estimating equation (7). The outcomes in columns (1) and (2) of Table 5 indicate that both the coefficients of *Ln_ firm* (-0.107) and *Ln_uni* (-0.108) are negative and highly statistically significant at the 1% level. Moreover, our analysis reveals that employment risk has a negative impact on firm targetiveness, even after accounting for various economic factors. In summary, these results imply that employment risks influence the likelihood of firms becoming acquisition targets by increasing their acquisitiveness probabilities while simultaneously reducing their targetiveness probabilities.

[Insert Table 5 here]

In sum, our empirical analysis provides compelling evidence that employment risks play a significant role in shaping firms' decisions regarding M&As within the Chinese market. We observe that these risks tend to encourage firms to adopt acquisitive strategies while simultaneously curbing their target-oriented activities. Specifically, our study highlights the pronounced influence of employment risks, which drive firms to engage in acquisitions as a means to address challenges related to their human capital resources. In conclusion, our empirical findings offer strong support for both ***H1 and H2***, as posited by the resource based theory and the neoclassical theory of economic growth.

4.3 Endogeneity issue

Our model could suffer from potential endogeneity issues such as omitted unobserved variables or endogenously determined independent variables. To address this concern, we estimate equations (6) and (7) using the two-stage least square (2SLS) method with

instrumental variable (IV). In our estimation, we adopted labor mobility as our instrumental variable following Donangelo (2014) and Qiu and Wang (2021).[10] In the first stage, we regress the endogenous variables on the instrumental variable (*Labor_mobility*) and all control variables as outlined in equation (6). The results are reported in columns (1), (3), (5), (7) of Table 6. The results affirm positive relationships between the instrument variable and our key independent variables in both acquiring firm and targeting firm perspectives. Moreover, the test statistics for under-identification and weak identification suggest that the chosen instrument is both strong and relevant. In the second stage, we estimate our main equation using the predicted value of the endogenous variable obtained from the first-stage regression. The results are presented in column (2), (4), (6), (8) of Table 6, indicating that our all findings remain robust after addressing potential endogeneity issues.[11]

[Insert Table 6 here]

4.4 Cross sectional analyses

4.4.1 Human capital intensity, Labor skills, and M&As

In the previous sections, we have established that employment risks have a positive impact on firm acquisitiveness. In light of this, our focus now shifts to examining the extent to which employment risks influence firm acquisitiveness, particularly in the case of human capital-intensive firms. These are firms where the workforce typically possesses higher levels of

[10] Donangelo (2014) argues that firms left with less productive capital may suffer due to labor mobility. Qiu and Wang (2021) provide evidence that firms face increased labor risks when local labor markets exhibit high labor mobility.

[11] We further consider the pseudo-M&A pairs following Lee et al. (2018) to ensure the robustness of our results. However, when examining the pairs from the pseudo-acquirer and target perspectives, there are limitations in our Chinese setting as the scarcity of paired financial data for the target party.

education, expertise, and specialized skills, making them more inclined to seek human capital through acquisition activities.

Prior research has shown that human capital-intensive firms encounter greater labor frictions (Ochoa, 2013; Chang and Jo, 2019; Cao and Rees, 2020). Israelsen and Yonker (2017) revealed that firms reliant on skilled labor experience a decrease in firm value when key human capital departs. Chang and Jo (2019) furnished evidence indicating that labor frictions for skilled workers raise labor adjustment costs for firms, making it challenging for human capital-intensive firms to recruit skilled labor in the labor market. Given these arguments, we anticipate that human capital-intensive firms, which rely heavily on skilled labor, are likely to face more pronounced labor frictions and additional labor costs as they strive to attract and retain skilled labor, compared to firms with low human capital intensity. This motivates them to acquire targets and expand their market presence across industry boundaries. To gauge the human capital intensity, we employ three proxy measures following existing studies (Ghaly et al., 2015; Ghaly et al., 2020; Cao and Rees, 2020).

The first is the human capital intensity, measured at the firm level. Human capital intensity is defined as an R&D expenditure to total sales ratio (Ghaly et al., 2015; Cao and Rees, 2020). The second is human capital-intensive industry firms. The human capital-intensive industry firm defined as the firm operated in highly human capital-intensive industries (Ghaly and Dang, 2017; Ghaly et al., 2020). [12] The third is the labor skill at the firm level. The labor skill is

[12] labor capital-intensive industry firms based on whether the firm belonged to an industry with R&D expenditure to total sales ratio above or below the median for that industry.

defined as the firm had a high skilled labor ratio[13] above the industry median (Ghaly et al., 2017; Ghaly et al.,2021). We then proceeded to re-estimate equation (6), with the results presented in Table 7.

[Insert Table 7 here]

For all low human capital-intensive firm subsample, the coefficient on *Ln_firm* (*Ln_uni*) are not statistically significant. In contrast, for the high human capital-intensive firm subsample, the coefficients on *Ln_firm* (*Ln_uni*) are positive and statistically significant at the 1% and 5% levels, respectively. In summary, our findings are consistent with previous research and support the notion that employment risk has a discernible impact on acquisition likelihood, particularly for firms characterized by high human capital intensity.

4.4.2 Political connections, State-ownerships, and M&As

Given the prevalent state control of the Chinese economy, this section delves deeper into how the influence of labor employment risks varies between firms with and without political ties, with two dimensions of proxies including both state ownership and executive political backgrounds. In general, a firm's ability to attract and retain labor is closely linked to factors such as its labor policies, operating conditions, and future growth prospects, and firms with political ties are able to access to more resources and thus effectively address labor-related concerns.

To test this prediction, we divided the full sample into two subgroups of both SOEs and non-SOEs. An acquirer is classified as an SOE if its ultimate controlling shareholder is a

[13] The skilled labor ratio was defined as the sum of technical labor, professional production labor, and professional sales labor divided by the total labor force.

government entity. We also divide non-SOEs into two subsamples according to if any of the executive has political background.[14] We then re-estimated equation (6) separately using these subsamples and report the results in Table 8.

For the M&A subsamples of SOEs and non-SOEs, with *M&A_dummy* as the dependent variable. The results are presented in column (1)-(4) of Table 8. In the subsample of non-SOEs, the coefficients for *Ln_firm* (*Ln_uni*) are positive, ranging from 0.021 to 0.048, and statistically significant at the 1% and 10% confidence levels. In contrast, in the subsample of SOEs, the results are found to be statistically insignificant. These results support our hypothesis, suggesting that employment risks have a more pronounced effect on M&A activities for non-SOEs.

[Insert Table 8 here]

We re-estimated equation (6) separately for the M&A subgroups with and without political connections on the non-SOEs sample, using *M&A_dummy* as the dependent variable. The results are presented in column (5)-(8) of Table 8. These results demonstrate that the coefficient for *Ln_uni* (*Ln_firm*) is significantly positive for non-SOEs without political connections, but it is insignificant for non-SOEs with political connections.

In summary, our findings align with previous arguments and suggest that, in contrast to firms with politically connections that enjoy government support for obtaining human resources, firms without political connections are more inclined to acquire human capital

[14] An executive is identified to have political background if he/she has previously served in a government department, or has been elected as a deputy to the National People's Congress or a member of the Chinese People's Political Consultative Conference.

through M&A activities as a means of mitigating the risks associated with labor employment, particularly for non-SOEs without political connections.

