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Do Insider Trading Laws Work?*

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Abstract

By calculating an estimated measure of undetected insider trading, this paper shows that profits made by informed corporate insiders prior to tender offer announcements increase after the first enforcement of insider trading laws. I analyze the effects of Insider Trading regulation on a sample of 5,099 acquisitions in 56 different countries, and estimate the profits due to insider trading from the abnormal volume in the weeks prior to the announcement, under the assumption that insiders purchase those shares at the prevailing price and hold them until the public announcement. I find that laws that prosecute insider trading fail to eliminate profits made by insiders, and make acquisitions more expensive. We conclude that, by increasing the market reaction to an acquisition, Insider Trading laws make it profitable to violate them.

Keywords: insider trading, takeovers, market regulation.

JEL classification codes: G38, G34, G15

Merger activity around the world has increased dramatically in the past decade. The market for corporate control has been running at a fever pitch, with the number of deals in 1999 up 163% over the 1990 figure of 10,051 announcements. International and cross-border transactions, which respectively accounted for 38% and 28% of the total acquisitions in 1999 continue to be fueled by the globalization of the world economy.¹ And with mergers running at this pace, many national regulators -the SEC and its counterparts abroad, are getting tougher on insider trading, since high takeover activity generally spawns bouts of insider trading. It is often claimed that regulators have an incentive to protect minority shareholders because of competition among exchanges for new investors, and the ability of corporations to raise capital in alternative markets. For example, the Securities and Exchange Commission decided in 1934 that insider trading (IT hereafter) should be prohibited. Since then most developed economies, and several emerging markets, have passed and enforced laws that prohibit undisclosed trading based on inside information. Eradicating such a practice has become one of the most important goals of market regulators.²

Yet, there is overwhelming evidence showing that, although illegal, stealth trading by corporate insiders persists. Meulbroek (1992) reports 183 cases of illegal insider trading episodes in the period 1979-1989. The median insider profit per episode was \$24,673, and the median penalty \$21,000 during the sample period. Keown and Pinkerton (1981) conclude that the stock price runups of target firms preceding takeover announcements are attributable to illegal trading on inside information. Of course, not all IT is illegal: Lakonishok and Lee (2000) document that in more than half of all companies listed on the NYSE, Amex, and Nasdaq exchanges during the 1975-1995 period there is some insider activity in a given year.³ Research is just beginning to show the extent of IT in other countries (see Pope et al. (1990) for the UK, and Eckbo and Smith (1998) for the analysis of the Norwegian market).

¹Source: Securities Data Corporation. There were 10,051 acquisitions in 1990, excluding LBO deals, spinoffs, recapitalizations, self-tender and exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest and privatizations. Out of the total number, 4,737 were international deals, and 2,666 were cross-border transactions. In 1999, there were 26,525 announcements (10,007 international, 7,370 cross-border). Worldwide mergers and acquisitions hit a record \$2.2 trillion dollars in the first nine months of 1999 (see Business Week, October 18, 1999).

²The U.S. Securities and Exchange Commission states that “*because insider trading undermines investor confidence in the fairness and integrity of the securities markets, the Commission has treated the detection and prosecution of insider trading violations as one of its enforcement priorities.*” (See www.sec.gov). The European Directive on Insider Trading also declares its purpose in the preamble: “*Whereas, by benefiting certain investors as compared with others, insider dealing is likely to undermine that confidence and may therefore prejudice the smooth operation of the market; [...] Whereas the necessary measures should therefore be taken to combat insider dealing...*”. (Council Directive 89/592 Coordinating Regulations on Insider Trading)

³See also Finnerty (1976).

If IT laws have not been able to achieve their main goal of eliminating undisclosed trades by insiders, the question that arises is what their effect has been,⁴. Initially one can formulate two different hypotheses. Since regulation makes illegal insider trading more costly –penalties, legal fees, loss of reputation–, insider trading episodes, and the profits that insiders realize, should decrease after the passing of IT laws. Alternatively, strict enforcement of the law could create monopoly profits for anyone who could find a way to circumvent the law itself. And, if as the theoretical and empirical literature⁵ show, markets become more liquid when IT laws are in place, then it is possible that, by banning trading by insiders, regulators have made it more profitable, and thus more attractive to those willing to risk prosecution.

This paper addresses this important question by analyzing the insiders' behavior prior to tender offer announcements. The power of my results comes from the international cross-section of regulatory regimes. As such, a similar study in one country would only provide weak results. I use a large sample of 5,099 acquisitions in 56 different countries, for the period January 1990 to December 1999. The sample is rich not only because of the large number of countries, but also because some of the stock exchanges have introduced and enforced IT laws during the sample period. I construct an estimator of undetected IT profits using the number of shares abnormally purchased during the last few weeks prior to a tender offer announcement, under the assumption that insiders purchase those shares at the current price and keep them until the public announcement. This provides a simple profit measure. I allow for comparisons across firms by normalizing by the total takeover proceeds.

The main finding of the paper is surprising. After the enforcement of IT laws, insiders appropriate a larger portion of the total takeover gains. The significance of this result is robust after controlling for liquidity, size, country-specific and tender offer-specific variables. . The cross-sectional analysis confirms an increase in IT profits after enforcement of IT regulation, but a negative relationship between the toughness of the law and IT profits after its enforcement. I find the U.S. to be the country where insider profits are the lowest, but also where IT regulation is toughest. The amount of profits realized by insiders is relatively higher in Western and Nordic Europe and in Canada, and lower in the US, as mentioned above, in the UK,

⁴The main assumption underlying the theoretical literature on IT regulation is that IT laws completely remove the possibility of trading by corporate insiders in regulated markets. Defendants of the IT prohibition argue that (i) by improving information disclosures, IT laws reduce agency costs and opportunistic managerial behavior (Shin, 1996), (ii) reduce information asymmetries among market participants and thus improve liquidity (Copeland and Galai, 1983, Leland, 1992), and (iii) enhance the confidence in the market and therefore increase the participation of ordinary investors in the stock exchange (Ausubel, 1990). Trading by corporate insiders with superior information, on the other hand, should be permitted because (i) it leads to more informationally efficient stock markets (Manne, 1966, Leland, 1992), and (ii) it is an effective way of compensating managers (Dye, 1984).

⁵Copeland and Galai, 1983, Leland, 1992, among the theoretical papers, and Beny, 1999, on the empirical side.

and in Australia. All else equal, countries of French or Spanish legal origin display the largest IT profits.

I rule out four alternative reasons why abnormal volume could just be an indication of outsiders' trading. First, I show that the profit measure is unrelated to the size of the toehold acquired by the bidder prior to the acquisition. A considerable proportion of the stock price runup before the public announcement of a tender offer can be attributable to open market trades by the acquiror (see Mikkelson and Ruback, 1985, and Choi, 1991). However, the effect of the toehold does not help explain the magnitude of the profit measure in the cross-sectional regressions: while the IT profit measure is positive in 1,976 acquisitions in the sample, only in 153 cases the bidder acquires shares in the target in the six months that precede the tender offer announcement. Second, I consider the effect of rumors on the pre-announcement abnormal volume. In 254 cases the deal is rumored before confirmation by the parties involved. This could drive heavy trading by outside investors. Yet, I do not find a significant relationship between the existence of rumors and the amount of profits realized prior to the public announcement. Third, abnormal volume might be due to institutional traders who are able to correctly predict takeover targets. While there is no reason why the institutional traders' behavior should change around the first enforcement of insider trading regulation, the measure of insider trading profits we propose includes the price effect of the trade. Since institutional trades usually have a larger price impact, I expect it to account for a small part of the total profits. Finally, I consider the possibility of lucky trading by outside investors that submit sizeable orders at the right time. I disregard that explanation by rolling back the estimation window for my IT profit measure: I find that, when calculated over a period of -120 to -60 days prior to the public announcement, the abnormal volume is positive only in 313 cases. In the last sixty days, it is positive in 1,607 deals.

The paper provides other pieces of interesting evidence. I find that bid prices, and consequently the market reaction to a takeover announcement, increase as IT laws become effective. I provide two alternative explanations for that result. First, because ownership concentration decreases after the passing of IT laws (Beny, 1999), takeovers become more expensive (Burkart, Gromb, and Panunzi, 1998). Second, IT laws are often accompanied by other legislative measures that aim to regulate financial markets in general and to foster acquisitions in particular. More competition in the market for corporate control drives prices up.

Finally, I document that, after the enforcement of IT regulation, the number of firms for which my estimate of insiders' profits is positive increases. Before IT regulation, I find evidence of insider trading in 32 percent of the acquisitions studied. Such percentage increases to 52 percent after the first enforcement of the law. This means that cases of undetected insider trading become more frequent and more profitable when IT is prohibited. I conclude that IT laws, by prohibiting IT and by creating profit opportunities to insiders, have made it more profitable. I highlight the importance of legislative initiatives that, while

ruling out undesirable practices by insiders, enhance the detection mechanisms, and severely increase the penalties for those who violate the law.

The next Section of the paper describes the data and its sources. In Section II I analyze the price performance of target firms around tender offer announcements. In Section III I briefly describe the differences in IT regulation across countries, and study the effect of IT laws on the takeover rate, the market reaction to the acquisition, and the bid price. In Section IV I describe my measure of IT profits and provide preliminary results. In Section V I provide cross-sectional evidence on the relationship between IT profits and regulation. Section V concludes the paper.

I Data

I collect an initial sample of takeover announcements that took place between January 1, 1990, and December 31, 1999. My primary source is the Securities Data Corporation Mergers and Acquisitions Database. The analysis is restricted to publicly listed companies, and I exclude from the initial sample LBO deals, as well as spinoffs, recapitalizations, self-tender and exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations.

There are 8,722 announcements that satisfy the above criteria. I additionally exclude second or subsequent bids⁶ (2,538 announcements), and observations for which relevant information⁷ could not be found. The final sample of takeovers comprises 5,099 announcements, corresponding to 56 different countries. Among them, 22 are developed economies, 25 are emerging markets, and 9 are developing countries. By region, I have observations from 2 countries in North America, 9 in Latin America, 6 in Eastern Europe, 15 in Western Europe, the 4 countries from Nordic Europe, 12 from South-East Asia, 1 from the Middle East, 5 from Africa, and 2 from Oceania. U.S. tender offers account for around 49 percent of the sample, UK tender offers for another 11 percent. Table 1 displays some summary statistics for the initial sample, disaggregated by country. Around the world, only 6 percent of the acquisitions are hostile. This number is fairly uniform (5.90 percent for the US, 8.18 percent for the UK). Schwert (2000), using U.S. data from 1975 to 1996, shows that 300 out of 2,346 acquisitions are classified as Hostile by SDC. Additionally, Table 1 reports the average market value of the target firm in dollars. In EU countries, except Greece and the UK, the typical target firm is larger than average. Target firms in emerging markets are usually small in size. Finally, the success rate in the U.S. is 55.86 percent, that compares to an average 40.52 percent worldwide.

⁶To take a conservative approach, I drop any bid occurring within a window of four years relative to an initial announcement.

⁷Name of the target firm and/or date of announcement.

[INSERT TABLE 1]

In order to analyze the time series behavior of the market for corporate control, I plot in Figure 1 the number of acquisitions by year. The trend is increasing in the U.S. as well as in the rest of countries. Interestingly, acquisitions of non-U.S. firms have increased dramatically since 1997. In fact, 60 percent of all non-U.S. acquisitions in my sample happened in the last three years of the sample period.

[INSERT FIGURE 1]

I also report the time series of takeover rates in Table 2. The takeover rate is calculated as in Comment and Schwert (1995), as the number of acquisitions in a given year normalized by the number of firms in the country's main exchange(s). In this case, to have a more meaningful measure, second and subsequent bids are included in the calculation. The number of firms in an exchange for a particular year is obtained from the International Federation of Stock Exchanges. The total number of firms in the U.S. includes firms listed in NYSE, Nasdaq, and Amex.

[INSERT TABLE 2]

Around 3 percent of all firms trading in U.S. exchanges suffer an acquisition attempt in 1990. This number grows to a 7.61 percent by 1999. The acquisition rates in the U.S. are larger than the average (for the overall sample, the rate increases from 2.18 percent in 1990 to 3.71 percent in 1999). It is actually the U.S., together with Canada, the country where the takeover intensity increases the most. The takeover intensity is low in the Middle East, Latin America, and Eastern Europe (respectively, 0.91, 0.95, and 1.33 percent on average, respectively).

To perform price analysis, I compile stock price information for the firms in my sample. CRSP provides daily prices, returns, and volume information for the target firms in the US. I also obtain data on the number of shares outstanding, and industry classification codes. For non-U.S. target, I gather stock price information from Datastream. To avoid exchange rate effects in the study, all stock prices and accounting variables are reported in dollars. These include dividend-adjusted daily returns, prices and volume. For firms with several classes of shares trading, I pick either the only one with data available, or the share class with control rights⁸.

⁸The share class with control rights may, as in Mexico and Sweden, be restricted to foreign investors. If all share classes have control rights, we select the first available in the Datastream list of codes.

Finally, when a domestic market index is needed, I use the value weighted market index from CRSP for U.S. observations. Datastream calculates a market data index by country⁹, that is available for most of the countries in my sample¹⁰.

