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When Interpersonal Network Transactions Hurt Firm Performance

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Abstract

We introduce agency concerns to social capital theory and predict that managers can use individual social capital to reduce personal effort costs, which is not in the best interest of the firm. To test this prediction, we collect data on all 8,019 hiring decisions from general managers in the National Basketball Association between 1981 and 2011. We find that managers have a clear preference for hiring players through social ties. The probability that a manager hires players from an NBA franchise to which he is socially tied is 27.6% higher than for an untied franchise. To isolate the motivation for this behavior, we complement our data with information on the sporting performance of teams. In line with agency theory, we find that the hiring of players through social ties reduces team performance. The effect is large: on average, each social-tie player reduces team winning percentage by 5.4%. Overall, this paper documents first empirical evidence that decision makers' use of individual social capital can lead to reduced firm-level performance.

Keywords: Social Networks, Social Capital, Principal-Agent-Relationship, Worker Allocation, Basketball

1 Introduction

Scholars in the field of social networks have long argued that social capital influences the performance and success of individuals (for an overview see Borgatti & Halgin, 2011). Although definitions of the term social capital vary across studies, researchers agree that social capital is a valuable resource to the individual that stems from the goodwill (such as trust, sympathy, and forgiveness) that resides in social relations (Adler & Kwon, 2002). As this goodwill makes information, influence, and solidarity available to members of the relationship, social capital has the potential to facilitate economic exchange and action. In consequence, individual social capital plays an important role in the allocation of economic resources. This paper provides empirical evidence on this role in the context of worker allocations across firms, and studies if decision-makers' use of social capital is always in the best interest of the firm.

According to the resource-based theory of the firm, firms that have access to resources that are rare, valuable, inimitable and nonsubstitutable can sustain competitive advantage (Barney, 1991). Within this theory, several organizational researchers have argued that such resources often reside within the employees of the firm (Wright, Dunford, & Snell, 2001). To the extent that social capital of employees provides them with superior access to information and resources that are valuable to the firm, we should thus expect that a firm is able to outperform its competitors if its employees have high social capital (Collins & Clark, 2003).

Empirical studies frequently test this hypothesis by showing that individual social ties influence resource allocation in (inter-)organizational contexts. The inherent logic of these tests is as follows. If social ties give employees access to superior information and resources, and if employees use their social ties for allocation decisions within the organization, then the overall outcome for the organization must be superior relative to a decision without use of social ties. Thus, to test for the performance effect of individual social ties, it suffices to show that individual social ties influence decision making in firms.

There is clear evidence that decision-makers have a preference to rely on their social

ties when searching for information and resources. Researchers observed this behavioral pattern in studies on hiring (Fernandez & Weinberg, 1997; Williamson & Cable, 2003), financing (Shane & Cable, 2002), investing (Cohen, Frazzini, & Malloy, 2008) and strategic decision making (Geletkanycz & Hambrick, 1997; Carpenter & Westphal, 2001). Overall, these studies suggest that employees' use of their social capital benefits firm performance. Or so it would seem.

Several researchers have pointed out that social capital of the "focal actor" (read: the individual) also carries risks for the "broader aggregate" (read: the firm). A key observation relates to the risk that an individual can become overly embedded in his or her social network which prevents opportunities for collaboration (Granovetter, 1985). Similarly, an individual may forgo opportunities for collaboration with unfamiliar partners, because he or she receives positive emotions from interaction with familiar partners (Lawler & Yoon, 1998). The general problem is that "there is no invisible hand that assures that the use of social capital resources [...] will generate an optimal outcome for the broader aggregate" (Adler and Kwon (2002), p. 31).

So what determines the individual's use of social capital resources? Adler and Kwon (2002) summarize the existing literature by stating that "In much social capital research in organizational studies, researchers have implicitly assumed that individual and collective actors are driven by instrumental motivations" (p. 25). In other words, the existing literature predominantly assumes that actors employ their social capital to reach their personal goals. This suggests that individual social capital can only become a form of organizational social capital if there is interest alignment between the individual and the organization (Kanazawa & Savage, 2009).

Agency theory (Fama, 1980; Jensen & Meckling, 1976) has long pointed out that there exist many forms of misalignment of the interests of managers and firm owners. These misalignments often come at substantial agency costs for the firm. In general, agency costs stem from managers' informational advantage over firm owners, which prevents owners from perfect monitoring of managers' effort levels. In consequence, managers will

often choose resource allocations that maximize their personal interest, but that are inefficient from the perspective of firm owners. While agency theory has a long tradition in economics, finance, and organizational research (Eisenhardt, 1989), it has so far been neglected in studies on the relationship between employee social capital, resource allocations and firm performance. However, as one integrates this aspect into the analysis, the role of employee-based social capital for firm performance becomes ambiguous.

To understand the intuition behind this ambiguity, consider the following example. Managers in organizations frequently need to decide how to fill vacant positions. In the first scenario, the manager's interests are perfectly aligned with the interests of the firm owner, i.e., the manager wants to use his or her social capital to the benefit of the firm. There are two job candidates and the manager has social ties to the former employers of both. If the manager contacts these social ties, he or she may obtain private information about the appropriateness of the two candidates. By combining this information with information available in the candidates' resumes, the manager can make sure that the resulting match between job candidates and positions in the organization is always at least as good as in organizations without social ties to former employers. In consequence, the organization may be able to outperform competitors with fewer social ties.

In the second scenario, the manager's interests are not completely aligned with the interests of the firm owners. For example, the manager may want to minimize his or her disutility from labor market search activities. In this case, the manager can use his or her social capital as a "short-cut" to access information about potential job candidates. By only approaching candidates who have worked at socially-tied firms before, the manager deliberately forgoes information from general search activities in the labor market and the resulting fit between job candidate and position may be worse than in an organization without social capital (requiring this organization to hire candidates exclusively via the market). In consequence, the manager's organization may underperform relative to competitors with fewer social ties.

The aforementioned example illustrates that the performance effect of social capital for

the firm cannot be inferred from answers to the question *whether* social capital influences resource allocation decisions. In both scenarios, the manager has incentives to rely on his or her social ties for information access and market transactions. Instead, it is also necessary to directly link these allocations to firm performance measures to infer how social capital influences the *quality* of decision making.

In this study, we introduce agency concerns to social capital theory, and document empirical evidence from a combined analysis of (i) whether social ties influence resource allocation, and (ii) how these resource allocations influence competitive outcomes between firms. We focus on worker allocation decisions, as these are among the most important resource allocation decisions in firms. While previous work has frequently engaged in testing one of both aspects in isolation (Fernandez & Weinberg, 1997; Shane & Cable, 2002; Williamson & Cable, 2003; Cohen et al., 2008; Geletkanycz & Hambrick, 1997; Peng & Luo, 2000; Collins & Clark, 2003), no previous study has been able to estimate both effects from the same data. We thus provide a novel approach of examining the economic consequences of social ties.

We construct a dataset with all 8,019 hiring decisions from 132 general managers in the National Basketball Association (NBA) over the period 1981 to 2011, and combine this data with information on team performance and each manager's full employment history (to infer his social ties to other teams). Our choice to test our hypotheses with data from the NBA was motivated by the observation that the use of sports data for empirical research on organizational topics offers a number of considerable advantages, and that it is now a well established procedure in the literature (Berman, Down, & Hill, 2002; Barden & Mitchell, 2007).

In the next section we review social capital and agency theories and derive our hypotheses. We then describe our data and empirical approach. Finally, we present our empirical results and a discussion of their managerial implications.