4.5 Corroboration tests

4.5.1 The moderating effect of financial constraints and M&A likelihood

Recent research has highlighted the significant influence of financial constraints on corporate investment behavior. Denis and Sibilkov (2010) found that firms with larger cash holdings tend to exhibit higher levels of investment. Building on this, Bodt et al. (2022) provided evidence that acquiring firms facing financial constraints are more inclined to use stock payments rather than cash in M&A transactions, even though this may result in ownership dilution. In contrast, Linck et al. (2013) found that high-accrual firms generate higher earnings-announcement returns compared to constrained low-accrual firms, and they tend to invest in projects aimed at improving performance. Given these findings, we hypothesize that firms with financing constraints, when confronted with employment risks, may either increase or decrease their probability of engaging in acquisitions. We follow Hadlock and Pierce (2010) and Masulis and Simsir (2018) in estimating the financial constraints as follows:

$$\mathrm{SA} = 0.043 \times \mathrm{Size}^2 - 0.737 \times \mathrm{Size} - 0.04 \times \mathrm{Age} \tag{10}$$

where Size (*Ln_Size*) is measured as the natural logarithm of total assets in a given year; Age (*Ln_Age*) is measured as the nature logarithm of the length of time the corporation is listed. To

explore this hypothesis, we re-estimated equation (6) by including financial constraints and its interaction with employment risks.

[Insert Table 9 here]

The results from the M&A likelihood model, as presented in Table 9, reveal that the coefficients for the interaction between financial constraints and employment risks (Ln_firm and *Ln_uni*) are positive (0.126 and 0.056) and statistically significant. These findings suggest that, in the context of financial constraints, firms facing employment risks are more inclined to pursue M&A activities. This aligns with the earlier argument that high-accrual firms are more likely to invest. Furthermore, our findings imply that acquiring firms may be motivated to acquire human capital through M&A, even in the presence of financial constraints.

4.5.2 Duration of employment risks

Considering the possibility that elevated employment risks may prompt firms to engage in M&A activities rather than abstain from them, it becomes important to explore the relationship between employment risks and M&A probability in a longer term. To address this concern, we re-estimate equations (6) and (7) to predict M&A probabilities for periods extending up to three years in the future. The outcomes of this analysis are presented in both Table 10 and Table 11.

[Insert Table 10 here]

In Table 10, columns 1-3 (4-6) show the baseline regression results for acquisition likelihood, with *Ln_firm* (*Ln_uni*) as the independent variable. These findings indicate that employment risks consistently exert a significant positive influence on M&A activities over

the course of two years. However, in year t+3, there is a notable reversal, indicating that the impact of employment risks no longer has any, has less significant effect on M&A activities after two years.

[Insert Table 11 here]

Columns 1-3 (4-6) of Table 11 report the baseline regression of firm targetiveness likelihood, where the independent variable is *Ln_ firm* (*Ln_uni*). These results suggest that employment risks have a consistently negative impact on M&A activities up to three years, the effect on targetiveness is longer lasting than on acquisitiveness.

4.5.2 M&As outcomes

Given the uncertainty regarding whether acquiring firms can enhance their corporate performance via acquiring human capital through M&A activities, this section focuses on using three variables to proxy post-M&A performance. These variables are cumulative abnormal return (*CAR [-1,+1]*), changes in return on assets (*⊿ROA*), and financial leverage (*Leverage*). Additionally, we consider the impact of employment risks on corporate economic outcomes, such as post-M&A performance.

Numerous studies have provided evidence that labor-related issues affect a firm's financial leverage (Agrawal and Matsa, 2013; Lin et al., 2018). For instance, Agrawal and Matsa (2013) found that financial leverage has a significant impact on a firm's likelihood of experiencing financial distress. They also noted that reducing leverage decreases the probability of a firm encountering financial distress and incurring the costs associated with employee layoffs. Consequently, we hypothesize that acquiring firms, by gaining human capital and mitigating

labor employment risks through M&As, are likely to experience positive post-M&A performance with lower financial leverage after a merger.

In addition, a substantial body of M&A literature has consistently used cumulative abnormal return (*CAR*) and changes in return on assets (*⊿ROA*) as key measurements of post-M&A performance (Luo, 2005; El-Khatib et al., 2015; Suk and Wang, 2021; Pan and Zhang, 2022). To assess the effects of employment risks on post-M&A performance, we employ the following regression:

$$Post\_performance_{i,t} = \alpha_0 + \alpha_1 \times EMP\_risks_{i,t-1} + \alpha_2 \times Control + IndustryFE + YearFE + \varepsilon_{i,t} \quad (11)$$

where $Post\_performance_{i,t}$ is the dependent variable, which is proxied by three variables: *Leverage, CAR[-1,+1],* and *⊿ROA.* Here, *Leverage* is defined as the ratio of the book value of short-term and long-term debts to the book value of assets. *CAR[-1,+1]* is defined as 3 day abnormal cumulative returns around M&A announcement dates by using the market-adjusted model with [-240, -11] as the estimation window. *⊿ROA* is defined as the difference between *ROA* (the average ratio of net income divided by total assets) three years after M&As (t+1 to t+3) and the average *ROA* three years before the M&As (t-1 to t-3), where M&A is conducted in year t. The independent variable in this regression is employment risks, denoted as *Ln_uni* and *Ln_firm*. Additionally, several other variables that are consistent with the equation (7) are controlled for in the analysis. Detailed descriptions of these variables can be found in Appendix A.

[Insert Table 12 here]

To test how employment risk affects acquirers' post-M&A performance, we include only acquisition deals where the acquirer faces employment risks higher than the industry median in the sample year while acquiring a low-risk target below the industry median for the given year. Consequently, our sample size reduces to 923 observations. The results in Table 12 provide insights into the relationship between employment risks and post-M&A performance. In columns 1 and 2, when Leverage serves as the dependent variable, the coefficients for *Ln_uni* and *Ln_firm* are negative, ranging from -0.021 to -0.028. These coefficients are statistically significant at the 5% and 10% levels, respectively, indicating that employment risks are associated with reduced financial leverage after M&A activities. In columns 3 and 4 (5 and 6), when the dependent variable is *CAR [-1,+1]* (*⊿ROA*), the coefficients for *Ln_uni* and *Ln_firm* are positive, ranging from 0.003 to 0.028 (0.011 to 0.022). These coefficients are statistically significant at the 1% to 10% levels, respectively, suggesting that employment risks are positively linked to improved post-M&A performance.

Overall, these results support our hypothesis that acquiring firms gain human capital through M&A activities, leading to enhanced human resource advantages and reduced labor employment risks, ultimately resulting in improved post-M&A performance.

4.5.3 Total factor productivity, Employment risks, M&A

Some studies have suggested that Total Factor Productivity (TFP) is an effective measure for evaluating the post-M&A labor performance efficiency of acquiring firms. For instance, Li (2013) found that changes in productivity can explain the announcement returns of acquirers. Pan and Zhang (2022) used TFP to capture post-M&A synergy and provided evidence that the

relative human capital between the acquirer and target influences post-M&A integration efficiency. Building on these arguments, this section aims to investigate whether acquiring firms are able to enhance their TFP after post-M&As, potentially reducing their exposure to employment risks.

In column 7-8 of Table 12 we present the estimation results of equation (11) with the dependent variable being Total Factor Productivity (TFP). TFP is measured using the method outlined in Wooldridge (2009). The results indicate that the coefficients for *Ln_uni* and *Ln_firm* are positive, ranging from 0.030 to 0.033. These coefficients are statistically significant, at 1%, 10% levels, respectively. This suggests that acquiring firms have the capacity to mitigate employment risks through M&A activities and, in doing so, improve their corporate productivity after a merger.