II Stock Price Analysis

A Reaction to the Announcement

Abnormal returns are calculated for a window around the tender offer announcement for all the firms for which daily data is available. Market model regressions are performed in the following way:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \epsilon_{it} \quad t = -250, \dots, -150$$

where R_{it} refers to the daily stock return for target firm i in country j , and R_{mjt} is the market return in country j . The residual ϵ_{it} defines the excess return for each firm and day.

I provide evidence on the stock price reaction to a tender offer in Table 3. One main concern when dealing with international data is the accuracy of the information regarding the announcement date. I perform two classes of tests. SDC reports the announcement date of the offer, as well as the original announcement date, that is defined as the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). I perform my estimation using the original announcement date. Second, I check in Lexis-Nexis for news with any reference to the target firm prior to the original announcement date in SDC where the firm is confirmed (not rumored) as a takeover target. Although I focus on news sources in English, I am able to identify 79 non-U.S. announcements that precede the SDC reported date, and I use this date as my event date.

[INSERT TABLE 3]

The last two columns in the Table display the ratio of the announcement return to the total tender offer return, that is,

⁹Total market calculations do not include all companies in a market. Instead the most important companies by market value are chosen - the precise number of constituents varies from market to market, according to the size of the market capitalisation, and changes to reflect current market conditions.

¹⁰For those countries for which the Datastream Market Index is not available, we use: the Nairobi Stock Exchange Index for Kenya, CESI Index for Hungary, AKM Composite Index for Russia (USSR), and the Zimbabwe Stock Exchange Industrial Index for Zimbabwe.

$$\text{Announcement Effect} = \frac{\sum_{t=-1}^{+1} \epsilon_{it}}{\sum_{t=-100}^{+1} \epsilon_{it}}$$

and the total announcement effect, or Total Price Effect = $\sum_{t=-100}^{+1} \epsilon_{it}$.

The results for the U.S. are consistent with the previous literature. I find a positive and significant cumulative abnormal return (two days around the announcement date) of 12.17 percent. Jensen and Ruback (1983) report an average of 7.72 percent for successful offers and 9.76 percent for unsuccessful offers. The samples they survey include deals between 1962 and 1978. In Sanders and Zdanowicz (1992) the announcement CAR is 21.36 percent, 10.38 percent in Mikkelsen and Ruback (1985), and 23.5 percent in Huang and Walkling (1987). Regarding the total tender offer price effect, I find a significant 22.82 percent CAR from day $t = -100$ to day $t = +1$ relative to the announcement date, in line with the 31.77 percent CAR in Bradley et al. (1988).

For the UK, Franks and Harris (1989) report at 23.3 percent significant CAR in the announcement month of the tender offer, in line with the significant 16.43 percent I find for my sample of 330 UK tender offers. Table 3 provides CARs for the remaining countries as well. Excluding the U.S. and the UK, the announcement effect of the tender offer relative to the total price effect is 38 percent. In Table 4 I aggregate these results by geographical region. Consistent with Bhattacharya et al. (2000), the announcement effect of a tender offer is not significant in Latin America, although there is a significant 11.24 percent reaction in the last hundred days that precede the announcement¹¹. The Total Price Effect ranges from 11.24 in Latin America to 45.51 in Canada.

[INSERT TABLE 4]

Only in Nordic Europe does it appear that the market anticipated the corporate announcement in days $(-100, -51)$. Finally, it is worth noting that comparisons across countries are difficult due to differences in regulation and takeover characteristics. However, in Section III I analyze the price reaction to tender offers depending upon a country's insider trading laws.

¹¹Bhattacharya et al. (2000), using a data set of corporate news announcements from Mexico (mainly corporate restructurings and earnings announcements) conclude that nothing much happens to a firm's stock return on the announcement day of an event. Mexico represents an interesting market since, although laws preventing insider trading exist since 1975, they have never been enforced. Therefore, as the authors suggest, undisclosed insider trading may be responsible for the market early response to corporate news. While the result in this paper is in dramatic contrast with the classical studies in the U.S. (see Mikkelsen and Ruback, 1985), it cannot be automatically generalized to other emerging markets, and it is not presented in isolation for different corporate announcements.

III Insider Trading Laws

A Overview

Insider trading laws have existed in the U.S. since the Section 10(b) of the Securities and Exchange Act of 1934, which prohibits an insider from trading on material inside, non-public, information. Bainbridge (1999) describes the U.S. IT laws in detail, and Bhattacharya and Daouk (2000) survey the existence and enforcement of IT laws in 103 countries with stock markets at the end of 1998. They conclude that US-type regulation is the exception rather than the rule. U.S. IT laws are strict in the sense that they affect not only corporate insiders, but also what the Rule 14e-3 define as *constructive insiders*¹², as well as outsiders who receive inside information from either true insiders or constructive insiders. Punishment has also become tougher over the years, and in 1988, the maximum criminal penalty was raised to \$1 million and the maximum prison sentence increased to ten years. Finally, Section 16b of the Securities Exchange Act requires insiders to disgorge all profits from short-swing trades¹³ to the corporations. Even though strict IT Laws are in place, there is plenty of evidence that corporate insiders still profit from private information especially preceding takeover announcements.

Bhattacharya and Daouk (2000) report data showing that although IT laws do not exist in only 16 countries out of the 103 countries they survey, they have been ever enforced only in 35 countries, and in 26 of them only after 1990. In emerging markets there have been prosecutions only in 23.1 percent of the countries. Differences still persist across countries. For instance, the evidence is that Britain's tough criminal prohibitions of insider-trading are less effective than in the US, because most U.K. cases are civil actions that encourage defendants to settle without going to trial; criminal prosecutions are reserved for the big scandals¹⁴. The British Department of Trade has secured convictions in just 14 cases in 10 years since 1980. The biggest fine¹⁵ was £25,000 in 1987. The most recent sentence, in December 1996, was for 120 hours of community service¹⁶. In Japan, under the current law, only officers of the listed company or shareholders with more than 10 percent of the outstanding shares are covered. The worst penalty a court can impose under the current civil procedure is to force the offender to return trading profits to

¹²Those with a relationship with the issuer that at least imply a duty to keep the disclosed information confidential.

¹³A short-swing trade is defined as a purchase (sale) and a subsequent sale (purchase) within a six-month period.

¹⁴Another weakness of the UK system, extensive to most European regulatory codes, is that secondary insider trading is not prohibited, so that someone who deals subsequent to being 'tipped off' about an impending takeover of Company X is immune from insider trading laws. Funny enough, the insider trading laws are restricted to British territory, so a corporate insider can tip off another insider in a foreign country, who can consequently trade at a profit in his firm's shares.

¹⁵Imposed on a senior manager at Morgan Grenfell who used inside knowledge to deal in shares ahead of a takeover bid.

¹⁶Financial Times, May 16, 1997

shareholders of the listed company. This has happened only once in nearly 40 years.

Additionally, cultural differences can make insider trading a good practice: the concept of insider trading retains a somewhat ambiguous and honorable status in Japan, and it is usually associated with smart investment¹⁷. In Latin and Asian countries, insider trading scandals usually display linkages to political power: cases like the Triangle scandal in France, are common place. The scandal involved insider purchases of Triangle shares shortly before it was bought by Pechiney in 1989. The six French buyers named in the *Commision des Opérations de Bourse* report included a close and long-standing friend of the president of the Republic. The 1989 Recruit scandal in Japan involved several companies that allowed top government officials to purchase stock at below-market prices.

If IT Laws improve market liquidity (as Bhattacharya and Daouk, 2000 show), but insiders do not refrain from trading in their company's stock, the question is to what extent IT regulation has reduced the expropriation of minority shareholders by well informed insiders across different countries. Several theoretical and empirical pieces (see, among others, Kyle ,1985, Holden and Subrahmanyam, 1992, and Foster and Viswanathan, 1993) predict that insiders are better able to hide informed trades the more liquid a stock is. Therefore, the expected penalty derived from being prosecuted by the regulator decreases. The greatest risk lies instead in illiquid stocks where volumes are small and unusual trades show up very fast. Additionally, Bhattacharya and Daouk (2000) show that the enforcement of IT laws reduces the cost of equity in a country by an average of 5 percent. Therefore, IT regulation helps enhance a country's financial development and hence the allocation of capital (Wurgler, 2000), and I should expect those insiders who are able to circumvent the laws prohibiting insider trading to make higher profits after IT laws are in place.

Secondly, Bhattacharya et al. (2000) show that in a country like Mexico, without a history of IT prosecutions, the market reaction to a corporate announcement is not significant. They blame insiders for such a pattern, but from where the insiders derive profits if the stock price does not react to the corporate announcement, remains an unanswered question.

B Price Reaction and IT Laws

In this Section I analyze the stock price reaction to the tender offer announcement in relation to the existence and enforcement of IT laws. In Table 5 I replicate the analysis of Section 2, where I only consider those target firms in countries that have enforced (passed) IT laws in the period 1990-1999. There are 28 (43) countries in the sample that have enforced (passed) laws in that period. I use an indicator variable that takes value zero if the tender offer happens in a year without IT laws, and one otherwise, and I eliminate

¹⁷Los Angeles Times, Feb 24, 1988

from the sample the observations whose announcement year equals the year when IT laws are first enforced in the corresponding country. Since most countries passed IT laws in the early years of the decade, very few firms have this variable equal zero. I also replicate the same results using the date when the IT laws are first passed.

Focusing on announcement effects, I find that the cumulative abnormal return in the three days around the announcement date is not significant before the enforcement (existence) of IT laws. The announcement effect however accounts for 21.29 percent (significant at the 1 percent level) of the total stock price reaction to the tender offer. The CAR in days $t = -1$ to $t = +1$ is significant (10.26 percent and 8.89 percent) after IT laws enforcement and existence, respectively. Similarly, I find a positive CAR in the last eight days ($t = -10$ to $t = -2$) and in the two subsets of firms (6.77 percent and 5.83 percent respectively).

[INSERT TABLE 5]

The total price reaction to the takeover increases from 21.77 percent to 60.30 percent after the enforcement (38.53 percent increase, significant at the 1 percent level), and from 31.31 percent to 55.75 percent after IT laws are passed (24.44 percent increase, significant at the 1 percent level). This evidence is in line with the results in Bhattacharya et al. (2000) for Mexico alone, since Mexico is a country in which insider trading has never been prosecuted.

[INSERT FIGURE 2]

Figure 2 plots the CAR around the announcement date of the tender offer with and without IT law enforcement. On average the market responds positively to the announcement between $t = -60$ and $t = 0$, even without IT laws. This positive reaction is, however, not significant from Table 5.

In the next section I attempt to explain this pattern of returns by looking at profits realized by insiders prior to any public news an impending takeover. If the difference in returns is due to insider trading, then I expect IT profits to decrease when new regulation is in place. However, if insiders are able to still profit from illegal trading, and they are able to realize those gains, the efficacy of IT laws should be put into question.

IV Measure of IT profits

A Abnormal Volume and Return

Many studies that examine the evidence on insider trading profits in U.S. markets have used the Official Summary of Security Transactions and Holdings as the main source of data¹⁸. Others, as Muelbroek (1992), sample illegal insider trading cases from the SEC's Enforcement Division Information. While this information is readily available for the US, information on insider trading cases under investigation is hardly available elsewhere. Moreover, I do not know how many insider trading cases remain undetected, even in the US. Given that many of the countries under my study lack any IT regulation during the sample period, and in the absence or malfunctioning of the detection mechanisms, data on insider trading activities must rely on indirect measures.

The measure I use in this paper is calculated under the assumption that insiders have imperfect knowledge about a forthcoming takeover attempt. Therefore, they buy at the current stock price and sell at the prevailing price after the announcement of the tender offer. Ideally, if an insider knows that a takeover is going to succeed for sure, he could still keep the shares until the completion of the acquisition. As shown in Table 5, in a perfectly efficient market, and in the absence of bid revisions, the target price at the announcement date of the offer equals the bid price times the market probability of the bid succeeding. Additionally, assuming perfect information regarding the details of the acquisition implies that insiders can never lose money, since they are never going to purchase target shares when the current stock price is higher than the (known) future bid price, or when they know with certainty that the proposed acquisition is going to be rejected by the target shareholders.

Therefore, for each tender offer in my sample, I estimate IT profits as follows:

$$\Pi_i = \frac{\sum_{t=-T}^{-5} \frac{B_i - P_{it}}{B_i - P_{i0}} Vol_{it}^*}{N_i Q_i} \quad (1)$$

where

$$Vol_{it}^* = \begin{cases} Vol_{it} - [\overline{Vol_i} + 2\sigma_{VOL}] & \text{if } Vol_{it} > \overline{Vol_i} + 2\sigma_{VOL} \\ 0 & \text{otherwise} \end{cases}$$

I calculate $\overline{Vol_i}$, and σ_{VOL} as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from date $t = -200$ to day $t = -100$ relative to the announcement date. B_i denotes the stock price at $t = 0$ (in dollars), that I assume equals the bid price times the expected probability of

¹⁸See Seyhun (1986), and Rozeff and Zaman, (1988).

bid success, and P_{i0} is the average target stock price (in dollars) calculated over a window of forty days from $t = -100$ to $t = -60$ relative to the announcement date. N_i is the total number of shares in the target firm, and Q_i is the percentage of shares that the bidder intends to acquire in the tender offer. I calculate Π_i for two different horizons, $T = 60$ and $T = 30$. The calculation is truncated at $t = -5$ because I assume that public news regarding the acquisition may be public one week (five trading days) prior to the public announcement. I use different subperiods for the calculation of average prices and volumes, without significant change in the results.

