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# On the irrelevance of insider trading for managerial compensation

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## ABSTRACT

We examine changes in the compensation of CEOs of German firms after the prohibition of insider trading (IT) in 1994 to test whether IT is a relevant compensation device. While we find that the performance elasticity of explicit CEO pay slightly increases subsequent to the IT law adoption for non-financial firms indicating an incentive-substitution effect, the overall change in levels seems modest. We explore the hypothesis that compensation for forgone IT profits in general is small because typically, firms lack at least one of the two necessary conditions for profitable IT: the existence of a liquid stock market imposing low costs of transactions and the presence of a small number of co-insiders, preventing the information rent to be competed away. Based on a difference-in-difference estimation, we indeed find that explicit pay increases more strongly for intensely traded firms and decreases for non-financial firms and insurance companies with a higher number of co-insiders. The combined effect is relatively small except for firms with the most liquid shares.

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## 1. Introduction

In the United States, trading on material, non-public information was proscribed already in 1934. Nevertheless, the issue of what are the benefits and costs of allowing insiders to trade on their informational advantage continues to be discussed (Manne, 2005; Bainbridge, 2001; Leland, 1992). One of the principal arguments brought forward by the defendants of insider trading pertains to the generation of incentive effects and income for managerial insiders (Manne, 1966; Hu and Noe, 2001). By consequence, one could argue that prohibiting insider trading requires owners of public firms to implement new, perhaps less effective incentive schemes and to compensate top management for the loss of trading income (Noe, 1997).<sup>1</sup>

A little noticed empirical regularity may raise doubts on the relevance of insider trading for compensating top managers, regardless of whether insider trading is legal or not. In principle, an insider realizes the largest trading profits under exclusive access to the information. Competition for the information will reduce the rents the insider can appropriate, and hence, insider profits decrease with the number of insiders (Kato and Hebner, 1997). At the same time, private information is only valuable if trading is not associated with large transaction costs, that is, if the equity market is sufficiently liquid (Glosten and Milgrom, 1985).<sup>2</sup> In reality, both variables, the number of insiders—measured as the

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<sup>1</sup> Outlawing insider trading and substituting by bonus or stock and option schemes may be detrimental to an efficient provision of incentives for at least two reasons. First, when IT would be permitted, managers could optimally adapt their stock holdings to their liquidity demands, and concentrate undiversified stock holdings when the information advantage trumps the wish for diversification. Second, option and bonus schemes are prone to manipulation (e.g., earnings management and option back-dating), and thus they can be costly but ineffective.

<sup>2</sup> A study by Lin and Howe (1990) indicates that illiquidity (large bid-ask spreads on the US OTC market) may hamper profitable insider trades.

number of officers, for example—and stock liquidity—measured as the number of shares traded—are positively related through their joint correlation with firm size.<sup>3</sup> As a consequence, both conditions under which insider trading is potentially profitable may rarely be satisfied simultaneously. In light of this insider dilemma, our paper aims at testing the empirical importance of insider trading for top executives.

There only exists limited evidence on the link between insider trading and managerial compensation. Roulstone (2003) examines whether restricting the time period during which managers are permitted to trade (no matter whether based on public or non-public information) by corporate statutes of US firms for the period 1994–1997 is associated with an increase in CEO pay. The effects he detects are relatively modest. Pay increases by about 4–13% for firms that introduce time restrictions on trading by their executives.

It is difficult to interpret this result as evidence against the importance of insider trading profits being part of the compensation package. Roulstone (2003) investigates situations in which insider trading (based on non-public information) is illegal. Provided the law completely deters illegal conduct, creating temporal restrictions for managerial trading should not result in any compensation effect except perhaps resulting from the inconvenience caused by restricting liquidity trading and portfolio restructuring. Under incomplete deterrence, only managers acting outside the legal boundaries are affected by trading window restrictions. However, even these managers may not be compensated for the full loss of future trading gains because a price is attached to illegal insider trading: the probabilistic fines, to be paid upon detection by financial market oversight agencies (cp. Becker, 1968). A manager whose trading profits only slightly exceed the costs incurred by potential sanctions would only ask for a small compensation in order to refrain from this activity. Thus, when the probability of detection and the size of the sanctions are large, compensation for trading window restrictions will be small. It is plausible to assume that both parameters are relatively large for the US.

