Office Politics in Tournaments: Strategic Use of Favoritism to Fight Collusion*

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Abstract

Economists have by large ignored the phenomena of office politics, such as collusion and favoritism, which prevail in organizations where, due to the subjectivity of performance assessments, the incentive mechanism often takes a form of tournament. This paper studies these phenomena in a stylized tournament model. It finds that favoritism cannot benefit organizations when employees are unable to collude, and exercising favoritism explicitly does not impair collusion. However, playing favoritism implicitly and strategically allows the employer to introduce a conflict among collusive employees and, thus, brings detrimental impact on collusion. These findings shed a new light on the efficiency justification for exercising favoritism.

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Even though some companies are less political than others, none have repealed the laws of human nature.....If there are no politics, check the people's pulse in your company since they are probably dead.

—Rick Brandon, quoted in *Dear Office-Politics*, a copyright material by Franke James

1 Introduction

One of the key incentive issues in organizations is that objective measures of employee performance are rarely available. Most organizations, such as firms and institutes, rely on subjective assessments by the employer.[1] The typical incentive contract in these organizations often takes a form of tournament where a fixed payment is committed to the winner of the contest. The fixed-payment commitment prevents the employer from reneging, while competition between employees could promote their working incentives.

Economists have long emphasized the importance and effectiveness of tournament;[2] however, they rarely address the fact that incentive effects could be distorted when office politics prevail. Collusion is one typical office game in which employees form a clique to jointly cut their efforts and outputs. Since the ranking of employee performance is determined by the employees' relative rather than absolute effort levels, with other conditions equal, it remains unchanged when employees cut their efforts collectively by the same levels, and employees save their effort cost. The phenomenon of collusion is indeed quite common in organizations,[3] and fighting collusion has long been a challenge to theorists and practitioners.[4]

[1] As argued by Prendergast and Topel (1993, 1996), while most of the economics literature on incentives in organizations focuses on situations where compensation schemes can be made based on objective performance measures such as output or sales, it ignores the fact that most compensation arrangements involve superiors' *subjective*, and hence non-contractible, judgements about employee performance.

[2] For instance, see Green and Stokey (1983), Lazear and Rosen (1981), Nalebuff and Stiglitz (1983).

[3] See Tirole (1986, 1992) for detailed discussion. Miller (1992) also describes a so-called "binging" game played between workers when discussing the compensation scheme of the bank wiring room in the Hawthorne plant of Western Electric; this game is played to punish the workers who produce too much, which is indeed a collusion enforcement device to prevent workers from exerting high efforts. Perhaps, the most familiar case to economists is the "bidding ring" that prevails not only in procurements but also in R&D contests. As collusive behaviors are always conducted in secret, what we have observed is only the tip of the iceberg.

[4] This is also emphasized by Tirole (1992): "Concurrently, sociologists and organization theorists have emphasized that behavior is often best predicted by the analysis of group as well as individual incentives. It would be naive to build incentives for individual members of an organization without considering their effect on collective

On the other hand, employers may also engage in office politics such as favoritism. Subjectivity of performance assessments opens a door to favoritism, where employers act on personal preference toward subordinates to favor some employees over others. Widespread favoritism in organizations and its harmful impacts on productivity and efficiency have long been emphasized by sociologists and economists. For instance, it is argued that favoritism is one of the most important sources of conflicts in organizations,[5] and that favoritism leads to a distortion of incentives.[6]

This begs the question: what's the employer's motive to play favoritism given the well-known harmful impact on the organization? This paper sheds a new light on the efficiency justification of favoritism; it finds that the employer has incentives to exercise favoritism when collusion among employees becomes a serious challenge, and the strategic use of favoritism could impair collusion.

We demonstrate the main idea in a simple tournament model. For the sake of exposition, we assume that there is a principal and two agents with identical productivity who take the same projects independently, and the principal benefits directly from the output of the projects. The output of each project is positively related to the agent's effort level; however the correlation is stochastic due to the uncertainty of the project. While the output of each agent is observable, objective assessments for the output are not available, neither absolutely nor relatively. The principal adopts a tournament mechanism whereby a prize is committed for the winner of the tournament (and only the winner). However, since the selection of the winner is based on the subjective evaluation of an agent's performance, the principal might favor one agent over another by overestimating the output of the favored agent;[7] in other words, favoritism here takes a form of bias in the subjective assessment.

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behavior. In other words, incentive structures must account for the possibility that members collude to manipulate their functioning."

[5] In a survey of Canadian government workers, Comerford (2002) finds that favoritism is the second most important source of workplace conflict followed by workload; while Albright and Carr (1997) list favoritism as one of the top ten misconducts against workers that mitigate working incentives. In the Alpha Review by Burke Croup Minnesota, Inc., it is even argued that favoritism is a cancer in organizations.

[6] Prendergast and Topel (1993) investigate the phenomena of discretion and bias in performance evaluation in organizations, and argue that favoritism can give rise to inefficiency on two margins. The first is rent seeking by workers, which is usually a waste of time. The second occurs because bias makes it difficult to determine the true talents of workers.

[7] For instance, if the output of the favored agent is 100, the principal can overestimate to 120. Thus the favored agent is more likely to win the prize of the tournament than his peer given other conditions equal.

Although both agents are assumed to be identical in their productivity, they might differ in other aspects that are not directly related to capacity, such as appearance, characteristics, and/or personality. However, these non-productive factors affect the principal's personal preference, and it is thus reasonable to assume that the principal bears an intrinsic preference toward the agents.

While the principal has an intrinsic preference and can bring a bias to the evaluation, he might not have an incentive to do so since exercising favoritism does not directly increase his utility.[8] This is quite different from the modelling approach outlined in Prendergast and Topel (1996), whereby a supervisor derives utility directly from exercising favoritism. In their model, favoritism takes a form of altruism (including negative altruism) since the superior's payoff depends also on the pay of his subordinate, and the incentive of exercising favoritism is derived from the supervisor's intrinsic preference; whereas in our model exercising favoritism brings a neutral effect on the employer's utility. While altruism could be a reasonable explanation for favoritism, we believe there might exist other non-altruistic motivations for the exercise of favoritism, which deserves further study. To this end, we disconnect the ad hoc correlation between the principal's intrinsic preference and his motivation to exercise favoritism, in order to disclose the virtual incentives for favoritism in the absence of any altruistic motivations.