Note that IT profits Π_i can be also expressed as:

$$\begin{aligned}\Pi_i &= \sum_{t=-T}^{-5} \frac{Vol_{it}^*}{N_i Q_i} \frac{B_i - P_{it}}{B_i - P_{i0}} \\ &= \sum_{t=-T}^{-5} ABVOL_{it} \times ABPR_{it}\end{aligned}$$

that is, the product of the abnormal turnover times the abnormal price change from the current stock price to the bid price -normalized to the total takeover gains per share. In this sense, Π_i represents the percentage of the total takeover gains (relative to the stock price sixty days prior to the takeover announcement) that are captured by informed insiders. If, instead, news about an impending takeover are publicly available prior to the official public announcement, one intuitively expects that buy orders push the stock price until it equals the expected bid price, thus canceling any profit from anticipated trading. Sanders and Zdanowicz (1992) argue that, since volume data are nonnormal, a better benchmark to calculate abnormal volume should be $\log(1 + Vol_{it})$. My results are robust to changes in the benchmark.

Tables 6A and 6B report the values of Π_i by nationality of the target firm, and by geographical region. I also report the corresponding average abnormal turnover, calculated as $\frac{1}{N_j} \sum_{i=1}^{N_j} \sum_{t=-T}^{-5} \frac{Vol_{it}^*}{N_i Q_i}$, where N_j is the number of acquisitions in country (region) j . The table also shows the percentage of deals for which the abnormal volume (and possible the IT profit measure) is positive. In the US, IT profits are positive in 35.10 percent of the cases. Although Lakonishok and Lee (2000) find evidence of insider trading in half of their sample, Cao et al. (2000), and Arnold et al. (2000), confirming the theoretical predictions of Easley et al. (1998), document that informed trading prior to takeovers has migrated from stocks to options. In particular, Arnold et al. (2000) show that the average return on call options of takeover targets is fourteen times that of the return on stocks. My results show that on average 1.284 percent of the total takeover gains in the U.S. are captured by insiders who purchase shares in the last 30 days preceding the public announcement (only 0.0176 percent when they trade in the last 60 days). Around 0.75 percent of

the shares purchased in the acquisition change hands in the last fifty five days prior to the announcement (0.358 percent in the last twenty five days).

[INSERT TABLE 6A]

[INSERT TABLE 6B]

In the U.K. the IT profits are negative. Note that IT profits can be negative if the insider purchase shares at a price higher than the bid price, or if, after purchasing shares at a price lower than the expected bid price, the offer is rejected by incumbent shareholders and the stock price increase upon the bid announcement is very low. Profits in the U.K. are also the lowest amongst those countries with significant results at the 10 percent level. IT profits are also low in the U.S. (0.0176 percent), France (0.321 percent) and Australia (0.544 percent). The largest IT profits occur in Norway (281.837 percent), Denmark (1.938 percent), Canada (1.874 percent), and Sweden (1.451 percent). The case of Norway deserves attention because it implies that all the takeover gains are captured by insiders (a value of Π_i greater than 100 percent can occur shares change hands more than once in the sample period). Eckbo and Smith (1998) study the performance of insider traders on the Oslo Stock Exchange, and find that in their sample, the average security has 96 insiders trading a total of 80 times in the period January 1985-December 1992. Although their paper does not focus on takeovers, they conclude, using conditional estimates, that Norwegian insiders do not earn significant profits. I find extremely high profits for insiders, even though IT laws exist in Norway since 1985, but have not been enforced until 1990. However, in the next Section I show that Norwegian IT laws are among the least strict in the world (scoring 1 in the index of toughness of IT regulation from Beny, 1999, that ranges from 1 to 5)¹⁹.

In Table 6B I show profits by geographical region. Driven by the results in Norway, Nordic countries display the highest profit ratio. In Asia insiders earn negative profits (-8.69 percent, significant at the 5 percent level, in the last fifty five days prior to the announcement). Although I find that in 57.14 percent of the Latin American targets, insiders realize positive profits (last fifty five days), the 0.070 percent profit ratio is not significant. Lack of degrees of freedom may explain the inconsistency of this result with those in Bhattacharya et al. (2000) for Mexico. In Western European countries, where IT laws are enforced mainly during the sample period, insiders' profits account for 3.26 percent of the total takeover proceeds.

¹⁹There is a potential reason for such a strange result in Norway. Out of the 104 acquisitions of Norwegian targets in our sample, in 31 of them the bidder owns a toehold prior to the public announcement. This is a large percentage compared to the 15.1 percent of U.S. bidders who acquire a toehold (see Bris, 2000). Moreover, I find that in nine acquisitions there are shares acquired in the last sixty days prior to the public announcement. The percentage of shares acquired in those nine targets is 20.37 on average. In Norway, toehold acquisitions larger than 10 percent of a company's stock must be disclosed.

[INSERT TABLE 7]

Are IT profits driven by price or by volume? The results in Tables 6A and 6B show that larger values for Π_i are consistently associated with large and significant abnormal turnover. Therefore insiders earn more because they trade more. For instance, IT profits (last fifty five days) in Canada are 1.864 percent of the total takeover proceeds, and the abnormal turnover is 1.335 percent. The same percentages in South Africa are 1.00 and 1.61. Whether larger profits are also due to higher bid prices will be analyzed in the next Section.

In Table 7 I only consider those targets in countries where IT laws have been enforced between January 1980 and December 1999. Focusing on the results for the last twenty five days prior to the announcements, I find evidence that average IT profits (per firm) increase 6.5 percent for the overall sample. The largest increase happens in Australia (18.5 percent increase, significant at the 1 percent level), followed by Nordic Europe (13.9 percent, significant at the 1 percent level) and Western Europe (10.0 percent, significant at the 1 percent level). Only in Asia and Eastern Europe do IT laws help reduce the amount of profits realized by insiders. After IT laws enforcement, insiders capture 12.623 percent of the total takeover gains, compared to 2.30 percent average gain that I obtain for the overall sample of 4,675 takeover announcements (Table 6A). Similar results are obtained for the last fifty five days before announcement. Again, IT profits increase because insiders trade more: the abnormal volume increases almost 7 percent after the enforcement of IT laws in the last twenty five days, and similarly in the last fifty five days. In Northern Europe the abnormal volume increases from a non-significant 0.03 percent to 149.62 percent (significant at the 1 percent level).

In terms of number of episodes of IT, we find evidence of positive abnormal volume in 19.61 percent (32.08 percent) of the observations before the enforcement of IT Laws, and 40.83 percent (52.03 percent) afterwards, in the last twenty five (fifty five) days that precede the public announcement. This evidence implies that IT is more frequent, and insiders therefore capture a larger portion of the takeover gains, after the enforcement of IT regulation.

While this evidence might not be conclusive for some readers, I analyze in the next section the cross-sectional relationship between IT profits and IT regulation, after controlling for firm-specific and country-specific variables. Before, I analyze bid prices before and after the passing and enforcement of IT laws, since higher bid prices may explain why insider traders benefit from IT laws.

B Robustness Analysis

In this section, I study whether the measure of IT profits defined in (1) actually measures legal, informed trading by outsiders such as the bidder, institutions, and individual investors driven by takeover rumors. Additionally, I check the reliability of the IT profit measure by rolling the estimation window back to days $t=-120$ to $t=-60$ relative to the tender offer announcement.

Insider trading prosecution cases often rely on circumstantial evidence (Spiegel and Subrahmanyam, 1995) based on alerts triggered by unusual price and volume movements. The estimate Π_i is a noisy estimate of those unusual movements. It is hard to argue that trading that results in significant volume is due to legal insider trading. In the U.S. for instance, short-swing profits must be disgorged to the firm. Therefore we expect informed insiders to either refrain from publicly trade on their own company's stock when their company is known to be a takeover target, or to engage in illegal insider trading. Nevertheless, the profit calculation may include other evidence of legal trading that put the previous results into question.

First, bidders usually acquire small stakes in the firms they target (toehold) preceding takeover announcement. An abnormal increase in trading volume could be an indication of an open market purchase by the bidder. Although the evidence for the U.S. and the U.K. shows that very few acquirors do purchase toeholds²⁰, the cross-sectional analysis implemented in Section V considers the relationship between toeholds and Π_i . In any case, while the IT profit measure is positive in 1,976 acquisitions in the sample, only in 153 cases the bidder acquires shares in the target in the six months that precede the tender offer announcement. The average toehold in our sample is 2.77 percent, and the percentage acquired by the bidder in the last six months before the tender offer is 0.51 percent²¹

Second, if institutional investors are able to correctly predict takeover targets, they can benefit from their privileged knowledge by trading on the target's stock prior to any public announcement. However, the price impact of an institutional trade, even when it is broken up into several trades, is sizeable (see Chan and Lakonishok, 1995), and therefore we expect Π_i to be low in this particular case.

Third, rumors or information leakages preceding a takeover battle may induce heavy trading. As with toeholds, the cross-sectional analysis controls for that possibility. I find evidence of takeover rumors in only 254 cases. Finally, abnormal volume may be driven by lucky investors who buy the target's stock at the right time. I analyze this possibility by estimating the measure of profits in a window long before the

²⁰See Jarrell and Poulsen (1989), Betton and Eckbo (2000), Bradley, Desai and Kim (1988), Jennings and Mazzeo (1993), and Bris (2000).

²¹If only the acquirors with positive toeholds are considered (563 cases), the average toehold is 27.18 percent, while the percentage acquired in the last six months is 15.71 on average for the 153 acquirors that do so.

tender offer announcement (from -120 to -60 days relative to the announcement date). The results from this estimation can be found in Tables 8A and 8B.

[INSERT TABLE 8A]

[INSERT TABLE 8B]

Table 8A calculates the profit measure by geographical region. While cases of abnormal volume represent 1607 when calculated over the days that immediately precede the public announcement (Table 6B), I find that in only 313 cases out of 4,651, Π_i is positive in dates $t=-120$ to $t=-60$. In the U.S., for instance, abnormal volume in the last sixty days accounts for 0.75 percent of the total number of shares acquired. This number increases to 1.90 percent from days $t=-120$ to $t=-60$. However, the cases of positive abnormal volume are 19.14 percent in the first subperiod, and 41.04 percent in the second one.

Therefore, my calculation of insider trading profits includes trades by outsiders (either informed or not), that makes the ratio an imperfect indication of illegal insider trading. However, I show in Table 8B that the distortion induced by outside informed trades does not affect the main result. In Table 8B I again report abnormal volume calculated over a prior window of either sixty or thirty days, and I differentiate between acquisitions with and without IT Laws Enforcement. There are two main findings from this table. First, cases of positive abnormal volume in days $t=-120$ to $t=-60$ increase slightly from 4.41 percent to 7.13 percent). In Table 7, the percentage increases from 32.08 to 52.03 after the enforcement of IT Laws. Second, the percentage of shares abnormally purchases over a period of sixty days ending at day $t=-60$ significantly decreases a 0.84 percent upon the first enforcement of IT regulation. Table 7 shows indeed that, when calculated over the last sixty days preceding the acquisition, this percentage increases 7.16 percent.

Finally, regarding the four explanations above, there are neither theoretical nor empirical foundations for a change in the behavior of acquirors regarding toehold purchases, institutional traders, and trend-chasing investors depending on the existence and/or enforcement of insider trading regulations²². Therefore, if the ratio in (1) only measures trading by informed outsiders, it should not vary before and after IT regulation. However, Table 7 shows that it does change.

²²There is evidence, though, that takeover regulations do affect the toehold acquisition strategies of bidders prior to tender offer announcements (see Bris, 2000).

C Bid price and Market Reaction to the Acquisition Announcement

In the Section IV.A I show that, because of an increase in trading by informed insiders, IT profits after the enforcement of IT laws become larger. In this section I study the changes in the abnormal price change ($ABPR_{it}$, the second component of the measure of IT profits). That is, I analyze whether one share of a target firm's stock purchased prior to being acquired yields larger profits when IT laws are in place. This is equivalent to analyzing how bid prices change with IT regulation²³.

I gather data on bid prices (in dollars) for the firms in my sample. I am able to find reliable data for only 1,619 firms (1,121 are U.S. targets). In case of a stock offer, I calculate the cash value of the offered shares with the exchange ratio and the market prices of the target and the bidder. In Table 9 I report the average premium, calculated as the percentage increase of the bid price (in dollars) relative to the stock price (in dollars) sixty days prior to the tender offer announcement. The average premium is 90.34 percent for U.S. targets, and only 56.86 percent for non U.S. targets. Premia are as low as 28.49 percent in Italy, and as high as 168 percent in Greece. In some countries (Spain, South Korea), takeover premia are on average negative. I also report the ratio of the stock price at the time of the tender offer announcement to the bid premium.