2 Theoretical Background

Social Capital and Worker Allocation

Worker allocation is probably the most extensively researched topic in the literature on the economics of social networks (Jackson, 2006). A literature review by Montgomery (1991) showed that about 50 percent of jobs for a variety of professions were found through social contacts. Data from a more recent review qualified friends and relatives as one of the most popular search method for job-seekers (Ioannides & Loury, 2004). Granovetter (2005) summarized that in most labor markets, social networks play a key role because any job matching process depends on a continuous flow of information through social networks. However, a common feature of these studies is their focus on social capital of workers, not firms.

Little research has been conducted on social networks of the demand side in labor markets. Williamson and Cable (2003) provided an analysis of employer networks and hiring patterns. Studying *Fortune 500* firms in their decision making for CEO and top management hirings, the authors found first evidence that decision makers tend to hire candidates from sources that belong to their social network. Specifically, these firms were more likely to hire new CEO's and other top management members from firms with which they shared personal board interlocks. Similarly, a recent study by Tian, Halebian, and Rajagopalan (2011), which analyzed CEO appointments of U.S. manufacturing firms, documented that capital markets reward the use of firm leaders' external ties in hiring decisions. This result suggests that investors believe in superior hirings when firm leaders employ their social capital in the decision process.

How Social Ties Influence Hiring Decisions

The Social Capital View. Social capital theory proposes that social capital is created through the goodwill (such as trust, sympathy, and forgiveness) that resides in social relations. As this goodwill makes information, influence, and solidarity available to the

members of the relation, social capital is a valuable resource for these members (Adler & Kwon, 2002).

Information is an important element in properly matching workers to positions. Uzzi (1996) pointed out that the high level of uncertainty in hiring decisions can be reduced by the fine-grained information transfer in social-tie relations. Similarly, Jackson (2010) argued that social networks allow to mitigate substantial search frictions as they enable the communication of critical information to firms about the potential fit of workers. This mitigation of search frictions ends up in reduced search costs since decision makers are able to use trusted social contacts that are already in place, and need not to invest in constructing new ones (Granovetter, 2005).

Moreover, social contacts occur as a costless by-product of interactions that are necessary for work [or other activities] (Granovetter, 1988). The ability to use social ties of one kind (such as a co-working history, or friendship) in another setting is called the appropriability of social structure (Coleman, 1988).

In consequence, a rational decision maker who wants to hire the best available candidate in the market will see his or her social capital as an instrument to achieve this goal with substantially lower search costs for the firm. Specifically, the manager might select a transaction partner from the set of his or her social ties, because the relational characteristics of social ties allow for a more reliable information exchange based on trust and closeness (Moran, 2005).

The Agency View. Agency theory (see e.g., Eisenhardt, 1989) has long pointed at the problems that arise if one party ("the principal") delegates tasks or work to another party ("the agent"). If the goals of the principal and the agent are not aligned and if the principal cannot verify the agents' actions, the decisions of the agent will not maximize the principals' utility. A classical example of such an agency relationship is the task delegation from firm owners to managers. Besides potential conflicts of interest between both parties, this relationship is characterized by an information asymmetry, because owners lack the ability to perfectly observe managers' effort choices.

This observation is particularly true in connection with employment of individual social capital. As social tie relations are to a large extent shaped by tacit behavior (Uzzi, 1996), it is difficult for firm owners to directly value the manager's interaction with his or her personal contacts. In consequence, the manager is able to maximize his or her self-interest instead of the firm owners' interest. Examples for self-interest maximization of managers are choices of inefficiently low effort levels, and selection of inefficient transaction partners that create private value for the manager. A manager can use his or her social ties for selection of transaction partners to achieve both of these goals, i.e., effort level reduction and the creation of private value.

Transactions with socially-tied partners help the manager to reduce his or her effort costs. Decision makers tend to restrict their searches for alternatives based on incurred individual search costs (Barden & Mitchell, 2007). To reduce personal workload, decision makers have often been observed to engage in prechoice screening, which reduces the number of choice alternatives to be evaluated in the decision process (Beach, 1993). A convenient and salient selection criterion for managers to reduce screening activity is to focus on a prechoice of socially-tied firms as potential transaction partners.

Transactions with socially tied partners provide a private value for the manager. The *theory of relational cohesion* suggests that interactions between socially tied actors produce positive emotions such as feelings of pleasures and excitement (Lawler & Yoon, 1998). For the manager, these positive emotions create a private value and can change his or her cost-benefit evaluation of a transaction. This provides an additional incentive for managers to focus on socially-tied firms in their hiring activities.

Based on our previous discussion of the social capital and agency views, it becomes clear that a manager's *motivation* to employ his or her social ties for decision-making in firms cannot be inferred from the mere observation that social ties were used in the decision. Instead, both the social capital and the agency view predict that managers will show a preference for hiring decisions via social ties. Therefore, we specify the following hypothesis:

Hypothesis 1. *Both social capital theory and agency theory predict that managers will employ their social ties to hire workers from socially-tied firms. Hiring from socially-tied firms occurs more frequently than hiring from socially-untied firms.*

Tie-Influenced Hiring Decisions and Firm Performance

The Social Capital View. In a situation of perfect interest alignment, a manager's use of social capital in decision making is the consequence of the opportunity to create additional value for the firm. In other words, managers rely on their personal contacts whenever they think that they are able to improve the quality of their hiring decision by using their social ties. Social ties help to reduce transaction costs and search frictions, and provide access to available hiring opportunities (see e.g., Moran, 2005). Therefore, in the absence of conflicts of interest between the manager and the firm owner, social capital theory predicts a positive relationship between decisions influenced by social ties and firm performance:

Hypothesis 2a. *In the absence of conflicts of interest between the manager and the firm owner, tie-influenced hiring decisions by the manager will lead to improved firm performance.*

The Agency View. In a situation of imperfect interest alignment, a manager's use of social capital in decision making is the consequence of the attempt to maximize personal self-interest. In other words, managers rely on their personal contacts whenever they think that they are able to either reduce their private search costs, or to generate private benefits through transactions with socially-tied partners or both. Such self-interest maximization by the manager leads to an overly reduction in the universe of potential hirings, relative to what would be required to find the best-fitting candidates for the firm. This results in a suboptimal match between workers and positions. Therefore, if conflict of interest

between the manager and the firm owner is possible, agency theory predicts a negative relationship between tie-influenced hiring decisions and firm performance:

Hypothesis 2b. *In the presence of conflicts of interest between the manager and the firm owner, tie-influenced hiring decisions by the manager will lead to reduced firm performance.*

3 Methods

Sample and Data Collection

To analyze the influence of individual social ties of managers on resource allocation decisions and firm performance, we created a new dataset that includes detailed information on all player transactions in the National Basketball Association (NBA) from the 1981 to the 2011 season. We complement this data with information on the full employment history of each team manager, as well as with information on seasonal statistics, wages (since 1984/85)¹ and socio-demographics for all players that appeared on the roster of any franchise during this period. All the data were obtained from *Sports Reference LLC*, a professional company that specializes in the collection and publication of sports data. In total, our dataset includes 2'331 players and 8'019 hiring decisions by 132 different managers.

The responsibility for hiring decisions rests exclusively with a team's general manager, and it is uncommon for the owner of a team to be also its general manager. This separation of ownership and control is the first necessary ingredient for potential agency conflicts between the general manager and the team owner. A closer look at the situation of general managers and team owners also reveals substantial information asymmetries between both parties. As of the season 2011/2012, Michael Jordan was the only franchise owner in the NBA who had an active player career history in professional basketball. This observation stands in sharp contrast to the share of general managers where the majority had a career

¹Unfortunately, salaries for the seasons 1986/1987 and 1989/1990 were not available.

history in professional basketball. In consequence, a franchise owner depends on his general manager's specific knowledge about basketball (most of which can be assumed to be tacit knowledge that stems from experience as a player or coach) when making hiring decisions.

