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THE EFFECTIVENESS OF INSIDER TRADING REGULATION: INTERNATIONAL EVIDENCE

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There is a long standing debate in the finance and law literatures about the need for insider trading regulation. Some scholars and practitioners argue that insider trading restrictions should be revoked because insider trading allows private information to be quickly incorporated into stock prices, thereby leading to more informationally efficient stock prices (Carlton and Fischel (1983); Dye (1984)). For example, Milton Friedman, laureate of the Nobel Memorial Prize in Economics, said: “You want more insider trading, not less. You want to give the people most likely to have knowledge about deficiencies of the company an incentive to make the public aware of that” (CNN interview, January 17, 2002).

In contrast, proponents of insider trading regulation assert that insider trading discourages investment and damages corporate value because uninformed investors face an adverse selection problem (Manove (1989); Ausubel (1990); Fischer (1992)). An uninformed but savvy investor knows that in the presence of insider trading she is likely to be a buyer when stock is overvalued and a seller when it is undervalued. In anticipation of losses, she may choose not to trade that stock.

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Thus, it is argued that allowing insiders to trade at the expense of uninformed outsiders diminishes investor confidence and hurts the integrity of capital markets (Brudney (1979); Easterbrook (1985); Glosten (1989); Maug (1995, 2002)).

Insider trading restrictions have been introduced in most markets in the last decade, and in many, the restrictions have also been enforced with the prosecution of those violating the rules. A survey by Bhattacharya and Daouk (2002) finds that out of 103 countries that have stock markets, 87 have introduced insider trading rules. A principal goal of introducing insider trading restrictions appears to be to prevent informationally advantaged insiders from trading at the expense of the uninformed public. The objective of our paper is to examine whether insider trading regulation deters trading by individuals with private information.

Figure 1 displays an index of insider trading regulation created by Beny (2005, 2006) for 33 countries. She constructs this *de jure* index of insider trading regulation by aggregating individual components of countries' insider trading laws. The index is formed by adding one if (1) violation of the insider trading law is a criminal offense; (2) individuals who receive information from insiders are prohibited from trading on material nonpublic information; (3) insiders

Figure 1



are prohibited from tipping outsiders about material nonpublic information and/or encouraging them to trade on such information for personal gain; (4) monetary penalties are proportional to insiders' trading profits; (5) investors have a private right of action. Figure 1 shows that Mexico, Norway, and Russia have relatively lax insider trading laws scoring 1 out of 5, while Canada, Ireland, and South Korea, the United States have strict laws scoring 5.

Do laws against insider trading deter private information trading?

Trading by insiders or individuals with non-public information is not directly observable. Therefore, to study the effectiveness of insider trading laws, we need a proxy for private information trading. In our paper, it is measured as the serial correlation in stock returns. Llorente et. al (2002) argue that the correlation over time reflects the degree of private information trading in that stock. When a subset of investors sells a stock for hedging reasons, the stock's price must decrease to attract other investors to buy. Since the expectation of future stock payoff remains the same, the decrease in the price causes a low return in the current period and a high expected return for the next period. When a subset of investors sells a stock using private information, the stock price decreases, reflecting the negative private information about its future payoff. Since this information is usually partially impounded into the price, the low return in the current period is followed by a low return in the next period, when the negative private information is further reflected in price. In short, hedging trades generate negatively correlated

Table 1

Decrease in private information trading after the first enforcement of insider trading laws

	Average value	T-statistics of equal average values
Private information trading before enforcement	0.00674	
Private information trading after enforcement	-0.0315	
Difference (after – before)	-0.0383	12.080
Note: Private information trading after the first enforcement is smaller than before enforcement. The difference is statistically significant at the 1% level.		

Source: Authors.

returns, and private information trades generate positively correlated returns.

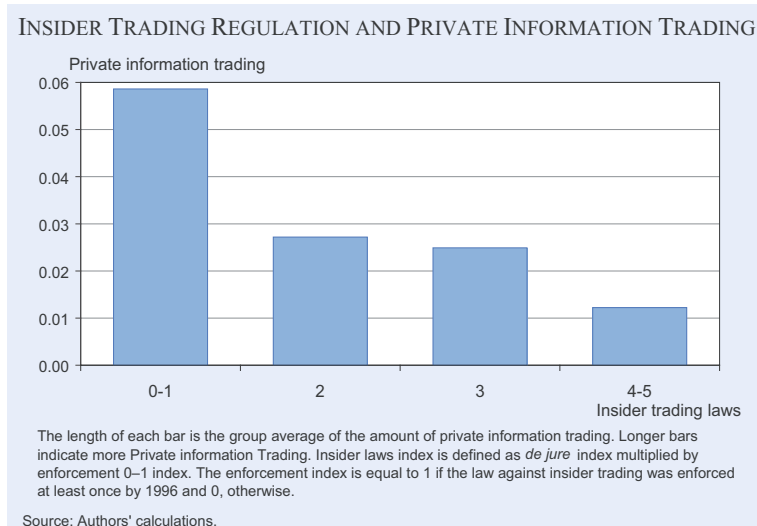
Using this measure of private information trading, we examine the effectiveness of insider trading regulation in a sample of 2,189 firms from 21 countries. Figure 2 indicates a monotonically negative relation between the strictness of laws against insider trading and the aggregate amount of private information trading.