[INSERT TABLE 9]

Table 10 presents results on bid prices (in dollars) before and after IT laws, and for countries that have changed the legislation in the period 1980-1990. There are 218 observations from those countries. For the total sample, the increase in the bid premium is significant at the 1 percent level, and equal to 6.83 percent. The increase is especially dramatic for Nordic Europe, where bid prices increase significantly a 17.71 percent. Table 10 also shows the ratio of the bid price to the stock price at the announcement, calculated as in Table 7. The increase in this ratio is not significant. I can conclude that, upon the enforcement of IT regulations, price reaction to the announcement of an acquisition increases, and that such an increase can be partially explained by a higher bid price²⁴.

[INSERT TABLE 10]

²³The abnormal price change is larger the higher the bid price (assuming a positive stock price runup prior to the acquisition).

²⁴When using the IT laws existence as discriminating variable, we could not find many observations in the Before IT Laws existence category. That is why we do not report these results.

Two explanations are consistent with that finding. IT laws are usually accompanied by other measures of financial development. For instance, Italy passed legislation outlawing insider trading in 1991, and as part of a more general overhaul of Italian securities markets²⁵. The IT law variables could proxy for a broader set of regulatory changes that made tender offers more expensive. Alternatively, Beny (1999) shows empirically that ownership concentration is lower in countries with IT regulation, perhaps since minority shareholders protection increases. Demsetz and Lehn (1985) argue that systematic regulation affects the options available to owners, and they document empirically that regulated industries in the U.S. display lower ownership concentration. In the context of takeovers, less ownership concentration increases the benefits from free riding and makes acquisitions more expensive.

Bhattacharya et al. (2000) argue that trading by insiders that are not prosecuted in Mexico accounts for the insignificance of the abnormal return at the announcement date, because stock prices incorporate the effect of the corporate announcement early. The results in Table 10 suggest that the findings in Bhattacharya et al. (2000) can be explained, in the case of acquisitions, by low bid prices in the absence of IT regulation, and by a normal market reaction to such bid prices. Alternatively, it is possible that the market underreacts to an acquisition announcement, either because of market inefficiency or because the target shareholders attach a very low probability of success to the impending acquisition. To test for the underreaction hypothesis, I calculate the ratio of the stock price at announcement divided by the bid price (both in dollars). The estimated ratio reflects the market reaction to the announcement as well as the market belief regarding the probability of a tender offer success. In Table 5 I test whether this ratio is significantly different from one. Focusing on the countries for which both the premium and the ratio of stock price to bid price are both significant, I fail to reject the null at the 1 percent level only for the US, the UK, Australia, and the Netherlands, and at the 10 percent level for Canada. Arguably those countries are the ones for which the underreaction hypothesis is most unlikely, since, except for the US, the success rate in the UK, Australia, the Netherlands, and Canada is, from Table 1, lower than the average (21.62, 23.55, 20.83, and 27.44 percent respectively). Results in Tables 7 and 8 are consistent with Walkling and Jindra (2000), who show that in the U.S., the average speculation spread (difference between the bid price and the market price one day after the initial announcement) is 1.86 percent.²⁶ Therefore, I conclude that there is little evidence of underreaction, and I find that stock prices are lower at announcement because

²⁵New law on takeovers, new rules on derivatives trading, and the introduction of computerized trading on the ten Italian stock exchanges. See Financial Regulation Report, July 1, 1991.

²⁶Their sample includes only cash tender offers exceeding \$10 million in value, where the bidder seeks to own 100 percent of the target firm. Our measure of speculation spread calculated over the stock price the day of the tender offer announcement is 13 percent, but our sample includes acquisitions of more than 50 percent of a target's shares.

bid prices are also lower.

D Additional Evidence: Takeover Intensity

In this section I examine whether the number of acquisitions in a country is affected by IT laws. I measure the intensity of the market for corporate control using the number of acquisitions in one year normalized by the number of firms in the corresponding exchange, as in Section I. Table 11 shows the average acquisition rate per year and country, where the percentage is calculated as the number of acquisitions in one year divided by the total number of firms in the country's main exchange in a given year. The last variable is obtained from the International Federation of Stock Exchanges. For the US, the total number of firms include those firms listed in NYSE, Amex, and NASDAQ. The number of acquisitions in one year is taken irrespective of whether a bid is a first or subsequent acquisition.

[INSERT TABLE 11]

Comment and Schwert (1995) estimate the same rate for the U.S. in each month from January 1975 to December 1991. They document takeover rates below 0.5 percent per month in 1990 and 1991. The average monthly rate in my sample is 0.4 percent. I am interested in how IT laws affect the number of acquisitions in one country. To that end, I estimate a regression of the takeover intensity, on a set of explanatory variables. Each observation in the regression is a particular country in a single year for which data are available. I have 220 country-year observations. The explanatory variables include a dummy variable that takes value one when IT laws exist. I additionally employ a dummy variable that takes value one when IT laws have been enforced in a particular year.

Several recent papers (La Porta et al., 1997, 1998; Levine, 1997; Demirguc-Kunt and Maksimovic, 1998) have documented the relationship between financial and institutional development, and the importance of legal and institutional variables at explaining corporate behavior. I control for those variables in the regression, using the measures of shareholder protection and financial development in La Porta et al. (1998). These authors report only averages in the Appendix, while I employ the complete time series of data that they use in their paper²⁷. I also control for the logarithm of the GDP per capita and dummy variables corresponding to the legal mother country. Results are reported in Table 7. I estimate the regression with and without time- and country-fixed effects.

[INSERT TABLE 12]

²⁷We are grateful to Florencio López de Silanes for providing me with these data.

Three main results from Table 12 deserve attention. First I show that countries that have Germany as its legal mother²⁸ as defined in La Porta et al. (1998) have also fewer companies that are taken over every year. The German corporate governance system is well known for relying on direct control of corporations and cross-ownership rather than on market forces. Secondly, I find that in more efficient legal systems there are fewer takeovers. One possible reason is that the better shareholder protection makes takeovers more expensive and hence less frequent. This explanation is consistent with the results in Section II.

Regarding the effect of IT Laws, there is some evidence that the intensity of the market for corporate control increases upon the first enforcement of IT laws. When interpreted economically, however, the results in Table 7 show that IT regulation has an almost negligible effect on the number of acquisitions: upon the first enforcement of IT laws in a particular country, we expect that, for every 10,000 firms, the number of firms that suffer a takeover attempt increases approximately by one. Additionally, when time- and country-fixed effects are used in the estimation, the coefficients for the IT Laws dummies become insignificant.

V Cross-Sectional Evidence

If IT laws help increase the liquidity in a market, and if, as Spiegel and Subrahmanyam (1995) suggest, IT regulation cannot be effective in preventing strategic trading by informed insiders, I should observe, everything else equal, more frequent and profitable insider trades in a country after the passing (or possibly the enforcement) of IT laws. In this case, increased trading volume could solely explain the corresponding increase in IT profits.

IT regulation, on the other hand, increases the potential profits to insiders by (i) making acquisitions more expensive, and (ii) by increasing the market reaction to the public announcement (see Section II, and Bhattacharya et al., 2000). If the effect of IT regulation on insiders' behavior is not dictated by increases in liquidity that help them hide their profitable trades, I should observe, after controlling for the liquidity of the stock, a positive relationship between IT laws existence (enforcement) and IT profits.

I formulate a regression model for the determination of insiders' profits that takes into account firm-specific factors, such as the liquidity of the stock, the size of the target firm, the attitude of the bidder and the price effect of the announcement, and country characteristics. The firm specific variables are:

-Target firm average volume. I measure the target firm average volume as the average turnover (in annual terms) calculated over a period of hundred days from $t = -200$ days relative to the announcement

²⁸Those are Germany, Japan, Austria, South Korea, Switzerland, and Taiwan.

day of the tender offer. This is a proxy for the liquidity of the stock.

- Firm size, measured by the dollar value of the target firm's total assets the year prior to the acquisition.

- Hostility of the acquisition. A dummy variable that takes the value one if the acquisition is hostile is introduced, since I expect larger profits in hostile deals, where information is less available prior to the public announcement.

- Total price effect of the announcement, and the ratio of the announcement CAR to the total price (as calculated in Section II).

- Rumors. I construct a dummy variable that takes the value one if the transaction originally began as a rumor, and was later confirmed by both parties. If my measure of IT profits is just the reflection of trading following takeover rumors, then I expect a positive relationship between the two variables. The value of the rumors variable is one in 254 cases.

- Size of the Bidder's toehold. As argued in the previous section, Π_i may just be a measure of the bidders' profits from purchasing a stake in the target firm prior to the announcement of the acquisition. In that case we expect a positive effect of the toehold on the measure of IT profits. There are 563 acquisitions out of 4,667 included in the sample where the bidder owns a fraction of the target's shares at the time of the tender offer announcement. However, only 153 of those acquired the toehold in the last six months that precede the announcement. I measure the toehold as the percentage ownership in the target at announcement.

- Finally, a US-dummy is introduced because the U.S. displays a completely different history of IT prosecution and enforcement.

Regarding the country-specific variables in the estimation, I control for the quality of the legal system, and measures of shareholder protection in La Porta et al. (1998a). Additionally, La Porta et al. (1998a) conclude that French- and Spanish-civil law countries have the weakest legal protections of investors. Therefore, I control for the legal origin of the country. Finally, I include some of the determinants of the quality of governments from La Porta et al. (1998b) as proxies for the moral standards of the country. In particular, I introduce in my estimation the geographical situation of the country (measured by its absolute latitude), and the distribution of the population by religion (percentage of Protestants, Catholics, and Muslims).

I test for the relationship between IT regulation and IT profits with the introduction of three variables in the regression. First, I use two dummies for IT laws existence and enforcement. An insignificant coefficient for both variables means that the reason why IT profits increase after IT laws passing and enforcement is an increase in trading volume combined with ineffective IT detection technologies, that induce corporate

insiders to violate the law. A significant and positive coefficient implies that IT laws increase the market reaction to corporate new information, and hence the potential profits from illegal insider trading. This would support the idea that the more strictly a law is enforced, the more profitable it becomes to violate it. Second, I regress insider trading profits on the index of toughness of insider trading laws constructed by Beny (1999). She constructs an index that is the sum of five indicators. The first indicator takes value one if tippees are legally considered to be secondary insiders. Similarly, the second indicator equals one if an insider can be held liable not only for trading but also for tipping third parties. The third component equals one if monetary penalties are proportional to insiders' trading profits. The fourth component asks whether the law grants investors a private right of action, and the fifth indicator equals one if violation of IT laws is a criminal offense, zero otherwise. The index equals five for the US, Ireland, and South Korea, and equals one for Mexico Norway, and Russia. When the quality index is used in the estimation, I restrict the sample only to those countries with existing IT laws.

[INSERT TABLE 13]

Results from the estimation are displayed in Table 13. The first model includes all the explanatory variables except for the quality index. First I find that IT profits increase with the target firm trading volume. This result is consistent with the theoretical literature that predicts higher profits to insiders in more liquid stocks (Kyle, 1985, Easley, O'Hara and Srinivas, 1998, Leland, 1992, Copeland and Galai, 1983). The total price effect of the announcement is negatively related to IT profits. The negative sign contradicts Bhattacharya et al. (2000), who blame insiders for the market underreaction to corporate events in Mexico.

The legal variables in La Porta et. al (1992) display the expected signs. I find that IT profits are higher in: (i) more corrupt countries, (ii) countries with less efficient judicial systems, (iii) countries where the enforceability of contracts is harder. I additionally find IT profits to be higher in countries whose legal mother is France or Spain, and lower in the US.

Confirming my previous results, I do find that IT profits increase upon the first enforcement of IT regulation. The estimated coefficient for this variable is significant at the one percent level, and for any specification that I tried. When I introduce the IT laws quality index, I find that, although the tougher the IT regulation, the lower the insiders' profits, still the relationship between the enforcement of the law and the amount of insiders' profits is positive. Models III to VI display different specifications of the initial model. In Models III, IV, and V, I implement the estimation with time-fixed effects, without a significant change in the coefficients. Interestingly, when the IT law measures are not used in the estimation, the

measure of stock liquidity fails to explain IT profits. However, when the IT variables are included, but the trading volume is excluded, the IT laws enforcement dummy remains significant. This means that IT laws create more profitable opportunities for insiders, not driven solely by an increased stock liquidity.

In Model VI I estimate a censored regression to account for the possibility of a non-linear relationship between IT laws and profits. In 55 percent of the observations in my sample, the IT profits ratio is zero. Therefore, I estimate a two-step regression, the first step being a probit model with all the observations in the sample. In a second step, I estimate a time-fixed effects model with the subsample of firms for which Π_i is positive, where the estimated hazard rate from the probit model is used as a regressor (see Heckman, 1979). While there is no change in the estimates, I find the hazard rate significant at the one percent level, confirming the non-linearity of the model.

Regarding the effect of rumors and the size of the toehold, the two variables are not significant in all of the specifications. Only in the censored model the rumors dummy is significant at the 5 percent level, with a positive sign. However, the variable rumors is not significant in the selection equation (not reported here) used to estimate the censored regression. Therefore, the measure of IT profits is positive even in the absence of takeover rumors. Moreover, even after controlling for the effect of rumors, the IT Laws Enforcement dummy displays a positive and significant coefficient.