Favoritism could benefit the favored agent, but it could also mitigate the incentive for the unfavored one to make the high effort. Therefore, the principal has no incentive to exercise favoritism if the agents are unable to collude in cutting their efforts jointly, and the optimal tournament mechanism is unbiased in the absence of collusion.

When agents are able to collude on low efforts, however, the tournament mechanism is unable to induce high efforts. The relative performance remains unchanged when both agents cut their efforts at the same level, which yields the same expected payoff for each agent as before, but joint shirking saves the effort cost. Basically, the collusive agreement between the agents is enforced by non-judicial mechanisms such as social norms and reputation. However, the purpose of this paper is not to investigate the collusion-enforcing mechanism in organizations, rather it aims to analyze the design of the tournament mechanism in the presence of collusion. For this sake, we consider the environment where the collusive agreement can be enforced without any transaction cost, and adopt the methodology of the literature of collusion-proof mechanism design in which it is assumed that the collusive agreement is enforced by a benevolent third party.[9]

[8] Notice that the principal's revenue comes from the realized output of the project, and is thus not directly derived from the agents' payoffs.

[9] This methodology was developed by Tirole (1986, 1992), and then widely adopted in the literature including

We consider a side contract that consists of a side payment from the winner to the loser of the tournament,[10] which takes the form of mutual insurance in the sense that the agents could be insured a fixed payoff regardless the winning or losing status. Obviously the agents have no incentive to exert high efforts with such a mutual insurance side contract. This result holds even if the principal adopts a biased tournament mechanism and exercises favoritism explicitly. To see this, suppose the principal were to favor one agent in the subjective assessment, say, by overestimating the output of the favored one. Doing so would increase the expected payoff for the favored agent while decreasing that for the unfavored one, and the favored agent could obtain a higher status quo utility absent collusion than the unfavored one, with other conditions equal. The asymmetric status of agents could bring an extra constraint in facilitating collusion, as the favored agent should be granted more stakes of collusion based on his higher status quo utility. Thus, the anonymous side contract that treats both agents equal might be insufficient to induce collusion. However, when favoritism is exercised in an explicit way so that the identity of the favored agent is common knowledge, a simple non-anonymous side payment mechanism can reallocate the stakes of collusion according to the agent's status quo payoff, which would grant the favored one more stakes.[11] Such a side contract could grant each agent a fixed payoff regardless of winning or losing, and this payoff is higher than the expected payoff absent collusion, while leaving the favored one a higher payoff due to favoritism.[12] Consequently, the agents have no incentive to work under full insurance.

The analysis above shows that exercising favoritism explicitly brings no detrimental impact on the efficiency of collusion. However, playing favoritism implicitly indeed opens a door for the employer to bring a conflict between employees in the reallocation of collusive stakes, and the reconciliation of the conflict leads to a distortion of the efficiency in collusion.

To fix ideas, suppose now the principal never announces the identity of his favorite agent publicly. Rather, the principal would reveal this information to only one agent with whom he

Itoh (1993), Laffont and Martimort (1997, 2000) as well as Laffont and Rey (2003); see also the discussion in Section 3.

[10] While there might be other kinds of side contracts, we consider the simplest contract that incurs no transaction cost in facilitating collusion. In other words, this side contract is one of the optimal side contracts that maximize the welfare of the collusive coalition (the gross payoff of two agents).

[11] For instance, consider the side payment agreement as follows: If the favored agent is the winner, he should pay the unfavored one (the loser) \$100, while the favored one can receive \$150 if the unfavored one is the winner.

[12] This can be achieved since the reallocation of collusive stakes incurs no transaction cost here.

has a close relationship.[13] Thus, the identity of the favored agent is asymmetrically informed among collusive agents, and this asymmetric information between collusive agents could impair collusion. The informed agent, who now knows which agent is favored by the principal, has an incentive to claim to be the favored agent in order to acquire a higher collusive stake. A trade-off between the incentive of truth-telling by the informed agent and the provision of mutual insurance to induce low efforts emerges in allocating the collusive stake through side contracting, and the reconciliation of the conflict leads to a distortion of collusive efficiency.[14]

The mechanism proposed above indeed highlights a key feature of office politics: The employer plays office politics as a response to that played by employees.[15] The phenomenon of office politics is widely discussed by psychologist, sociologist and management scholars,[16] however, it has been by large ignored by economists. This paper sheds a new light on the economic rationale for playing office politics in a stylized tournament model. It shows that, if employees do no play office politics to collude on low efforts, it's better for the employer not to play the game as well. When instead employees can form a coalition, then the employer would play favoritism strategically as a response.

Focusing on the study of favoritism, this paper is closely related to Prendergast and Topel (1996) but differs in several aspects. First, Prendergast and Topel (1996) study the impact of favoritism on the compensation in a model where those in authority value their power to affect subordinates' welfare and their demands for this power are traded off against the costs of favoritism caused by added arbitrariness of performance evaluations, while we investigate the incentives of exercising favoritism implicitly and strategically in order to fight collusion. Second, favoritism takes a form of altruism in their model, but it is non-altruistic in our model. Our paper also relates to the work of Kwon (2006), who argues that favoritism can arise endogenously as an optimal decision rule in a model of strategic delegation of decisions where two experts produce competing ideas with conflicts in preference. In his paper, favoritism is equivalent to delegation of authority to the favorite, and the altruistic motivation of favoritism is also assumed away.

From the view point of mechanism design for fighting collusion, this paper is closely related

[13] For instance, the principal often drinks with that agent at the same pub.

[14] This is a well-known result in incentive theory.

[15] To get a detailed view on office politics, please visit the website: www.officepolitics.com.

