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EFFECT OF STOCK MARKETS ON THE ADOPTION OF
TEMPORARY EMPLOYMENT CONTRACTS: EVIDENCE FROM CHINA

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Abstract

This study explores the relationship between capital markets and the adoption of alternative human resource practices. Specifically, I examine whether publicly-traded enterprises are more likely to adopt temporary, as opposed to permanent employment contracts, and whether listing on particular stock exchanges has additional effects. Based on quasi-maximum likelihood estimation of 102 establishments in China, I find that publicly listed enterprises make significantly greater use of temporary employment contracts than do non-listed ones. Moreover, NASDAQ listed enterprises, as well as those listed on Chinese stock exchanges, are associated with significantly lower use of temporary employment contracts than those listed on the NYSE because of capital market microstructures, stakeholder presence in organizational decisions, and corporate governance forms.

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1. Introduction

The intersection between globalization and financialization has attracted increasing interest among researchers and practitioners. On the one hand, overseas investment and operations of multinational companies have successfully accelerated the growth of international trade and global production networks. In particular, the international expansion of firms from emerging economies such as China has become a significant driving force of the deepening integration of global economy (Luo and Tung 2007). On the other hand, the growing importance of financial institutions in economic activities has allocated shareholders increased power over the construction of ideal organizational strategies and the adoption of business practices (Davis 2009). Different from lenders and private business owners, financial investors have limited knowledge of a firm's operations and tend to view the firm as a bundle of financial assets deployed to maximize short-term earnings (Lazonick and O'Sullivan 2000). Indeed, there are increasing concerns that capital market investors may thus induce managers to prioritize financial performance measures, to adopt short-term investment horizons, and to favor shareholder rather than stakeholder interests.

Despite the importance of this topic, relatively few empirical studies have investigated the role of financial institutions in explaining the management of human resources in an increasingly global context (for an exception, see Conway et al. 2008). The present study contributes to the literature by focusing on this issue, and in particular, on the extent to which firms adopt permanent or temporary employment contracts – an important indicator of their commitment to

long-term investment in human resources. Employment contracts establish bilateral obligations and reciprocal expectations between employers and employees; they determine the extent to which companies can forsake commitment to employees at minimal economic and legal costs (Kalleberg and Reve 1993). Previous studies have found that explicit or implicit contracts for long-term employment generate benefits to firms in the forms of firm-specific human capital (Doeringer and Piore 1991), lower turnover (Osterman 1984), and lower transaction and monitoring costs (Williamson et al. 1975). However, a firm's adoption of permanent employment contracts may be in conflict with equity holders' preference for asset liquidity; and those financial systems that favor liquidity are likely to focus on meeting the demands of shareholders instead of other stakeholders (Gospel and Pendleton 2003).

This study examines two research questions. First, do publicly-listed companies make greater use of temporary employment contracts than do non-listed companies? Second, do differences in the characteristics of stock exchanges lead to differences in the types of employment contracts used? I draw on an original survey of 102 establishments operating in China to explore these issues. While this may seem like an unusual site for a study of this kind, China is an appropriate setting because there is great variation in firm-level participation in capital markets. While some remain untraded, an unprecedented number of Chinese firms have participated in initial public offerings at home or traded shares in foreign capital markets. In addition, many multinational corporations with stock exchange listings have set up operations via partially or wholly foreign owned affiliates in China. Moreover, the emergence of market-based employment relations in China has allowed the dramatic growth of temporary employment, although some firms continue to retain traditional long-term employment models. These features offer a unique opportunity to study systematic differences in employment

contracts produced by different market listings among companies operating within a single national context.

2. Employment contracts in China

A major feature of the transformation of employment relations in China is the erosion of social contracts and the emergence of legal contracts for labor (Friedman and Lee 2010). Prior to economic reforms in late 1980s, China's employment system was essentially a bureaucratic device to support planned economic activities and urban welfare. Urban workers were administratively allocated into a *de facto* job tenure system which provided various social benefits including housing, health care, education, and pensions. Meanwhile, mobility was minimal because workers could not change jobs without the permission of their employers. As a result, over ninety percent of the urban workforce consisted of permanent workers with effective life-long tenure to remain in their enterprises in the early 1980s (White 1987). Over decades, however, the administrative control over personnel has led to severe mismatch of labor, overstaffing, and low productivity especially among state-owned enterprises.

China embarked on massive economic reforms and became the largest recipient of foreign direct investment of all developing countries in the 1990s. Companies with various ownership arrangements came into operation and proliferated rapidly. As state enterprises were compelled to reduce reliance on government resources and compete in the market, the Chinese government attempted to redefine its role as a regulator of labor relations and institutionalize a new system which supports market-oriented, voluntaristic, and individualistic employment relationships (Frenkel and Kuruvilla 2002; Friedman and Lee 2010).

