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## Games and Economic Behavior

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# Goal setting in the principal–agent model: Weak incentives for strong performance <sup>☆</sup>



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## ARTICLE INFO

### Article history:

Received 13 October 2016

Available online xxxx

### JEL classification:

C92

D23

M54

### Keywords:

Principal–agent models

Incentive theory

Non-monetary incentives

Goal setting

Reference-dependent utility

Laboratory experiments

## ABSTRACT

We study a principal–agent framework in which principals can assign wage-irrelevant goals to agents. We find evidence that, when given the possibility to set wage-irrelevant goals, principals select incentive contracts for which pay is less responsive to agents' performance. Agents' performance is higher in the presence of goal setting despite weaker incentives. We develop a principal–agent model with reference-dependent utility that illustrates how labor contracts combining weak monetary incentives and wage-irrelevant goals can be optimal. The pervasive use of non-monetary incentives in the workplace may help account for previous empirical findings suggesting that firms rely on unexpectedly weak monetary incentives.

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## 1. Introduction

### 1.1. Monetary and non-monetary incentives

Contract theory has traditionally focused on the design of monetary incentives as the unique motivation tool. The premise of these theories, also known as the principal–agent paradigm, is that workers will only respond to monetary incentives (e.g. piece rates, bonuses, stock options) leaving aside the role of intrinsic motivators (see Laffont and Martimort, 2002 and Bolton and Dewatripont, 2005 for reviews). These theories commend a widespread use of monetary incentives rewarding workers according to observable measures of effort. The predictions of these models, however, are frequently at odds with observed labor contracts. One of the major puzzles for this literature is to account for the rather limited use of monetary incentives

<sup>☆</sup> The authors acknowledge the continuous support of the Economic Science Institute at Chapman University. Brice Corgnet also acknowledges the support of LABEX CORTEX (Univ Lyon). Roberto Hernán-González also acknowledges financial support from the Spanish Ministry of Economy and Competence [2016/00122/001], Spanish Plan Nacional I+D MCI [ECO2013-44879-R], 2014-17, and Proyectos de Excelencia de la Junta Andalucía [P12.SEJ.1436], 2014-18. This research started when the third author was working at the University of Nottingham and visiting the Economic Science Institute at Chapman University.

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in the workplace. For example, [Chiappori and Salanié \(2000\)](#) report extensive evidence that pay is much less sensitive to firm performance than what standard theories predict.

In this paper, we put forward that this discrepancy between theory and evidence may result from principal–agent models neglecting important aspects of work motivation related to the use of non-monetary incentives. Psychologists and behavioral economists ([Deci, 1971, 1975](#); [Frey and Jegen, 2001](#)) have already challenged the idea that workers' motivation relies exclusively on monetary incentives. For example, self-determination theory ([Deci and Ryan, 1985](#); [Ryan and Deci, 2000](#)) posits a continuum of motivational states ranging from extrinsic motivation, in which people are motivated by external factors, to intrinsic motivation, in which their behavior is completely self-determined. In the workplace, intrinsic motivation is associated with high levels of employee satisfaction, commitment, and wellbeing (e.g., [Baard et al., 2004](#); [Deci et al., 2001](#)). Self-determination theory suggests that intrinsic motives may alleviate the conflict of interest between workers who supposedly dislike effort and employers who aim at maximizing firm performance. This theory also explains why higher extrinsic incentives (e.g. monetary incentives or managerial control) may undermine workers' internal drives (see [Gneezy et al., 2011](#) and [Kamenica, 2012](#) for reviews).