Franchise owners are only able to partially monitor the behavior of general managers. As the team owner lacks the same knowledge about players as the general manager, the owner is unable to perfectly monitor the general manager's effort level. The interdependent production process makes it impossible to isolate the contribution of individual players to the joint team product for owners that are not true experts in the game of basketball. Imperfect monitoring by the owner is the second necessary ingredient for agency conflicts to exist.

Moreover, the team production technology leads to substantial search costs for general managers to find good players. For the managers it is challenging to extrapolate from a player's performance in another team to how this player would perform in the general manager's existing team structure. Therefore, hiring decisions should not be based on simple player performance statistics only. Instead, extensive search effort is required from the general manager to increase the quality of the match. Because the marginal value of this search effort is essentially unobservable, the manager enjoys some room for opportunistic behavior. Therefore, interest misalignment between general manager and team owner can lead to inefficient player allocations from the perspective of the team owner.

There are three different ways for a team manager to hire players from other teams. First, a manager can sign a player whose contract with another franchise expires as a "free agent" by outbidding all other interested parties, and by offering this player a guaranteed long-term contract that lasts between one and seven years. This transaction type accounts for 38.2 % of all player transactions in our sample. Second, managers can sign free agents for special short-term contracts (so-called "10-day contracts"). Managers often use these contracts to fill their roster with additional reserve players in the presence of unexpected player shortage due to injuries. This transaction type accounts for 11.9 %

of all player transactions in our sample. Third, managers can trade their players with on-going contracts against players with on-going contracts from other franchises. In this case, a single transaction may include more than one player from each transaction partner, and multiple (> 2) transaction partners. This transaction type is the most frequent type and accounts for 47.9 % of all player transactions in our sample.

Two aspects that relate to franchise relocations and league extensions in the NBA require careful examination. From time to time, franchises relocate and re-appear in the league under a new name. For example, in 2008 the Seattle SuperSonics franchise relocated to Oklahoma City and changed its name from SuperSonics to Thunder. However, the league treats each franchise as a continuous legal entity, independent of the team name and the host city. Accordingly, Oklahoma City Thunder and the Seattle SuperSonics are one and the same franchise in our data.

League expansion rules provide team managers of new franchises with a special recruiting opportunity. The "expansion draft" helps new franchises to set up a starting roster. Expansion franchises which enter the league (seven in our sample period) are allowed to pick numerous players from the existing franchises. There are specific rules for each expansion draft, but in general, the existing franchises can protect most of their active player while leaving some of the players open for selection. The selection of players through the expansion draft accounts for the remaining 2 % of all player transactions between franchises in our sample.

The key advantages of our dataset relate to our ability to observe the pool of potential players, which could (theoretically) have been hired by a franchise, and how franchises, managers, and players performed before the hiring-decision. While this information is crucial to answer how social ties change resource allocation decisions and firm performance, it is frequently unavailable for data from other industries. Usually, the set of available workers is unobservable to researchers, because many workers change across industries during the course of their career, and because data on workers from other firms who could have been employed are missing (which raises concerns about selection biases in such

studies (Fernandez & Weinberg, 1997)).

In contrast, the NBA is an almost closed system of extraordinary talented workers who mostly spend their entire working career within this industry. It is generally agreed that the seasonal inflow of players due to upcoming young players (so-called "rookies") is very limited, because only 30 new players (out of 10'000 high school seniors) are talented enough to make it into the league (Rosen & Sanderson, 2001). As a consequence, managers are "doomed" to recruit their personnel from the limited set of other NBA franchises. This implies that our data on all active players covers just about any potential signing opportunity for NBA managers. In compliance with this reasoning, more than two out of three players (68%) were directly recruited from other franchises in the NBA, and another 20% of player hirings related to the annual draft (where franchises are allowed to select upcoming college, high school and international players). In consequence, only a mere 12% of all player hirings involved undrafted players from outside the league.

Therefore, we use manager-franchise dyads as the unit of analysis in order to test our hypothesis about hiring behavior. We created these dyads on a seasonal level. In the case that a franchise employed several managers within the same season (so that every manager was only responsible for part of the season games), we only included dyads for the team's primary manager in that season. Due to the incremental league expansion over time, the number of seasonal dyads has risen during our sample period. In 1981, there were 23 franchises in the NBA, resulting in 506 manager-franchise dyads. In 2011, there were 30 franchises in the NBA, resulting in 870 manager-franchise dyads. In total, our hiring-sample consisted of 22'258 manager-franchise dyads during our 31-year period. By means of these dyads, a total of 5'420 player moved from one franchise to another.

To test our hypotheses about the firm-level performance effect of hiring decisions via social ties, we collected seasonal data on each franchise's winning percentage, payroll, total number of players, total player appearances, as well as the number of new players on the roster, and the appearances of players that were signed through a social tie. Overall, our performance-sample consisted of 677 franchise-year observations in the period 1985 -

2011.

Measures

Social Ties. We measured a general manager's social ties by his personal ties to other franchises in the NBA. We thus captured intra-industry ties of decision makers. Such ties often stem from a firm's hiring of external decision makers (Geletkanycz & Hambrick, 1997): job-changers bring their personal contacts with them when they start new employment relationships (Granovetter, 1988). Many of these social contacts emerge from a general manager's interaction with co-workers as he moves through different workplace settings in his career. Granovetter (1988, p. 194) stated that individuals "stockpile" their social contacts as older ties from past jobs are as important as more recent ones. Based on this reasoning we measured a manager's social ties to other firms by his employment history. We assumed that a manager who joins a franchise from another franchise, is socially connected to his prior employer based on the personal contacts he generated with associates during the co-working experience. Having all the data on each manager's working history, we were able to generate all ties to other franchises at any point in time.

Measuring a manager's social ties exclusively on the basis of this employment history is a conservative approach, and previous researchers have used different, and sometimes broader tie definitions. For example, Barden and Mitchell (2007) infer the degree of a firm's social embeddedness from its previous transactions with other firms, and from previous transactions between its manager and other managers. Therefore, their definition reflects the joint history between the involved parties. However, for the purpose of our study, it seems more plausible that managers who aim to maximize personal interest do so by means of their *individual* social capital (which is directly at their disposal) than by means of the *organizational* social capital (which was created by other members of the organization). Another example comes from Cohen et al. (2008) who used shared education networks as a measure of social networks. However, they did not observe if two individuals from the same education network ever had a direct relationship. In contrast,

our conservative measurement should guarantee that there is a well established personal connection between a manager and a socially tied franchise because of the factual co-working experience with various associates.

Our narrow tie definition came at the expense of very few ties, because team managers in the NBA do not move across franchises as much as players. In total, we observed at least one social tie for only a third of all managers in our sample. However, out of these managers, 25% had three or four social ties to other teams (see Table 1 for an overview of all active managers between 1981 and 2011 and the total number of players they acquired via social ties in their working history).

At this point, we would like to emphasize that our approach makes it ex-ante less likely to detect any statistical relationship between a manager's social ties (as defined by us) and his hiring decisions. Acknowledging that managers are likely to dispose of additional unobserved social ties to other franchises, we should not see a difference in behavior between managers with and without social ties (again, as defined by us) in our analysis. If, in turn, we find a statistical difference in behavior, we can view this as a lower bound of the true effect size.

Tie-Influenced Resource Allocation. For each season, we measured tie-influenced resource allocation decisions by recording any player, who was recently acquired via a social tie of the hiring manager to the former employer. We did refer to these player as "tie-hirings". In addition, we counted the total number of tie-hirings for each team, and calculated the share of match appearances of tie-hired players relative to the overall number of match appearances of players for this team.