The Labor Law took effect in 1995, which consolidated a myriad of regulations passed in the previous decades. As a national law, it requires that an employer and an employee establish an explicit, written employment contract. The Law provides three types of contracts: permanent (open-ended or non-temporary), temporary (or fixed-term), and assignment-based term. This study focuses on the first two types of contracts because assignment-based contracts are not common in industrial settings. A permanent contract represents a legally enforceable agreement which elicits mutual expectation of employment continuity. It extends and formalizes the notion of ongoing employment in traditional employment relationships. By contrast, a temporary contract is of limited duration and must include a fixed termination date. Under a temporary contract, the employer or the employee can terminate the employment relationship unilaterally upon expiration of the contract, for good cause, bad cause, or no cause at all. It is noteworthy that worker rights typically associated with permanent employment are made applicable to temporary workers in China, including such as minimum wage, unemployment insurance, and the right to holidays and a safe workplace. In addition, there is few legal restrictions concerning the length of temporary jobs, as long as both parties understand the absence of employment continuity. For example, the average length of a temporary contract is 13 months in this study sample. In short, the government saw the institutionalization of employment contracts as a cornerstone of a market-based employment system as it eliminates previous distinctions in labor regulations among enterprises based on ownership arrangements.

3. Literature review and hypotheses

Since the 1990s, waves of privatizations and financialization saw state-owned enterprises and private businesses in China converted into publicly held companies with stock market

listings at home and abroad. In 2008, there were 864 listed companies on the Shanghai Stock Exchange and 740 listed companies on the Shenzhen Stock Exchange, with a total market capitalization of 17.78 trillion U.S. dollars (World Federation of Exchanges, 2009). Meanwhile, there were 56 companies from mainland China whose shares were traded on the New York Stock Exchange (NYSE) and another 102 companies on the National Association of Securities Dealers Automated Quotations (NASDAQ). China is one of the largest sources of listed companies on the NYSE and NASDAQ from non-U.S. regions (Balfour 2009). Operations and investment strategies of multinational corporations with different foreign equity listings further add to the diversity of ownership arrangements among companies operating in China. This study examines the spread of temporary employment contracts in China against the backdrop of the increasing financialization of business operations and the globalization of equity markets.

Effect of Equity Listing on the Use of Employment Contracts

A publicly listed company is legally authorized to obtain a listing on an open stock market and sell its shares to the public at large, whereas a private company primarily raises capital internally or through leveraged debt from banks and private capital. Investors in the stock markets are willing to supply their savings at relatively low cost for two reasons. First, buying small stakes in many companies helps them to diversify investment risks. Second, these investments are liquid because investors can sell their stocks at short notice. Modern theories of corporate finance and strategic management suggest that external shareholders and their need for equity liquidity may affect a firm's internal allocation of resources via several mechanisms. First, stock markets constitute an information process mechanism as open market transactions effectively aggregate diffuse information about equity pricing (Fama 1980; Holmström and

Tirole 1993). The informational function of stock markets helps investors to act on their interests as it allows the use of objective, cross-industry financial criteria to understand a firm's value. This market-based equity financing model is different from a bank-centered debt financing model, which reduces the sensitivity of investment to liquidity constraints through relational lending and monitoring (Boot 2000). Second, shareholders can sell stocks at low cost when they believe that stock price movement has not lived up to their expectations. When a large number of shareholders decide to quit, the stock price drops, which encourages corporate restructuring and even hostile takeover. Either case will lead to the replacement of existing management (Jensen and Meckling 1976; Agrawal and Knoeber 1996). From an agency perspective, managers are induced to minimize a possible takeover threat by maintaining high stock prices and conforming to shareholder consensus views on how to run the firm. Third, managerial rewards are often contingent on the achievement of these financial outcomes. For example, companies have increasingly adopted performance-based compensation plans in order to align the interests of top executives and stockholders (Westphal and Zajac 1998). These measures effectively promote managerial accountability to the interests of shareholders.

A consequence of this process may be the lessening of incentives to develop strategic resources that increase sustainable profitability. Because shareholders lack access to proprietary firm-specific information, they cannot distinguish between high- and low-quality investments. Evidence suggests that shareholders in the open market usually evaluate a firm making high-quality investments at no more than the market value of the average firm, forcing it to withdraw these investments for long-term gains (Leland and Pyle 1977; Myers and Majluf 1984). Alternatively, they tend to emphasize objective, cross-industry financial criteria rather than an organization's achievement of strategic goals or business growth. For example, managers of

conglomerates face pressure from securities analysts to dismantle diversified corporate strategies because security analysts who specialize by industry cannot easily understand the stock of diversified companies and therefore underrate their performance (Zuckerman 2000). This means that listed firms have to place more emphasis on narrow financial objectives such as share price and dividend payouts, rather than broadly defined operational strengths relative to competitors. Moreover, shareholders tend to prefer short-term value creation from their investments over long-term commitment to the business. This short-term view occurs because corporate managers and investors—especially institutional money managers—are evaluated and rewarded based on annual or even quarterly performance. Accordingly, they are under pressure to make investment decisions and report earnings based on the same time frame (Graves and Waddock 1990; Ryan and Schneider 2002). Prior research indicates that firms owned by short-term shareholders are more likely to withdraw or even forego long-term investments, in order to avoid earning disappointments and inflate their stock prices (Bange and De Bondt 1998). The short-term investment horizons of shareholders stand in contrast to those of other private investors and banks, which tend to form long-run coalitions with firms and do not reveal information immediately in public markets (Aoki and Dinc 2000).