5. Conclusion

This study delves into the influence of employment risk on corporate decisions regarding M&A activities. By utilizing local market density as a measure of employment risks, we uncover a noteworthy relationship between reductions in employment risk and increases in the probability of acquisitions, while simultaneously observing a decrease in the likelihood of mergers. These findings provide strong support for both the resource based theory (Coff, 1997; Wright et al., 2001) and the neoclassical theory (Romer, 1990). Notably, the impact of employment risk is most pronounced for firms with higher levels of human capital intensity, firms lacking political connections, and firms facing tight financial constraints.

Our results also offer compelling evidence that firms can use M&A activities to mitigate the risks associated with labor employment while concurrently acquiring valuable human capital, resulting in improved post-merger performance and increased productivity. In essence, this study underscores the pivotal role of labor frictions in shaping corporate investment decisions, impacting investment outcomes, and enhancing investment efficiency, especially in the context of M&A activities. Additionally, our research demonstrates that firms can minimize losses and retain valuable employees through strategic M&A activities.

Table 1 Summary statistics

This table presents the descriptive statistics for the entire sample used in this study.

variable	N	mean	sd	min	max	p50	p25	p75
Acquirer_ dummy	26092	0.186	0.389	0	1	0	0	0
Target_ dummy	26092	0.065	0.246	0	1	0	0	0
Ln_ labor cost	26092	16.871	1.706	12.42	21.383	16.893	15.789	17.926
Ln_ firm	26092	4.784	1.726	1.099	7.347	4.771	3.526	6.51
Ln_ labor number	26092	7.734	1.247	4.111	11.053	7.665	6.9	8.502
Labor Mobility	26092	-0.028	0.077	-0.075	0.534	-0.046	-0.049	-0.036
Ln_ uni	26092	3.879	0.92	1.099	4.92	4.174	3.434	4.554
SOE	26092	0.42	0.494	0	1	0	0	1
Ln_ Age	26092	2.031	0.897	0	3.296	2.197	1.386	2.773
ROA	26092	0.041	0.056	-0.268	0.204	0.039	0.016	0.068
Leverage	26092	0.418	0.257	0	0.909	0.433	0.196	0.625
Q	26092	1.963	1.188	0.871	8.545	1.588	1.237	2.238
Cashflow	26092	0.048	0.071	-0.181	0.253	0.047	0.009	0.09
Mb_ ratio	26092	0.628	0.238	0.117	1.148	0.63	0.447	0.809
HHI	26092	5.243	1.249	4.133	8.419	4.493	4.356	6.321
GDP	26092	1.089	0.026	1.012	1.159	1.08	1.071	1.101
Political connection	26092	0.205	0.404	0.000	1.000	0.000	0.000	0.000

Table 2 Firm acquisitiveness and pairwise correlation matrix

This table displays the Pearson pair-wise correlations among all variables in the baseline regression, specifically from the perspective of firm acquisitiveness. The correlations are presented in two panels. Panel A focuses on the independent variable, "intensity of universities," and its correlations with other variables in the baseline regression. Panel B centers on the dependent variable, "intensity of firms," and its correlations with other variables in the baseline regression. In both panels, the notation *, **, and *** is used to denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A	Acquirer_ dummy	Ln_ firm	SOE	Ln_ Age	ROA	Leverage	Cashflow	Mb_ ratio
Acquirer_ dummy	1.000							
Ln_ firm	0.012*	1.000						
	0.057							
SOE	-0.041***	-0.296***	1.000					
	0.000	0.000						
Ln_ Age	-0.003	-0.202***	0.425***	1.000				
	0.641	0.000	0.000					
ROA	-0.017***	0.068***	-0.098***	-0.229***	1.000			
	0.007	0.000	0.000	0.000				
Leverage	0.026***	-0.157***	0.135***	0.211***	-0.263***	1.000		
	0.000	0.000	0.000	0.000	0.000			
Cashflow	-0.016***	-0.013	0.012***	-0.006	0.373***	-0.135***	1.000	
	0.008	0.037	0.002	0.307	0.000	0.000		
Mb_ ratio	-0.003	-0.110***	0.202***	0.095***	-0.207***	0.244***	-0.111***	1.000
	0.535	0.000	0.000	0.000	0.000	0.000	0.000	

Panel B	Acquirer_ dummy	Ln_ uni	SOE	Ln_ age	ROA	Leverage	Cashflow	Mb_ ratio
Acquirer_ dummy	1.000							
Ln_ uni	0.028***	1.000						
	0.000							
SOE	-0.041***	-0.031***	1.000					

	0.000	0.000						
Ln_ Age	-0.003	-0.024***	0.425***	1.000				
	0.641	0.000	0.000					
ROA	-0.017***	0.021***	-0.098***	-0.229***	1.000			
	0.007	0.001	0.000	0.000				
Leverage	0.027***	-0.123***	0.135***	0.211***	-0.263***	1.000		
	0.000	0.000	0.000	0.000	0.000			
Cashflow	-0.016***	-0.032***	0.020***	-0.006	0.373***	-0.135***	1.000	
	0.008	0.000	0.002	0.307	0.000	0.000		
Mb-ratio	-0.004	0.011	0.202***	0.095***	-0.207***	0.244***	-0.111***	1.000
	0.535	0.083	0.000	0.000	0.000	0.000	0.000	

Table 3 Firm targetiveness and pairwise correlation matrix

This table presents the Pearson pair-wise correlations among all variables in the baseline regression, specifically from the perspective of firm targetiveness. The correlations are displayed in two panels. Panel A emphasizes the independent variable, "intensity of universities," and its correlations with other variables in the baseline regression. Panel B centers on the dependent variable, "intensity of firms," and its correlations with other variables in the baseline regression. In both panels, the notation *, **, and *** is used to signify statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A	Target_ dummy	Ln_ firm	SOE	Ln_ Age	ROA	Leverage	Cashflow	Mb_ ratio
Target_ dummy	1.000							
Ln_ firm	-0.132***	1.000						
	0.000							
SOE	0.072***	-0.296***	1.000					
	0.000	0.000						
Ln_ Age	0.111***	-0.202***	0.425***	1.000				
	0.000	0.000	0.000					
ROA	-0.075***	0.069***	-0.098***	-0.229***	1.000			
	0.000	0.000	0.000	0.000				
Leverage	0.057***	-0.157***	0.135***	0.211***	-0.263***	1.000		
	0.000	0.000	0.000	0.000	0.000			
Cashflow	-0.040***	-0.013**	0.020***	-0.006	0.373***	-0.135***	1.000	
	0.000	0.0373	0.002	0.307	0.000	0.000		
Mb_ ratio	0.004	-0.110***	0.202***	0.095***	-0.207***	0.244***	-0.111***	1.000
	0.494	0.000	0.000	0.000	0.000	0.000	0.000	
Panel B	Target_ dummy	Ln_ uni	SOE	Ln_ Age	ROA	Leverage	Cashflow	Mb_ ratio
Target_ dummy	1.000							
Ln_ uni	-0.053***	1.000						
	0.000							
SOE	0.072***	-0.032***	1.000					

	0.000	0.000						
Ln_ Age	0.111***	-0.024***	0.425***	1.000				
	0.000	0.000	0.000					
ROA	-0.075***	0.021***	-0.098***	-0.229***	1.000			
	0.000	0.001	0.000	0.000				
Leverage	0.057***	-0.123***	0.135***	0.212***	-0.263***	1.000		
	0.000	0.000	0.000	0.000	0.000			
Cashflow	-0.040***	-0.032***	0.012***	-0.006	0.373***	-0.135***	1.000	
	0.000	0.000	0.002	0.307	0.000	0.000		
Mb_ ratio	0.004	0.011	0.202***	0.095***	-0.207***	0.244***	-0.111***	1.000
	0.494	0.083	0.000	0.000	0.000	0.000	0.000	