[16] For instance, Gary Miller (1992) emphasizes that social interactions including gambling, games, and afterwork activities, which are not directly related to work, but serve important purpose; they provide a means by which the members of the social cliques could demonstrate to one another in a continuous way their trustworthiness and capacity to cooperate (see chapter 9).

to Ishiguro (2004), who argues that discrimination in organizations could contribute to fight collusion. Ishiguro (2004) studies the phenomenon of collusion in organizations where the objective assessments of employee performance are not available in absolute level but could be available in a relative way, and shows that a discriminatory wage scheme in tournaments, which grants the favored agent a high incentive (a high prize if wins) but the unfavored one a low incentive (no prize at all), could prevent collusion: The favored agent has an incentive to make a high effort while the unfavored has no incentive to work (and also no incentive to collude). However, the implementation of such a discriminatory wage scheme depends crucially on the assumption that the objective evaluation of relative performance is available,[17] which seems to be restrictive given the nature of subjectivity in performance assessments.[18] Therefore, in organizations where no objective assessments are available to either absolute or relative performance (which, we believe, is the more general case), whether there exists a tournament mechanism that can implement socially efficient efforts (high-level efforts) in the presence of collusion remains still an open question in the existing literature.

This paper studies the phenomenon of collusion in tournaments under a more general environment with subjective evaluation of performance, and shows that socially efficient efforts can be implemented with probability 1/2 when the principal uses favoritism strategically, which brings a theoretical contribution to the literature. However, the novelty of the paper lies mainly in its idea that the strategic use of favoritism helps to fight collusion, which brings an efficiency justification for exercising favoritism, and moreover lies in its motivation on the study of office politics, which highlights an economic rationale for such popular phenomena that have been by large ignored by economists.

We present a simple tournament model in section 2 and then show that the optimal tournament contract in the absence of collusion is unbiased. In section 3, we discuss the mechanism of collusion and show that explicit favoritism brings no detrimental impact on collusion. The main result that the strategic use of favoritism could impair collusion is built in Section 4 and, finally, our conclusions are made in section 5.

[17] If the relative performance evaluation is also subjective, then the principal will renege on his payment by arguing that the winner is the unfavored one who needs only to be paid a lower prize (normalized to be zero).

[18] Furthermore, the naked discriminatory scheme based on the verifiable identity of agents, say gender, is quite likely to be challenged in reality under most jurisdictions.

2 The Basic Setting

2.1 The model

There are one principal and two agents in an organization. The two agents, as denoted by A^1 and A^2, are recruited from a competitive labor market with a reservation payoff 0, and they are assumed to be identical in productivity. The principal is risk-neutral and the agents are also risk-neutral but protected by limited liability. There are two identical projects and each agent is assigned to take one project independently. The output of each agent A^i, $i = 1, 2$, is given by $y^i = e^i + \varepsilon^i$, where e^i is the effort level of agent A^i and ε^i represents a random shock, and the output y^i can be commonly observed ex post. The random variables ε^i, $i = 1, 2$, are identically and independently distributed with a symmetric distribution function $F(.)$ on $\mathbb{R}$, where $F(.)$ is twice-differentiable and has symmetric properties: $F(0) = 1/2$ and $F(x) = 1 - F(-x)$ for any $x \in \mathbb{R}$. The corresponding density function, as denoted by $f(.)$, satisfies $f(x) = f(-x)$ for any $x \in \mathbb{R}$.

For simplicity of exposition, we assume that each agent can choose two effort levels, namely high or low, as denoted by $e = 1$ or $e = 0$ respectively, and their effort levels are not observable by others. We denote by $C(e)$ the effort cost, and normalize the effort costs to $C(0) = 0$ and $C(1) = c > 0$.

Objective assessments of the performance y^i are not available and, thus, it is impossible to write an incentive contract contingent on the absolute or relative performance. A tournament mechanism is introduced to provide incentives for the agents, which comprises a fixed prize T for the winner (and only the winner) of the contest and an assessment rule for the selection of the winner.[19] More precisely, an assessment rule H specifies conditions under which an agent will win in the tournament. For instance, an unbiased rule specifies that the agent A^1 gets the prize if and only if his performance is better than that of his peer, which is $y^1 > y^2$.

Due to subjectivity of performance assessment, the principal has a right of discretion in the selection of the winner. This opens a door for favoritism where the principal might act on personal preference toward the agents to favor one agent. In general, the principal could introduce an assessment rule with some degree of bias when he has an intrinsic preference for one agent, though it would not improve his welfare directly. A typical bias in the evaluation is that the principal overestimates the performance of the favored one by granting additional value b in the output.

[19] The agent can also get a basic wage whether he wins or loses, which is normalized to zero for simplicity.

For the purpose of exposition, we use subscripts "f" and "u" to represent the status of favored and unfavored agent respectively, and superscripts "1" and "2" to denote the the verifiable identity of agents (say gender or names). The identity of the agents is commonly known, however the status of the favored agent is private information held only by the principal. To fix ideas, we simply assume that, at the beginning of the game, the nature selects a favored agent by tossing a coin and then the principal is informed about the choice of the nature. It is also common knowledge that each agent is equally likely to be favored ex ante. Under the biased assessment rule $H(b)$, the favored agent A_f wins if only if $y_f + b > y_u$. We assume that the principal's bias b is bounded such that $0 \leq b \leq \overline{b}$, and that the assessment rule as well as the degree of bias b are commonly known. We will see later that the principal will choose an optimal bias b^* in equilibrium.

Notice that, in this setting, favoring one agent over another brings no direct gain to the principal as the final payment is fixed whoever wins.[20] So the principal can commit to the assessment rule and bias b announced ex ante as he has no incentive to renege on it ex post.

