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# Merger efficiency and managerial incentives☆

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#### ABSTRACT

We consider a two-stage principal-agent model with limited liability in which a CEO is employed as agent to gather information about suitable merger targets and to manage the merged corporation in case of an acquisition. Our results show that the CEO systematically recommends targets with low synergies—even when targets with high synergies are available—to obtain high-powered incentives and, hence, a high personal income at the merger-management stage.

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#### 1. Introduction

On May 07, 1998, the Daimler-Benz AG and the Chrysler Corporation merged into the DaimlerChrysler AG, one of the world's biggest car manufacturers with 442,000 employees and a market value of about \$100 billion. The former Daimler Chief Executive Officer (CEO), Jürgen Schrempp, promised huge synergy savings in distribution, product design, and research and development. Leading newspapers were less optimistic. On the day following the merger, the New York Times stated that "at a news conference held here to proclaim the biggest industrial marriage in history, neither company could explain in detail where billions of dollars in savings from reduced expenses would come from" (Andrews, 1998). In 2001, these fears were confirmed by the actual course of events—the market value of DaimlerChrysler shrank to \$44 billion, which was nearly the pre-merger market value of the

Daimler-Benz AG alone. Thus, synergies either remained unexploited or did not exist.<sup>2</sup>

Nevertheless, the merger had one clear winner—the 1998 Daimler CEO and later DaimlerChrysler CEO Jürgen Schrempp. Before merging, his estimated yearly income amounted to \$2.9 million. After merging, the pay system for top executives at Daimler-Benz changed dramatically: at least 70% of top executive compensation became performance bonuses and other incentive payments (Bryant, 1999). As a consequence, the new estimated income of Jürgen Schrempp (at least) doubled. There does not only exist anecdotal evidence for the observation that the income of an acquiring firm's CEO rises considerably—even after a merger that leads to low or no synergies. The empirical results of Bliss and Rosen (2001), Grinstein and Hribar (2004), Bebchuk and Grinstein (2005), Girma et al. (2006), Harford and Li (2007), and Guest (2009) show that this observation can be considered as a stylized fact.<sup>3</sup>

With acquisitions leading to higher CEO compensation, an immediately related question is how the anticipation of this positive income effect affects the quality of acquisition decisions. In the following, we offer a rationale for why CEOs do not prefer the best merger targets, and how they benefit from poor merger quality. We consider a two-

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<sup>&</sup>lt;sup>2</sup> "Chrysler proved to be a massive rescue job that sucked up billions and absorbed German management for years [...]. Synergies have been few and far between" (Bloomberg BusinessWeek, 2005). General Electric is another prominent example for a large corporation that has grown via non-synergetic acquisitions; see, e.g., The Economist (2014).

<sup>&</sup>lt;sup>3</sup> See Williams et al. (2008) for a literature survey.

stage principal-agent relationship between a CEO, on the one hand, and the board of directors or the shareholders—henceforth summarized as the "principal"—on the other. The CEO is protected by limited liability. Anderson et al. (2004) observe that changes in CEO compensation following a merger are likely to reflect a restructuring of incentives, which suggests that long-term commitment to contractual terms is rather unrealistic in the context of CEO compensation. In line with this observation, we assume this principal-agent relationship to be governed by a series of short-term contracts. In the first stage, the CEO gathers information on possible merger targets and recommends a target to the principal. At the end of the first stage, the principal decides on whether to acquire the target firm or not. In case of acquisition, in the second stage the principal has to choose between merging the old firm and the newly acquired one, or running both independently.<sup>4</sup> If the principal prefers merging, the CEO is employed to manage the merged firm. At this stage, the principal can optimally fine-tune CEO incentives by using bonuses that depend on the CEO's performance. Our analysis shows that if a CEO identifies both low- and high-synergy targets, he will tend to recommend a low-synergy one to make the principal choose high-powered incentives at the merger-management stage, yielding a large rent to the CEO. This result, providing one possible explanation for the low synergies from the Daimler-Chrysler merger, sheds light on how CEOs can manipulate their post-merger remuneration by making suboptimal merger recommendations. Besides the case of Daimler-Chrysler, there exists broad empirical evidence that merging often leads to poor outcomes (e.g., Bradley et al., 1988; Bruner, 2005; Jarrell et al., 1988; Jensen and Ruback, 1983; Morck et al., 1990). This empirical literature is in line with our theoretical findings.

Our model focuses on CEOs gaining from mediocre mergers via an increase in compensation. Alternative theories, like the empire-building approach and the hubris hypothesis, are in line with post-merger firm performance that can be rated as relatively poor against the background of the respective purchasing price. According to these theories, CEOs may make mediocre merger *deals* so that the acquiring firm's shareholders do not earn a positive merger premium (i.e., the purchasing price is too high). The theories, however, cannot explain why CEOs might be interested in choosing mediocre merger *targets*. According to our model, CEOs prefer mediocre merger targets because they lead to a demanding situation that justifies high-powered CEO incentives.