The theoretical arguments presented above suggest that listing on open stock exchanges diminishes a firm's incentives to make long-term commitments to workers. Specifically, managers tend to establish tentative employment ties in order to facilitate the use of financial measures in internal capital allocations, to restrict long-term claims by employees against the firm, and to create a sense of insecurity among incumbent employees (Gospel and Pendleton 2003; Lazonick and O'Sullivan 2000). However, previous empirical studies testing these arguments have been inconclusive. For example, analyses of OECD national data indicated that

high levels of stock trading and M&A activities were associated with shorter job tenure, more variable pay schemes, and greater pay dispersion between management and workers (Black, Gospel, and Pendleton 2007; Sjöberg 2009). In other words, pressure from capital market investors has shifted the balance in managerial decision-making against the interests of employees as long-term stakeholders. Nevertheless, Conway and colleagues (2008) reported inconsistent findings that stock market listing was associated with commitment-enhancing practices such as teamwork and incentive pay in Britain and France, although measures of employment continuity was not empirically examined. Based on these arguments, I propose that listed companies are likely to adopt temporary employment contracts than non-listed companies.

Hypothesis 1. Publicly traded enterprises are likely to make greater use of temporary employment contracts than are privately held enterprises.

Heterogeneity among Stock Market Platforms

Research in financial economics generally rests on an assumption that investors in equity markets elicit a common interest in stock price maximization and have homogeneous preferences for organizational decisions (Bagwell 1991). However, different stock exchanges have different characteristics, which may lead to the construction of divergent normative belief structures and to substantial variation in organizational strategies among listed firms. They may differ in terms of their capital market microstructures, insider representation on boards, and distinct approaches to managing uncertainties. This present study considers the NYSE, the largest securities market in the U.S., as a prime example that elicits shareholder-oriented values and the traditional Anglo-American model of corporate governance. Relative to NYSE listed companies, this study

examines the adoption of human resource practices among firms listed on the NASDAQ and Chinese Stock Exchanges.

Although NYSE and NASDAQ are located in the same country and provide similar services, they manifest distinct values and favor different definitions of good corporate governance (Rao et al. 2000). Capital market microstructures determine specific trading mechanisms and therefore the price formation process in the open market. NYSE is a centralized floor-auction market while NASDAQ is a fragmented screen-based market with multiple dealers and alternative trading systems (Heidle and Huang 2002; Lipson 2003). On the NYSE, specialist firms keep a central order book of the limit orders and consolidate all orders according to price and time priority. Price discovery occurs through the interaction of supply and demand of public order flow. Specialist firms profit by charging commissions rather than generating order flow. By contrast, dealers for stocks listed on NASDAQ are obligated to “make the market” by quoting bid and ask prices as well as trading out of their own inventories. A dealer market such as NASDAQ provides strong incentives for broker-dealers to promote a stock, since brokerage firms earn the commission from generating order flow. Some brokerage firms can capture additional revenues by trading the stocks from their own retail brokerage businesses—known as “internalizing” orders. However, NYSE regulations create a firewall that restricts interactions between a brokerage firm and its affiliated specialist operations. The NYSE regulations also prohibit specialist firms from “popularizing” a stock. Furthermore, on the NYSE, customer orders take precedence over the specialists, making it harder for a firm to internalize order flow even if it owns the specialist firm. Due to these structural differences, brokerage firms have greater incentives to understand the operations and strategies of their invested NASDAQ-listed

companies and are more likely to hold their stocks for longer periods, whereas brokerage firms are more likely to earn positive revenue on short-term round-trip transactions from NYSE-listed companies (Comerton-Forde et al. 2010).

A second major difference lies in insider ownership and representation in corporate decision-making. Compared to NYSE companies, NASDAQ companies provide a larger proportion of compensation in the form of equity grants and have more unexercised stock options as a percentage of total shares outstanding (Anderson et al. 2000; Murphy 2003). Therefore, these firms have ownership structures in which insider shareholders have a prominent voice, compared to NYSE companies, diversely owned by outside equity investors. Insiders develop an in-depth understanding of the firm and its industry by observing and participating in the firm's operations. Research on board behavior suggests that insider representation leads to better information flows within the boardrooms and hence strengthens board participation in the strategic decision process (Baysinger and Hoskisson 1990). More importantly, while outside shareholders can reduce risks via equity diversification and secondary market trading, insider owners cannot diversify their employment risks. Instead, they tend to enter into long-term relationships with the company and exercise their control over organizational actions as long-term stake holders.