VI Conclusion

Insider-trading regulators face a fundamental dilemma: by prohibiting it, they make it more profitable. This paper shows that, as the regulations on insider dealing are enforced, the potential profits from insider trading rise. By gathering information on IT in 56 countries in the world and by analyzing a firm's stock reaction prior to a tender offer announcement on a sample of 5,099 acquisitions, I find that the profits to insiders, calculated over the fifty five days that precede a public announcement, increase after IT laws are enforced. I nevertheless report evidence showing that the toughness of the law matters: IT laws create profitable opportunities to insiders first because they increase the liquidity of the market, and second because uninformed investors participate more if they infer that insiders are not going to take advantage of them. Therefore the effect of IT laws on insider behavior depends on the toughness of the penalty they face if ever detected.

One contribution of the paper is that, instead of examining the relationship between detected IT profits and regulation, I estimate an indirect measure of insiders' profits that is based on unusual price and volume movements. This approach circumvents the difficulties of drawing any empirical conclusion from the sole

use of detected insider trading, and allows us to analyze the behavior of insiders with private information on corporate events in the absence of IT laws, and thus of any detection technology in place.

Additionally, I find two major effects of IT regulation on the market for corporate control. First, there is evidence that the market response to the announcement of a takeover increases with IT laws. The rationale for this result is that, by increasing the liquidity of the stock, IT laws facilitate information being impounded into stock prices. Secondly, I find that acquisitions become more expensive after the passing and enforcement of IT laws. Since, as shown in Beny (1999), IT laws reduce ownership concentration, the cost of acquiring a majority of shares in a given company increases.

The paper draws a major implication for future research. IT regulation, if not accompanied by some other institutional response, fails to eliminate the advantages from inside information. The only way of reducing the potential benefits from breaking the law is to improve a firm's disclosure requirements, increase penalties, and improve the detection technology. And, "*(...) even if detection were certain, one can imagine a situation where the monopoly profits were so high - in millions of pounds - that many would opt to break the law, grab the money, have plastic surgery and disappear.*"²⁹ . The interaction of these three mechanisms is what may (potentially) make IT laws work.

²⁹Financial Times, February 26, 1987.

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Country	Number of Acquisitions	Market Value (\$mil)	Hostile	Successful	%Hostile	%Successful
Argentina	21	2198.50	0	10	0.00%	47.62%
Australia	344	203.36	31	81	9.01%	23.55%
Austria	19	239.86	1	8	5.26%	42.11%
Belgium	34	971.63	3	12	8.82%	35.29%
Bermuda	11	582.24	1	3	9.09%	27.27%
Brazil	30	34.29	0	9	0.00%	30.00%
Canada	718	182.65	58	197	8.08%	27.44%
Chile	13	209.13	0	6	0.00%	46.15%
China	9	175.56	1	4	11.11%	44.44%
Colombia	11	61.08	0	1	0.00%	9.09%
Cyprus	2	31.68	0	1	0.00%	50.00%
Czechoslovakia	5	137.42	0	6	0.00%	120.00%
Denmark	50	300.44	2	10	4.00%	20.00%
Ecuador	2	38.17	0	0	0.00%	0.00%
Finland	37	1194.54	3	13	8.11%	35.14%
France	262	1461.97	12	102	4.58%	38.93%
Germany	202	2126.42	7	52	3.47%	25.74%
Ghana	1	517.89	1	0	100.00%	0.00%
Greece	25	460.88	0	10	0.00%	40.00%
Hong Kong	154	218.63	6	29	3.90%	18.83%
Hungary	8	70.27	0	2	0.00%	25.00%
India	82	317.44	4	14	4.88%	17.07%
Indonesia	30	894.03	0	4	0.00%	13.33%
Ireland	35	114.36	5	6	14.29%	17.14%
Israel	37	97.90	1	15	2.70%	40.54%
Italy	71	3537.16	0	18	0.00%	25.35%
Japan	165	1404.30	6	62	3.64%	37.58%
Kenya	2	2.89	0	0	0.00%	0.00%
Latvia	1	0.00	0	1	0.00%	100.00%
Luxembourg	6	4707.38	1	1	16.67%	16.67%
Malaysia	124	256.67	6	25	4.84%	20.16%
Mexico	12	255.64	0	1	0.00%	8.33%
Netherlands	72	1108.72	5	15	6.94%	20.83%
New Zealand	42	141.70	3	14	7.14%	33.33%
Norway	104	377.62	5	15	4.81%	14.42%
Peru	12	242.45	1	3	8.33%	25.00%
Philippines	43	41.94	2	12	4.65%	27.91%
Poland	20	67.75	0	8	0.00%	40.00%
Portugal	26	409.50	3	7	11.54%	26.92%
Romania	1	307.75	0	1	0.00%	100.00%
Russia	5	290.00	0	2	0.00%	40.00%
Singapore	72	230.14	2	29	2.78%	40.28%
South Africa	149	412.60	5	39	3.36%	26.17%
South Korea	59	74.43	0	11	0.00%	18.64%
Spain	69	1369.65	1	8	1.45%	11.59%
Sri Lanka	8	21.92	1	1	12.50%	12.50%
Sweden	134	621.85	9	25	6.72%	18.66%
Switzerland	55	510.41	1	13	1.82%	23.64%
Taiwan	4	514.13	0	0	0.00%	0.00%
Thailand	67	89.75	5	22	7.46%	32.84%
Trinidad	1	60.09	0	0	0.00%	0.00%
Turkey	15	70.80	2	5	13.33%	33.33%
United Kingdom	953	915.80	78	206	8.18%	21.62%
United States	4286	1293.64	253	2394	5.90%	55.86%
Zambia	1	100.62	0	1	0.00%	100.00%
Zimbabwe	1	1.69	0	0	0.00%	0.00%
Total	8722	995.33	525	3534	6.02%	40.52%

Table 1. Description of the Sample

Countries in the Sample, Number of Acquisitions per country, Average Market Value, Number of Hostile Acquisitions, and Number of Successful Acquisitions

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database. Only public companies are considered, and we exclude LBO deals, spinoffs, recapitalizations, self-tender and exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations. Second and subsequent bids that occur within a window of four years relative to an initial announcement are excluded. A bid is considered Hostile when the board officially rejects the offer but the acquiror persists with the takeover, or if the offer is a surprise to the target's board and has not yet given a recommendation. A deal is successful when it has been either totally or partially completed.

Region	Average	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Canada	5.41%	4.19%	5.01%	3.49%	3.44%	4.00%	5.33%	4.84%	6.27%	9.56%	7.97%
East Asia	1.90%	1.86%	1.31%	1.38%	1.24%	1.33%	1.85%	1.87%	1.77%	2.81%	3.04%
Eastern Europe	0.95%	na	0.92%	na	na	0.79%	na	0.34%	0.57%	1.23%	1.86%
Latin America	1.33%	0.56%	na	0.59%	0.17%	1.27%	1.36%	1.36%	0.86%	1.48%	2.38%
Middle East	0.91%	1.39%	1.05%	0.27%	na	na	0.15%	0.46%	0.76%	1.36%	1.84%
Nordic Europe	4.96%	4.35%	5.67%	3.56%	5.88%	5.74%	5.35%	3.12%	5.28%	3.35%	7.28%
Oceania	2.89%	2.55%	3.58%	1.40%	1.54%	1.69%	2.97%	3.03%	3.69%	4.42%	4.04%
South Africa	2.28%	0.26%	0.96%	1.19%	0.95%	3.37%	1.57%	2.88%	3.74%	6.58%	1.35%
United Kingdom	3.84%	4.26%	3.93%	2.21%	2.70%	2.44%	3.00%	1.94%	4.06%	5.57%	8.31%
United States	5.32%	3.06%	3.34%	3.12%	3.96%	5.35%	5.83%	6.09%	7.20%	7.67%	7.61%
Western Europe	2.06%	1.72%	1.98%	2.21%	1.71%	1.97%	1.89%	2.03%	1.43%	2.27%	3.26%
TOTAL SAMPLE	2.55%	2.18%	2.48%	2.06%	2.22%	2.41%	2.47%	2.23%	2.24%	3.02%	3.71%

Table 2. Takeover Rate

Takeover Rate by year of announcement and geographical region

The average Acquisition Rate is calculated as the total number of acquisitions in a country per year (including second and subsequent bids) normalized by the total number of firms in the country's main exchange as of December of the corresponding year. The number of firms in the main exchange is obtained from the International Federation of Stock Exchanges' web page, at www.fibv.com/stats/ta11.xls. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars.

COUNTRY	N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
Argentina	11	0.06%	1.85%	4.79%	2.33%	55.90%	9.04%
Australia	112	0.03%	4.24%	6.27%	8.43% ***	-27.30% ***	18.97% ***
Austria	10	-0.14%	-7.90%	-1.03%	2.49%	1.58%	-6.58%
Belgium	14	0.04%	0.94%	-4.15%	-0.09%	-40.81%	-3.26%
Brazil	11	0.36%	12.24%	-2.34%	-2.68%	-50.47%	7.58%
Canada	375	-0.06%	9.34%	20.92% ***	15.57% ***	-636.87% ***	45.80% ***
Chile	6	0.09%	5.72%	18.84%	3.90%	6.87%	28.54% **
China	5	0.18%	25.43%	9.58% *	-1.28%	7.11%	33.91%
Colombia	2	0.00%	4.90%	-11.95%	-0.56%	5.13%	-7.61%
Cyprus	1	-0.02%	23.91%	28.99%	10.36%	16.38%	63.24%
Denmark	20	0.05%	1.96%	1.27%	13.40% **	52.83% ***	16.68% ***
Finland	14	0.05%	-0.99%	0.13%	9.20%	-54.33%	8.39%
France	118	0.05% **	-0.26%	17.23%	1.11%	4.71% ***	18.14%
Germany	69	-0.01%	1.94%	1.25%	3.24% *	-59.42%	6.41%
Greece	14	-0.05%	5.25%	18.02%	3.69%	36.03%	26.91% **
Hong Kong	59	-0.11%	13.25%	11.41% *	30.10%	31.88% ***	54.64% **
Hungary	3	-0.10%	10.54%	7.26%	0.55%	20.69%	18.25%
India	34	0.04%	3.98%	9.86%	2.93%	19.60% ***	16.81%
Indonesia	9	0.08%	-17.99%	-1.30%	4.50%	-6.29%	-14.71% **
Ireland	14	0.14%	-5.24%	6.57%	8.20%	57.85% *	9.66%
Israel	21	-0.19%	4.19%	15.30% ***	6.81%	34.91% **	26.10% ***
Italy	24	-0.13%	2.74%	1.84%	3.98%	9.40%	8.44%
Japan	121	-0.05% *	2.22%	5.10%	9.78% ***	30.88% ***	17.04% *
Kenya	2	0.07%	4.63%	-0.78%	6.55%	34.38%	10.47%
South Korea	26	-0.17%	-13.23%	1.37%	2.38%	32.68%	-9.66%
Luxembourg	1	-0.52%	4.63%	11.49%	37.01%	69.66%	52.61%
Malaysia	61	0.03%	4.32%	3.09%	5.26% *	34.74% ***	12.70% ***
Mexico	1	0.95%	63.78%	18.73%	8.32%	9.15%	91.77%
Netherlands	31	0.09% *	-0.36%	9.49%	8.57% ***	27.53% ***	17.78%
New Zealand	18	0.14%	2.64%	2.44%	4.88%	7.96%	10.10%
Norway	29	0.18% **	0.15%	3.09%	17.25% ***	-554.31% ***	20.67% *
Peru	4	0.27%	7.69%	7.30%	1.88%	24.53%	17.13%
Philippines	22	0.12%	8.62%	17.02%	5.17% *	2258.51% **	30.94% **
Poland	10	-0.11%	8.09%	0.72%	3.82%	25.16%	12.52%
Portugal	9	-0.07%	11.21%	-5.26%	2.51%	0.01%	8.39%
Russia	3	0.20%	9.41%	48.92%	0.04%	0.43%	58.56%
Singapore	39	0.09%	4.28%	5.93% **	7.33%	-40.10% ***	17.63% *
South Africa	70	0.11%	-4.25%	9.46%	6.85%	20.72% ***	12.36%
Spain	13	-0.17%	3.90%	4.49%	-0.55%	154.48%	7.67% *
Sweden	37	0.10%	-1.38% **	4.39%	10.03% ***	79.09% **	13.15% *
Switzerland	15	-0.01%	-1.65%	2.87%	3.13% **	21.39%	4.34%
Taiwan	3	-0.84%	-10.11%	13.61%	-0.29%	-55.33%	2.38%
Thailand	36	-0.06%	9.16%	6.23%	2.36%	13.17%	17.69% **
Turkey	6	-0.45%	2.28%	15.19%	8.76%	80.62%	24.70%
United Kingdom	330	-0.03%	1.15%	2.43% **	16.43% ***	105.03% ***	19.98% ***
United States	2823	0.15%	0.94% ***	3.97% ***	12.17% ***	44.98% ***	22.82% ***
Zimbabwe	1	-1.56%	-17.52%	-27.09%	6.70%	-17.66%	-39.47%

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 3. Price Effects

Cumulative Abnormal Returns around the announcement date of the tender offer, by nationality of the target firm.

Cumulative abnormal daily returns are estimated from a market model regression in days $t=-250$ to $t=-150$ relative to the announcement date. Abnormal returns are then accumulated for different subperiods. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored).