The results of this cross-country comparison are reinforced when we compare private information trading in a country before the first enforcement of insider trading restrictions with private information trading in the same country after the first enforcement of insider trading restrictions. As in Bhattacharya and Daouk (2002), the time of the first enforcement is the year in which the country first enforced its insider trading laws by prosecuting a violator. We find that, on average, the amount of private information trading decreases significantly after the first enforcement of insider trading laws (Table 1).

Problems with poor-governance firms

Although insider trading restrictions are, on average, associated with lower private information trading, we expect to see variation in this relationship depending on the quality of firm corporate governance. We measure

Figure 2



governance quality on company level by the ownership wedge – the difference between control and cash flow rights of large shareholders. Large shareholders and managers who have high levels of control but lack sufficient cash flow rights are known to seek private benefits which are not shared with minority shareholders (Claessens et al. (2002); Faccio and Lang (2002)). Control rights can exceed cash flow rights because of pyramidal structure, cross-holdings, and dual-class shares. For example, if the controlling shareholder owns ten percent of company A's outstanding stocks, which in turn owns 30 percent of firm B's stocks, then she is considered to control ten percent of firm B, the weakest link in the chain of control rights. However, the cash flow rights of firm B owned by the controlling shareholder is only three percent ($10\% \times 30\%$).

There are several reasons why insider trading laws may be less effective in restraining insiders from trading on private information when governance problems are large, that is, when the ownership wedge is high.

First, when the ownership wedge is high, controlling shareholders are more likely to engage in insider trading to make up for their scarce cash flow rights. They are also less likely to relinquish trading profits if insider trading restrictions are imposed because the lack of sound governance provides more opportunities to mask insider trades through the use of off-

shore accounts, nominee accounts, independent manager-owned companies etc.

Second, insider trading is one of several avenues for expropriating profits from outside investors. Restricting insider trading without closing other channels of expropriation may encourage controlling shareholders and managers of companies with poor governance to seek other methods of diverting resources away from minority shareholders. Other methods include elaborate transfer pricing schemes, special dividends, perquisites consumption and outright stealing. If controlling shareholders are engaged in expropriation, they are likely to mask the resulting poor performance of the firm through, for example, earnings management. The resulting opaque environment can increase the returns to private information acquisition and trading.

We test the validity of these arguments by addressing the following empirical question -how effective are insider trading laws in reducing private information trading for firms and countries with governance problems?

Table 2 provides country summary statistics (country averages) of the ownership wedge, which is our proxy for governance problems, along with statistics for other relevant variables such as private information trading, control rights, cash flow rights, de jure

Table 2

Descriptive statistics

Country	Private information trading	Control rights	Cash flow rights	Ownership wedge	De jure index of insider trading laws	Year of first enforcement of insider trading laws
Austria	0.0379	54.454	47.457	6.997	2	No cases
Belgium	0.0416	37.621	32.335	5.286	3	1994
Finland	0.0426	32.643	28.820	3.824	3	1993
France	0.0253	46.290	45.309	0.981	4	1975
Germany	0.0268	46.976	41.202	5.774	3	1995
Hong Kong	-0.000181	33.150	28.920	4.230	3	1994
Indonesia	0.0610	34.773	25.045	9.727	2	1996
Italy	0.0699	51.991	44.177	7.814	3	1996
Japan	0.0254	11.085	7.250	3.835	2	1990
Malaysia	0.00629	33.646	28.738	4.908	3	1996
Norway	0.0781	25.434	23.226	2.208	1	1990
Philippines	0.0891	28.000	24.857	3.143	2	No cases
Portugal	0.0696	43.633	40.405	3.228	4	No cases
Singapore	0.0411	29.515	22.412	7.103	4	1978
South Korea	-0.0246	22.893	19.848	3.045	5	1988
Spain	0.0554	28.591	26.654	1.937	4	1998
Sweden	0.0603	26.047	19.006	7.041	3	1990
Switzerland	0.0348	40.028	27.639	12.389	3	1995
Taiwan	0.00429	22.705	18.672	4.033	4	1989
Thailand	0.0658	37.931	33.985	3.946	3	1993
UK	0.00119	16.893	15.654	1.239	3	1981

Source: Authors.

Table 3**Impact of insider trading laws and firm governance on private information trading and earnings opacity**

Variable	Private information trading	Earnings opacity
Ownership wedge	0.0206	0.209
Insider trading laws	-0.0117	-0.0115
Interaction of ownership wedge with insider trading laws	0.0142	0.0138
Number of firms	2,059	1,706
Note: All indicated coefficients are significant at 10% level. Every regression controls for firm cash flow rights, liquidity, market capitalization, investment opportunities, research and development expenditures, and industry fixed effects.		

Source: Authors.

insider trading laws, and years of first enforcement of the laws. There is great variation in the average amount of private information trading. It is the highest in Philippines (0.089), Norway (0.078), and Italy (0.069) and the lowest in South Korea (-0.025), Hong Kong (0.000), and the U.K (0.001).