Table 4 Firm acquisitiveness and employment risks

This table displays the results of the firm acquisitiveness linear probability model. The dependent variable is Labor market density, which is proxied using two variables: the total number of firms within a 60-mile radius of the sample firm and the total number of universities within a 60-mile radius of the sample firm. Columns (1) and (3) present the results of the influence of employment risks, measured by a 60-mile radius of the sample firm and the total number of firms, on firm acquisitiveness likelihood. Columns (2) and (4) present the results of the influence of employment risks, measured by the total number of universities within a 60-mile radius of the sample firm, on firm acquisitiveness likelihood. The table also includes other variables defined in Appendix A. The significance levels are indicated by the notation *, **, and ***, which signify statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Acquirer dummy=1			
	(1)	(2)	(3)	(4)
Ln_ firm	0.024***		0.022**	
	(0.008)		(0.009)	
Ln_ uni		0.044***		0.039***
		(0.012)		(0.013)
SOE	-0.121***	-0.130***	-0.109***	-0.117***
	(0.026)	(0.026)	(0.029)	(0.028)
Ln_ Age	0.003	0.002	-0.009	-0.011
	(0.014)	(0.014)	(0.018)	(0.018)
ROA	-0.173	-0.174	-0.215	-0.216
	(0.198)	(0.199)	(0.221)	(0.222)
Leverage	0.182***	0.187***	0.193***	0.198***
	(0.045)	(0.045)	(0.050)	(0.050)
Cash flow	-0.117	-0.105	-0.135	-0.124
	(0.153)	(0.153)	(0.173)	(0.173)
Mb ratio	0.098*	0.093*	0.097*	0.092
	(0.052)	(0.052)	(0.057)	(0.056)
HHI			0.158***	0.158***
			(0.051)	(0.051)
GDP			0.093	-0.146
			(0.871)	(0.848)
Unemployment rate			-0.085	-0.103
			(0.154)	(0.154)
Population			-0.036*	-0.033*
			(0.019)	(0.019)
Minimum Salary			-0.042	-0.054
			(0.154)	(0.154)
Constant	-1.270***	-1.345***	-1.840*	-1.675
	(0.105)	(0.108)	(1.085)	(1.062)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	26,063	26,063	21,291	21,291
Adjusted R2	0.011	0.012	0.012	0.012

Table 5 Firm targetiveness and employment risks

This table displays the results of the firm targetiveness linear probability model. The dependent variable is Labor market density, which is proxied using two variables: the total number of firms within a 60-mile radius of the sample firm and the total number of universities within a 60-mile radius of the sample firm. Columns (1) and (3) present the results of the influence of employment risks, measured by a 60-mile radius of the sample firm and the total number of firms, on firm targetiveness likelihood. Columns (2) and (4) present the results of the influence of employment risks, measured by the total number of universities within a 60-mile radius of the sample firm, on firm targetiveness likelihood. variables defined in Appendix A. The significance levels are indicated by the notation *, **, and ***, which signify statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Target_ dummy=1			
	(1)	(2)	(3)	(4)
Ln_ firm	-0.107***		-0.098***	
	(0.018)		(0.019)	
Ln_ uni		-0.108***		-0.099***
		(0.027)		(0.027)
SOE	0.003	0.044	-0.028	0.006
	(0.047)	(0.047)	(0.049)	(0.050)
Ln_ Age	0.254***	0.259***	0.288***	0.295***
	(0.030)	(0.030)	(0.036)	(0.036)
ROA	-1.432***	-1.444***	-1.412***	-1.427***
	(0.255)	(0.254)	(0.274)	(0.274)
Leverage	0.178**	0.171**	0.204**	0.193**
	(0.084)	(0.083)	(0.089)	(0.089)
Cash flow	-0.826***	-0.831***	-0.879***	-0.891***
	(0.234)	(0.238)	(0.255)	(0.259)
Mb ratio	-0.154*	-0.138	-0.143	-0.118
	(0.090)	(0.089)	(0.094)	(0.094)
HHI			0.073	0.076
			(0.082)	(0.083)
GDP			1.273	2.898**
			(1.316)	(1.340)
Unemployment rate			-0.109	-0.012
			(0.196)	(0.200)
Population			0.010	0.003
			(0.037)	(0.037)
Minimum Salary			-0.325*	-0.275
			(0.177)	(0.181)
Constant	-1.247***	-1.185***	-3.129*	-4.844***
	(0.193)	(0.202)	(1.684)	(1.754)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	26,063	26,063	21,291	21,291
Adjusted R2	0.071	0.065	0.064	0.059

Table 6 Instrumental variable linear probability model

This table reports the results of the instrumental variable approach, which includes two stages. The first stage is a probit model with labor market density variables, and the second stage is an ordinary least square regression of the impact of employment risks on M&As. Each regression also includes time-trend and industry-fixed effects. Columns 1-4 present the results from the acquirers' perspectives. Columns 4-8 present the results from the targets' perspectives. Labor mobility (*Labor_mobility*) is instrumental variables. Other variables are defined in Appendix A, and the significance levels are denoted by the notation *, **, and ***, which indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Acquirer dummy=1				Target dummy=1			
	First_stage	Second_stage	First_stage	Second_stage	First_stage	Second_stage	First_stage	Second_stage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln_ firm		1.187***				-0.067**		
		(0.236)				(0.03)		
Ln_ uni				3.696**				-0.209*
				(1.540)				(0.120)
Labor_ mobility	-1.209***		-0.388**		-1.209***		-0.388**	
	(0.239)		(0.163)		(0.239)		(0.163)	
SOE	-0.401***	0.434***	-0.033	0.080	-0.401***	-0.025*	-0.033	-0.005
	(0.059)	(0.115)	(0.041)	(0.158)	(0.059)	(0.014)	(0.041)	(0.012)
Ln_ Age	-0.106***	0.117**	-0.015	0.045	-0.106***	0.022***	-0.015	0.026***
	(0.032)	(0.047)	(0.022)	(0.085)	(0.033)	(0.005)	(0.022)	(0.006)
ROA	0.215	-0.372	0.149	-0.666	0.215	-0.163***	0.149	-0.146**
	(0.281)	(0.341)	(0.192)	(0.744)	(0.281)	(0.044)	(0.192)	(0.059)
Leverage	-0.363***	0.481***	-0.352***	1.352**	-0.363***	-0.001	-0.352***	-0.050
	(0.092)	(0.139)	(0.067)	(0.595)	(0.092)	(0.016)	(0.066)	(0.046)
Cash flow	-0.389*	0.363	-0.540***	1.899*	-0.389*	-0.123***	-0.540***	-0.210***

	(0.227)	(0.284)	(0.152)	(1.014)	(0.227)	(0.037)	(0.152)	(0.078)
Mb ratio	-0.172*	0.186	0.0482	-0.196	-0.172*	-0.026*	0.048	-0.005
	(0.104)	(0.129)	(0.072)	(0.280)	(0.104)	(0.015)	(0.073)	(0.020)
HHI	-0.018	0.070	-0.005	0.066	-0.019	0.014	-0.005	0.014
	(0.053)	(0.065)	(0.028)	(0.104)	(0.053)	(0.014)	(0.028)	(0.015)
GDP	-27.56***	32.73***	-9.554***	35.33**	-27.56***	-1.357	-9.554***	-1.504
	(1.499)	(6.828)	(0.984)	(15.39)	(1.499)	(0.842)	(0.984)	(1.176)
Unemployment rate	-1.282***	1.492***	-0.317***	1.141*	-1.282***	-0.082*	-0.317***	-0.062
	(0.147)	(0.342)	(0.092)	(0.603)	(0.147)	(0.045)	(0.092)	(0.048)
Population	0.153***	-0.193***	0.012	-0.057	0.153***	0.011	0.012	0.003
	(0.039)	(0.061)	(0.029)	(0.113)	(0.039)	(0.007)	(0.030)	(0.008)
Minimum Salary	-0.525***	0.628***	-0.024	0.095	-0.525***	-0.073***	-0.025	-0.043*
	(0.090)	(0.171)	(0.064)	(0.243)	(0.090)	(0.028)	(0.064)	(0.026)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	21,291	21,291	21,291	21,291	21,291	21,291	21,291	21,291
Underidentification test								
Kleribergen-Paaprk LM statistics		25.563***		5.731***		25.563***		5.731***
weak identification test								
Cragg-Donald Wald F statistic		51.766***		11.786***		51.766***		11.786***
Weak instrument robust inference								
Anderson-Rubin Wald test		25.626***		5.23**		25.626***		5.69 **