Control Variables. We included two control variables in our team-performance analysis. First, *Players* denotes the overall number of a team's players that appeared on the court during a season. Often, the number of players that appear on the court reflects the injury situation of a team. Because a team is more likely to hire additional players in case of bad injury luck, we included this variable in our analysis. Second, *Payroll* is the logarithm of the sum of the wages of all players on a team's roster in our analysis. Because

a team’s performance depends in large part on its budget, we included this variable in our analysis.

Analysis

Tie-Influenced Resource Allocation. We analyzed the influence of manager social ties on resource allocations by means of a linear probability model (LPM), where the dependent variable $hiring_{ijt}$ was a binary variable that indicates if manager i hired a player from franchise j in season t ($hiring_{ijt} = 1$), or not ($hiring_{ijt} = 0$). Dichotomization of the dependent variable caused little information loss, because almost 90% of the dyads with hirings included only one player. We chose the LPM model over a Logit or Probit model, because it was conceptually easier to include team- (α_j), manager- (α_i) and season-fixed effects (α_t) in the LPM than in the Logit or Probit models.

$$P(hiring_{ijt}) = \beta_0 + \beta_1 social_tie_{ijt} + \alpha_i + \alpha_j + \alpha_t + \varepsilon_{ijt} \quad (1)$$

The independent variable $social_tie_{ijt}$ indicates if manager i had a social tie to franchise j in season t , and ε_{ijt} is the idiosyncratic error term. To control for the inherent heteroskedasticity of the LPM, we computed standard errors that are White heteroskedasticity-robust and clustered at the manager-season level. Cluster-adjusted standard errors allowed for the possibility that some unobserved factors lead to correlation between all hiring decisions of a manager within the same season.

Firm Value of Tie-Influenced Resource Allocations. We analyzed the firm value of tie-influenced resource allocations by means of a market-based test procedure. Specifically, we regressed a team’s sporting performance on its number of tie-hirings, payroll, and number of players. The intuition behind this procedure was as follows. By controlling for a team’s payroll, the coefficient for tie-hirings indicated whether a team with tie-hirings did better or worse than what could have been expected from its payroll. This procedure had the advantage that it already controlled for any potential differences in the characteristics of tie-hirings and non-tie-hirings in so far as these influence their

TABLE 1
List of all NBA managers who were active between 1981 and 2011

General Manager	Franchise	Number of Tie Hirings	General Manager	Franchise	Number of Tie Hirings
D. Ainge	Celtics (04-11)	0	D. Harris	Bucks (88-92)	0
A. Attles	Warriors (77-86)	0	S. Layden	Jazz (90-99), Knicks (00-04)	0
R. Auerbach	Celtics (51-84)	0	T. Leiweke	Rockets (94)	0
J. Axelson	Kings (70-79), Kings (83-88)	0	L. Lenart	Clippers (81)	0
P. Babcock	Nuggets (88-90), Hawks (91-02)	4	J. Lucas	76ers (95-96)	0
R. Babcock	Raptors (05-06)	0	J. Lynam	76ers (93-94)	0
B. Bass	Spurs (80-94), Hornets (96-04)	3	B. MacKinnon	Clippers (76-77), Nets (82-83), Nets (87)	0
E. Baylor	Clippers (87-08)	0	J. McCloskey	Pistons (80-92), Timberwolves (93-95)	3
J. Begzos	Spurs (75-79), Kings (80-81)	0	K. McHale	Timberwolves (96-09)	0
A. Bianchi	Knicks (88-91)	0	B. McKinney	Timberwolves (90-91), Pistons (93-95)	2
B. Bickerstaff	Nuggets (91-97), Bobcats (05-07)	1	J. McMahan	Rockets (68), Warriors (87-88)	4
L. Bird	Pacers (04-11)	0	D. Morey	Rockets (08-11)	0
L. Blanks	Suns (11)	0	C. Mullin	Warriors (05-09)	0
V. Boryla	Knicks (60-61), Nuggets (85-87)	1	Donn Nelson	Mavericks (06-11)	0
J. Bower	Hornets (06-10)	0	K. O'Connor	Jazz (00-11)	0
J. Brewer	Timberwolves (92)	0	N. Olshey	Clippers (11)	0
L. Brown	76ers (98)	0	R. Patterson	Bucks (71-72), Rockets (73-89)	3
B. Buckwalter	Trail Blazers (87-92)	0	S. Patterson	Rockets (90-93), Trail Blazers (07)	0
R.C. Buford	Spurs (03-11)	0	J. Paxson	Cavaliers (00-05)	0
J. Calipari	Nets (97-99)	0	J. Paxson	Bulls (04-09)	0
M.L. Carr	Celtics (95-97)	0	G. Petrie	Trail Blazers (93-94), Kings (95-11)	8
D. Checketts	Jazz (88-89)	0	R. Pfund	Miami Heat (98-08)	0
R. Cho	Trail Blazers (11)	0	P. Phipps	Clippers (83-84)	0
J. Cohen	Kings (82)	0	R. Pitino	Celtics (98-01)	0
J. Colangelo	Suns (68-94)	0	T. Podleski	Clippers (82)	0
B. Colangelo	Suns (95-06), Raptors (07-11)	4	G. Popovich	Spurs (95-02)	0
D. Collins	Pistons (96-98)	0	S. Presti	Thunder (08), Thunder (09-11)	0
M. D'Antoni	Suns (07)	0	K. Pritchard	Trail Blazers (08-10)	0
C. Dawson	Rockets (97-07)	0	W. Reed	Nets (91-96)	0
D. DeBusschere	Nets (1975), Knicks (83-86)	2	J. Reynolds	Kings (91-94)	0
D. Delaney	Cavaliers (81-82)	0	P. Riley	Miami Heat (09-11)	0
D. Demps	Hornets (11)	0	L. Riley	Warriors (10-11)	0
J. Dumars	Pistons (01-11)	0	B. Russel	Thunder (74-77), Kings (89-90)	0
M. Dunleavy	Bucks (93-97), Clippers (09-10)	0	R. Salyers	Pacers (82-86)	0
W. Embry	Bucks (72-77), Cavaliers (87-99)	5	B. Sharman	Lakers (77-82)	0
B. Ferry	Wizards (74-90)	0	G. Shue	76ers (74), 76ers (91-92)	0
D. Ferry	Cavaliers (06-10)	0	O. Smith	Magic (06-11)	0
G. Forman	Bulls (10-11)	0	N. Sonju	Clippers (78-79), Mavericks (81-96)	4
J. Gabriel	Magic (97-04)	0	G. St. Jean	Warriors (98-04)	0
D. Gavitt	Celtics (91-94)	0	E. Stefanski	Nets (05-08), 76ers (09-10)	1
H. Glickman	Trail Blazers (71-81)	0	G. Stirling	Knicks (87)	0
K. Grant	Mavericks (97)	0	C. Theokas	Nets (1970), Nets (79-81)	0
C. Grant	Cavaliers (11)	0	I. Thomas	Raptors (96-98), Knicks (05-08)	1
B. Greenberg	76ers (97)	0	R. Thorn	Bulls (79-85), Nets (01-04), 76ers (11)	3
G. Grunwald	Rockets (90-91), Raptors (99-04)	6	D. Twardzik	Hornets (92-95), Warriors (96-97)	1
L. Habegger	Thunder (84-85)	0	M. Ujiri	Nuggets (11)	0
J. Hammond	Bucks (09-11)	0	W. Unseld	Wizards (97-00)	0
L. Harris	Bucks (04-08)	0	K. Vandeweghe	Nuggets (02-06), Nets (09-10)	1
R. Higgins	Bobcats (08-11)	0	Z. Volchok	Thunder (70), Thunder (78-83)	0
S. Inman	Trail Blazers (82-86)	0	J. Volk	Celtics (85-90)	0
D. Issel	Nuggets (99-01)	0	W. Walker	Thunder (95-01)	0
S. Jackson	Grizzlies (96-00)	0	C. Wallace	Celtics (02-03), Grizzlies (08-11)	3
M. Jordan	Wizards (01-03)	0	D. Walsh	Pacers (87-03), Knicks (09-11)	0
D. Kahn	Timberwolves (10-11)	0	M. Warkentien	Nuggets (07-10)	0
S. Kasten	Hawks (80-90)	0	B. Weinbauer	Rockets (95-96), Bucks (98-99)	0
S. Kerr	Suns (08-10)	0	J. Weisbrod	Magic (05)	0
B. King	76ers (99-08), Nets (11)	0	H. Weltman	Cavaliers (83-86), Nets (88-90)	3
B. Knight	Grizzlies (01-02), Hawks (03-08)	2	J. West	Lakers (83-00), Grizzlies (03-07)	0
J. Krause	Bulls (77), Bulls (86-03)	0	B. Whitsitt	Thunder (87-94), Trail Blazers (95-03)	3
M. Kupchak	Lakers (01-11)	0	L. Wilkens	Thunder (86)	0
F. Layden	Jazz (80-87)	0	D. Wohl	Miami Heat (96-97)	0
A. Bristow	Hornets (91), Nuggets (98-98), Hornets (05)	3	L. Schaffel	Jazz (78-79), Hawks (80), Nets (84-86), Miami Heat (89-95)	5
E. Donovan	Knicks (65-70), Clippers (71-75), Knicks (76-82)	0	C. Scheer	Nuggets (75-84), Clippers (85-86), Hornets (89-90)	4
E. Grunfeld	Knicks (92-99), Bucks (00-03), Wizards (04-11)	2	R. Sund	Pistons (99-00), Thunder (02-07), Hawks (09-11)	1
J. Nash	76ers (87-90), Wizards (91-96), Nets (00), Trail Blazers (04-06)	6	D. Vertlieb	Thunder (69-70), Warriors (75-76), Pacers (81)	2
Don Nelson	Bucks (78-87), Warriors (89-95), Mavericks (98-05)	17	P. Williams	Bulls (70-73), Hawks (74), 76ers (75-86), Magic (90-96)	9