Finally, top executives of NASDAQ firms often are also the founders or initial investors. Because they have more organization-specific skills and a higher equity stake, these top executives have greater authority in making independent organizational decisions and are less driven by the interests of external investors. In addition, business executives in NASDAQ companies exemplify entrepreneurs who are enthusiastic about business uncertainties and motivated by an overwhelming need to achieve and a strong urge to build an empire. They have

higher risk-bearing capacities and are prone to making risky but value-enhancing investments. This suggests that NASDAQ companies are more likely to invest in intangible assets such as human resources rather than trying to maximize level of dividends and pay out the share price.

In sum, the NYSE and the NASDAQ have systematic differences in capital market microstructures, insider representation, and the risk bearing capacities of listed firms. Compared to those listed on NYSE, NASDAQ companies have greater incentives to focus on future profitability and to develop a longer planning horizon for corporate decision-making. Accordingly, NASDAQ companies are more likely to use long-term employment contracts to secure human resources.

Hypothesis 2. NASDAQ-listed companies will make less use of temporary employment contracts than will NYSE-listed companies.

China established its stock exchanges in the 1990s and has experienced explosive growth over the past decades. Although the markets were set up to establish effective governance structures and emulate the stylized NYSE model, scholars have argued that companies listed on Chinese stock exchanges operate in a substantively different institutional environment than those of the NYSE.

Similar to other emerging economies, China's publicly listed firms are characterized by highly concentrated ownership structure. Teney, Zhang, and Brevort (2002)'s study of Chinese stock markets reported that on average, the dominant shareholder owns almost half of a listed firm, whereas millions of minority shareholders each hold small stakes. In this situation, the main conflict of interest is that between the controlling shareholder and the minority shareholders, rather than between the generality of investors and corporate managers as in many

NYSE companies (Bai et al. 2004). Moreover, the controlling shareholder is often times the state, either in the form of direct ownership at central and local government levels, or in the form of indirect state ownership through state-owned investment institutions. High ownership concentration imposes liquidity constraints and limits the market's pricing functions. Unlike minority owners whose selling of small shares does not significantly change share price, controlling shareholders do not often benefit from capital gains arising from share price changes and frequent trading in the secondary market. Instead, they seek returns from a firm's growth and stability. Moreover, the presence of a tightly knit group of shareholders who control a dominating stake hinders and sometimes prevents the market for corporate control. Therefore, managers of Chinese listed companies more likely to develop a stable and committed workforce and signal their confidence in sustainable business growth.

The Chinese corporate governance arrangements resemble the Anglo-American governance system, but combine it with the two-tier board structure. By law, Chinese listed firms formally separate the executive function of the management board from the monitoring function of the supervisory board. The supervisory board is composed of non-executive supervisory directors who may represent labor, the government, and/or the controlling shareholders (Tam 2000). While the supervisory board does not appoint managers or directly evaluate them, supervisors can raise critical questions and make suggestions in management board meetings and shareholder meetings. The supervisory board may even proposal dismissal of wrong-doing top managements and directors. Although some scholars have criticized the supervisory board for having only a loosely defined monitoring role with the board of directors and managers, many believe that the two-tiered board structure helps to address the conflicting interests of multiple stakeholders, including employees (Xiao, Dahya, and Lin 2004).

Research on financial disclosures and corporate governance has revealed that a well-functioning information environment helps improve asset liquidity in market investors' favor (Levitt 1998). The rule of law and the principle of arm's length transactions provide a cornerstone for the NYSE model of corporate governance. Capital market-supporting infrastructure and -supporting institutions in China are in the formative stages, however. For example, accounting reporting and auditing standards, capital market regulations, and legal protection of private property are ill-functioning in China's capital markets (Allen et al. 2005). This characteristic significantly increases the costs of collecting accurate financial information on alternative investment choices. Moreover, there is a severe shortage of market valuation and trading expertise. Therefore, stock price is often driven by rumors and market sentiment rather than reliable information on the listed company. This further limits equity investors' ability to exert influence over company directors and managers (Holthausen and Verrecchia 1990).

In sum, Chinese listed companies operate in a very different ownership, financial, and institutional environment from that of the NYSE model. Government, corporate managers, and even employees have far more prominent roles in the operation of Chinese listed companies than in NYSE companies. Also, Chinese listed firms are less exposed to governance pressures from impatient shareholders via the market for corporate control and greater information disclosure. In short, Chinese listed companies are likely to promote multiple interests in making employment decisions rather than emphasizing shareholder wealth as espoused by NYSE companies.

Hypothesis 3. Companies publicly listed on Chinese stock exchanges (i.e., Shanghai and Shenzhen) will make less use of temporary employment contracts than will those listing on the NYSE.