Table 7 Human capital-intensive firm and acquisition likelihood

This table reports the results of the M&A linear probability model for subsamples based on firms' human capital intensity. Human capital intensity is proxied as three variables, that is labor intensives firm, human capital-intensive industry firm, and skill labor firm, respectively. The labor capital intensity measured as the ratio of R&D expenditure to total sales. the human capital-intensive industry firm that equals one if a firm belongs to an industry with R&D expenditure to total sales above the median in that industry, and 0 otherwise. The Labor skill that equals 1 if the firm had a skilled labor ratio above the median, and 0 otherwise. Columns 1-2(5-6; 7-9) present the results of the influence of employment risks, as measured by a 60-mile radius of the sample firm and the total number of universities, on M&A likelihood for high human capital intensive firms. Columns 3-4(7-8; 9-10) present the results of the influence of employment risks, as measured by the total number of firms within a 60-mile radius of the sample firm, on M&A likelihood for high human capital intensive firms. All variables are defined in Appendix A, and the significance levels are denoted by the notation *, **, and ***, which indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	labor capital-intensive firm				human capital-intensive industry				Skill Labor			
	Acquirer dummy=1											
	low	high	low	high	low	high	low	high	low	high	low	high
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ln_ firm	0.017	0.029**			0.017	0.028**			0.007	0.025**		
	(0.012)	(0.012)			(0.013)	(0.012)			(0.017)	(0.012)		
Ln_ uni			0.024	0.060***			0.030	0.050***			0.013	0.041**
			(0.018)	(0.019)			(0.019)	(0.018)			(0.027)	(0.018)
SOE	-0.090**	-0.135***	-0.097**	-0.143***	-0.099**	-0.126***	-0.105**	-0.135***	-0.110**	-0.201***	-0.112**	-0.210***
	(0.040)	(0.039)	(0.039)	(0.039)	(0.043)	(0.037)	(0.042)	(0.036)	(0.053)	(0.041)	(0.053)	(0.041)
Ln_ Age	-0.020	0.001	-0.022	0.001	-0.009	-0.011	-0.011	-0.011	-0.035	-0.010	-0.035	-0.011
	(0.024)	(0.026)	(0.024)	(0.026)	(0.026)	(0.024)	(0.026)	(0.024)	(0.033)	(0.024)	(0.033)	(0.024)
ROA	-0.697**	0.123	-0.701**	0.123	-0.855**	0.185	-0.863**	0.192	-0.545	-0.157	-0.551	-0.158
	(0.319)	(0.306)	(0.320)	(0.306)	(0.348)	(0.286)	(0.348)	(0.286)	(0.391)	(0.310)	(0.391)	(0.310)
Leverage	0.138**	0.233***	0.139**	0.241***	0.129*	0.223***	0.132*	0.230***	0.283***	0.231***	0.285***	0.234***
	(0.069)	(0.070)	(0.069)	(0.069)	(0.074)	(0.065)	(0.074)	(0.065)	(0.096)	(0.069)	(0.096)	(0.069)
Cash flow	-0.103	-0.136	-0.094	-0.121	0.037	-0.239	0.051	-0.232	0.115	-0.133	0.118	-0.119

	(0.236)	(0.242)	(0.237)	(0.242)	(0.255)	(0.228)	(0.256)	(0.228)	(0.335)	(0.250)	(0.335)	(0.250)
Mb ratio	0.064	0.094	0.060	0.085	0.090	0.085	0.086	0.077	0.215**	0.082	0.212**	0.077
	(0.078)	(0.081)	(0.078)	(0.081)	(0.083)	(0.077)	(0.083)	(0.077)	(0.107)	(0.079)	(0.107)	(0.079)
HHI	0.202**	0.100	0.201**	0.098	-0.101	0.161***	-0.107	0.161***	0.313**	0.334***	0.312**	0.336***
	(0.095)	(0.067)	(0.095)	(0.067)	(0.152)	(0.058)	(0.152)	(0.058)	(0.127)	(0.086)	(0.127)	(0.086)
GDP	-1.233	1.151	-1.459	0.919	-1.033	0.965	-1.183	0.632	-1.520	-0.487	-1.544	-0.724
	(1.269)	(1.156)	(1.249)	(1.114)	(1.321)	(1.149)	(1.303)	(1.102)	(2.038)	(1.494)	(2.003)	(1.475)
Unemployment rate	-0.177	0.054	-0.188	0.028	-0.176	-0.007	-0.183	-0.040	0.078	-0.152	0.072	-0.173
	(0.205)	(0.242)	(0.205)	(0.241)	(0.217)	(0.226)	(0.217)	(0.225)	(0.268)	(0.206)	(0.268)	(0.206)
Population	-0.056**	-0.016	-0.054**	-0.012	-0.048*	-0.026	-0.046	-0.023	-0.015	-0.036	-0.014	-0.032
	(0.027)	(0.025)	(0.027)	(0.025)	(0.029)	(0.024)	(0.029)	(0.024)	(0.033)	(0.028)	(0.033)	(0.028)
Minimum Salary	0.105	-0.213	0.090	-0.214	0.114	-0.210	0.098	-0.216	0.112	0.043	0.107	0.029
	(0.213)	(0.221)	(0.212)	(0.221)	(0.224)	(0.212)	(0.224)	(0.211)	(0.338)	(0.247)	(0.338)	(0.246)
Constant	-0.341	-2.874**	-0.311	-2.784**	1.393	-2.890**	1.529	-2.701**	-1.520	-2.632	-1.525	-2.527
	(1.612)	(1.463)	(1.578)	(1.404)	(1.835)	(1.414)	(1.818)	(1.368)	(2.479)	(1.803)	(2.450)	(1.785)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,738	10,553	10,738	10,553	9,409	11,853	9,409	11,853	4,838	10,289	4,838	10,289
Adjusted R2	0.0120	0.0162	0.0120	0.0168	0.0128	0.0166	0.0129	0.0168	0.0134	0.0152	0.0134	0.0153