The probability distribution function of y^i is given by $P_r\{y^i \leq y\} = F(y - e^i)$, so the distribution function of $\varepsilon^i - \varepsilon^j$ can be derived by

$$G(x) \equiv P_r\{\varepsilon^i - \varepsilon^j \leq x\} = \int_{-\infty}^{+\infty} F(x + \varepsilon) f(\varepsilon) d\varepsilon.$$

Note that $G(.)$ also has a symmetric property as $G(x) = 1 - G(-x)$, which follows from

$$1 - G(-x) = P_r\{\varepsilon^i - \varepsilon^j \geq -x\} = P_r\{\varepsilon^j - \varepsilon^i < x\} = G(x).$$

Therefore, in the absence of favoritism, the probability that $y^i > y^j$ happens is given by

$$P_r\{y^i > y^j\} = P_r\{\varepsilon^j - \varepsilon^i \leq e^i - e^j\} = G(e^i - e^j).$$

When the biased assessment rule $H(b)$ is introduced, instead the favored agent is granted a bias b in the performance assessment, and this induces a probability of the favored one winning, expressed by

$$\begin{aligned} p_f(e; b) &\equiv P_r\{y_f + b > y_u\} = P_r\{\varepsilon_u - \varepsilon_f \leq (e_f + b) - e_u\} \\ &= G(e_f - e_u + b), \end{aligned}$$

[20] Prendergast and Topel (1996) also investigated the phenomenon of favoritism in organizations where supervisors often impose some bias in their evaluations of workers' performance according to their own preferences. They assume that the supervisor's utility depends on the pay of his subordinate, and the supervisor favors some subordinate simply because such favoritism increases his utility (a kind of altruism). Instead, in our model, favoritism does not improve the principal's welfare directly.

and also a winning probability for the unfavored one

$$p_u(e;b) = 1 - p_f(e;b) = G(e_u - e_f - b).$$

It appears that $p_f(e;b) > p_u(e;b)$ when $e_u = e_f$, that is, the favored agent is more likely to get the prize than unfavored one given that both agents exert the same efforts.

Under this tournament mechanism, the favored agent earns an expected payoff $U_f(e;b) = p_f(e;b)T - C(e_f)$ while the unfavored one obtains a payoff $U_u(e;b) = p_u(e;b)T - C(e_u)$. The principal makes a profit $R(y_f + y_u) - T$, where $R(y_f + y_u)$ is the revenue for the principal. To fix ideas, we focus only on the implementation problem in which the high efforts can be induced at the minimum incentive cost, that is, the principal aims at inducing the high efforts with a minimum prize T.[21]

2.2 Tournaments Absent Collusion: A Benchmark.

As a benchmark, we analyze the incentive effects in tournaments in the absence of collusion. It is a well-known result in the literature of tournament that high efforts can be induced in the absence of collusion when the prize is sufficiently high.[22] The intuition is indeed quite simple. Given any assessment rule $H(b)$ and prize T, the favored agent is willing to exert high effort rather than low effort if the additional payoff due to increased probability of winning, $(G(b) - G(b-1))\,T$, exceeds the effort cost c. The same logic applies to the unfavored agent, which requires that $(G(-b) - G(-b-1))\,T \geq c$. Notice that each agent is also willing to accept the contract given that the contract is designed to promote high effort, that is, the agent's participation constraints $G(b)T \geq c$ and $G(-b)T \geq c$ are also satisfied. So both agents are willing to exert high-level efforts if

$$T \geq T^*(b) \equiv \max\{\frac{c}{G(b) - G(b-1)}, \frac{c}{G(-b) - G(-b-1)}\},$$

and the principal aims to minimize its incentive cost $T^*(b)$ by choosing b ($b \geq 0$).

Yet, introducing a bias in performance assessment increases the incentive cost. While the favored agent has stronger incentives to make the high effort, the unfavored agent's incentive is suppressed. Consequently, the principal must offer an even higher prize for the unfavored agent

[21] We assume that it is always desirable for the principal to induce the high efforts, i.e., $R(y_f + y_u|\overline{e}) - T(b) > R(y_f + y_u|\underline{e})$, for any $0 \leq b \leq \overline{b}$, where $\overline{e} \equiv (1,1)$ and $\underline{e} \equiv (0,0)$ represent the high efforts and the low efforts respectively, while $T(b)$ is the minimum prize for inducing high-level efforts under perfect collusion as defined by (7) in the appendix.

[22] See Prendergast (1999) for an excellent survey.

to make the high effort. To see this, notice that the minimum prize is achieved when

$$\begin{aligned} G(b) - G(b-1) &= G(-b) - G(-b-1) \\ &= G(b+1) - G(b), \end{aligned}$$

where the last line comes from the symmetry of $G(.)$: $G(x) = 1 - G(-x)$. It appears that the optimal assessment rule absent collusion must be unbiased,[23] and the optimal prize is given by

$$T^*(0) = \frac{c}{G(0) - G(-1)}.$$

The analysis is summarized in the following proposition:[24]

Proposition 1 *If the agents are unable to collude, then the optimal tournament mechanism is unbiased.*

3 Collusion and Explicit Favoritism: An Impossibility Theorem

The above-mentioned tournament is vulnerable to collusion. The probability of winning is determined by the relative rather than absolute efforts. It, therefore, remains unchanged when both agents cut their efforts collectively with the same amount. Each agent can then benefit from saving the effort cost by choosing the low effort.

Basically, the collusive agreement between agents is enforced by non-judicial mechanisms such as reputation, social norms or reciprocity in long-term relationship.[25] In this paper, we are not motivated to investigate these enforcement mechanisms in organizations. Rather we aim to study how the incentive mechanism is distorted under collusion and how the principal responds

[23] We need to consider two cases. First, if the distribution function $F(\cdot)$ is uniform, then $G(b) - G(b-1) = G(b+1) - G(b)$ for any $b \geq 0$, in which case any assessment rule yields the same incentive effect, and exercising favoritism does not benefit the principal. Second, if the distribution function is not uniform, then the above equality holds only if $b = 0$, in which case exercising favoritism increases the incentive cost and hurts the principal.

[24] The proof is demonstrated in Appendix A.