Alternative Arguments

While there is strong theoretical support for the impact of stock market listings, labor market conditions and product market conditions are the primary alternative explanations for the increasing use of temporary contracts. I consider these explanations in this study. First, characteristics of the local labor market are likely to affect firms' decision to adopt short-term contracts to manage employees. When the labor market is tight, firms are at a disadvantage in negotiating contracts with workers. Employers and employees are more likely to reach agreements about contract conditions - such as job security - in favor of the employees. Moreover, the pressure that labor shortage puts on many aspects of business operations can be a significant burden, especially when companies have made substantial fixed asset investments (such as work technologies in the study setting). In this case, companies have strong incentives to provide long-term employment in order to secure a stable flow of skilled labor (Osterman, 1984). By contrast, when labor is abundant, firms are in a better position to negotiate contracts in their favor. Under these circumstances, firms may exploit market opportunities and offer temporary employment contracts. Moreover, product market conditions influence the demand for labor and the types of employment contracts that employers seek. When demand fluctuations are high, employers need short-term labor that may be hired or let go as needed (Abraham and Taylor 1996). When companies are able to spread the risks of demand fluctuations, they are able to increase the predictability of staffing needs, and therefore increase the use of long-term employment contracts.

4. Methods

Research Setting and Data Collection

Prior studies in strategic human resource management suggest that focusing on one occupation and one productive activity reduces confounding effects due to heterogeneity while simultaneously allowing for sufficient variation in organizational characteristics (Batt 2002). This approach also facilitates the development of contextualized interpretation of results. This study uses call centers that operate in mainland China as the empirical setting because high operating costs and indirect profitability of call center operations make them a likely target for rollbacks and dismissals when managers are under pressures to cut budgets. Moreover, call centers are a large and growing segment of the Chinese workforce, and an important example of divergent employment strategies --some managers favor commitment-based practices in order to ensure high quality services, while others adopt a marginalized approach as a response to intense cost pressures. In general, managers have sought a variety of permanent and temporary contractual arrangements to balance these alternative pressures. Finally, call center operations are common among establishments of different ownership structures – as independent operators, establishments within primary firms, and in primary firms located in different industries with different capital market financing mechanisms. These sources of variation provide a rich setting for exploring the research questions at hand.

Because call centers are not well documented in standard industry directories, I developed a list of over 600 call centers using various sources including newspapers, professional magazines, membership directories for professional associations, staffing agencies, and equipment manufacturers and used this list as the sample frame. I then obtained access to the subscriber database for *Customer Care and Call Center Management*, the most popular professional magazine for people interested in call center operations (including but not limited to call center managers). I was able to match contact information for managers at 187 call centers.

As response rates may increase when verbal commitment is obtained prior to sending a survey instrument (O'Keefe and Homer 1987), I attempted to contact each center's general manager by telephone to secure his or her cooperation in this study. If the general manager could not be reached, I attempted to speak to a HR manager who was directly involved in workplace employment practices. In some centers, no telephone contact was possible.

To test hypotheses advanced in this study, I primarily utilized the survey methods to seek responses from managers of these establishments. A questionnaire was adapted from a previously-tested international call center survey (Batt, Holman, and Holtgrewe 2009). The conventional method of back-translation was used to translate the measures from English to Chinese. And then, I consulted extensively with employees, managers, and industry experts through thirty-five in-depth interviews to ensure the relevance of the measurement items to the Chinese context. Modifications to the questionnaire items based on the inputs reflected mainly clarifications and amplifications of the original items. I used the direct interview method (including face-to-face and phone interviews) to obtain responses to the survey instrument. This procedure provides advantages over paper-based surveys because it allows the researcher to assess the respondents' suitability for the study and offers respondents an opportunity to ask for clarification about the issues under study. At the end of each interview, I assured confidentiality to all respondents and offered to provide a summary of the study findings.

The survey was administered between October 2006 and March 2007. A total of 137 managers agreed to participate. In all, surveys from 102 call centers are complete and usable, for a response rate of 74%, or 55% of the original 187 establishments. The geographic areas of these companies covered twenty-eight cities in sixteen provinces across the country. In addition

to the surveys, I used stock market publications and company financial reports to obtain information on each company's public listing status.

Variables and Measures

This study measured the dependent variable, *adoption of temporary employment contracts*, as the proportion of employees who are hired on a short-term basis, including direct hires on a temporary contract and workers placed by a temporary help agency. This measure extends previous studies that examined the likelihood of using temporary employees as a binary variable (e.g., Davis-Blake and Uzzi 1993; Gramm and Schnell 2001; Houseman 2001; Uzzi and Barsness 1998).

The study included the following independent variables. *Publicly traded status* was measured as a dummy variable which indicates whether the establishment or its parent company is privately held or publicly traded (publicly listed =0, private=1). For all publicly listed companies, I retrieved their recent financial reports and obtained information on the listed market. Among publicly listed companies, I used a set of dummy variables to measure a firm's *listed capital markets* as categorical variables, including the NYSE (the omitted category), NASDAQ, Chinese stock exchanges (mainland China, including Shanghai and Shenzhen), and other markets (including Hong Kong Stock Exchange, stock exchanges in European countries and other Asian countries). Eight out of 54 publicly traded companies in this sample were cross-listed on both the NYSE and Hong Kong Stock Exchange. I categorized them as NYSE listed companies because prior research suggests that companies are driven by the values and practices of the more prestigious, well-established institutions, which in this case is the NYSE (Sanders and Tuschke 2007).