market values. Szymanski (2000) previously applied this test procedure to determine the extent of wage discrimination in sports labor markets, and we followed his suggestion on variable transformations. In particular, we measured the variables tie-hirings, payroll, and players relative to their league averages. We specified the following estimation equation:

$$\begin{aligned} win_pct_{ft} = & \beta_0 + \beta_1(tie_hirings_{ft} - \overline{tie_hirings}_t) \\ & + \beta_2(payroll_{ft} - \overline{payroll}_t) + \beta_3(players_{ft} - \overline{players}_t) + \gamma_f + \varepsilon_{ft} \end{aligned} \quad (2)$$

where the subscripts f and t denoted franchises and seasons, and $\overline{(\cdot)}_t$ denoted the league average of a variable in season t . The dependent variable win_pct_{ft} was the regular season winning percentage of franchise f in season t . Measuring organizational performance of NBA franchises by regular season sporting success is a well accepted approach in the literature (see e.g., Pfeffer & Davis-Blake, 1986; Berman et al., 2002). In line with Szymanski (2000), we used a log-transformed dependent variable to measure the relative impact of the independent variables on winning percentage.

The coefficient of interest was β_1 , which we interpret as the effect of tie-influenced hiring decisions on performance. A positive (negative) β_1 indicates that tie-hirings provided an above (below) average contribution to the team production process. Therefore, the social capital view suggested β_1 to be positive (Hypothesis 2a), while the agency view suggests it to be negative (Hypothesis 2b).

An important concern for our analysis of firm performance relates to the potential endogeneity of tie-hirings. Prior work from McDonald and Westphal (2003) on tie-influenced decision making showed that decision makers have a greater tendency to rely on their social ties when firm performance is low. If this observation holds for general managers in the NBA, a negative relationship between tie hirings and firm performance would only reflect the correlation between firm performance at the end of the season and firm performance at the start of the season.

A unique characteristic of the sports industry provides a way to circumvent this serious concern. Seasons in the NBA are separated into a foregoing off-season period between

June and October (when roster adjustments and team preparation happen) and a playing period (starting in November). This chronological separation of hiring decisions and the process that generates performance (the games) implies that off-season tie-hirings cannot reflect low performance at the beginning of the season. From a technical point of view, the advantage of this timely separation is that the number of off-season tie-hirings is predetermined in the firm-performance regression. Therefore we also ran our analysis for a restricted measure of tie-influenced resource allocation, in which we only counted the number of off-season tie-hirings.

In addition to the previously discussed control variables, we included franchise fixed effects (γ_f) in our analysis to control for franchise specific attributes that may affect performance. Finally, ε_{ft} denotes the idiosyncratic error term. We computed White heteroskedasticity-robust standard errors to take potential heteroskedasticity into account.

4 Results

Table 2 provides descriptive statistics and correlations among the variables used in the regression models. The variable of interest in the model of firm performance was *tie hiring appearances*. As we used the *share* of tie hiring appearances relative to total team appearances in our analysis, Table 2 also includes the variable *total team appearances*. The average number of appearances from players, which were acquired via a social tie to another franchise (≈ 5) was rather small in relation to the total appearances from all players (≈ 817). This observation reflects our narrow measurement of social ties: on average, managers have about 0.4 ties, because most managers never changed their employer within our sample period.

Social Ties and Resource Allocation. Hypothesis 1 predicted that a manager resorts to socially-tied franchises when searching for new players. To assess in a model-free analysis if hiring-probabilities varied across a manager’s set of socially-tied and socially-untied franchises, we first performed a nonparametric Wilcoxon-Mann-Whitney test. While this test only tests for the equality of a variable across two groups, and does

TABLE 2
Means, Standard Deviations, and Pearson Correlations

<i>Model of Hiring Probability^a</i>							
Variable	Mean	s.d.	1				
1. Manager-Franchise Hiring	0.19	0.39					
2. Manager-Franchise Tie	0.01	0.12	0.02*				

<i>Model of Firm Performance^b</i>							
Variable	Mean	s.d.	1	2	3	4	5
1. Winning Percentage ^c	-0.75	0.36					
2. Tie Hiring Appearances	4.87	20.77	-0.12*				
3. Off-Season Tie Hiring App.	3.17	15.63	-0.09*	0.84*			
4. Total Team Appearances	817.12	72.11	0.05	-0.01	0.01		
5. Payroll ^c	17.19	0.82	0.11*	-0.05	-0.00	-0.08	
6. Number of Players	16.62	2.38	-0.33*	0.04	0.02	-0.04	0.18*

^a $n = 22, 258$.

^b $n = 677$.

^c Log-transformed.

* $p < .05$

not allow for a directional test of variables across two groups (i.e., whether the variable was higher or lower in one group), it has the considerable advantage that it does not require any distributional assumptions on the variable of interest. The test result clearly showed that hiring probabilities differed across dyads with social ties and dyads without social ties ($z = 3.24, p < 0.01$). This result shows that social ties matter for resource allocation decisions of managers. We emphasize that this effect cannot be attributed to the presence of various control variables that help to "control this effect into the model".