[25] For instance, Miller (1992) describes a so-called "binging" game played between workers when discussing the compensation scheme of the bank wiring room in the Hawthorne plant of Western Electric; this game is played to punish the workers who produce too much, which is indeed a collusion enforcement device to prevent workers from exerting high effort levels. Moreover, collusive agreements among employees that aim to reduce their efforts collectively are not prohibited by law and can even be enforced by mediators like labor unions.

to collusive behaviors. For this sake, it is useful to consider the "worst case" of collusion, that is, that collusive agreement can be enforced by a benevolent third party.[26]

Assumption 1. *The collusive agreement is enforced by a benevolent mediator.*

This assumption, as a short-cut in modelling the enforcement of collusion, was first introduced by Tirole (1986), and then widely adopted in the literature of fighting collusion. As argued by Tirole (1992), when enforcement is ensured by repeated interactions and reputation, enforceable side contracts at best depict a polar case in which reputation mechanisms work well to enforce collusion. Laffont and Martimort (2000) also pointed out that this paradigm can be seen as a black box for the repeated interaction by which collusion emerges, which allows us to characterize the upper bound that can be achieved by the coalition. Moreover, they further argued that if any mechanisms are robust under perfect collusion, they must also be robust when collusion becomes imperfect.

The game is simplified thanks to this assumption; its timing is illustrated as follows:

Stage 1. The principal proposes a tournament contract, each agent then decides to accept or not; if no one rejects then:

Stage 2: A mediator proposes a side contract and each agent then decides whether or not to accept; if no one vetoes then:

Stage 3: Each agent makes an effort simultaneously;

Stage 4: Outputs are realized and contracts (the tournament contract and the side contract) are enforced.

A tournament contract consists of a prize T for the winner and an assessment rule $H(b)$, and we assume that this contract is public, or commonly observed by contracting parties. However, the status of the favored agent is a piece of private information possessed only by the principal, who can decide whether or not to disclose this information to the agents. If the principal reveals this information in a public way, then the status of the favored agent becomes common knowledge and favoritism is thus explicit. We show in this section that it is impossible to induce high efforts when the principal exercises favoritism explicitly.

Following Assumption 1, a side contract will be proposed and then enforced by a benevolent

[26] The analysis of fighting collusion under this assumption can be regarded as a benchmark case of the theory, which ensures the robustness of the incentive mechanism under perfect collusion. The assumption can also be justified by the conservative consideration on the harmful impact of on-going collusion, since in most cases the employer at the top of the organization has little idea of the extent to which these collusive activities are organized and enforced. It is therefore reasonable to consider the "worst" case of collusion.

mediator who aims to maximize the gross payoff of the coalition. The gross payoff of two agents is equal to the prize net of the effort costs, that is,

$$\begin{aligned} & U_f(e;b) + U_u(e;b) \\ = \; & p_f(e;b)T - C(e_f) + p_u(e;b)T - C(e_u) \\ = \; & T - (C(e_f) + C(e_u)), \end{aligned}$$

which is independent of the functional forms of side contracts. Thus, all side contracts that induce the agents to make the low efforts are equally optimal, which yield the maximal total payoff T.

Absent collusion, a tournament contract could induce an agent to make a high effort if and only if the payoff gap between winning and losing, T, is sufficiently high such that the extra gain from making a high effort rather than choosing a low effort unilaterally overweighs the effort cost, i.e., $(G(b) - G(b-1))\,T \geq c$ for the favored agent and $(G(-b) - G(-b-1))\,T \geq c$ for the unfavored one. To induce low efforts collectively, a side contract must mitigate the payoff gap between winning and losing such that the above relation is violated. This can be achieved simply by using a side payment from the winner to the loser, which takes a form of mutual insurance. For instance, if the assessment rule is unbiased, then a side contract specifies that the winner must pay half of the prize to the loser could provide full insurance to both agents: each agent is insured a payoff $T/2$ regardless of winning or losing and, thus, no agent has an incentive to making the high effort.[27]

When the assessment rule is biased, the favored agent could earn a higher payoff than the unfavored one absent collusion. The favored agent could be convinced to collude with the unfavored one only if he would be granted more collusive stakes to be strictly well-off under the collusive agreement. When the principal exercises favoritism explicitly, the status of the favored agent becomes common knowledge, in which case the side payment could be specified based on the agent's favored status.

To see this, let s_f (resp. s_u) denote the side payment that the favored agent (resp. unfavored agent) must pay his peer when he is the winner. Now consider the following side payments: $s_f = p_u(\overline{e};b)\,T = G(-b)T$ and $s_u = p_f(\overline{e};b)\,T = G(b)T$, where $\overline{e} \equiv (1,1)$ denotes the pair of high efforts, that is, the side contract requires the winner to pay his losing peer a side payment equal to the expected payoff that the losing agent would have earned absent the side transfer. This side contract provides the full insurance for the favored agent, as he is granted a virtual

[27] Such a side payment is contractible since the identity of the winner is common knowledge ex post.

payoff as a winner, $T - s_f = (1 - G(-b))\,T = G(b)T$, which is exactly equal to the side payment he would receive as a loser, s_u, and that fixed payoff, $G(b)T$, is strictly higher than the (net) expected payoff in the absent of collusion: $G(b)T - c$. By analogy, the unfavored agent is also fully insured and strictly well-off under collusion. Therefore, no agent has an incentive to exert the high effort.

The above analysis leads to the following result:[28]

Proposition 2 *Exercising favoritism explicitly brings no detrimental impact on collusion and consequently the agents will collude on low efforts.*

4 Strategic Use of Favoritism Against Collusion

Explicit favoritism is rarely observed in modern organizations. Discrimination is per se illegal under most jurisdictions, hence an employer who uses favoritism explicitly will be accused by employees, labor unions and even superiors. Instead, favoritism as a typical office game is played rather implicitly in organizations and is hard to verify. Employers rarely express their personal preferences over subordinates publicly; in most cases, their personal preferences are kept as a secret or only disclosed informally to a small group of employees who might have a close relation with the employer.[29]

We suppose that employers are not naive, indeed they are talent in playing office politics. As a respose to agents' collusive game, the principal will manipulate the revelation of information on his personal preference, and the strategic use of favoritism brings a conflict between collusive agents.

For the simplicity of exposition, we assume that it is commonly known that agent A^1 has close relations with the principal and the latter will disclose his intrinsic preference to the informed agent A^1.[30] Notice that the principal can commit to disclose the truth to the informed agent as

[28] Ishiguro (2004) also argues that inducing high efforts is impossible under tournament when agents are able to collude with any transaction cost. He further shows that in the environments when the objective evaluation of relative performance is available, a discriminatory incentive contract can induce the favored agent to exert the high effort while the unfavored agent exerts the low effort, and agents have no incentive to collude. However, the effectiveness of the discriminatory mechanism relies on the assumption that the relative performance of the agents can be verifiable.