Table 3 presents the results of regressions of private information trading on ownership wedge and strictness of insider trading laws. The positive coefficient on the ownership wedge indicates that firms with more governance problems (higher ownership wedge) experience more private information trading. This finding seems consistent with the notion that controlling shareholders of firms with higher governance problems are more likely to use sensitive private information to obtain trading profits for themselves. The negative coefficient on insider trading laws suggests that stricter insider trading laws are associated with less private information trading (as already seen in Figure II).

However, the positive and significant coefficient on the interaction of ownership wedge with insider trading regulation indicates that insider trading regulation is less effective in reducing private information trading when the wedge between ownership and control is higher, that is, when firm governance problems are worse.

The sizes of the coefficients in Table 3 also indicate that the effect of stricter insider trading laws are not only statistically but also economically significant. When insider trading laws index improves by one point (out of five), the amount of private informa-

tion trading decreases by 13% relative to the sample average. Judging from the coefficient on the interaction term of ownership wedge with insider trading laws, for firms with the highest governance (zero ownership wedge), private information trading decreases by 18% relative to the sample average. For firms with the lowest governance (60% ownership wedge) it actually increases by 2.0%. This confirms our argument that although stricter insider trading regulation reduces private information trading, the laws become less effective for companies with worse governance.

We argued above that this asymmetric relation between private information trading and insider trading restrictions arises partly because managers banned from trading are likely to make up for lost profits by expropriating the firm's resources, particularly when firm governance is poor. Managers who divert firms' resources will attempt to mask the resulting poor performance of the firm, foster information asymmetry and thus, increase the returns to private information trading. This argument is supported by the data. Table 3 also shows a regression of earnings opacity, which measures the quality of information disclosed by the firm to the public, on the ownership wedge and insider trading laws. We find that firms with high ownership wedge have more opaque earnings. Moreover, a high ownership wedge is associated with even greater opacity in countries with stricter insider trading laws. Thus, the quality of information provided to the public becomes lower when strict insider trading restrictions are imposed on firms with poorer governance.

Problems with weak investor protection

When controlling shareholders with inadequate cash flow rights can resort to alternative forms of expropriation, insider trading restrictions may lead to more private information trading and higher earnings opacity. However, in countries where investor rights are well protected, it is costlier for controlling shareholders who have been deprived of insider trading profits to resort to other means of expropriation. Therefore, one is less likely to observe earnings opacity and private information trading when insider trading restrictions and good investor protection co-exist.

In Table 4, we repeat our analyses for sub-samples of low- and high-investor protection countries. We find

Table 4**Differential impact of investor protection on private information trading and earnings opacity**

Variable	Private information trading	Earnings opacity	Private information trading	Earnings opacity
	Low-investor protection countries		High-investor protection countries	
Ownership wedge	0.0254	0.197	0.0184	-0.0881
Insider trading laws	-0.0123	-0.0110	-0.00911	-0.0270
Interaction ownership wedge with insider trading laws	0.0108	0.0146	0.0000549	-0.166
Number of firms	896	840	1,163	866
Note: Coefficients in bold font are significant at 10% level. Every regression controls for firm cash flow rights, liquidity, market capitalization, investment opportunities, research and development expenditures, and industry fixed effects.				

Source: Authors.

that in the high-investor protection sub-sample, insider trading restrictions are unambiguously associated with lower private information trading and earnings opacity. However, in countries with poor investor protection, the combination of strict insider trading restrictions and poor firm governance could lead to higher private information trading and higher earnings opacity. That is, the adverse effects of combining strict insider trading restrictions with poor firm governance are observed only in countries where minority shareholder rights are poorly protected.

What can emerging economies do to prevent insider trading?

In the past decade, most stock markets around the world have introduced rules against insider trading. In many countries, these rules have been enforced with the prosecution of violators. The objective of insider trading restrictions is purportedly to improve the integrity and liquidity of stock markets by encouraging ordinary investors to participate.

We examine the effectiveness of insider trading restrictions in reducing private information trading. Our results indicate that insider trading restrictions become less effective if firm governance standards are weak or investors are not well protected. Controlling shareholders and managers banned from insider trading may be able to make up for the loss in trading profits by covertly expropriating firm resources if the protection given to minority share-

holders is low. Thus, imposing insider trading restrictions on firms with governance problems or in countries where investors are not protected sufficiently may actually increase private information trading since the returns to information acquisition are likely to be high in the resulting opaque environment.

If the primary objective of insider trading restrictions is to encourage the uninformed public to participate in the market, then regulators, especially in emerging economies, need to be wary of the effect insider trading restrictions have on the aggregate level of private information trading.

For firms and countries with governance problems, the restrictions may not make uninformed investors better-off, unless the regulator ensures a concomitant improvement in investor protection standards. Countries that do not protect minority shareholders adequately but have strict laws against insider trading should ensure stronger investor protection standards that would make expropriation and manipulation of financial statements harder. Otherwise, the costs of introducing and enforcing insider trading restrictions may not be worthwhile.

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