The directional impact of social ties on hiring probabilities, can be inferred from Table 3 which reports the results from our regression model. Model 1 indicates that managers' social ties to other franchises were positively related to the frequency with which managers recruited new players from these franchises ($p < 0.01$). While the β -coefficient of 0.065 may look small at first glance, the marginal effect was actually large: relative to the unconditional probability of hiring players through a randomly chosen dyad, the hiring probability was 27.6% higher in the presence of a social tie. Overall, this result provides

strong support for the prediction of Hypothesis 1: managers tend to draw on personal contacts when they decide about new personnel.

Additional robustness checks (given in the Appendix) showed that our result cannot be attributed to the interpretation that manager-franchise ties reflect indeed manager-player ties. While we observed that social ties between managers and players had themselves a positive impact on hiring probabilities, we still found a positive influence of manager-franchise ties beyond this impact ($p < 0.05$). This result also persisted when we only included free-agent signing observations in our analysis. Note that in this case, a manager's social ties could only provide information about a player but did not own the property rights of this player anymore.

TABLE 3
Results of Regression Analysis of the Hiring Probability^a

Variables	Model 1
Manager-Franchise Tie	0.065** (0.024)
Manager fixed effects	Included
Franchise fixed effects	Included
Season fixed effects	Included
Observations	22,258

^a Robust standard errors are reported in parentheses.

* $p < .05$

** $p < .01$

*** $p < .001$

Firm Value of Tie-Influenced Resource Allocations. Hypotheses 2a and 2b predicted opposite performance effects from tie-hirings. To assess in a model-free analysis if tie-hirings impact a franchise's winning percentage, we first performed a nonparametric Wilcoxon-Mann-Whitney test. We compared the winning percentage of franchises where a manager had used his social ties in at least one hiring decision with the winning percentage of franchises where the manager had not used his social ties for hiring decisions. The test result clearly showed that the winning percentages were different across both franchise groups ($z = 2.26, p < 0.05$). This finding shows that managers' use of individual social

ties is related to franchise performance.

The directional impact of tie-hirings on franchise performance can be inferred from Table 4. Model 1 indicates that tie-hirings reduce franchise performance ($p < 0.05$). On average, franchises that used players which were acquired via social ties of the manager underperformed their competitors, holding the team's payroll and number of players used fixed. This result obtained although the estimated coefficients for payroll and number of players used both had the expected direction and were highly significant. Model 2 in Table 4 shows that the significance of the tie-hiring coefficient in Model 1 was not due to an endogeneity bias. Tie-hirings still have a significantly negative impact on team performance if we restrict our analysis to hiring decisions from the off-season. This result provides strong evidence for a causal effect of tie-influenced resource allocation on firm performance. Overall, our results provided support for Hypothesis 2b, which predicted that managers can use their social ties to maximize self-interest, which harms firm performance.

Additional robustness checks (given in the Appendix) allowed us to rule out a number of alternative explanations for our findings. First, we estimated a specification in which we controlled for a manager's overall number of ties. If bad managers get fired more often, these managers have more ties and are more likely to hire players through social ties. The negative influence of tie-hirings could then be attributed to the bad manager making poor hiring-decisions. However, including a manager's overall number of ties in the performance estimation did not alter our finding. In a similar vein, we analyzed whether teams with managers who ever used social ties to hire players were less successful. This procedure allowed us to test if managers, who had used their personal ties in decision making, are generally less able than managers who had not used their social ties in decision making. However, we did not find any statistically significant impact of this variable, which again suggests that our findings were not attributable to unobserved manager quality.

Second, we did not find any evidence that the negative impact from tie-hirings was attributable to a smaller degree of roster-stability. Previous work has shown that a team's

tacit knowledge, which stems from its shared experience, contributes to team performance. Therefore, a high degree of player turnover could reduce team performance, because turnover destroys tacit knowledge among team members (Berman et al., 2002). However, we did not find the inclusion of the seasonal number of newcomers in a team to alter our conclusion.

TABLE 4
Results of Regression Analyses of Firm Performance^a

Variables	Model 1	Model 2
Share of Tie Hiring Appearances	-1.241* (0.567)	
Share of Off-Season Tie Hiring Appearances		-1.787* (0.808)
Log Payroll	0.649*** (0.108)	0.653*** (0.109)
Number of Players	-0.047*** (0.005)	-0.048*** (0.005)
Franchise fixed effects	Included	Included
Observations	677	677

^a Robust standard errors are reported in parentheses.

* $p < .05$

** $p < .01$

*** $p < .001$

Third, we acknowledge that the negative performance effect from tie-hirings would also have obtained if tie-hirings had been overpriced on the market for player talent. We defined a player to be overpriced, if a team had paid too much for him, relative to his past performance, and other observable characteristics. To test this alternative explanation, we estimated a wage model of NBA salaries that followed the approach in earlier studies (e.g., Gius & Johnson, 1998; Berri, Brook, & Schmidt, 2007). However, analyzing the wages of more than 1'000 free agent signings, we did not observe any influence of social tie hiring on player wages. Thus, it was not the case that managers, on average, paid too much for tie-hirings based on observable characteristics.

Fourth, we estimated a specification in which we controlled for the presence of player-

tie-hirings. As previously mentioned, there is an overlap between a manager's measure of ties to other franchises and his direct personal ties to players. Including a variable for player-tie-hiring appearances allowed us to determine if our findings reflected this overlap. However, controlling for the presence of player-tie-hirings did not alter our conclusion.

Finally, we re-estimated Model 1 using a team's level of winning percentage (instead of its logarithmic winning percentage) as dependent variable to judge the robustness of our findings across different specifications for the functional form. Again, our estimation results remained virtually unchanged.

5 Discussion

Agency theorists have long acknowledged that the separation of ownership and control can result in substantive agency costs, because managers will make decisions that are in their personal interest, and not in the best interest of owners (Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976). This study addressed the question, whether managers might use their individual social capital, a concept that has mostly been associated with positive performance effects for firms, to make resource allocation decisions that maximize self-interest, but which are not in the best interest of firm owners. Prior research on social embeddedness of the organization offers limited insight on this effect, as it does either analyze whether social capital of decision makers alters resource allocations between organizations, or whether the presence of social capital is associated with better performance. In contrast, this study examined (i) how individual social capital influences resource allocation between organizations, and (ii) how these very resource allocations affect outcomes of firm competition. This novel approach to examine the firm-level consequences of individual social ties represents a substantial contribution to the organizational literature.

Our study empirically examined the impact of manager social ties on hiring decisions and team performance in the National Basketball Association (NBA), and found that managers have a clear tendency to hire players through social ties. The probability that a

manager hired players from an NBA franchise to which he is socially tied was 27.6% higher than for an untied franchise. This finding extends the empirical basis for the importance of individual social capital in the decision making in firms.

The most important finding of our study was that player hirings through manager social ties *reduce* team performance. This novel empirical finding in the literature calls for a more careful treatment of individual social capital as a form of organizational social capital. As pointed out by Kanazawa and Savage (2009) the transfer of individual social capital to the organizational level hinges on perfect interest alignment between decision makers and the organizations. Our introduction of agency concerns to social capital theory offered an extended theoretical perspective on social capital by (i) acknowledging that such interest alignment may in practice often be imperfect, and by (ii) arguing that the use of available resources and information of a manager’s social ties can have a value for the manager but may not for the broader aggregate.