I included several variables to account for alternative explanations. To control for labor market conditions, I retrieved data on local minimum wages and local unemployment rate from the *China Labor Statistical Yearbook*, to control for regional differences in labor market conditions. Moreover, product market coverage reflects the geographic region to which call centers provide services, ranging from local, regional, national, to international. As call centers provide technology-mediated, concentrated service operations, an important way to spread demand risks is to increase geographic service coverage and hence decrease sensitivity to location-specific disturbances. Therefore, product market coverage was used as a proxy measure of level of demand variability. I also included control variables of establishment characteristics. Establishment size was the number of customer service employees at a work site. An establishment's age was measured by the number of years that it had been in operation. Last, I controlled for industry types using a set of dummy variables, including telecommunications, financial services, manufacturing, and other industries (omitted category).

Model Specifications

A typical way to estimate the hypothesized model is to use linear multiple regressions, which can be mathematically formulated as:

$$E(y | x) = x\beta \quad (1)$$

where y is the dependent variables and x includes all independent variables. Although equation (1) is straightforward, the fact that the dependent variable is a fractional response (i.e., the proportion of temporary employees)—bounded between 0 and 1—may raise statistical concerns. There is no guarantee that the predicted value lies within bounds, a similar problem to that found in the linear probability model for binary data. This could be a serious problem when a large

proportion of y takes on the values 0 or 1. Therefore, I used quasi-maximum likelihood estimation (QMLE) methods for regression models as suggested by Papke and Wooldridge (1996). Compared to ordinary regression models and log-odds type procedures, the quasi-likelihood estimation method effectively estimates fractional dependent variables while there is no need to use *ad hoc* transformations to handle data at the extreme values of 0 and 1.

Mathematically, I estimated the following model to predict the proportion of temporary employees:

$$E(y | x) = G(x\beta) \quad (2)$$

where $G(\cdot)$ takes the standard log-odds functional form.

5. Results

Table 1 reports descriptive statistics and correlations for all variables. On average, call centers in this sample recruited 29% of their employees through temporary employment contracts. Fifty-five percent of companies in the sample were publicly traded, including 17% listed on the NYSE, 8% on the NASDAQ, and 9% on Chinese stock exchanges. An average call center in this sample housed 360 employees and had been in operation for five years. Moreover, the correlation coefficients indicated no major correlational problems with the variables reported.

----- Insert Table 1 around here -----

Table 2 provides regression results based on the quasi-maximum likelihood estimation method. The dependent variable is the proportion of employees on temporary contracts among all non-supervisory employees in the largest occupational group in each establishment. Model 1

includes only the control variables, while Models 2 and 3 add independent variables as specified in the hypotheses. The results report marginal effects, which represent the incremental effects of each predictor variable on the dependent variable for an average establishment in the sample.

----- Insert Table 2 around here -----

Results of Model 1 show that labor market and product market conditions significantly affect employers' adoption of temporary employment contracts. The use of temporary employment contracts is positively associated with local unemployment rates and negatively related to the extent to which a company provides services to multiple geographic areas. This suggests that the adoption of temporary employment contracts is low when the labor market is tight and when demand volatility is low. These results are consistent with findings in prior studies (e.g., Abraham and Taylor 1996; Houseman 2001; Masters and Miles 2002). In addition, new establishments are more likely to hire more temporary employees. However, the effect of establishment size is negligible and the industry effects are not significant in this model.

Model 2 tests the effect of stock market listings on a firm's employment practices. Hypothesis 1 predicted that the use of temporary employment contracts is high when an enterprise is publicly traded. The estimated coefficient for *non-listed* suggests the average effect of non-listing on the use of temporary employment contracts. The results show that publicly-listed companies have, on average, 31 percent more employees on temporary contracts than do non-listed companies. This finding is consistent with the argument that managers in publicly traded companies are induced to adopt logic of shareholder value as the basis for strategic action (Black et al. 2008). As the conventional lifetime employment model which provides job security

and career mobility through job ladders may impair the liquidity of human assets, managers adopt temporary employment contracts in order to develop tentative ties with employees and to accommodate the preferences of important actors in the financial markets. Hypothesis 1 is supported. The coefficients for the labor market and product market variables are still significant, the signs are in the right direction, and the magnitudes are about the same as those in Model 1. The coefficients of industry types are significant with the inclusion of the listings status ($p < 0.10$), suggesting that telecommunications companies hire more temporary employees while financial companies use fewer.