In order to assess the relevance of insider trading for the compensation of top managers, one ideally wishes to observe insider trading profits and explicit pay under both legal regimes. However, insider trading profits are rarely observed when insider trading constitutes an illegal activity. As a second best solution, a way to elicit the compensation effect of insider trading prohibition is a comparison of executive remuneration before and after the introduction of such a law. Provided that insider trading is of low empirical importance, one would expect no substantial consequences for the explicit compensation of managers as a response to the IT prohibition. While this approach is impractical for many countries where insider trading laws were adopted at a time for which data on managerial pay are difficult to obtain, it is feasible for Germany which is one of the last countries to adopt such regulation in 1994 among the large developed economies (Bhattacharya and Daouk, 2002).<sup>4</sup>

We present evidence on how German CEO pay responds to the prohibition of insider trading in 1994, formulated in Section 14 WpHG (*Wertpapierhandelsgesetz*). We use a data set that informs about the total CEO pay for a large set of German listed and non-listed firms during the period of 1988–1999, that is, six years prior and six years after the law was enacted.<sup>5</sup> We use a difference-in-difference set-up, based on the idea that the IT law should only affect the compensation of managers from listed firms, using the set of non-listed firms as the control group. In the following section, we provide a brief account of the history of insider trading regulation in Germany. Subsequently, we describe our data set. Section 4 hosts the empirical results. The paper is concluded in Section 5. The Appendix contains a discussion of the pay variable construction.

## 2. Insider trading and other regulation in Germany

For the largest part of the last century, insider trading was entirely unregulated in Germany. Only on November 13, 1970, a commission comprising stock market experts and directors of listed firms (*Börsensachverständigenkommission*) worked out voluntary guidelines (*Insiderhandels-richtlinien*) that were supposed to fill this gap. These guidelines could only be enforced when they became part of a contract, and they have remained voluntary after being amended twice in 1976 and 1988. Moreover, IT was not a criminal offense during this time. As a result, they have rarely been enforced and thus failed to develop some bite. For example, only about 18 investigations based on violations of the guidelines have been conducted until 1983 (Peltzer, 1994).

In an attempt to improve the integrity of the European capital markets and to eliminate the widely differing levels of insider trading regulation in the EU member states, the European Commission adopted the Insider Dealing Directive in 1989 (Directive 89/592/EEC).<sup>6</sup> Directives need to be implemented into national law before they become effective. In the case of Germany, this took five years, due to solving complicated issues regarding the competencies of the *Länder* (states) and the federal government. The Insider Dealing Directive was finally implemented as German law as part of the Securities Trading Act (*Wertpapierhandelsgesetz, WpHG*) on July 26, 1994. Under this law, IT became a criminal activity, and engaging in insider trading could be sanctioned with up to five years in prison.

<sup>3</sup> Not every measure of stock liquidity may be positively related to firm size. For our argument to hold, it is sufficient that a trade of a certain size is carried out less costly for large firms than for small firms. This has been shown to hold, for example, by Breen et al. (2002).

<sup>4</sup> Germany introduced the IT law as a response to the European Community Insider Trading Directive in 1994 (89/592/EEC of November 13, 1989).

<sup>5</sup> One may argue that the signal of law enforcement is more important than the mere adoption of the law. However, in Germany, the insider trading law was enforced as early as in 1995. Our main results hold if we assume that this is the critical time point, rather than 1994.

<sup>6</sup> Published in the European Commission's *Official Journal*, 1989, L334, p. 30.

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