Table 8 Political ties and acquisition likelihood

This table reports the results of the M&A linear probability model for subsamples based on political connections with two dimensions of proxies including both state ownership and executive political backgrounds. Columns 1 and 3 (5 and 7) present the results for non-SOEs (non-SOEs without political connections). Columns 2 and 4 (6 and 8) present the results for SOEs (non-SOEs with political connections). All variables are defined in Appendix A, and the significance levels are indicated with the notation *, **, and ***, which signify statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Acquirer dummy=1							
	Full Sample				Non-SOEs			
	non-SOE	SOE	non-SOE	SOE	Non-PC	PC	Non-PC	PC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln_ firm	0.021*	0.022			0.027**	0.011		
	(0.012)	(0.014)			(0.013)	(0.022)		
Ln_ uni			0.048***	0.028			0.057***	0.026
			(0.018)	(0.020)			(0.020)	(0.035)
Ln_ Age	-0.023	0.021	-0.024	0.020	-0.017	-0.063	-0.018	-0.064
	(0.022)	(0.033)	(0.022)	(0.033)	(0.025)	(0.046)	(0.025)	(0.046)
ROA	-0.309	-0.133	-0.312	-0.116	-0.300	-0.245	-0.300	-0.254
	(0.267)	(0.412)	(0.267)	(0.413)	(0.300)	(0.604)	(0.300)	(0.604)
Leverage	0.229***	0.169**	0.233***	0.175**	0.255***	0.172	0.258***	0.176
	(0.065)	(0.081)	(0.065)	(0.081)	(0.072)	(0.128)	(0.072)	(0.129)
Cash flow	-0.294	0.089	-0.283	0.094	-0.311	-0.279	-0.294	-0.278
	(0.226)	(0.274)	(0.226)	(0.274)	(0.258)	(0.462)	(0.258)	(0.462)
Mb ratio	-0.022	0.252***	-0.023	0.246***	0.009	-0.112	0.009	-0.113
	(0.076)	(0.085)	(0.076)	(0.086)	(0.086)	(0.164)	(0.086)	(0.164)
HHI	0.206***	0.026	0.207***	0.025	0.175**	0.358**	0.175**	0.362**
	(0.073)	(0.075)	(0.073)	(0.075)	(0.081)	(0.167)	(0.081)	(0.167)
GDP	0.106	0.047	-0.150	-0.223	-0.585	2.317	-0.930	2.178
	(1.414)	(1.111)	(1.374)	(1.083)	(1.616)	(2.767)	(1.578)	(2.692)
Unemployment rate	-0.045	0.036	-0.062	0.012	-0.191	0.426	-0.210	0.413
	(0.204)	(0.242)	(0.204)	(0.241)	(0.237)	(0.404)	(0.237)	(0.404)
Population	-0.015	-0.055*	-0.011	-0.054*	-0.014	-0.023	-0.009	-0.021
	(0.026)	(0.028)	(0.026)	(0.029)	(0.029)	(0.051)	(0.029)	(0.051)
Minimum Salary	-0.063	-0.035	-0.083	-0.042	0.086	-0.441	0.057	-0.447
	(0.212)	(0.230)	(0.212)	(0.229)	(0.256)	(0.383)	(0.256)	(0.383)
Constant	-2.613	-0.656	-2.493	-0.402	-2.017	-4.963	-1.822	-4.935
	(1.706)	(1.400)	(1.672)	(1.366)	(1.951)	(3.386)	(1.916)	(3.336)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,980	9,310	11,980	9,310	9,023	2,957	9,023	2,957
Adjusted R2	0.0189	0.0096	0.0193	0.0095	0.0206	0.0264	0.0211	0.0266

Table 9 Financial constraints and Acquisition likelihood

This table reports the results of the M&A linear probability model with the dependent variable as M&A dummy, which takes a value of 1 if a firm makes at least one cross-region M&A announcement in a given year and 0 otherwise. The financial constraint is measured as the SA index. Column (1) presents the results of the influence of employment risks (measured by a 60-mile radius of the sample firm and the total number of universities) on M&A likelihood. Column (2) presents the results of the influence of employment risks (measured by the total number of firms within a 60-mile radius of the sample firm) on M&A likelihood. All variables are defined in Appendix A, and the significance levels are identified with the notation *, **, and ***, which indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Acquirer dummy=1	
	(1)	(2)
Ln_ uni	0.514***	
	(0.184)	
Ln_ firm		0.232**
		(0.099)
Financial Constraints	-0.865***	-0.626***
	(0.203)	(0.136)
Ln_uni * Financial constraints	0.126***	
	(0.049)	
Ln_firm * Financial constraints		0.056**
		(0.026)
SOE	-0.106***	-0.097***
	(0.028)	(0.029)
Ln_ Age	-0.057***	-0.055***
	(0.019)	(0.020)
ROA	-0.293	-0.296
	(0.216)	(0.216)
Leverage	0.212***	0.208***
	(0.050)	(0.050)
Cash flow	-0.216	-0.215
	(0.170)	(0.170)
Mb ratio	-0.025	-0.018
	(0.050)	(0.050)
HHI	0.269***	0.272***
	(0.046)	(0.046)
GDP	-1.779***	-1.784***
	(0.568)	(0.576)
Unemployment rate	-0.249*	-0.233
	(0.143)	(0.143)
Population	-0.036*	-0.038**
	(0.019)	(0.019)
Minimum Salary	-0.026	-0.030
	(0.126)	(0.126)
Constant	-3.816***	-2.804***
	(1.062)	(0.893)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	21,291	21,291
Adjusted R2	0.0108	0.0105

Table 10 The long-term effect of employment risks on firm acquisitiveness

This table displays the outcomes of a linear probability model for firm acquisitiveness in the time periods T+1, T+2, and T+3. Columns (1)-(3) depict the findings regarding the impact of employment risks, as measured by the number of firms within a 60-mile radius of the sample firm, on the firm likelihood of acquisition. Meanwhile, Columns (4)-(6) present the results regarding the influence of employment risks, as measured by the total number of universities within a 60-mile radius of the sample firm, on the likelihood of firm targetiveness. All variable definitions can be found in Appendix A. The significance levels are indicated by the symbols *, **, and ***, denoting significance at the 10%, 5%, and 1% levels, respectively.

Dependent	Acquisition likelihood	Acquisition likelihood	Acquisition likelihood	Acquisition likelihood	Acquisition likelihood	Acquisition likelihood
	(1)	(2)	(3)	(4)	(5)	(6)
Ln_ firm	0.028***	0.022*	0.015			
	(0.010)	(0.012)	(0.011)			
Ln_ uni				0.041***	0.029*	0.032*
				(0.015)	(0.016)	(0.017)
SOE	-0.135***	-0.173***	-0.174***	-0.145***	-0.178***	-0.180***
	(0.031)	(0.037)	(0.034)	(0.031)	(0.034)	(0.037)
Ln_ Age	0.010	0.007	-0.014	0.008	-0.015	0.005
	(0.020)	(0.024)	(0.022)	(0.020)	(0.022)	(0.024)
ROA	0.181	-0.134	0.195	0.190	0.201	-0.121
	(0.272)	(0.338)	(0.312)	(0.272)	(0.311)	(0.338)
Leverage	0.250***	0.136**	0.182***	0.254***	0.189***	0.142**
	(0.055)	(0.067)	(0.059)	(0.055)	(0.059)	(0.066)
Cash flow	-0.259	-0.492**	-0.495**	-0.248	-0.486**	-0.486**
	(0.184)	(0.217)	(0.199)	(0.184)	(0.199)	(0.217)
Mb ratio	0.154**	0.206***	0.173**	0.148**	0.170**	0.203***
	(0.063)	(0.076)	(0.070)	(0.063)	(0.070)	(0.076)
HHI	0.165***	0.127	0.131*	0.164***	0.130*	0.126
	(0.060)	(0.088)	(0.071)	(0.060)	(0.071)	(0.088)
GDP	-0.402	-0.684	-0.175	-0.791	-0.313	-1.019