To test whether different capital markets impose heterogeneous values on organizational decisions, Model 3 provide analyses to compare the adoption of temporary employment contracts among companies listed on the NASDAQ, Chinese stock exchanges, and the NYSE (omitted category). As compared to Model 1, the incremental explanatory power of capital market effects over that of labor and product markets is 14%. Moreover, the estimated coefficients show the average effects of being listed on the NASDAQ and Chinese stock exchanges on the adoption of temporary employment contracts as compared to those listed on the NYSE. Consistent with hypothesized predictions, the results for Model 3 show that companies listed on the NYSE use a significantly higher proportion of temporary employees than those listed on the NASDAQ and Chinese stock exchanges, even when labor market conditions, product market conditions, and organizational characteristics are controlled for. Hypotheses 2 and 3 are strongly supported.

6. Discussion and conclusion

The growing importance of equity markets appears to be pushing corporate managers to adopt a view of the firm more clearly in line with the interests of shareholders. Empirical studies have shown that a firm's emphasis on stock market valuation is negatively correlated with long-term investments such as spending on research and development, product diversification, and commitment to socially responsible activities (e.g., Hill & Snell, 1988; Hillman & Keim, 2001; Zuckerman, 2000). This study extends this body of literature by connecting the pressures from financial markets to the changing nature of employment relationships.

Several findings are noteworthy. First, this study explores the relationship between stock market listings and the use of temporary employment contracts. The logic of inquiry is that, because shareholders have limited knowledge about company operations and often make investment decisions within a short time frame, they prefer to diversify investments, maintain asset liquidity, and emphasize financial measures of corporate performance. To accommodate these needs, company managers may need to adopt employment practices that increase the liquidity and flexibility of human assets. Among the companies in the study sample, I found that establishments of publicly listed companies were significantly more likely to use a higher proportion of temporary employees, compared to non-listed companies. This finding provides empirical evidence for prior conceptual work that an increasing emphasis on shareholder values is associated with shorter job tenure and more tenuous employment ties. Furthermore, this study extends past studies based on aggregated cross-national data (e.g., Black et al. 2008) by providing direct observation of workplace-level employment practices among companies operating within an emerging economy. This approach builds on the large diversity in financial characteristics among firms within the same country, while reducing the confounding effects of variation in national institutions or culture.

Furthermore, while a large body of past work has examined the adoption of temporary work from an economic perspective (e.g., Abraham and Taylor 1996; Mangum et al. 1985; Masters and Miles 2002), this study suggests that the nature of employment relationship is also affected by a firm's connection to capital markets and the prominence of shareholder value based on liquidity and short-term investment returns. In other words, the spread of temporary employment contracts is not only shaped by considerations of labor market conditions and demand variability, but by corporate managers' awareness of capital market pressures and their efforts to maximize the flexibility and liquidity of deploying personnel assets. The use of temporary employment contracts may therefore become a long-standing feature of a firm's HR strategy. This study thus contributes to discussions on the transformation of employment relationships in the modern workplace and supports a strategic view of the use of temporary employment contracts.

Finally, this study challenges the assumption of homogeneity in shareholder interests and proposes a contingency perspective of the effects of capital markets and equity ownership. The results of this study show that there is substantial variation among listed companies on the NYSE, NASDAQ, and Chinese stock exchanges. I argue that this is due to divergent values relating to the shared interpretative frames of good governance and investor expectations embedded in various stock exchanges. NYSE listed companies make significantly greater use of temporary employment contracts than do those affiliated with the NASDAQ or Chinese stock exchanges. These differences among trading platforms are based on capital market microstructures, insider influences on corporate decisions, and the time sensitivity of investor decisions.

Limitations and Future research

This study has some limitations, which suggest possibilities for future research. First, because the empirical evidence is based on companies operating in China, characteristics idiosyncratic to company operations in China, such as governance and legislative structures, might have affected the research results. This study has no direct implications on the extent to which our results generalize to other countries. Nevertheless, I believe that even if the results were to apply only to China, they are of general interest given the expansion of the Chinese stock market and the significance of Chinese initial public offerings on international capital markets. Second, this study examined the adoption of temporary employment contracts in similar establishments that deliver service and sales operations. This approach allowed us to control for extraneous effects such as the sector's unique institutional environment, competitive pressures, and technological conditions, but it also limits generalizability.

Third, although this study focused on the effect of stock market listings to examine the impact of capital markets on employment practices, alternative ways of measuring the influence of equity investors and corporate ownership structures should be explored in future research. For instance, some studies in financial research and strategic management have used measures of levels of stock concentration, presence of blockholders, and managerial ownership to examine the incentives and risk bearing propensity of managers, as well as their authority in organizational decisions in relation to shareholders (e.g., Baysinger, Kosnik, and Turk, 1991; Betty and Zajac 1994; Hill and Snell, 1989). More recently, some scholars have begun to investigate whether different types of owners (e.g., households, banks, non-financial companies, and institutional investors including pension funds and mutual funds) have distinct and potentially conflicting preferences for organizational decisions (Hoskisson et al. 2002; Ryan and

Schneider 2002). More research is thus needed to capture these capital market effects more comprehensively.