Regarding the observation of increased CEO compensation following a merger, one might argue that this increase is due to larger firm size-given the stylized fact that firm size is positively correlated with CEO pay. However, this fact does not yield a straightforward explanation for how CEOs gain from merging via increased compensation and, therefore, prefer merging. On the one hand, mergers may lead to personal costs for a CEO who is now responsible for a larger entity and has to invest more time and effort to manage the merged corporation. In that case, there are two possibilities. If the CEO earns a sufficiently large rent without merging, the additional personal costs only reduce this rent. Otherwise, the CEO has to be paid for the additional burden according to the theory of compensating wage differentials. Neither possibility, however, leads to a gain for the CEO. On the other hand, merging can lead to an extra utility for the CEO if he is an empire builder and benefits from additional prestige and power by managing a larger corporation. It is not clear, however, why shareholders should additionally increase CEO pay in this situation. Hence, again we cannot argue that the CEO gains via increased compensation.

In our analysis of the CEO's recommendation of a merger target, we focus on decision-based incentives throughout the paper: while the

synergies of the recommended target firm are observable for the principal, CEO pay in the first stage can only condition on whether an acquisition takes place or not. We find that the principal may benefit from offering the CEO a sufficiently high wage premium in case of an acquisition, although the quality of the CEO's recommendation of a merger target is not contractible. Offering a large acquisition premium acts as a commitment device for the principal not to approve low-synergy recommendations because low-synergy targets will not justify the high CEO pay. Consequently, the CEO is kept from opportunistically recommending a low-synergy merger target while identifying high-synergy targets at the same time. The empirical findings of Grinstein and Hribar (2004) can be interpreted in this direction. They report that, in their sample, 39% of the acquiring firms pay an acquisition premium to their CEOs for the completion of the deal.

We discuss several extensions of the basic model as a robustness check for our main findings. The first extension considers the possibility of writing long-term contracts. If the principal has sufficient commitment power to stick to a long-term contract, the problem of opportunistic target recommendation can be eliminated. This advantage, however, comes at a cost since the optimal long-term contract always induces suboptimal effort compared to the flexible effort implementation of short-term contracts. We derive conditions under which short-term contracting outperforms long-term contracting.

In a second extension, we analyze the interaction between synergies and the performance measure for successful merger management. We show that the main result—opportunistic recommendation of merger targets by the agent—may qualitatively still prevail. In addition, we discuss the implication of equity based compensation of CEOs in the context of merger management. Our results imply that if the CEO's compensation is equity based and short-term firm success is affected by actual merger synergies, then such compensation plans work against opportunistic recommendation.

Furthermore, we show that the assumption of management effort and synergies being substitutes is crucial for the conflict of interest between principal and agent to arise. In addition, we discuss the implications of endogenizing information gathering by the agent at the first stage of the game. Finally, we consider the possibility that the agent is an empire builder or bears personal costs from merging.

The rest of the paper is organized as follows. We start with a review of the related literature in Section 2. In Section 3, we introduce our basic model, which is analyzed in Section 4. Section 5 discusses the robustness of our main finding. We conclude in Section 6. All proofs are deferred to the Appendix.

### 2. Related literature

Our paper contributes to the literature on real authority and project recommendation. <sup>7.8</sup> Closely related to our paper, Dow and Raposo (2005) explore the determinants of a CEO's choice of corporate strategy. The principal–agent relationship in Dow and Raposo (2005) is governed

<sup>&</sup>lt;sup>4</sup> As outlined by Bloomberg BusinessWeek (2005), these two basic choices also existed with regard to the Daimler–Chrysler case—either "ramping up the technical and manufacturing collaboration between Mercedes and Chrysler" or "run[ning] the two companies as separate entities."

<sup>&</sup>lt;sup>5</sup> See, e.g., Anderson et al. (2004), Section 2, and the literature cited therein.

<sup>&</sup>lt;sup>6</sup> The incomplete contracting assumption of decision-based rewards was introduced by Dewatripont and Tirole (1999). According to this approach, incentive schemes condition on actual decisions but not on the content or quality of the information underlying these decisions.

<sup>&</sup>lt;sup>7</sup> The seminal papers by Aghion and Tirole (1997) and Baker et al. (1999) do not discuss the interplay of project recommendation and subsequent optimal incentive provision. Moreover, in our paper, the second-stage moral hazard problem endogenously implies the conflict of interests between principal and agent, which is exogenously given in Aghion and Tirole (1997) and Baker et al. (1999).

<sup>&</sup>lt;sup>8</sup> Landier et al. (2009) analyze organizational design given that division of labor requires project choice and project implementation to be delegated to two different agents whose opinions regarding project choice may diverge. They find that organizational dissent fosters the efficient use of information because the implementer's unwillingness to work hard on the chooser's preferred projects constrains the chooser in selecting self-serving projects. Relatedly, in a model of repeated project choice, Marino et al. (2009) analyze the implication of separation costs for the allocation of authority when the scope for centralization is limited by the agent's ability to disobey the principal's orders.

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