Even though a growing number of works in Economics have documented the effectiveness of various forms of non-monetary incentives such as goals ([Wu et al., 2008](#); [Goerg and Kube, 2012](#); [Gómez-Miñambres, 2012](#); [Corgnet et al., 2015a](#); [Dalton et al., 2015](#); [van Lent and Souverijny, 2015](#); [Allen et al., 2016](#)), status incentives ([Charness et al., 2014](#)), symbolic rewards ([Kosfeld and Neckermann, 2011](#)), delegation ([Fehr et al., 2013](#)), autonomy ([Falk and Kosfeld, 2006](#)) or trust ([Dickinson and Villeval, 2008](#)), little is known about the interaction between monetary and non-monetary incentives. It is essential, however, to examine monetary and non-monetary incentives jointly to provide guidance for practitioners who typically use both types of incentives.

## 1.2. Contract design and non-monetary incentives

Our approach aims at incorporating non-monetary incentives in the principal–agent framework by relying on the widespread and extensively-studied practice of “goal setting”. The motivational effect of wage-irrelevant goals has been studied at length in the literature in Psychology and Management (see [Locke, 1996](#) and [Locke and Latham, 2002](#) for reviews) and more recently in the Economics literature ([Wu et al., 2008](#); [Goerg and Kube, 2012](#); [Gómez-Miñambres, 2012](#); [Corgnet et al., 2015a](#)). According to [Locke and Latham \(2002\)](#) 90% of the studies show a positive correlation between the use of goal setting in firms and workers performance. The literature has, however, paid little attention to the study of the relationship between wage-irrelevant goals and monetary incentives which seems essential to both incentive theorists and practitioners.

[Corgnet et al. \(2015a\)](#) took a first step in that direction by studying the interaction between monetary stakes and goal setting policies. They showed that goals tend to be more effective when stakes are large than when they are small. The present work goes one step further by studying the design of contracts that include both monetary incentives and wage-irrelevant goals.

From a theoretical standpoint, we modify the standard principal–agent model with moral hazard (e.g. [Holmström, 1979](#)) by assuming that the agent has two sources of work motivation: a standard monetary motivation and a goal-dependent non-monetary motivation. As a result, workers' utility not only increases when pay is high but also when goals are achieved. Extending on [Kahneman and Tversky \(1979\)](#) we assume that agents are loss averse in the non-monetary domain. In our model, this implies that the utility loss of falling short of the goal by a certain amount is higher than the utility gain of producing more than the goal by the same amount. Our theoretical contribution is to extend the principal–agent model to a case in which principals can set both monetary (a fixed pay and a performance pay) and non-monetary incentives (wage-irrelevant goals). We show that goal setting, by providing an additional tool to incentivize agents, allows principals to achieve stronger incentives while making lesser use of performance pay. One caveat with the use of goal setting is that agents will suffer a utility loss if they do not attain the goal set by the principal. To compensate for that possibility, the principal will increase the agent's fixed pay when setting goals to agents. Therefore, goal setting generates a tradeoff between lowering performance pay and increasing fixed pay to ensure agents' participation. The optimal contract is such that the decrease in performance pay made possible by the use of wage-irrelevant goals more than compensates the necessary increase in fixed pay, thus reducing the principal's agency costs to motivate agents. Therefore, agents will exert more effort and principals will obtain higher earnings when goal setting is present in the model. In the presence of goal setting, the principal will thus be able to reduce the wage bill by substituting costly monetary incentives with non-monetary incentives.

In our setting, optimal contracts typically rely both on performance pay and wage-irrelevant goals. Our framework contrasts with models in which monetary incentives may undermine intrinsic motivation. For example, [Bénabou and Tirole \(2003\)](#) stress the possibly negative effect of monetary incentives on agents' intrinsic motivation in a setting in which an informed principal holds private information about the agent's ability level. In their model, the crowding out of intrinsic motivation arises because setting strong monetary incentives provides a negative signal on the agent's perceived ability level which, in turn, may lead the agent to exert low effort. By contrast, our model considers the commonly-studied case in which agents (not principals) hold private information about their level of ability. That is, agents know more about their own level of ability than principals know about agents. In that case, performance pay cannot signal low-ability to the agent and thus does not undermine motivation.

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