A second contribution of our study relates to its use of longitudinal sports data over a 31-year time horizon to test the relationship between manager social capital and firm performance. The empirical findings in earlier work on this topic are predominantly based on cross-sectional data (Geletkanycz & Boyd, 2011; Collins & Clark, 2003). While these studies generated a number of exciting and important insights, they are unable to distinguish whether their findings represent mere correlations or causal influences. In contrast, our analysis explicitly addressed the potential endogeneity of tie-hirings by distinguishing between off-season and in-season player hirings. By focusing on player hirings prior to the first game of a season, we do not face any reverse causation issues that relate to the influence of low performance at the beginning of the season on subsequent tie-hiring decision-making. This allowed for a causal interpretation of the tie-hiring coefficient.² Moreover, our use of longitudinal data allowed for the inclusion of time-invariant team fixed-effects, which helped to alleviate omitted-variable bias problems.

Our study also offers contributions to the literature on human resource management

²In line with this interpretation, results from another analysis (not given), did not show any relationship between off-season tie-hirings and team performance in the *previous* season.

and the labor market. While the relationship between social networks and labor allocation processes is a well documented research topic, few studies have analyzed this relationship from a demand-side perspective (i.e., from the perspective of the firm). To understand the mechanism by which decision makers recruit their personnel from other firms is especially interesting in markets with short labor supply. In such markets, firms frequently engage in a "war for talent" (Chambers, Foulton, & Handfield-Jones, 1998) by exerting enormous recruiting efforts to acquire the best employees. Therefore, it is of high relevance to answer the question how decision-makers' social networks influence these "wars for talent".

However, with the notable exception of Tian et al. (2011), empirical evidence on this topic is inexistent. The authors studied the stock market reactions to corporate recruiting through board member's social ties, and found that investors believe in a positive relationship between social ties and the quality of hiring decisions. The evidence in our study does not support such beliefs. Instead, we found that social ties are not always used to hire the best people in the market, which implies that firms can end up with runner-ups that are within reach of the decision makers. Clearly, future work is needed to explore the reasons for these contradicting findings.

The findings of our study have also practical relevance. The influence of individual social capital on firm performance was large. On average, tie-hired players appeared in about 36 games per season. Adding one such tie-hired player to a roster resulted in a reduction of franchise winning percentage by 5.4%. For the 48 franchises in our sample that just made the playoffs by claiming the 8th spot of their conference, this would have ended up in 2.1 less regular season wins on average. In 64.5% of all seasons in our sample, this difference in wins would have been enough to put the team ranked 8th in its conference down to the 9th spot (thereby missing the playoffs). This observation implies that the impact of social ties on the hiring behaviour of managers can be crucial in making it into the playoffs or not. Three teams did actually miss the playoffs due to tie-hiring based on the results from our model. The 91/92 Atlanta Hawks, the 92/93 Orlando Magic and the 92/93 Detroit Pistons all missed the playoffs by just one regular season win and for all of

them, players which were acquired via a social tie had between 50 and 100 appearances in the respective seasons.

How can the large negative performance effects of manager social capital in our study be aligned with existing evidence on positive performance effects of manager social capital? Collins and Clark (2003), for example, analyzed the performance effect of top management team (TMT) social capital for high-technology firms, and found that "strong and diverse TMT external networks increased both sales growth and stock price" (p. 748). Unfortunately, the authors were unable to observe the exact decisions of the TMT that lead to this positive performance effect.

We think that the key to understanding the different findings in our study and the study by Collins and Clark (2003) is their use of data for top management *teams*. It is well known in the social-psychology literature that groups can create their own behavioral norms, which can lead to changes in the behavior of individual group members (Terry & Hogg, 1999). Moreover, several studies show that the presence of productive peers can lead to higher effort choices by an individual than if that individual had worked in isolation (e.g., Mas & Moretti, 2009). In consequence, decision making in team contexts may be less prone to result in inefficient resource allocations for the firm because peer pressure substitutes for monitoring by the owner.

While we believe that our empirical findings are generalizable to a broad range of organizational settings that involve principal-agent relationships, it is important to acknowledge some limitations of our work. First, as is the case for any industry-specific analysis, we were unable to provide conclusive evidence on the external validity of our findings. The results of our study apply most directly to organizations where output is created by a team-production process. In such production technologies, group-based tacit knowledge is often a critical source of competitive advantage, because of the high interdependence and required coordination of workers (Berman et al., 2002). We expect that the negative performance effect from inefficient allocation decisions is most pronounced in such a production process, because interdependence, and complementarities between team

members will result in an amplification of the inefficiency. Future work across different industries is needed to assess the moderating role of firm production technologies for the influence of individual social ties on firm performance.

Second, the use of data from just one industry prevented us from an analysis of the moderating role of market-structure related factors on the relationship between manager social capital and firm performance. Geletkanycz and Boyd (2011) recently showed that the influence of CEOs' outside directorships on source firm performance is moderated by the source firm's degree of diversification, industry growth, and industry concentration.

A third limitation of our study relates to our measurement of social ties. While our primary objective was to construct a conservative measure for social ties, we are unable to analyze the interrelation between different levels of organizational and managerial social capital. Barden and Mitchell (2007), for example, combined interleader ties and organization-level ties in their analysis of interorganizational exchange and found that the influence of shared exchange experience between the leaders of two organizations on interorganizational exchange was larger, when other members of the organizations also shared a history of exchange experiences. The authors thus concluded that "leaders have more influence within their organizational context than in isolation" (p. 1440). However, the authors did not consider the performance effects of these exchanges. This seems to be a fruitful avenue for future researchers.

Finally, we emphasize that our findings do not suggest that individual social capital cannot lead to improved decision making in firms. Instead, our findings should be viewed as evidence that negative aspects of social capital can sometimes outweigh the positive aspects of social capital. Future work should try to isolate both types of aspects to see how the relative magnitude of these aspects changes with decision-makers' environments.

Conclusion

Researchers in the area of social capital theory predominantly point at the large performance opportunities that individual social capital carries for firms. Our study questioned

the generality of this view. Specifically, we introduced agency concerns to social capital theory and argued that decision makers can use the resources of their social ties to maximize personal self-interest, thereby reducing firm performance. Our empirical findings provided support for this view, and introduced knowledge about the temptation of social ties. While previous work referred to the "dark side" of social capital to describe narrowing effects of cohesive networks (Gargiulo & Benassi, 2000; Stam & Elfring, 2008), we see the theoretical reasoning behind our findings in opportunistic behavior of decision-makers.

Appendix

Robustness of Hiring-Probability Effects

Manager-Player Ties. We expected that personal ties from managers to players are also relevant for the hiring decisions. If a manager has a tie to another franchise because of former employment, there is a higher probability that the manager also worked together with actual players from that franchise. To rule out that our results on manager-franchise ties reflect personal ties between managers and players, we expanded our model to manager-franchise-player dyads. In this model, the dependent variable $hiring_{kijt}$ measured whether manager i recruited a specific player k from franchise j in season t or not. This approach controlled for the effect of a personal tie between manager i and player k based on prior co-working experience.

The results from Model 1 in Table 5 show that our findings were not driven by direct ties between managers and players. On average, a manager had a higher probability to hire a player from a socially tied franchise even when there was no joint working history of the manager and the player ($p < 0.05$). Not surprisingly, the direct personal ties between managers and players had a significant impact on the hiring probability by themselves. Numerous studies have embedded job-seekers' social networks into economic models of the labor market (e.g., Montgomery, 1991; Calvó-Armengol & Jackson, 2004; Ioannides & Soetevent, 2006; Calvó-Armengol & Jackson, 2007) and have shown that networks affect the hiring probabilities of workers. However, our original conclusion on the importance of manager-franchise dyads remained unchanged.

Free Agent Signings. We estimated a model that excluded player trading and the expansion draft as categories of recruiting. We did this, because we were interested to learn if managers would still show a preference to hire players via social ties even when their social contact could only provide information about the resource (the player), but did not own its property rights. In this model the dependent variable $hiring_{kijt}$ denoted whether manager i recruited a specific player k with a free agent or short-team contract

from franchise j in season t . The results from Model 2 in Table 5 show that managers did also approach their social ties if these could only provide information about the resource.

