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Compensation, perks, and welfare

Philipp Weinschenk *

Bonn Graduate School of Economics, Germany
Max Planck Institute for Research on Collective Goods, Kurt-Schumacher-Str. 10, 53113 Bonn, Germany

HIGHLIGHTS

- We study the provision of perks in an agency model with moral hazard.
- We show that even though perks are contractible, their provision may be inefficient.
- There can be over- as well as underinvestment in perks.
- Perks may actually harm the agent, although perks per se are enjoyable for the agent.

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ABSTRACT

In an agency model with moral hazard and limited liability, we show that the provision of perks can be inefficient, even if perks are contractible. Interestingly, there can be over- as well as underinvestment in perks. We also demonstrate that perks may actually harm the agent, although perks per se are enjoyable for the agent.

1. Introduction

Compensation of employees cannot only be purely monetary, but may also contain nonmonetary ingredients. These so called perks are indeed a common form of compensation, especially for executives.[1] There is a long-lasting debate whether perks are overprovided or not. One group of researchers (e.g., Jensen and Meckling, 1976, Grossman and Hart, 1980, Hart, 2001, Bebchuk and Fried, 2003, Bebchuk and Fried, 2004, and Yermack, 2006) argues that agents exploit the discretion they have to get perks. This is beneficial for them, but harmful for the principal and detrimental for welfare. A second group (e.g., Fama, 1980, Henderson and Spindler, 2005, Rajan and Wulf, 2006, Marino and Zábojník, 2008a, and Oyer, 2008) reasons that perks are useful instruments to align the objectives of principals and agents. This view suggests that the investments in perks are efficient. We contribute to this debate by showing that the provision of perks can be inefficient, even if perks are contractible. Moreover, we show that perks may not only be overprovided, but that there are also scenarios where they are underprovided. We also demonstrate that perks may actually harm the agent, although perks per se are enjoyable for the agent.

Also Marino and Zábojník (2008a) study a model of moral hazard and perks. Because the agent's liability is assumed to be unlimited, the principal effectively maximizes the total expected surplus and investments in perks are thus always socially optimal. Moreover, in such a framework, perks are neutral for the agent's well-being. Limited liability is therefore a key factor for our results. We think that limited liability is highly reasonable if legal constraints restrict transfers from the agent to the principal or if the agent's wealth and her possibility to take credits are bounded. Marino and Zábojník (2008b) consider an environment where employees have private information about their preferences and

* Correspondence to: Max Planck Institute for Research on Collective Goods, Kurt-Schumacher-Str. 10, 53113 Bonn, Germany. Tel.: +49 0 228 91416 33; fax: +49 0 228 91416 62.
E-mail addresses: weinschenk@coll.mpg.de, p.weinschenk@gmx.de.

[1] In Grinstein et al. (2009) random sample of 361 firms belonging to the S&P 1500 Index, for the years 2006–2007, 90% of firms provide perks to their top five executives and the mean annual value is $296,300.

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outside opportunities. To screen the employees, the firm optimally provides different bundles of perks and salary. Canidio and Gall (2012) show that perks can be useful in a model of career concerns and multiple tasks to increase the opportunity costs of tasks which are more visible than others.

2. Model

There are two risk-neutral parties, a principal (she) and an agent (he). One can think of the agent as an employee and the principal as a firm owner. The agent exerts noncontractible effort $e \in \{0, 1\}$, where 0 indicates shirking and 1 working. Working causes private costs for the agent of $c > 0$, whereas shirking is costless.

Monetary compensation depends on performance. Performance is good, G, or bad, B. The probability of good performance is $p(e)$. Working increases the probability of good performance: $0 < p(0) < p(1) < 1$. The agent earns wage w_S, with $S \in \{B, G\}$. His liability is limited to his wealth, which we normalize to zero. Therefore, wages have to be nonnegative: $w_S \geq 0$ for all $S \in \{B, G\}$. To guarantee that the agent participates if the contract obeys limited liability, we suppose that the agent's reservation payoff is zero.[2]

Nonmonetary compensation takes the form of perks. We suppose that the principal can invest in perks or not and this is contractible. Perks cause costs of $k > 0$ for the principal and increase the agent's utility by $v(1)$ if he works and by $v(0) > 0$ if he shirks. Effort and perks are complements in the agent's utility function: $\Delta v := v(1) - v(0) > 0$.[3] The idea is that perks make exerting effort more enjoyable. For example, if effort measures the hours the agent spends working in his office, the agent's benefit from having a nice office is higher, the longer he works. Another example is a corporate jet: the difference in utility between flying in a corporate jet versus flying commercially increases with the flight length, which is a proxy for the agent's effort.[4] We suppose that $c > \Delta v$, which ensures that perks alone are not sufficient to motivate the agent to work; at least some monetary incentives are necessary.