Finally, future research is encouraged to examine the impact of the changing social and institutional environment in China. For example, the implementation of the China Labor Contract Law provides greater protection for temporary workers and discourages the use of successive short-term contracts. However, my interviews with companies and labor intermediaries conducted in late 2011 tend to suggest that firms are adept at exploiting legal loopholes and pursuing indirect forms of temporary work arrangements. For example, the CEO of a large staffing company said that they would “rotate” workers between companies to outskirt the restriction of a series of short-term contracts. Doubts about China’s sustainable economic prospects further increase the incentives to take a short-term approach to employment relationships. Hence, future research is needed to replicate and extend the present research findings using longitudinal data.

Some of our findings are based on cross-sectional data. Thus, even though our theory argues for causal relationships between the independent and dependent variables, we must be careful to consider the possibility of reverse causality. However, we think this possibility is minimal. In the case of the USSC guidelines, our experience in examining corporate ethics programs indicates that ethics policies and practices seldom, if ever, make specific reference to these requirements. Thus, we think it unlikely that the presence of particular ethics program practices would make managers more aware of the guidelines. The data on media attention to companies' ethical failings and on Conference Board attendance were drawn from years prior to our survey, so possibilities of reverse causality do not arise.

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Table 1 Descriptive Statistics and Correlations

Variables	Mean	Std. Dev.	(1)	(2)	(3)	(4)	(5)	(6)
1. Proportion of temporary employees	0.29	0.35						
2. Non-listed companies	0.45	0.50	-0.21					
3. NYSE listed companies	0.08	0.27	0.43 *	-0.41 *				
4. NASDAQ listed companies	0.09	0.29	-0.09	-0.26	-0.13			
5. Chinese stock exchanges listed companies	0.22	0.41	-0.01	-0.28	-0.14	-0.09		
6. Other listed companies	0.22	0.41	-0.06	-0.48 *	-0.23	-0.15	-0.16	
7. Local minimum wage	562.72	76.07	0.11	-0.14	0.02	0.11	0.02	0.07
8. Local unemployment rates	3.15	1.56	0.14	-0.01	0.20	-0.05	-0.10	-0.07
9. Product market coverage	2.55	0.85	-0.46 *	0.06	-0.32	0.20	0.16	-0.02
10. Establishment size	359.92	770.79	0.15	-0.24	0.22	0.05	-0.09	0.12
11. Establishment age	4.94	3.59	0.32	-0.29	0.18	-0.03	-0.09	0.27
12. Industry: telecom	0.31	0.47	0.30	-0.10	0.43 *	-0.20	-0.14	-0.05
13. Industry: financial services	0.28	0.45	-0.20	0.22	-0.17	-0.18	-0.12	0.09
14. Industry: manufacturing	0.24	0.43	-0.15	-0.04	-0.06	-0.16	0.23	0.05

Table 1 (Continued)

	(7)	(8)	(9)	(10)	(11)	(12)	(13)
8. Local unemployment rates	-0.02						
9. Product market coverage	0.10	-0.29					
10. Organization size	0.16	0.01	0.00				
11. Organization age	0.10	-0.07	-0.06	0.35 *			
12. Industry: telecom	0.05	0.12	-0.28	0.33	0.19		
13. Industry: financial services	0.04	0.05	0.14	-0.06	-0.08	0.14	
14. Industry: manufacturing	0.02	-0.21	0.40 *	-0.01	0.07	0.07	0.16

* n=102. Significant at .05 level; Bonferroni adjusted.

Table 2 Results of Quasi-Maximum Likelihood Estimation
Predicting the Proportion of Temporary Employees (Marginal Effects)

	(1)		(2)		(3)
<i>Capital market effects</i>					
Non-listed companies			-0.31 **		-0.33 ***
			(0.17)		(0.09)
NASDAQ listed companies					-0.43 ***
					(0.07)
Chinese stock exchanges listed companies					-0.21 **
					(0.11)
Other listed companies					-0.57 ***
					(0.10)
<i>Alternative arguments</i>					
Local minimum wage	0.00		0.00		0.00 ***
	(0.00)		(0.00)		(0.00)
Local unemployment rates	0.16 ***		0.25 ***		0.04
	(0.04)		(0.07)		(0.03)
Product market coverage	-0.80 ***		-0.91 ***		-0.32 ***
	(0.15)		(0.18)		(0.07)
<i>Control variables</i>					
Establishment size	0.00 ***		0.00 ***		0.00
	(0.00)		(0.00)		(0.00)
Establishment age	0.21 ***		0.32 ***		0.06 ***
	(0.05)		(0.08)		(0.02)
Industry: telecom	0.12		0.28 *		-0.29 **
	(0.14)		(0.15)		(0.14)
Industry: financial services	-0.25		-0.33 *		-0.03
	(0.16)		(0.18)		(0.14)
Industry: manufacturing	0.20		0.09		0.08
	(0.16)		(0.21)		(0.13)
R-squared	0.912		0.914		0.927
Adj R-squared	0.904		0.906		0.918

1. n=102

2. Standard errors in parentheses

3. * p<0.1, ** p<0.05, *** p<0.01