[29] For instance, these employees may have common interests in classical music with their employer, or enjoy drinking at the same pub with their boss after work.

[30] We exclude the possibility that the informed agent can be paid as a whistle-blower to report collusive activities,

he cannot benefit from false disclosure. We have assumed that the prize T and the assessment rule H, including bias b, are commonly known for both agents and the mediator. The only asymmetric information in the coalition is the identity of the favored agent, which is held only by the informed agent. That is, the informed agent knows who is favored or not while the uninformed agent only knows that he is equally likely to be favored.

Timing and Mechanism

We have assumed that it is a common belief ex ante that each agent can be favored with a probability of 1/2. The principal knows his preference at the beginning of the game, and will disclose this information to the informed agent after signing the tournament contract.[31] The timing of the remaining stages of the game is the same as before, except that the mediator could now propose a menu of side contracts based on the A^1's report of his type, that is, whether A^1 is favored or not.[32]

The main result

The principal creates asymmetric information between the agents by manipulating the revelation of information. It appears that enforcing a collusive agreement under asymmetric information is more costly than enforcement under symmetric information, and will thus lead to a distortion of collusive efficiency.

The intuition can be demonstrated by analyzing the incentive problems in side contracting for low efforts. We do not intend to solve for the optimal grand contract that is immune to collusion, but instead focus on the formation of coalition whereby the mediator proposes a side contract for the agents to induce low efforts. Recall that the mediator aims at maximizing the total welfare of the coalition, which is exactly equal to the tournament prize T, subject to a set of incentive constraints. Since the total surplus is independent of side contracts, solving for the optimal side contract is then equivalent to seeking for an incentive feasible side contract that

since we assume collusion is enforceable in the sense that any defection will be punished.

[31] It does not matter whether the principal realizes his preference before or after the acceptance of the tournament contract, as we can exclude the possibility that the informed principal may propose unanonymous contracts to the favored and unfavored agents respectively, simply because the status of the agents is not verifiable.

[32] The revelation principle applies here to side contracting and, without loss of generality, the mediator could propose a menu of take-it-or-leave-it contracts contingent on the type of the informed agent. Such contracts are called separating contracts according to incentive theory (see Laffont and Martimort, 2002). The mediator may also propose a pooling side contract regardless of the asymmetric information between agents. The pooling contract is, however, a special case of separating contracts in which the mediator suggests exactly the same side contracts for both types of agents.

meets all incentive constraints.

The mediator now faces two types of agents, namely, the informed agent A^1 with private information on the status of favoritism and the uninformed agent A^2. Without loss of generality, we consider the revelation mechanism in which the mediator proposes a menu of side contracts based on the revelation of the information by the informed agent. For instance, if agent A^1 reports that he is the favored type, then the side contract C_f (which comprises non-anonymous side payments for the agents) will be proposed and enforced at the end of the game; in contrast, the side contract C_u will be recommended if the informed agent claims to unfavored.

We claim now there is no side contract C_f for inducing low efforts that can meet all incentive constraints. This result is established by showing the conflict among different incentive constraints given a sufficiently high prize T.

The previous analysis indicates that any side contract that would provide full insurance for the agent against the uncertainty of winning or losing could induce low efforts. Notice that such a side contract yields a fixed payoff $G(b)T$ for the favored agent while a payoff $G(-b)T$ for the unfavored agent, independent of the states of winning or losing. The gap of the payoffs, $(G(b) - G(-b))\,T$, which represents the extra gain due to favoritism, is increasing with the prize T. In the case when the informed agent possesses private information on the status of favoritism, however, this extra gain brings an incentive for the unfavored type (that is, the informed agent happens to be unfavored) to lie. By claiming to be the favored type, the unfavored agent can always be granted a fixed payoff $G(b)T$ regardless of winning or losing, rather than get the fixed payoff $G(-b)T$ by telling the truth. Thus, any side contract that provides full insurance for the agents is not immune to false report.

To prevent the informed agent from lying, the side contract must discriminate the payoffs of the favored type between the states of winning and losing, and this is achieved by increasing his payoff in the state of winning and decreasing that in the case of losing, while still keeping the expected payoff unchanged (equal to $G(b)T$). On the other hand, the side contract could still provide full insurance to the unfavored type and grant a fixed payoff $G(-b)T$ in each state. Notice that the unfavored agent is more likely to lose than the favored one: $G(b) > 1/2 > G(-b)$, and such an arrangement would indeed reduce the expected payoff to the unfavored type if he claimed to be the favored one. Therefore, the unfavored type has no incentive to mimic the favored type if the expected payoff that he could gain by a false report is less than that from telling the truth, $G(-b)T$.

However, enlarging the payoff gap of the favored one brings additional incentive problem

for the collusive coalition. The favored agent would have a stronger incentive to exert the high effort when the payoff gap between winning and losing is larger, since he is more likely to win by deviating from the collusive agreement unilaterally (the probability of winning now increases to $G(1+b)$). Notice that the payoff gap is proportional to the tournament prize T. Thus, the favored type will deviate from the collusive agreement and make the high effort instead, given that the tournament prize T is sufficiently high.

The above analysis shows that side contracting under asymmetric information faces a trade-off between the incentive of truth-telling and the provision of mutual insurance. To prevent the informed agent from lying, the side contract must enlarge the payoff gap between winning and losing (thus increases the payoff uncertainty), whereas to induce low efforts, it should decrease the payoff gap (and provide full insurance for each agent at best). This trade-off cannot be reconciled when the tournament prize is sufficiently high and, as a result, the side contract C_f (to be proposed given that the informed agent claims favored type) cannot induce the low efforts (indeed C_f can only induce the high efforts).