Announcement Effect is calculated as $\frac{\sum_{t=-1}^{t=+1} \varepsilon_{it}}{\sum_{t=-100}^{t=-1} \varepsilon_{it}}$, where the ε_{it} 's are abnormal returns calculated from a market model, where the

parameters have been estimated on a window from $t=-250$ to $t=-150$ relative to the tender offer announcement. Total Effect is calculated as $\sum_{t=-100}^{t=+1} \varepsilon_{it}$. Market Returns are obtained from CRSP (Value Weighted) for the US, and from Datastream for the US. For

non-US deals, the market return is the Datastream market index for the corresponding country, except for Kenya (Nairobi Stock Exchange Index), Hungary (CESI Index), Russia (AKM Composite Index), and Zimbabwe (Zimbabwe Stock Exchange Index).

Region	N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
Asia	415	-0.03%	4.16%	6.64% ***	9.54% ***	134.61% ***	20.31% ***
Canada	377	-0.06%	9.23%	20.79% ***	15.52% ***	-633.87% ***	45.51% ***
Eastern Europe	16	-0.05%	8.80%	10.98%	2.50%	19.69%	22.22% *
Latin America	35	0.18%	6.24%	4.08%	0.75%	7.61%	11.24% *
Middle East	21	-0.19%	4.19%	15.30% ***	6.81%	34.91% **	26.10% ***
Nordic Europe	101	0.10% *	-0.30%	2.74%	12.71% ***	-123.64% ***	15.25% ***
Oceania	133	0.05%	4.01%	5.42%	7.72% ***	-24.49% ***	17.19% ***
South Africa	70	0.11%	-4.25%	9.46%	6.85%	20.72% ***	12.36%
United Kingdom	334	-0.02%	1.17%	2.38% *	16.42% ***	104.56% ***	19.94% ***
United States	2823	0.15%	0.94% ***	3.97% ***	12.17% ***	44.98% ***	22.82% ***
Western Europe	342	0.00%	0.78%	8.55%	2.91% **	3.52% ***	12.22% ***

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 4. Price Effects by Geographical Region

Cumulative Abnormal Returns around the announcement date of the tender offer, by geographical region of the target firm.

Cumulative abnormal daily returns are estimated from a market model regression in days $t=-250$ to $t=-150$ relative to the announcement date. Abnormal returns are then accumulated for different subperiods. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored).

Announcement Effect is calculated as $\frac{\sum_{t=-1}^{t=+1} \varepsilon_{it}}{\sum_{t=-100}^{t=-1} \varepsilon_{it}}$, where the ε_{it} 's are abnormal returns calculated from a market model, where the

parameters have been estimated on a window from $t=-250$ to $t=-150$ relative to the tender offer announcement. Total Effect is calculated as $\sum_{t=-100}^{t=+1} \varepsilon_{it}$. Market Returns are obtained from CRSP (Value Weighted) for the US, and from Datastream for the US. For

non-US deals, the market return is the Datastream market index for the corresponding country, except for Kenya (Nairobi Stock Exchange Index), Hungary (CESI Index), Russia (AKM Composite Index), and Zimbabwe (Zimbabwe Stock Exchange Index).

Before IT Laws Enforcement						
N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
151	-0.02%	-0.20%	2.67%	1.97%	21.29% ***	21.77% ***
Before IT Laws Existence						
N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
27	-0.20% ***	0.09%	-0.88%	1.40%	17.30%	31.31%
After IT Laws Enforcement						
N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
600	-0.01%	3.55% **	6.77% ***	10.26% ***	28.83% ***	60.30% ***
After IT Laws Existence						
N	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
754	-0.01%	3.14% **	5.83% ***	8.89% ***	28.87% ***	55.75% ***
Difference After minus Before IT Laws Enforcement						
	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
	0.00%	3.75% ***	4.10% ***	8.29% ***	7.55% ***	38.53% ***
Difference After minus Before IT Laws Existence						
	(-100,-51)	(-50,-11)	(-10,-2)	(-1,+1)	Announcement Effect	Total Effect
	0.18% ***	3.04% ***	6.71% ***	7.49% ***	11.57% *	24.44% ***

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 5. Price Reaction to the Takeover and IT Laws

Stock Price Reaction to the Acquisition before and after the existence and enforcement of insider trading laws.

Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000). Cumulative abnormal daily returns are estimated from a market model regression in days $t=-250$ to $t=-150$ relative to the announcement date. Abnormal returns are then accumulated for different subperiods. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). Market Returns are obtained from CRSP (Value Weighted) for the US, and from Datastream for the US. For non-US deals, the market return is the Datastream market index for the corresponding country, except for Kenya (Nairobi Stock Exchange Index), Hungary (CESI Index), Russia (AKM Composite Index), and Zimbabwe (Zimbabwe Stock Exchange Index).

Announcement Effect is calculated as $\sum_{t=-1}^{t=+1} \frac{E^t}{E^t}$, where the E^t 's are abnormal returns calculated from a market model, where the parameters have been estimated on a window from $t=-250$ to $t=-150$ relative to the tender offer announcement. Total Effect is calculated as $\sum_{t=-1}^{t=+1} E^t$. Market Returns are obtained from CRSP (Value Weighted) for the US, and from Datastream for the US. For non-US deals, the market return is the Datastream market index for the corresponding country, except for Kenya (Nairobi Stock Exchange Index), Hungary (CESI Index), Russia (AKM Composite Index), and Zimbabwe (Zimbabwe Stock Exchange Index).

Country	N	From day -30 to day -5					From day -60 to day -5				
		Profits	p-value	Ab. Volume	p-value	% Positive	Profits	p-value	Ab. Volume	p-value	% Positive
Argentina	11	0.001%	(1.0000)	325.447%	(0.5000)	100.00%	0.001%	(1.0000)	650.818%	(0.5000)	100.00%
Australia	112	-0.497%	(0.8650)	0.408% ***	(0.0000)	27.78%	0.544% **	(0.0106)	0.647% ***	(0.0000)	47.73%
Austria	10	0.336%	(1.0000)	0.609%	(0.5000)	50.00%	1.022%	(0.2500)	0.782%	(0.2500)	100.00%
Bahamas	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Belgium	14	-0.042%	(0.5000)	0.038%	(0.2500)	33.33%	-0.081%	(0.6250)	0.084%	(0.1250)	50.00%
Bermuda	5	0.212%	(0.5000)	0.466%	(0.5000)	100.00%	0.184%	(0.5000)	0.696%	(0.5000)	100.00%
Brazil	11	0.000%	.	0.000%	.	0.00%	0.000%	.	0.000%	.	0.00%
Canada	366	-0.087%	(0.4177)	0.713% ***	(0.0000)	23.97%	1.874% ***	(0.0003)	1.341% ***	(0.0000)	34.82%
Cayman Islands	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Chile	6	0.009%	(1.0000)	0.016%	(1.0000)	100.00%	0.169%	(0.5000)	0.216%	(0.5000)	100.00%
China	5	-0.080%	(1.0000)	2.392%	(1.0000)	0.00%	-0.989%	(1.0000)	5.156%	(0.2500)	50.00%
Colombia	2	0.000%	.	0.000%	.	0.00%	0.000%	.	0.000%	.	0.00%
Cyprus	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Czechoslovakia	9	0.037%	(0.7500)	0.378%	(0.2500)	66.67%	0.311%	(0.7500)	1.001%	(0.2500)	66.67%
Denmark	19	0.368%	(0.7500)	0.115%	(0.2500)	40.00%	1.938% *	(0.0625)	4.368% *	(0.0625)	83.33%
Ecuador	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Finland	13	0.328%	(0.6250)	0.720%	(0.1250)	33.33%	-0.021%	(0.8750)	0.751%	(0.1250)	37.50%
France	114	0.197% **	(0.0233)	1.010% ***	(0.0000)	39.47%	0.321% **	(0.0140)	1.662% ***	(0.0000)	40.48%
Germany	66	-0.080%	(0.6250)	0.651% ***	(0.0020)	31.25%	0.193% ***	(0.4648)	0.882% ***	(0.0010)	50.00%
Ghana	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Greece	14	0.872%	(0.7500)	6.690%	(0.2500)	66.67%	-4.139%	(1.0000)	10.062%	(0.2500)	66.67%
Hong Kong	59	2.322%	(1.0000)	6.644%	(0.2500)	11.11%	-2.983%	(0.8750)	8.986% *	(0.0625)	27.27%
Hungary	4	0.000%	.	0.000%	.	0.00%	0.969%	(1.0000)	0.939%	(1.0000)	50.00%
India	33	0.171%	(0.2500)	0.392%	(0.2500)	60.00%	0.137%	(0.1250)	0.571%	(0.1250)	80.00%
Indonesia	9	0.000%	.	0.000%	.	0.00%	0.000%	.	0.000%	.	0.00%
Ireland	14	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Israel	20	0.285%	(0.1250)	0.527% *	(0.0625)	28.57%	0.289%	(0.1875)	0.525% *	(0.0625)	30.77%
Italy	23	3.666% *	(0.0781)	8.185% **	(0.0156)	40.00%	3.743%	(0.1563)	8.901% **	(0.0156)	40.00%
Japan	116	0.636%	(0.3525)	0.620% ***	(0.0010)	36.84%	-19.335%	(0.8497)	0.897% ***	(0.0000)	43.48%
Kenya	2	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Latvia	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Liberia	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Luxembourg	0	.	.	0.000%	.	0.00%	.	.	0.000%	.	0.00%
Malaysia	57	0.041%	(0.6250)	0.362%	(0.1250)	13.33%	0.059%	(0.3750)	0.411%	(0.1250)	21.43%
Mexico	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Netherlands	31	0.537% **	(0.0313)	3.356% **	(0.0313)	66.67%	1.079% **	(0.0156)	4.216% **	(0.0156)	70.00%
Netherlands Antilles	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
New Zealand	18	-0.012%	(0.7500)	0.112%	(0.2500)	16.67%	0.421%	(0.5000)	0.312%	(0.2500)	33.33%
Norway	27	182.329%	(0.2500)	428.253%	(0.2500)	25.00%	281.837% **	(0.0313)	449.020% **	(0.0313)	42.86%
Papua Nueva Guinea	2	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Peru	4	0.000%	.	0.000%	.	.	0.001%	(1.0000)	0.002%	(1.0000)	100.00%
Philippines	22	0.002%	(1.0000)	1.790%	(0.2500)	40.00%	0.751%	(0.1250)	2.526%	(0.1250)	66.67%
Poland	10	-0.309%	(0.5000)	0.517%	(0.2500)	20.00%	1.483%	(0.5000)	1.420%	(0.2500)	40.00%
Portugal	9	-0.105%	(1.0000)	0.812%	(1.0000)	0.00%	1.400%	(1.0000)	6.636%	(1.0000)	100.00%
Romania	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Russia	2	0.000%	.	0.000%	.	0.00%	0.000%	.	0.000%	.	.
Singapore	39	0.654% ***	(0.0039)	1.203% ***	(0.0020)	64.29%	0.658% **	(0.0425)	1.363% ***	(0.0005)	50.00%
South Africa	70	0.381% ***	(0.0039)	0.605% ***	(0.0039)	47.37%	1.005% ***	(0.0010)	1.609% ***	(0.0010)	52.38%
South Korea	27	0.882%	(1.0000)	1.153%	(0.5000)	25.00%	3.249%	(0.2500)	2.880%	(0.1250)	42.86%
Spain	12	-0.086%	(0.5000)	0.046%	(0.5000)	0.00%	0.060%	(0.7500)	0.173%	(0.2500)	40.00%
Sri Lanka	6	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Sweden	37	0.394%	(0.2969)	0.505% **	(0.0156)	26.32%	1.451% *	(0.0547)	0.807% ***	(0.0039)	33.33%
Switzerland	15	0.134%	(0.5000)	0.095%	(0.5000)	33.33%	11.703%	(0.5000)	0.095%	(0.5000)	33.33%
Taiwan	3	0.000%	.	0.000%	.	0.00%	0.000%	.	0.000%	.	0.00%
Thailand	35	-0.088% *	(0.0625)	0.815% *	(0.0625)	0.00%	-0.150%	(0.8438)	0.674% **	(0.0313)	37.50%
Trinidad	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Turkey	7	20.659%	(1.0000)	21.216%	(1.0000)	100.00%	16.040%	(1.0000)	27.110%	(0.5000)	50.00%
United Kingdom	327	-1.398% **	(0.0220)	0.149% ***	(0.0000)	46.77%	-0.032% ***	(0.0000)	0.316% ***	(0.0000)	56.94%
United States	2,845	1.284%	<0.0001	0.358% ***	<0.0001	35.10%	0.018% ***	(0.0000)	0.749% ***	<0.0001	41.04%
Zambia	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.
Zimbabwe	1	0.000%	.	0.000%	.	.	0.000%	.	0.000%	.	.

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 6A. Insider Trading Profits by country

Average Profits from Insider Trading by nationality of the target firm.

