The real effect of the initial enforcement of insider trading laws

Zhihong Chen a, Yuan Huang c, Yuanto Kusnadi b, K.C. John Wei c,⁎

a Hong Kong University of Science and Technology, Hong Kong
b Singapore Management University, Singapore
c Hong Kong Polytechnic University, Hong Kong

ABSTRACT

Based on a difference-in-differences approach, we find strong evidence that the initial enforcement of insider trading laws improves capital allocation efficiency. The effect is concentrated in developed markets and manifests shortly after the enforcement year. Further analysis shows that the improvement is positively associated with the increase in liquidity around the enforcement year and the opaqueness of the information environment before the enforcement year. The improvement is more pronounced for firms operating in more competitive markets, being more financially constrained, and with more severe agency problems. Finally, we find increased accounting performance after the enforcement and the increase is positively associated with the improvement in capital allocation efficiency. Overall, our evidence suggests that the initial enforcement of insider trading laws improves capital allocation efficiency by providing more information to guide managerial decisions and by reducing market frictions arising from information asymmetry and agency problems.

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1. Introduction

A large body of international literature has shown that capital resources are allocated more efficiently in countries with more developed financial markets, stronger legal protection of investors, and more transparent informational environments. See, for example, Wurgler (2000), Fisman and Love (2004), Biddle and Hilary (2006), Francis et al. (2009), Bushman et al. (2011), and McLean et al. (2012). While these cross-country analyses offer valuable insights, they are also limited in the potential to draw causal inferences (Bushman and Smith, 2001).
One way to improve these analyses is to examine within-country changes in capital allocation efficiency over time using experimental settings (Wurgler, 2000; Leuz and Wysocki, 2016). In this study, we contribute to the literature by testing whether and how the initial enforcement of insider trading laws (hereafter enforcement) affects capital allocation efficiency using a difference-in-differences (DID) design.

We hypothesize that enforcement improves capital allocation efficiency by enhancing market efficiency. Restriction on insider trading reduces information asymmetry and enhances liquidity, which in turn attracts more informed risk arbitrage and improves the information efficiency of prices (Bushman et al., 2005; Fernandes and Ferreira, 2009). More efficient prices improve capital allocation efficiency through at least three channels: (1) by providing more precise information to guide managers’ decisions, (2) by reducing financing constraints, and (3) by increasing the effectiveness of monitoring (Wurgler, 2000; Bushman and Smith, 2001; Bond et al., 2012).

We test our hypothesis on a sample of 123,343 firm-year observations (17,924 firms) in 23 developed markets and 19,923 observations (4264 firms) in 22 emerging markets between 1982 and 2003. Following Wurgler (2000) and Bushman et al. (2011), we measure capital allocation efficiency by the sensitivity of capital investment growth to investment opportunity shocks. We measure investment opportunity shocks by the lagged industry returns of US-listed firms. This design choice builds on the assumption that there exist common global industry-specific shocks to growth opportunities (Fisman and Love, 2004). In addition, since the US market is the most efficient, the industry returns of the US-listed firms are likely the best measure of such common shocks (Rajan and Zingales, 1998; Fisman and Love, 2007).

We find strong evidence that firms allocate capital more efficiently after enforcement. In particular, we find a statistically significant increase in the sensitivity of investment growth to return following enforcement, after controlling for country and year fixed effects on the sensitivity. The increase is also economically significant. Based on the estimate from our baseline model, the investment growth associated with a one-standard-deviation increase in shocks to investment opportunities is about 6% higher in the post-enforcement period than in the pre-enforcement period.

Christensen et al. (2016) argue that the effect of regulations could either be weaker or stronger in countries with weaker pre-regulation institutions. Prior studies have also documented mixed findings of the enforcement effect in developed and emerging markets (Bushman et al., 2005; Fernandes and Ferreira, 2009). Thus, we examine the effect of enforcement in developed and emerging markets separately. We find a significant increase in capital allocation efficiency after enforcement only in the developed markets. One possible reason is that new regulations are more likely to be abused in countries with weak institutions and inefficient bureaucracies (Shleifer, 2005). In addition, emerging markets have poor protection of private property rights, which deters informed risk arbitrage. Therefore curbing insider trading may not increase price informativeness in emerging markets (Morck et al., 2000; Fernandes and Ferreira, 2009).

Moreover, mechanisms that seek to restrict managers’ rent-seeking behavior and reduce the cost of external financing may have limited benefits when private property rights are weakly protected (Stulz, 2005; Durven et al., 2009).

We conduct two robustness tests for our identification strategy. First, we examine the change in the sensitivity of investment growth to return in the developed markets over a relatively short period of time around the enforcement year (i.e., years $-2$ to $+3$, where year $0$ is the enforcement year). We find a significant increase in sensitivity in years $+1$ to $+3$ from that in years $-2$ to $0$. Second, we randomly assign a pseudo enforcement year to firms in countries that began enforcing their insider trading laws before our sample period or in countries that did not enforce their insider trading laws until after our sample period. We find a significant increase in the sensitivity of investment growth to return after the true enforcement year but not after the pseudo enforcement year.

We find that our baseline results are robust to various model specifications, sample selections, and measurements of investment growth and investment opportunity shocks. The results are also qualitatively similar when we conduct analysis at the country-year level by using the country-year-specific estimates of the sensitivity of investment growth to return as the dependent variable.

We then examine the cross-sectional variation in the effect of enforcement on capital allocation efficiency in the developed markets to further substantiate our hypothesis and highlight the potential channels through which enforcement works. First, if enforcement improves capital allocation efficiency by enhancing the informativeness of stock prices, the increase in capital allocation efficiency and the increase in price informativeness should be positively correlated. Prior studies have suggested that curbing insider trading improves liquidity and higher liquidity attracts more informed trading, which results in more informative prices (Bhattacharya and Spiegel, 1991; Chordia et al., 2008). We measure price informativeness enhancement by the increase in liquidity around the enforcement year. We find that the increase in capital allocation efficiency is positively associated with the increase in liquidity.

Second, as insiders trade more aggressively in more opaque information environments (Aboody et al., 2005), curbing insider trading should improve price efficiency to a greater extent in countries with more opaque information environments before the enforcement year. We follow Leuz et al. (2003) and Bhattacharya et al. (2003) to measure information opacity in each country before the enforcement year. Consistent with our prediction, the improvement in capital allocation efficiency is more pronounced in countries where information environments are more opaque before the enforcement year.

Third, while managers have a great deal of internal information (such as technology, production costs, and strategies), outside investors are more likely to have external information (such as the status of the industry and competitors) that managers may not know (Bond et al., 2012). In more competitive industries, the external information would be more useful because firms are more vulnerable to changes in their peers’ fortunes and strategies (Ozoguz and Rebello, 2013). Therefore, to the extent that enforcement improves capital allocation efficiency by providing more information to guide managers’ decisions, the effect is expected to be more pronounced for firms that operate in more competitive product markets. Consistent with this prediction, we find a pronounced effect of enforcement on the sensitivity of investment growth to return in industries with a lower Herfindahl index.

Fourth, to the extent that enforcement improves capital allocation efficiency by relaxing external financing constraints and reducing agency problems, the effect should be more pronounced for more financially constrained firms and firms with more severe agency conflicts between insiders and outside shareholders. Consistent with this prediction, we find a pronounced increase in capital
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