In contrast, the favored type has no incentive to mimic the unfavored one, which implies that the informed agent must tell the truth if he claims to be unfavored. In this case, the side contract C_u, which ensures a fixed payoff $G(-b)T$ to the unfavored type of the informed agent, independent of winning or losing, and a fixed payoff $G(b)T$ to the favored type (now the uninformed agent), could induce low efforts without triggering any incentive problems. Since the likelihood of the informed agent to be favored is $1/2$, the high efforts can be implemented with a probability of $1/2$ (through side contract C_f). The above analysis leads to the main result:

Proposition 3 *When the principal exercises favoritism strategically and provides a sufficiently high tournament prize, collusion among agents becomes inefficient and consequently high efforts can be induced with a probability of* $1/2$.

Proof. See Appendix. ■

The optimal bias

When agents are unable to collude, the principal cannot benefit from exercising favoritism. However, favoritism is valuable to fight collusion only when it can be exercised implicitly and strategically, whereas fighting collusion incurs extra costs. The prize that the principal must offer to induce high efforts (with a probability of $1/2$) in the presence of collusion, as given by

(7) in the appendix,

$$T(b) \equiv \frac{c}{G(1+b)-G(b)} + \frac{4c}{G(b)-G(-b)},$$

is higher than that absent collusion. In particular, $T(b) = +\infty$ when $b = 0$, which implies that it is impossible to induce high efforts without favoritism.

Notice that $T(b)$ is decreasing with b: the more bias the lower incentive cost. However, the over-biased assessment rule also brings a perverse effect for the unfavored agent and lowers his incentives. To see this, the unfavored agent will exert the high effort only if

$$T \geq \frac{c}{G(-b)},$$

and this threshold of the prize is increasing in b. The optimal bias b^* in the assessment rule can thus be determined by solving this trade-off, which is given implicitly by

$$\frac{c}{G(1+b)-G(b)} + \frac{4c}{G(b)-G(-b)} = \frac{c}{G(-b)}.$$

5 Conclusions

Economists have by large ignored the phenomena of office politics, such as collusion and favoritism, which prevail in organizations where, due to the subjectivity of performance assessments, the incentive mechanism often takes a form of tournament. This paper studies these phenomena in a stylized tournament model. It finds that favoritism cannot benefit organizations when employees are unable to collude, and exercising favoritism explicitly does not impair collusion. However, playing favoritism implicitly and strategically allows the employer to introduce a conflict among collusive employees and, thus, brings detrimental impact on collusion. These findings shed a new light on the efficiency justification for exercising favoritism.

The main result is explored in a stylized model where agents take their projects independently and non-cooperatively, and moreover they can collude on low efforts which undermines the organizational efficiency. We show that exercising favoritism strategically could impair their collusive relationship without affecting their individual working incentives. In organizations where outputs rely on team rather than individual works, however, exercising favoritism could undermine the cooperative relationship within the team and, thus, brings a negative impact. In this case, the trade-off between fighting collusion and promoting cooperation would emerge, which calls for a cautious use of favoritism. We leave this topic for future research.

Appendix: Proof of Proposition 3

We do not intend to solve for the optimal grand contract that is immune to collusion, but instead focus on the formation of coalition whereby the mediator proposes a side contract for the agents to induce low efforts. We will show that no side contract can induce low efforts when the informed agent is the favored type, given that the prize T is high enough.

The mediator now faces two types of agents, namely, the informed agent A^1 with private information on the status of favoritism and the uninformed agent A^2. Without loss of generality, we consider the revelation mechanism in which the mediator proposes a menu of side contracts based on the revelation of the information by the informed agent. For instance, if agent A^1 reports that he is the favored type, then the side contract comprising a pair of side payments $C_f = \{s_f^1, s_u^2\}$ will be proposed and enforced at the end of the game, where s_f^1 denotes the side payment that A^1, who is supposed to be the favored agent, must pay A^2 if he wins, while s_u^2 is the side payment from A^2 to A^1 in the case where A^2 wins (who is supposed to be the unfavored type). On the contrary, the side contract $C_u = \{s_u^1, s_f^2\}$ will be recommended when A^1 claims to be unfavored.

First of all, we consider the agents' incentives to collude. The agents could be convinced to participate in collusion only if their expected payoff under collusion is strictly higher than that absent collusion. Suppose the informed agent is indeed the favored type and reports the true information (in which case C_f is recommended), he would get a net payoff $T - s_f^1$ when he wins in the tournament and a side payment s_u^2 from the uninformed agent (who is then the unfavored type) when he loses, which yields an expected payoff as denoted by

$$U_f^1 \equiv G(b)(T - s_f^1) + G(-b)s_u^2. \tag{1}$$

The informed agent will be convinced to collude only if this expected payoff exceeds his status quo utility absent collusion, $G(b)T - c$, that is

$$U_f^1 \geq G(b)T - c.$$

If instead A^1 is the unfavored type (now the side contract $C_u = \{s_u^1, s_f^2\}$ will be recommended if A^1 reports the truth), he will accept the side contract only if the expected payoff under collusion is higher than that absent collusion

$$U_u^1 \equiv G(-b)(T - s_u^1) + G(b)s_f^2 \geq G(-b)T - c. \tag{2}$$

On the other hand, notice that the uninformed agent A^2 must decide whether or not to accept the contract before the asymmetric information is revealed. He will, therefore, accept the contract if the expected payoff is higher than that absent collusion

$$\frac{1}{2}\left(U_f^2+U_u^2\right)\geq\frac{1}{2}T-c. \tag{3}$$

Using the fact that the gross payoff of the two agents is constant, or equivalently

$$\begin{aligned} U_f^2+U_u^2 &= G(b)(T-s_f^2)+G(-b)s_u^1+G(-b)(T-s_u^2)+G(b)s_f^1 \\ &= 2T-\left(U_f^1+U_u^1\right), \end{aligned}$$

we can rewrite (3) as follows:

$$\frac{1}{2}\left(U_f^1+U_u^1\right)\leq\frac{1}{2}T+c.$$

Combining with the constraint (1), we obtain the lower bound for the premium of favoritism[33]

$$\Delta U\equiv U_f^1-U_u^1\geq(G(b)-G(-b))T-4c, \tag{4}$$

where $\Delta U=U_f^1-U_u^1$ represents the extra gain that the informed agent can obtain by being the favored type.