The principal earns a gross profit of $\pi(S)$, with $S \in \{B, G\}$. We assume that $\pi(G)$ is sufficiently high so that the principal optimally hires the agent and implements that he works.

The timing is as follows:

1. The principal suggests a contract $\mathcal{C} = (w_B, w_G, P)$, with w_B, $w_G \geq 0$ and $P \in \{\text{perks, no perks}\}$.
2. If the agent accepts, the game continues; if he rejects, the game ends and parties receive their reservation payoffs.
3. The principal invests according to $\mathcal{C}$ and the agent chooses effort e.
4. Performance S realizes and the wage is payed according to $\mathcal{C}$.

It is useful to interpret the ratio $p(1)/p(0)$ as the precision of the performance measure. The more precise the measure is, the less important are random factors, and the higher $p(1)/p(0)$ is. The ratio $v(1)/v(0)$ is interpreted as the work-relatedness of perks. It measures the complementarity between effort and perks.

3. Analysis

3.1. Principal's problem

The agent will only choose to work if his expected utility from working is at least as high as the one from shirking.[5] Without perks the incentive constraint is thus

$$p(1)w_G + (1 - p(1))w_B - c \geq p(0)w_G + (1 - p(0))w_B. \tag{1}$$

This can be rewritten as

$$\Delta p \Delta w \geq c, \tag{2}$$

where $\Delta p := p(1) - p(0)$ and $\Delta w := w_G - w_B$.

It is readily verified that the cost minimizing wage scheme, which respects the limited liability and the incentive constraints, is

$$w_B = 0 \quad \text{and} \quad w_G = \frac{c}{\Delta p}. \tag{3}$$

The principal's expected wage payment is then

$$E[w|\text{no perks}] = \frac{p(1)c}{\Delta p}. \tag{4}$$

With perks, the incentive constraint changes to

$$\Delta p \Delta w \geq c - \Delta v. \tag{5}$$

The principal optimally sets

$$w_B = 0 \quad \text{and} \quad w_G = \frac{c - \Delta v}{\Delta p}. \tag{6}$$

Her expected wage payment is then

$$E[w|\text{perks}] = \frac{p(1)(c - \Delta v)}{\Delta p}. \tag{7}$$

The complementarity between effort and perks allows the principal to cut back monetary compensation, cf. (3) and (6), which saves the principal in expectation

$$\frac{p(1)\Delta v}{\Delta p} > 0. \tag{8}$$

The principal buys perks if and only if they cost up to the amount which the principal saves in expectation on wages:

$$k \leq \frac{p(1)\Delta v}{\Delta p}. \tag{9}$$

3.2. Planner's problem

To have a benchmark for the principal's investment decision, suppose now that a utilitarian planner decides about perks. The planner does not care about wage payments, because these are just transfers between the risk-neutral parties. Hence, the planner buys perks if and only if they do not cost more than their consumption utility:

$$k \leq v(1). \tag{10}$$

3.3. Comparing the solutions

Examining (9) and (10) yields that the principal's willingness-to-pay for perks, $p(1)\Delta v/\Delta p$, exceeds the one of the planner, $v(1)$, if and only if

$$\frac{v(1)}{v(0)} > \frac{p(1)}{p(0)}. \tag{11}$$

Then, from the planner's perspective, the principal's investment is either efficient or too high. Overinvestment occurs for $k \in (v(1), p(1)\Delta v/\Delta p]$.

The principal's willingness-to-pay falls short of the one of the planner if and only if

$$\frac{v(1)}{v(0)} < \frac{p(1)}{p(0)}. \tag{12}$$

Then, the principal's investment is either efficient or too low. Underinvestment occurs for $k \in (p(1)\Delta v/\Delta p, v(1))$, in which case the principal does not invest in perks, although this would enhance welfare.

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2 This assumption is standard; see Laffont and Martimort (2001, Chapters 4 and 5).

3 This assumption is also made in the models of Marino and Zábojník (2008a) and Oyer (2008). It is empirically supported by the findings of Oyer (2008) and Rajan and Wulf (2006).

4 We thank an anonymous referee for suggesting this example.

5 To avoid open set problems, we impose the standard assumption that the agent chooses to work in case of indifference.

Only if $\frac{v(1)}{v(0)} = \frac{p(1)}{p(0)}$ are the principal's and the planner's incentives to invest in perks perfectly aligned and the principal's investment is efficient for all costs k.