Insider trading profits are calculated as:

$$\text{Profits} = \sum_{i=1}^N \frac{1}{N_i Q_i} \sum_{t=-5}^{-30} (V_{it} - P_{it})$$

where

$$V_{it} = \begin{cases} \text{Vol}_i - \left[\frac{\text{Vol}_i - \text{Vol}_0 + 2\sigma^{\text{vol}}}{2} \right] & \text{if } \text{Vol}_i > \text{Vol}_0 + 2\sigma^{\text{vol}} \\ 0 & \text{otherwise} \end{cases}$$

We calculate $\frac{1}{N_i Q_i}$ and σ^{vol} as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from day $t=-200$ to day $t=-100$ relative to the announcement date. B_t denotes the stock price at $t=0$ (in dollars), and P_{it} is the average target stock price (in dollars) calculated over a window of forty days from $t=-100$ to $t=-60$ relative to the announcement date. N_i is the total number of shares in the target firm, and Q_i is the percentage of shares that the bidder intends to acquire in the tender offer. We calculate IT profits for two different horizons, $T=60$ and $T=30$.

Abnormal Volume is calculated as:

$$\text{Abnormal Volume} = \sum_{i=1}^N \frac{1}{N_i Q_i} \sum_{t=-5}^{-30} (V_{it} - P_{it})$$

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored).

Region	N	From day -30 to day -5					From day -60 to day -5				
		Profits	p-value	Ab. Volume	p-value	% Positive	Profits	p-value	Ab. Volume	p-value	% Positive
ASIA	405	0.654% **	(0.0137)	1.648% ***	(0.0000)	30.12%	-5.685% ***	(0.0052)	2.278% ***	(0.0000)	40.82%
UNITED STATES	2,845	1.284% ***	<0.0001	0.358% ***	<0.0001	35.10%	0.018% ***	<0.0001	0.749% ***	<0.0001	41.04%
LATIN AMERICA	34	0.002%	(0.5000)	96.757% ***	(0.2500)	33.33%	0.030%	(0.1250)	193.521% *	(0.0625)	57.14%
UNITED KINGDOM	331	-1.381% **	(0.0220)	0.147% ***	(0.0000)	46.77%	-0.031% ***	(0.0000)	0.312% ***	(0.0000)	56.94%
MIDDLE EAST	20	0.285%	(0.1250)	0.527% *	(0.0625)	28.57%	0.289%	(0.1875)	0.525% *	(0.0625)	30.77%
OCEANIA	133	-0.420%	(0.8275)	0.360% ***	(0.0000)	26.19%	0.515% ***	(0.0088)	0.589% ***	(0.0000)	46.00%
SOUTH AFRICA	70	0.381% ***	(0.0039)	0.605% ***	(0.0039)	47.37%	1.005% ***	(0.0010)	1.609% ***	(0.0010)	52.38%
EASTERN EUROPE	16	-0.193%	(0.5000)	0.310%	(0.2500)	14.29%	1.101%	(0.2500)	1.087%	(0.1250)	42.86%
CANADA	368	-0.086%	(0.4177)	0.710% ***	(0.0000)	23.97%	1.864% ***	(0.0003)	1.335% ***	(0.0000)	34.82%
WESTERN EUROPE	332	0.837% ***	(0.0055)	2.139% ***	(0.0000)	38.61%	1.209% ***	(0.0000)	2.932% ***	(0.0000)	46.73%
NORDIC EUROPE	97	51.018% **	(0.0448)	122.180% ***	(0.0000)	28.26%	79.836% ***	(0.0002)	126.884% ***	(0.0000)	42.00%

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 6B. Insider Trading Profits by Geographical Region

Profits from Insider Trading by geographical region.

Insider trading profits are calculated as:

$$\text{Profits} = \sum_{t=-T}^{-5} \frac{Vol_{it}^*}{N_i Q_i} \frac{B_i - P_{it}}{B_i - P_{i0}}$$

where

$$Vol_{it}^* = \begin{cases} Vol_{it} - [\overline{Vol_i} + 2\sigma_{vol}] & \text{if } Vol_{it} > \overline{Vol_i} + 2\sigma_{vol} \\ 0 & \text{otherwise} \end{cases}$$

We calculate $\overline{Vol_i}$ and σ_{vol} as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from day t=-200 to day t=-100 relative to the announcement date. B_i denotes the stock price at t=0 (in dollars), and P_{i0} is the average target stock price (in dollars) calculated over a window of forty days from t=-100 to t=-60 relative to the announcement date. N_i is the total number of shares in the target firm, and Q_i is the percentage of shares that the bidder intends to acquire in the tender offer. We calculate IT profits for two different horizons, T=60 and T=30.

Abnormal Volume is calculated as:

$$\text{Abnormal Volume} = \sum_{t=-60}^{-5} \frac{Vol_{it}^*}{N_i Q_i}$$

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored).

From day -30 to day -5																				
	No IT Laws						With IT Laws						Difference							
	N	Profits		Abnormal Volume		%Positive	N	Profits		Abnormal Volume		%Positive	Profits	Abnormal Volume						
		Ratio	p-value	Percentage	p-value			Ratio	p-value	Percentage	p-value									
Total Sample	264	0.05%	(0.3067)	1.11%	***	<0.0001	19.61%	788	3.27%	***	(0.0000)	8.09%	***	<0.0001	40.83%	3.22%	***	6.98%	***	
Asia	101	-0.02%	(0.9102)	3.09%		(0.0039)	16.67%	322	0.87%	***	(0.0242)	1.24%	***	<0.0001	38.78%	0.89%	***	-1.85%	***	
Eastern Europe	3	0.00%	.	0.00%	.	0.00%	.	15	-0.24%		(0.5000)	0.41%		(0.2500)	20.00%	-0.24%		0.41%		
Western Europe	108	0.00%	(0.7422)	0.31%		(0.0078)	17.39%	236	0.93%	***	(0.0064)	2.23%	***	<0.0001	44.93%	0.93%	***	1.92%	***	
Latin America	5	0.00%	.	0.00%	.	0.00%	.	30	0.00%		(0.5000)	0.01%		(0.5000)	40.00%	0.00%		0.01%		
Northern Europe	12	-0.03%	(1.0000)	0.03%		(1.0000)	0.00%	103	59.63%	***	(0.0214)	143.12%	***	<0.0001	32.50%	59.66%		143.09%	**	
Australia	35	-0.56%	(0.5000)	0.09%		(0.5000)	0.00%	82	-0.42%		(0.7119)	0.45%	***	<0.0001	47.62%	0.14%		0.36%	**	
From day -60 to day -5																				
	No IT Laws						With IT Laws						Difference							
	N	Profits		Abnormal Volume		%Positive	N	Profits		Abnormal Volume		%Positive	Profits	Abnormal Volume						
		Ratio	p-value	Percentage	p-value			Ratio	p-value	Percentage	p-value									
Total Sample	265	-1.47%	***	(0.0001)	1.83%	***	<0.0001	32.08%	795	4.84%	***	(0.0000)	8.99%	***	<0.0001	52.03%	6.32%	***	7.16%	***
Asia	102	-6.46%		(0.3804)	4.12%	***	(0.0005)	28.13%	323	-5.82%	***	(0.0213)	1.79%	***	<0.0001	46.77%	0.64%		-2.33%	***
Eastern Europe	3	0.00%	.	0.00%	.	0.00%	.	15	1.44%		(0.2500)	1.45%		(0.1250)	50.00%	1.44%		1.45%		
Western Europe	108	0.23%	***	(0.0322)	0.97%	***	(0.0005)	36.00%	241	1.38%	***	(0.0007)	3.14%	***	<0.0001	51.39%	1.15%	***	2.17%	***
Latin America	5	0.00%	.	0.00%	.	0.00%	.	30	0.04%		(0.1250)	0.05%		(0.1250)	66.67%	0.04%		0.05%		
Northern Europe	12	0.11%		(1.0000)	0.03%		(1.0000)	33.33%	104	93.91%	***	(0.0003)	149.62%	***	<0.0001	44.44%	93.80%		149.59%	**
Australia	35	0.27%		(0.5000)	0.20%		(0.5000)	10.53%	82	0.63%	***	(0.0087)	0.73%	***	<0.0001	71.43%	0.36%	***	0.53%	**

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 7. Insider Trading Profits and Insider Trading Laws

Profits from Insider Trading before and after the enforcement of insider trading laws.

Insider trading profits are calculated as:

$$Profits = \sum_{i=1}^N \frac{Vol_{it}^*}{N_i Q_i} \frac{B_i - P_0}{B_i - P_0}$$

where

$$Vol_{it}^* = \begin{cases} Vol_{it} - \overline{Vol_i} + 2\sigma_{Vol_i} & \text{if } Vol_{it} > \overline{Vol_i} + 2\sigma_{Vol_i} \\ 0 & \text{otherwise} \end{cases}$$

We calculate $\overline{Vol_i}$ and σ_{Vol_i} as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from day t=-200 to day t=-100 relative to the announcement date. B_i denotes the stock price at t=0 (in dollars), and P₀ is the average target stock price(in dollars) calculated over a window of forty days from t=-100 to t=-60 relative to the announcement date. N_i is the total number of shares in the target firm, and Q_i is the percentage of shares that the bidder intends to acquire in the tender offer. We calculate IT profits for two different horizons, T=-60 and T=-30.

Abnormal Volume is calculated as:

$$Abnormal\ Volume = \sum_{i=1}^N \frac{Vol_{it}^*}{N_i Q_i}$$

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000).

From day -90 to day -60					
Region	N	% Abnormal Volume > 0		Abnormal Volume	
		Profits	p-value	Ab. Volume	p-value
ASIA	231	7.359% ***	(0.0000)	1.531% ***	(0.0000)
UNITED STATES	3493	14.028% ***	(0.0000)	2.247% ***	(0.0000)
LATIN AMERICA	16	0.000%	.	0.129%	(0.5000)
UNITED KINGDOM	178	7.303% ***	(0.0002)	0.352% ***	(0.0000)
MIDDLE EAST	18	0.000%	.	0.213%	(0.5000)
OCEANIA	61	4.918%	(0.2500)	0.259% ***	(0.0010)
SOUTH AFRICA	37	5.405%	(0.5000)	0.419% ***	(0.0010)
EASTERN EUROPE	13	0.000%	.	0.812%	(0.2500)
CANADA	248	9.677% ***	(0.0000)	0.287% ***	(0.0000)
WESTERN EUROPE	214	5.140% ***	(0.0010)	0.565% ***	(0.0000)
NORDIC EUROPE	71	4.225%	(0.2500)	0.406% ***	(0.0005)

From day -120 to day -60					
Region	N	% Abnormal Volume > 0		Abnormal Volume	
		Profits	p-value	Ab. Volume	p-value
ASIA	245	10.204% ***	(0.0000)	3.037% ***	(0.0000)
UNITED STATES	3494	19.147% ***	(0.0000)	1.909% ***	(0.0000)
LATIN AMERICA	17	5.882%	(1.0000)	0.558%	(0.1250)
UNITED KINGDOM	189	14.286% ***	(0.0000)	0.588% ***	(0.0000)
MIDDLE EAST	18	0.000%	.	0.521%	(0.5000)
OCEANIA	68	10.294% **	(0.0156)	0.836% ***	(0.0000)
SOUTH AFRICA	40	10.000%	(0.1250)	0.717% ***	(0.0005)
EASTERN EUROPE	13	7.692%	(1.0000)	0.859%	(0.1250)
CANADA	252	13.095% ***	(0.0000)	0.526% ***	(0.0000)
WESTERN EUROPE	228	10.965% ***	(0.0000)	2.869% ***	(0.0000)
NORDIC EUROPE	74	8.108% **	(0.0313)	0.561% ***	(0.0000)

Table 8A. Abnormal Trading Volume Prior to the Tender Offer Announcement, by Geographical Region
Abnormal Volume, and Percentage of Acquisitions with Positive Abnormal Volume, calculated up to 60 days prior to the public announcement
Insider trading profits are calculated as:

$$\text{Abnormal Volume} = \sum_{t=-T}^{-60} \frac{Vol_{it}^*}{N_i Q_i}$$

where

$$Vol_{it}^* = \begin{cases} Vol_{it} - [\overline{Vol_i} + 2\sigma_{vol}] & \text{if } Vol_{it} > \overline{Vol_i} + 2\sigma_{vol} \\ 0 & \text{otherwise} \end{cases}$$

We calculate $\overline{Vol_i}$ and σ_{vol} as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from day t=-200 to day t=-100 relative to the announcement date. B_i denotes the stock price at t=0 (in dollars), and P_{10} is the average target stock price(in dollars) calculated over a window of forty days from t=-100 to t=-60 relative to the announcement date. N_i is the total number of shares in the target firm, and Q_i is the percentage of shares that the bidder intends to acquire in the tender offer. We calculate IT profits for two different horizons, T=120 and T=90.

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000).