	(0.946)	(0.978)	(1.001)	(0.909)	(0.952)	(0.931)
Unemployment	-0.221	0.174	-0.381*	-0.257	-0.407*	0.124
	(0.175)	(0.244)	(0.211)	(0.174)	(0.210)	(0.243)
Population	-0.045**	-0.046*	-0.053**	-0.041**	-0.052**	-0.045*
	(0.021)	(0.025)	(0.022)	(0.021)	(0.023)	(0.025)
Minimum Salary	0.165	-0.012	-0.196	0.157	-0.204	-0.024
	(0.158)	(0.190)	(0.173)	(0.158)	(0.173)	(0.189)
Constant	-1.763	-0.344	-1.179	-1.468	-1.116	-0.076
	(1.189)	(1.314)	(1.296)	(1.154)	(1.254)	(1.277)
Year fixed	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,303	12,043	14,314	17,303	14,314	12,043
Adjusted R2	0.013	0.012	0.013	0.013	0.013	0.012

Table 11 The long-term effect of employment risks on firm targetiveness

This table displays the outcomes of a linear probability model for firm targetiveness in the time periods T+1, T+2, and T+3. Columns (1)-(3) depict the findings regarding the impact of employment risks, as measured by the number of firms within a 60-mile radius of the sample firm, on the likelihood of firm targetiveness. Meanwhile, Columns (4)-(6) present the results regarding the influence of employment risks, as measured by the total number of universities within a 60-mile radius of the sample firm, on the likelihood of firm targetiveness. All variable definitions can be found in Appendix A. The significance levels are indicated by the symbols *, **, and ***, denoting significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Targetiveness	Targetiveness	Targetiveness	Targetiveness	Targetiveness	Targetiveness
	(1)	(2)	(3)	(4)	(5)	(6)
Ln_ firm	-0.077***	-0.058***	-0.059***			
	(0.020)	(0.021)	(0.022)			
Ln_ uni				-0.093***	-0.082***	-0.081***
				(0.028)	(0.030)	(0.030)
SOE	-0.046	-0.044	-0.069	-0.018	-0.024	-0.049
	(0.053)	(0.056)	(0.058)	(0.054)	(0.056)	(0.058)
Ln_ Age	0.236***	0.230***	0.185***	0.243***	0.236***	0.192***
	(0.037)	(0.040)	(0.041)	(0.037)	(0.040)	(0.041)
ROA	-2.319***	-1.575***	-0.919**	-2.340***	-1.622***	-0.972**
	(0.327)	(0.426)	(0.460)	(0.327)	(0.426)	(0.461)
Leverage	0.173*	0.149	0.110	0.158*	0.133	0.092
	(0.092)	(0.098)	(0.101)	(0.092)	(0.097)	(0.100)
Cash flow	-0.809***	-0.805***	-1.006***	-0.818***	-0.815***	-1.009***
	(0.269)	(0.295)	(0.320)	(0.274)	(0.299)	(0.324)
Mb ratio	-0.148	-0.189*	-0.139	-0.126	-0.175	-0.128
	(0.103)	(0.110)	(0.114)	(0.103)	(0.110)	(0.114)
HHI	0.053	-0.005	-0.006	0.054	-0.003	-0.005
	(0.095)	(0.107)	(0.116)	(0.095)	(0.107)	(0.116)
GDP	1.334	0.896	1.027	2.522*	1.670	1.948

	(1.370)	(1.440)	(1.541)	(1.369)	(1.418)	(1.486)
Unemployment rate	0.034	0.150	0.077	0.143	0.271	0.216
	(0.229)	(0.293)	(0.311)	(0.231)	(0.294)	(0.311)
Population	0.018	0.033	0.043	0.013	0.030	0.041
	(0.040)	(0.042)	(0.043)	(0.039)	(0.041)	(0.042)
Minimum Salary	-0.033	-0.079	0.011	-0.016	-0.044	0.047
	(0.183)	(0.194)	(0.206)	(0.185)	(0.196)	(0.209)
Constant	-3.280*	-2.587	-2.975	-4.358**	-3.225*	-3.775*
	(1.760)	(1.875)	(2.076)	(1.809)	(1.913)	(2.083)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,294	14,307	12,038	17,294	14,307	12,038
Adjusted R2	0.0569	0.0443	0.037	0.0551	0.0442	0.0371

Table 12 Post-M&A outcomes

This table reports the results of post-M&A outcomes with the dependent variables Leverage, CAR [-1,+1], △ROA, and total factor productivity (TFP). Leverage is defined as the ratio of the book value of short-term and long-term debts to the book value of assets after the M&A announcement date. △ROA is defined as the difference between the average ROA from t+1 to t+3 and the average ROA from t-3 to t-1, where M&A is conducted in year t. CAR [-1,+1] measures the cumulative abnormal returns over a 3-day window period centered on the M&A announcement date. The dependent variables are TFP_WRDC, calculated using the methods described in Wooldridge (2009). All variables are defined in Appendix A, and the significance levels are identified with the notation *, **, and ***, which indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable	Acquirer dummy=1							
	Leverage		CAR [-1, +1]		△ROA		TPP_WRDC	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln_ firm	-0.021**		0.003**		0.022***		0.030***	
	(0.008)		(0.002)		(0.003)		(0.011)	
Ln_ uni		-0.028*		0.028***		0.011*		0.033*
		(0.015)		(0.003)		(0.006)		(0.019)
SOE	-0.105***	-0.095***	0.006*	0.002	0.007	-0.001	0.054**	0.040
	(0.020)	(0.020)	(0.004)	(0.003)	(0.007)	(0.007)	(0.027)	(0.028)
Ln_ Age	0.048***	0.048***	0.004*	0.004**	0.001	-0.000	0.000	-0.001
	(0.011)	(0.011)	(0.002)	(0.002)	(0.004)	(0.004)	(0.016)	(0.016)
ROA	-0.894***	-0.883***	-0.252***	-0.261***	-0.255***	-0.261***	0.129	0.115
	(0.167)	(0.170)	(0.034)	(0.033)	(0.057)	(0.056)	(0.272)	(0.272)
Cash flow	-0.222*	-0.222*	0.138***	0.139***	-0.040	-0.041	0.225	0.224
	(0.133)	(0.134)	(0.029)	(0.028)	(0.049)	(0.049)	(0.260)	(0.261)
Mb ratio	0.139***	0.147***	-0.016**	-0.018**	-0.032**	-0.041***	0.241***	0.229***
	(0.041)	(0.041)	(0.008)	(0.007)	(0.014)	(0.015)	(0.067)	(0.066)

HHI	-0.029	-0.024	0.004	0.000	-0.001	-0.004	-0.108*	-0.114*
	(0.036)	(0.036)	(0.007)	(0.007)	(0.012)	(0.013)	(0.061)	(0.062)
GDP	0.004	0.009	-0.001	-0.001	-0.004*	-0.009***	0.023**	0.015
	(0.006)	(0.006)	(0.001)	(0.001)	(0.002)	(0.002)	(0.010)	(0.010)
Unemployment rate	0.053	0.082	0.026	0.030	-0.057	-0.095**	0.164	0.119
	(0.131)	(0.132)	(0.020)	(0.019)	(0.047)	(0.048)	(0.194)	(0.197)
Population	0.014	0.012	-0.001	0.001	-0.004	-0.002	0.019	0.022
	(0.013)	(0.013)	(0.002)	(0.002)	(0.004)	(0.005)	(0.017)	(0.017)
Minimum Salary	-0.201*	-0.181	-0.005	-0.008	0.014	-0.008	0.372**	0.342*
	(0.115)	(0.115)	(0.022)	(0.021)	(0.044)	(0.047)	(0.178)	(0.177)
Constant	0.211	-0.284	0.077	0.028	0.334	0.958***	-2.964**	-2.203**
	(0.712)	(0.675)	(0.127)	(0.111)	(0.255)	(0.270)	(1.199)	(1.121)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	923	923	923	923	923	923	917	917
R-squared	0.314	0.310	0.175	0.262	0.295	0.242	0.117	0.111

Figure 1 Global Labor Shortage Trends

Note: this figure disclosed by the OECD presents the labor shortage based on more than 40,000 employers across all industry sectors in 40 economics from 2009-2022.