Proposition 1. *The principal never underinvests and may overinvest in perks if the work-relatedness of perks, $v(1)/v(0)$, is higher than the precision of the performance measure, $p(1)/p(0)$. The results reverse if the work-relatedness of perks is lower than the precision of the performance measure.*

Put differently, the principal invests weakly more (less) in perks than a planner would, if the work-relatedness of perks is higher (lower) than the precision of the performance measure. In the working paper, we show that if investments in perks are a continuous variable, the relationships are strict.

3.4. Intuition and agent's well-being

The agent's expected utility without perks is, see (3),

$$E[w|\text{no perks}] - c = \frac{p(1)c}{\Delta p} - c, \tag{13}$$

while with perks it is, see (6),

$$E[w|\text{perks}] - c + v(1) = \frac{p(1)(c - \Delta v)}{\Delta p} - c + v(1). \tag{14}$$

The additional expected utility due to perks is hence

$$v(1) - \frac{p(1)\Delta v}{\Delta p}. \tag{15}$$

Interestingly, although perks per se are enjoyable for the agent, the additional expected utility is not necessarily positive. This holds because perks have not only a consumption-benefit effect, see the first component of (15), but also a wage-reduction effect, see the second component. It is readily verified that the additional expected utility is negative if (11) holds, while it is positive if (12) holds. Intuitively, perks that are closely (barely) related to work allow the principal to cut back monetary compensation so much (little) that the wage-reduction effect dominates (is dominated by) the consumption-benefit effect.

Proposition 2. *Perks harm (benefit) the agent if they are closely (barely) related to work, i.e., if $v(1)/v(0) > [<]p(1)/p(0)$.*

This provides an intuition for Proposition 1. The principal does not take into account the agent's well-being when deciding about investments in perks. Consequently, if perks harm the agent the principal never underinvests and may overinvest in perks. In contrast, if perks benefit the agent the principal never overinvests and may underinvest.

4. Discussion

We next briefly discuss two interesting extensions. The formal analysis is delegated to the working paper. There we also analyze the comparative statics and show the robustness of our results by considering (i) productivity-enhancing perks, (ii) menus of perks, (iii) continuous investments in perks, (iv) continuous effort, and (v) a richer signal space.

Discretion—One may criticize our base model because it does not capture that, in reality, agents often have discretion and exploit their discretion to get perks. Our reply to this critique is twofold. First, our model shows that investments in perks may be inefficient even if we abstract from discretion. This finding clarifies that discretion is not necessary for inefficiency. Second, we extend our model by assuming that the agent has the discretion to take perks – at the expense of the principal – when there is insufficient monitoring. Interestingly, regarding the question of whether the investment in perks is efficient or not, our results stay completely valid. We also show that discretion can cause a commitment problem: If perks harm the agent, the agent would like to commit to not exploiting the discretion he has, but this is not subgame perfect.

Agent can buy perks—There are several reasons why it is plausible that the agent cannot buy perks. First, the agent initially has no wealth and therefore cannot buy perks. This argument ties in nicely with the common explanation why the principal and the agent form a relationship: the agent lacks resources which the principal has and so the agent cannot work on his own, while the principal is not able or willing to exert effort herself. Second, there are several agents and perks are a public good; hence, if there are sufficiently many agents, no agent has an incentive to invest in perks. Third, it is more expensive for the agent to buy perks than it is for the principal; it is then not worthwhile for the agent to invest in perks (cf. Oyer, 2008). Suppose now that, nonetheless, the agent is also able to buy perks. One can show that if the agent can buy perks before the principal, perks may be over- or underprovided. If the agent can buy perks after the principal, there is never underprovision, but there may be overprovision. The reason why there can be overprovision is the same as in the base model. The reason why underprovision can occur is as follows. First, the principal is not willing to buy perks if they are barely related to work. Second, the agent does not buy perks, although he knows that the principal will not buy perks either and perks cost less than the utility they deliver, because of the following hold-up problem: when the agent buys perks the principal will cut back wages, which dilutes the agent's incentive to buy perks in the first place.

5. Conclusions

We provide a simple agency model with moral hazard and show that investments in perks are not necessarily efficient, even though investments are contractible. Over- as well as underinvestment in perks is possible. We also demonstrate that perks may harm the agent, although perks per se are enjoyable for him. Thus, while some perks may seem a luxury at first glance, they can actually be a poisoned gift.

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