TABLE 5
Results of Regression Analyses of the Hiring Probability^a (Robustness Checks)

	Model 1	Model 2
Variables	Controlling for Manager-Player Ties	Excluding Hiring by Trades/Exp. Draft
Manager-Franchise Tie	0.005* (0.002)	0.002* (0.001)
Manager-Player Tie	0.006*** (0.001)	0.007*** (0.001)
Manager fixed effects	Included	Included
Franchise fixed effects	Included	Included
Season fixed effects	Included	Included
Observations	489,485	489,485

^a Robust standard errors are reported in parentheses.

* $p < .05$

** $p < .01$

*** $p < .001$

Robustness of Tie-Hiring-Performance Effects

A Manager's Number of Social Ties. We expected that the presence of tie-hirings is higher if managers keep a lot of social ties. As we measured social ties by former employment history, manager quality might have been correlated with this measure. On the one hand, bad managers have a higher chance to get sacked from their employers. Supposing that they are able to find other jobs in the league even though they have limited skills, bad managers keep more ties than good managers. On the other hand, good managers have a higher chance to get headhunted from other franchises. From this perspective, good managers keep more ties than bad managers because they get the possibility to work for different franchises. To rule out that such a correlation shapes the results, we included a variable that controlled for a manager's number of ties (relative to the league average).

The associated estimates from Model 1 in Table 6 did not alter our previous conclusion.

The coefficient for a manager's number of social ties was negative, but insignificant. In contrast, the estimate on the manager-franchise tie-hirings was still significant at the 10% level of statistical significance. Restricting our analysis to off-season hirings resulted in qualitatively similar results.

Revealed Manager-Quality. If managers use social ties to reduce costly search effort, it could be hypothesized that these managers performed always worse than their counterparts who did not hire players through social ties. To answer this question, we created a binary variable that measured whether a manager had ever before used his social ties to hire players. However, the associated estimation results from Model 2 in Table 6 did not show any statistically significant impact from this variable which again suggests that our findings were not directly attributable to unobserved manager quality. Restricting our analysis to off-season hirings resulted in qualitatively similar results.

Roster Stability. Adding new players to a team - via ties or not - reduces roster stability. Therefore, the presence of tie-hirings is correlated with a general measure of roster stability. Simmons and Berri (2011) recently found evidence for a positive effect of roster stability on player performance in the NBA. They argued that continuous interactions of a stable group of players incorporate learning and peer effects. In order to control for an effect of general player turnover on performance, we included a variable that counted the number of all hirings from a franchise in specific season (relative to the league average). However, the estimates from Model 3 in Table 6 did not alter our previous conclusions. The roster stability variable was not statistically significant, but had the theoretically expected negative sign. We obtained similar results, when we restricted our analysis to off-season player hirings.

Manager-Player-Tie Hiring Appearances. We added a variable that controlled for the presence of players which had been acquired based on a direct tie between the manager and the player. Part of the effect from the presence of tie-hirings could be shaped by influences of manager-player ties. Including the presence of player-tie-hirings in our regression model allowed us to isolate the manager-franchise tie-hiring effect of

interest. The results from Model 4 in Table 6 did not change our conclusions, and the control variable itself had no significant effect on firm performance. This result suggests that tie-influenced decision making was not negative *per se* for teams. Ties that directly linked decision makers and resources seemed to shift the impact of social ties towards the positive aspects from social capital theory. Although managers still limited their search effort by focusing on social networks, information advantages which allowed for a better fit of worker to position seemed to be more pronounced in direct tie relations. When we restricted our analysis to off-season player hirings, the tie-hiring effect was even statistically significant on the 5% level.

Functional Form. While our use of a logarithmic transformation for the dependent variable followed the suggestion by Szymanski (2000)), we also ran a regression on the non-transformed dependent variable to judge the robustness of our findings across different function form specifications. Model 5 of Table 6 shows that the significance of the coefficients was not affected by this adjustment of the functional form. We obtained similar results, when we restricted our analysis to off-season player hirings (although the p-value was slightly higher with 0.051).

Manager-Fixed-Effects. In Model 6, we included manager fixed-effects in addition to franchise fixed-effects (which were used in all models) in our regression. The β -coefficient of interest was still negative but insignificant (p-value 0.145). However, when constricting our analysis to off-season hirings, the tie-hiring effect was again statistically significant at the 10% level. Thus, we believe that our results are not driven by unobserved manager quality. Instead, the result is most likely attributable to high multicollinearity between manager fixed-effects and tie-hirings. To separate the manager fixed-effects from the tie-hiring effect, we would have needed a sufficient number of observations for each manager in which he had had tie-hirings in some seasons, and in which he had had no tie-hirings in other seasons. However, because there was a large number of managers who never hired players through social ties (because they had no social ties), there was no way to precisely disentangle both effects.

TABLE 6
Results of Regression Analyses of Firm Performance^a (Robustness Checks)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variables	Including Number of GM Ties	Including Tie-Recruiter Dummy	Including Number of Hirings	Including Player-Tie Hirings	Non-Transf. Dependent Variable	Including Manager Fixed-Eff.
Share of Tie Hiring Appearances	-0.911 [†] (0.504)	-1.151* (0.554)	-1.169* (0.550)	-1.221 [†] (0.604)	-0.441* (0.276)	-0.737 (0.492)
Log Payroll	0.651*** (0.105)	0.647*** (0.106)	0.632*** (0.111)	0.650*** (0.108)	0.276*** (0.046)	0.515*** (0.106)
Number of Players	-0.047*** (0.005)	-0.047*** (0.005)	-0.042*** (0.007)	-0.047*** (0.005)	-0.020*** (0.002)	-0.044*** (0.007)
Number of Manager Ties	-0.041 (0.025)					
Dummy, Tie-Recruiting Manager		-0.023 (0.034)				
Number of Hirings			-0.005 (0.006)			
Share of Player-Tie Hiring Appearances				-0.060 (0.411)		
Franchise fixed effects	Included	Included	Included	Included	Included	Included
Manager fixed effects	No	No	No	No	No	Included
Observations	677	677	677	677	677	677

^a Robust standard errors are reported in parentheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

Social Ties and Player Wages. To test whether the influence on winning percentage was driven by systematic overpayment of tie-hirings rather than by suboptimal fit of players, we estimated a wage model of NBA salaries. Building on prior work in this area (e.g., Gius & Johnson, 1998; Berri et al., 2007), we analyzed the salaries of more than 1'000 free agent signings based on prior performance and player characteristics. As Berri et al. (2007) showed that scoring is almost as predictive as any other performance measure that incorporates a wide range of playing statistics, we only included scoring to capture prior performance in a parsimonious way. We also included a dummy variable in the wage regression that recorded if a player-signing included a tie between the signing manager and the prior employer. However, based on the associated estimation results in Table 7, we did not find any evidence for a systematic overpayment of players who had been acquired via social ties of managers.

TABLE 7
Wage Regression Analysis^a

Variables	Logarithmic Player Salary
Dummy, Tie Hiring	0.113 (0.127)
Points scored (per Game), previous season	0.111*** (0.006)
Games played, previous season	0.009*** (0.001)
Experience	0.083*** (0.020)
Experience squared	-0.005** (0.001)
Dummy, Center	0.545*** (0.064)
Dummy, Forward	0.082 (0.057)
Franchise fixed effects	Included
Season fixed effects	Included
Observations	1,157
R^2	0,584

^a Robust standard errors are reported in parentheses.

* $p < .05$

** $p < .01$

*** $p < .001$

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