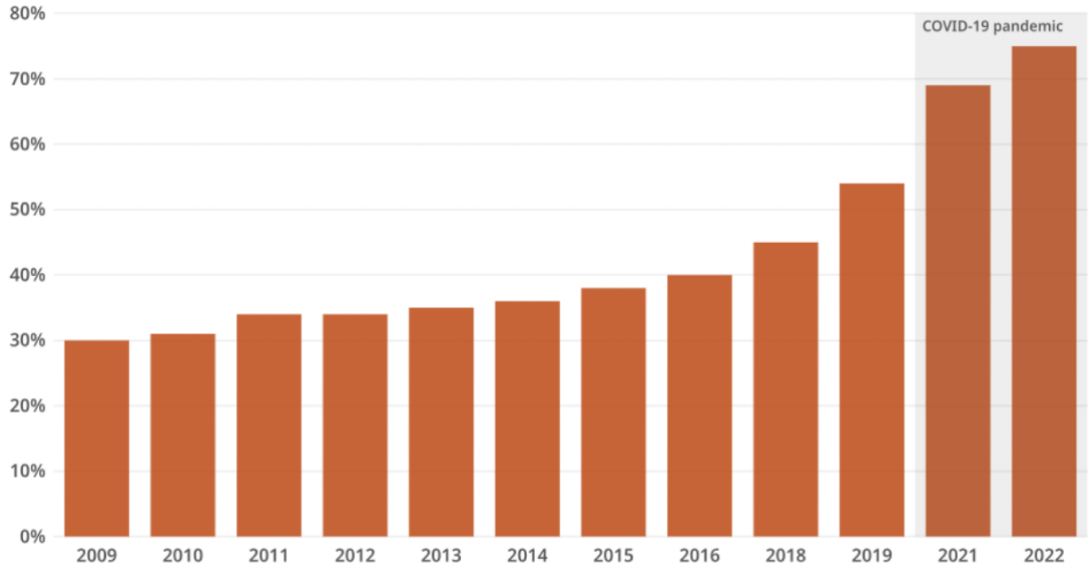
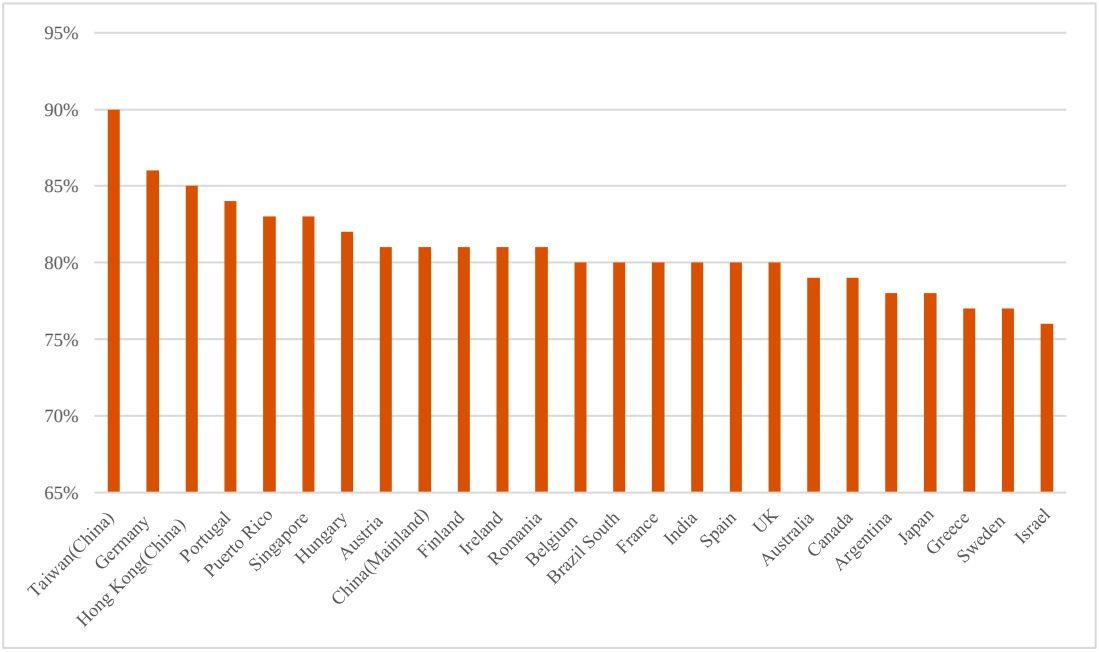


Figure 2 Labor Shortage in Each Economy

Note: This figure disclosed by Korn Ferry shows that each economy displays a different level of labor shortage up to 2023.



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Appendix A. Definition of variables

Variables	Definitions
Acquirer dummy	A dummy variable that equals 1 if a firm makes at least one acquisition announcement in a given year, and 0 otherwise.
Target dummy	A dummy variable that equals 1 if a firm is be acquired at least one M&A announcement in a given year, and 0 otherwise.
Ln_ firm	The naturel logarithm of the total number of firms within a 60-mile radius of the sample firm
Ln_ uni	The naturel logarithm of the total number of universities within a 60-mile radius of the sample firm
Ln_ Age	The naturel logarithm of number of years of a firm.
HHI	The ratio of market concentration.
Financial Constraints	The ratio of SA index
Leverage	The ratio of the book value of short-term and long-term debts to the book value of assets.
Q	The ratio of market value and book value to total assets.
△ROA	The ratio of book value of short-terms and long-term debts to the book value of assets
ROA	The ratio of net income to net assets.
Mb_ ratio	The ratio of the market value of assets to the book value of assets.
Cashflow	the ratio of cash flows to total assets.
Market-to-book-ratio	The ratio of the market value of assets to the book value of assets.
CAR [-1,+1]	Cumulative abnormal returns over the 3-day window period centred on the M&A announcement date.
Total factor productivity (TFP)	The average total factor productivity (TFP), where TFP is calculated following the method in Woolderdge (2009).
GDP	The annual growth rate of per capita GDP.
Population	The percentage of the population increase rate in the given year.
Unemployment rate	The percentage of the unemployment rate in the given year.
Minimum Average Wages	The natural logarithm of the annual average minimum labor wages in a given year.
human capital-intensive firm	A dummy variable that equals 1 if firm with above the median R&D expenditure to total sales in that year as high human capital intensive, and 0 otherwise.

human capital-intensive industry	A dummy variable that equals 1 if firm belongs industry with above the median R&D expenditure to total sales in that year as high human capital intensive, and 0 otherwise.
Skill Labor	A dummy variable that equals 1 if firm with above the median skilled labor ratio (the sum up technical labor, professional production labor, and professional sales divided by total amount of labors) as high labor skilled firms, and 0 otherwise.
Political connection	A dummy variable that equals 1 if the Chairman or top manager of listed firms has served or is currently serving in one government, department or is currently elected as a deputy to the National People's Congress or a member of the Chinese People's Political Consultative Conference, and 0 otherwise.
SOE	A dummy variable that equals 1 if the firm is ultimately controlled by the government, and 0 otherwise.
Intangible (Ln intangible)	The natural logarithm of intangible assets
SOE	A dummy variable that equals 1 if the firm is ultimately controlled by the government, and 0 otherwise.
Shares	A dummy variable that equals 1 if the acquirer holds more than 50 % target’s shares after post M&A, and 0 otherwise.
Prior firm performance	A dummy variable that equals 1 if ROA is above the median value in that year, and 0 otherwise.