The above condition implies that, due to favoritism, the favored type of the informed agent should be granted a premium of payoff under collusion at least higher than $(G(b)-G(-b))T-4c$, which is increasing with the prize T. However, this gives an incentive for the unfavored type to mimic the favored one. To see this, suppose A^1 happens to be the unfavored type, then he will get U_u^1 by revealing the true type. However, by claiming to be the favored type, he would earn an expected payoff

$$G(-b)(T-s_f^1)+G(b)s_u^2=U_f^1-(G(b)-G(-b))T_f,$$

as now the side contract $C_f=\{s_f^1,s_u^2\}$ rather than $C_u=\{s_u^1,s_f^2\}$ would be recommended, where $T_f\equiv T-s_f^1-s_u^2$ denotes the gap of payoffs between winning and losing for the favored type (a measure of the incentive power), which represents the degree of incentive power (the higher this gap, the stronger incentive for the high efforts). The unfavored type could earn the expected payoff U_f^1 by claiming to be favored, but has to bear a cost of the false report, $(G(b)-G(-b))T_f$, as his virtual winning probability is $G(-b)$ rather than $G(b)$. Increasing the favored type's payoff in the winning state and decreasing his payoff in the losing state enlarges

[33] This result remains unchanged if the uninformed agent decides to accept the side contract after the information is revealed. In this case, the uninformed agent faces two participation constraints: $U_f^2\geq G(b)T-c$ if he is the favored type, and $U_u^2\geq G(-b)T-c$ in case he is unfavored. Summing these two constraints yields the same result as (3).

the gap of payoffs between two states, which makes it more costly to lie. It follows that the unfavored type has no incentive to report falsely if and only if

$$U_u^1 \geq U_f^1 - (G(b) - G(-b))T_f,$$

which amounts to

$$\begin{aligned} T_f &\geq \frac{\Delta U}{G(b) - G(-b)} && (5) \\ &\geq T - \frac{4c}{G(b) - G(-b)}, && (6) \end{aligned}$$

where the second inequality comes from (4).

This condition indicates that, in order to prevent the unfavored type from lying, the side contract $C_f = \{s_f^1, s_u^2\}$ should be set such that the gap of payoffs for the favored type should be large enough. However, this brings an additional incentive problem. The favored type would then be tempted to deviate from the collusive agreement by exerting the high effort, by which his winning probability is increased to $G(1+b)$, and such a deviation yields an extra gain

$$\begin{aligned} & G(1+b)(T - s_f^1) + (1 - G(1+b))s_u^2 - c - U_f^1 \\ = \; & (G(1+b) - G(b))\, T_f - c \\ \geq \; & (G(1+b) - G(b))\, T - \frac{(G(1+b) - G(b))\, 4c}{G(b) - G(-b)} - c. \end{aligned}$$

It appears that the favored type will deviate to the high effort if

$$T \geq T(b) \equiv \frac{c}{G(1+b) - G(b)} + \frac{4c}{G(b) - G(-b)}. \quad (7)$$

Therefore no side contract $C_f = \{s_f^1, s_u^2\}$ can induce low efforts given the tournament prize is sufficiently high.

The mediator could instead propose a side contract with asymmetric effort levels between agents. We show that such asymmetric efforts are unsustainable when the tournament prize is high enough, as shown by the analogy. Notice that, if the side contract specifies the favored agent to make the low effort while the unfavored type makes the high effort, then the same logic in the previous analysis applies to show that the favored type would be tempted to deviate given that the tournament prize is high enough. If instead the side contract proposes the high effort for the favored type and the low effort to the unfavored type, then the probability of winning becomes $p_f = G(1+b)$ for the favored type and $p_u = 1 - G(1+b) = G(-1-b)$ for the unfavored

type. By analogy, the unfavored type has no incentives to lie if

$$\begin{aligned} T_f &\geq \frac{\Delta U}{G(1+b)-G(-1-b)} \\ &\geq T - \frac{4c}{G(1+b)-G(-1-b)}. \end{aligned}$$

However, now the unfavored agent (the uninformed one) is tempted to deviate and exert the high effort, by which his winning probability is increased to $G(-b)$, and such a deviation yields an extra gain

$$\begin{aligned} & G(-b)(T-s_u^2)+(1-G(-b))s_f^1-c-U_u^2 \\ = \;& (G(-b)-G(-b-1))\,T_f-c \\ = \;& (G(1+b)-G(b))\,T_f-c \\ \geq \;& (G(1+b)-G(b))\,T-\frac{(G(1+b)-G(b))\,4c}{G(1+b)-G(-1-b)}-c. \end{aligned}$$

It follows that the unfavored type will deviate if $T \geq T(b)$ since $G(1+b)-G(-1-b) > G(b)-G(-b)$.

Summarizing the previous analysis leads to the conclusion that only the high efforts can be induced when the informed agent is the favored type. This is indeed achieved by the side contract with zero side payments, that is, $C_f = \{0,0\}$, thus the gap of payoff between the winner and loser is still equal to the tournament prize, under which the unfavored type has no incentive to mimic the favored one.

In contrast, the favored type has no incentive to mimic the unfavored one; this implies that the informed agent must tell the truth if he claims to be unfavored. In this case, the side contract C_u with $s_u^1 = G(b)T$ and $s_f^2 = G(-b)T$, which ensures a fixed payoff $G(-b)T$ to the unfavored type of the informed agent, regardless of winning or losing, and a fixed payoff $G(b)T$ to the favored type (now the uninformed agent), could induce the low efforts without triggering any incentive problems. Since the likelihood that the informed agent will be favored is $1/2$, the high efforts can be implemented with a probability of $1/2$.

To capture all possibilities of side contracting, we must also consider the possibility of pooling contracts, which does not rely on the revelation of private information from the informed agent. However, given that the pooling contract is a special case of the separating contract with $s_f^1 = s_u^1$ and $s_f^2 = s_u^2$, it appears that offering a pooling side contract can do no better than the separating contract.

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