PAIS	N	Bid Price		% Reaction		Test (%Reaction = 1)	
		%Premium	p-value	%Reaction	p-value	t-stat	p-value
USA	1121	90.35% ***	(0.0074)	87.21% ***	(0.0000)	-12.545	(0.0000)
Belgium	2	65.15% *	(0.0950)	71.92% ***	(0.1343)	-1.824	(0.2098)
Denmark	2	51.59%	(0.3856)	94.31% ***	(0.0014)	-1.634	(0.2439)
Finland	2	56.43%	(0.1899)	85.83% **	(0.0313)	-3.359	(0.0783)
Philippines	2	82.86%	(0.2709)	61.98%	(0.3013)	-1.198	(0.3536)
Poland	2	55.62%	(0.1080)	86.93% ***	(0.0056)	-17.051	(0.0034)
Spain	2	-13.19%	(0.5811)	121.30%	(0.1026)	1.080	(0.3931)
Switzerland	2	54.54%	(0.2110)	79.36%	(0.1572)	-1.032	(0.4106)
Turkey	2	128.91%	(0.3814)	86.45%	(0.1449)	-0.677	(0.5683)
Greece	3	168.46%	(0.2071)	100.36%	(0.1474)	0.008	(0.9939)
India	4	104.74%	(0.2844)	95.54% ***	(0.0002)	-1.147	(0.3153)
Ireland	4	68.91%	(0.2738)	81.92% **	(0.0108)	-1.254	(0.2781)
South Korea	4	-20.34%	(0.5815)	375.49%	(0.2808)	0.963	(0.3903)
Italy	6	28.49% *	(0.0503)	94.46% ***	(0.0000)	-1.225	(0.2664)
Thailand	8	49.34% *	(0.0554)	87.56% ***	(0.0003)	-0.962	(0.3643)
Germany	9	41.89% *	(0.0952)	93.83% ***	(0.0000)	-0.584	(0.5737)
Norway	9	40.06% **	(0.0243)	93.95% ***	(0.0000)	-1.612	(0.1413)
Sweden	9	81.88%	(0.1112)	89.66% ***	(0.0000)	-2.146	(0.0604)
Netherlands	11	42.41% **	(0.0161)	90.31% ***	(0.0000)	-2.483	(0.0304)
South Africa	13	39.06% *	(0.0646)	106.82% ***	(0.0003)	0.309	(0.7621)
Hong Kong	14	103.39%	(0.1170)	90.88% ***	(0.0000)	-0.983	(0.3422)
Singapore	16	78.04% ***	(0.0077)	94.51% ***	(0.0000)	-0.636	(0.5340)
Malaysia	19	50.54% **	(0.0152)	101.29% ***	(0.0000)	0.148	(0.8835)
France	31	26.03% **	(0.0131)	96.04% ***	(0.0000)	-0.532	(0.5984)
Japan	46	25.76%	(0.1468)	132.54% ***	(0.0000)	2.188	(0.0338)
Australia	49	37.01%	(<0.0001)	89.84% ***	(0.0000)	-2.802	(0.0073)
Canada	65	42.58%	(<0.0001)	90.69% ***	(0.0000)	-1.692	(0.0955)
United Kingdom	162	45.15%	(<0.0001)	87.82% ***	(0.0000)	-8.256	(0.0000)

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 9. Bid Premium and Stock Reaction to the Tender Offer Announcement
Bid Premium paid by the Acquiror and Ratio of Stock Price at Announcement Date to Bid Price.

Bid Premium is calculated as the percentage change of the Bid Price (in dollars) relative to the target stock price sixty days prior to the announcement. In case of a stock offer, the cash value of the shares offered is used as bid price. The % Reaction is calculated as:

$$\% \text{ Reaction} = \frac{\text{Stock Price at } t=0}{\text{Bid Price}}$$

The last two columns report t-statistics and p-values for the hypothesis that the Ratio of Stock Price to Bid Price equals one. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored).

Region	Before IT Laws Enforcement				After IT Laws Enforcement			
	N	Premium	p-value	%Reaction	N	Premium	p-value	%Reaction
Asia	86	21.55% ***	(0.0002)	98.19%	312	30.73% ***	(0.0024)	128.11% ***
Eastern Europe	3	69.21%	(0.4129)	NA	13	14.81% **	(0.0279)	103.54% **
Latin America	4	2.58%	(0.8653)	NA	30	7.14%	(0.1870)	84.57% **
Nordic Europe	10	1.20%	(0.8651)	NA	86	18.90% ***	<0.0001	91.72% ***
Oceania	18	5.39%	(0.4391)	118.54% ***	103	11.58% ***	(0.0001)	86.03% ***
Western Europe	97	4.48%	(0.1227)	96.84%	230	12.07% ***	<0.0001	93.04% ***
TOTAL SAMPLE	218	13.36%	<0.0001	100.99%	774	20.19% ***	<0.0001	100.27% ***

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Region	Difference After minus Before			
	Premium	t-stat	p-value	%Reaction
Asia	9.18% ***	11.13	<0.0001	29.92% ***
Eastern Europe	-54.40%	-1.40	(0.1820)	NA
Latin America	4.56%	0.64	(0.5234)	NA
Nordic Europe	17.71% ***	8.02	<0.0001	NA
Oceania	6.19% ***	3.80	<0.0001	-32.51% ***
Western Europe	7.59% ***	22.20	<0.0001	-3.80% ***
TOTAL SAMPLE	6.83% ***	36.59	<0.0001	-0.72%

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 10. Bid Premium, Announcement Effect, and IT Laws

Bid Premium paid by the Acquirer and Ratio of Stock Price at Announcement Date to Bid Price, depending on the existence and enforcement of insider trading laws.

Bid Premium is calculated as the percentage change of the Bid Price (in dollars) relative to the target stock price sixty days prior to the announcement. In case of a stock offer, the cash value of the shares offered is used as bid price.

%Reaction is calculated as:

$$\% \text{ Reaction} = \frac{\text{Stock Price at } t = 0}{\text{Bid Price}}$$

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000).

COUNTRY	Average Acquisition Rate (per Year)	Median Acquisition Rate (per Year)	Average # of Firms Acquired	Average Number of Firms Exchange
Argentina	2.453%	2.336%	2.6	152
Australia	2.572%	2.961%	31.3	1160
Austria	2.179%	2.294%	2.4	144
Belgium	2.411%	2.128%	3.4	296
Bermuda	8.333%	9.091%	2.8	60
Brazil	0.800%	0.746%	4.3	576
Canada	4.597%	4.014%	65.3	1278
Chile	3.533%	2.717%	3.3	265
China	0.470%	0.522%	1.8	383
Colombia	0.692%	0.314%	2.2	318
Cyprus	2.041%	2.041%	1.0	49
Czechoslovaquia	0.556%	0.667%	1.7	300
Denmark	2.344%	2.110%	5.6	252
Ecuador	0.781%	0.781%	1.0	87
Finland	3.237%	3.150%	4.1	127
France	3.654%	3.417%	26.2	970
Germany	1.257%	1.027%	18.4	680
Ghana	4.762%	4.762%	1.0	21
Greece	2.415%	0.966%	5.0	185
Hong Kong	2.340%	2.432%	15.4	524
Hungary	5.442%	6.122%	2.7	49
India	0.140%	0.137%	8.2	5843
Indonesia	1.182%	0.709%	3.3	213
Ireland	5.072%	5.797%	3.5	92
Israel	0.702%	0.455%	4.6	536
Italy	3.397%	3.349%	7.1	251
Japan	0.914%	0.499%	16.5	1815
Sout Korea	0.950%	0.515%	7.4	716
Kenya	2.000%	2.000%	1.0	50
Latvia	2.000%	2.000%	1.0	50
Luxembourg	1.613%	1.613%	1.0	305
Malaysia	1.751%	1.766%	12.4	517
Mexico	1.290%	0.968%	2.0	215
Netherlands	1.659%	1.267%	7.2	424
New Zealand	0.031%	3.297%	4.7	185
Norway	5.306%	4.337%	10.4	164
Peru	1.024%	1.024%	3.0	237
Philippines	2.780%	2.262%	6.1	194
Poland	1.786%	1.460%	3.3	289
Portugal	1.635%	1.258%	2.6	171
Romania	1.190%	1.190%	1.0	84
Russia	0.839%	0.671%	1.3	149
Singapore	2.226%	2.381%	6.5	267
South Africa	2.423%	1.545%	14.9	666
Spain	4.716%	4.511%	6.3	435
Sri Lanka	0.825%	0.795%	2.0	217
Sweden	5.134%	4.598%	13.4	218
Switzerland	2.546%	2.546%	5.5	438
Taiwan	0.495%	0.495%	2.0	331
Thailand	1.727%	1.392%	7.4	358
Trinidad	3.846%	3.846%	1.0	26
Turkey	0.831%	0.775%	2.1	198
United Kingdom	4.017%	3.616%	86.6	2473
Usa	4.818%	5.153%	389.6	7837
Zambia	10.000%	10.000%	1.0	10
Zimbabwe	1.493%	1.493%	1.0	67

Table 11. Takeover Rate

Average and Median Acquisition Rate, and Number of Acquisitions in the Sample, by nationality of the target firm.

The average Acquisition Rate is calculated as the total number of acquisitions in a country per year (including second and subsequent bids) normalized by the total number of firms in the country's main exchange in the corresponding year. We then calculate the country average for the years 1990 to 1999. The number of acquisitions in the sample only includes those deals for which stock price information is available, and excludes second and subsequent bids. The number of firms in the country's main exchange is from the International Federation of Stock Exchanges, were available, and Bhattacharya and Daouk (2000) otherwise. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars.

Dependent Variable: Takeover Intensity

Variable	Without Fixed Effects			Year Fixed Effects			Country Fixed Effects			Country and Year Fixed Effects		
	Estimate	t-Stat	p-value	Estimate	t-Stat	p-value	Estimate	t-Stat	p-value	Estimate	t-Stat	p-value
Legal Mother is UK	-0.0200 ***	-2.88	(0.0050)									
Legal Mother is France	-0.0283 ***	-3.92	(0.0002)									
Legal Mother is Germany	-0.0419 ***	-5.60	<.0001									
Rule of Law	-0.0051 *	-1.81	(0.0739)									
Risk of Expropriation (Low Score, High Risk)	0.0068	1.50	(0.1365)									
Government Repudiation of Contracts (Lower Score, High Risk)	0.0020	0.78	(0.4353)									
Corruption Index (Lower Score, High Corruption)	-0.0007	-0.24	(0.8117)									
Efficiency of Judicial System	0.0020	1.20	(0.2346)									
Enforceability of Contracts	-0.0047	-0.65	(0.5180)									
Log GDP per Capita	0.0020	0.39	(0.6995)									
IT Laws Enforceability	0.0138 **	2.47	(0.0155)	0.0111 ***	3.31	(0.0011)	0.0084 **	2.59	(0.0105)	0.0036	0.85	(0.3948)
IT Laws Existence	-0.0110 *	-1.69	(0.0956)	-0.0096 *	-1.73	(0.0849)	0.0012	0.23	(0.8155)	-0.0029	-0.48	(0.6336)
Number of Observations	101			220			220			220		

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table 12. Determinants of the Takeover Ratio

Regression of the Takeover Acquisition Ratio on Explanatory Variables.

The average Acquisition Rate is calculated as the total number of acquisitions in a country per year (including second and subsequent bids) divided by the total number of firms in the country's main exchange as of December of the corresponding year. 'IT Laws Enforceability' is a dummy variable that takes value '1' if the country of nationality of the company has enforced insider trading laws before the announcement year of the acquisition, '0' otherwise. 'IT Laws Existence' is a dummy variable that takes value '1' if the country of nationality of the company has insider trading laws existing before the announcement year of the acquisition, '0' otherwise. Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000). The rest of explanatory variables are described in La Porta et al. (1998), where we use the time series of each variable instead of an aggregate average per country. The number of firms in the main exchange is obtained from the International Federation of Stock Exchanges' web page, at www.ifbv.com/stats/ra1.xls. P-values are White-heteroskedasticity consistent.

Variable	Model I		Model II		Model III		Model IV		Model V		Model VI	
	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value	Estimate	p-value
Intercept	9.9950 **	(0.0275)									138.0400 ***	<.0001
Target Firm Average Volume	0.0212 *	(0.0803)	-0.0307	(0.8820)	0.0202 *	(0.0991)			0.0008	(0.7577)	0.2380 ***	<.0001
Target Firm Size	0.0000	(0.8870)	0.0000	(0.9512)	0.0000	(0.8608)			0.0000	(0.8361)	0.0003 ***	<.0001
Hostility	-0.0919	(0.4237)	0.0477	(0.9417)	-0.0901	(0.4347)	-0.0843	(0.4174)	-0.0809	(0.4853)	17.4463 ***	<.0001
Total Price Effect of the Announcement	0.0342	(0.4690)	-0.0596	(0.8887)	0.0308	(0.5174)	0.0320	(0.4771)	0.0414	(0.3860)	0.0784	(0.3331)
Ratio of Announcement Effect / Total Effect	0.0003	(0.8741)	-0.0064	(0.8467)	0.0003	(0.8857)	0.0000	(0.9572)	0.0000	(0.9911)	0.0011	(0.8930)
Rumors prior to the Announcement	0.1563	(0.2630)	-0.6166	(0.4200)	0.1467	(0.2956)	0.1556	(0.2073)	0.1487	(0.2903)	0.6338 **	(0.0331)
Size of the Bidder's Toehold	-0.0165	(0.1246)	-0.0190	(0.5891)	-0.0163	(0.1302)	-0.0049	(0.5662)	-0.0012	(0.9146)	0.0026	(0.9138)
IT Laws Enforcement Before Announcement	4.9498 ***	<.0001	7.6527 ***	<.0001	4.9396 ***	<.0001	2.1936 ***	<.0001			16.2533 ***	<.0001
IT Laws Existence Before Announcement	-0.7519	(0.3519)			-0.8010	(0.3248)	-0.3112	(0.4754)			-7.3738	(0.1239)
Quality of IT Regulation			-4.2831 ***	<.0001								
Main Exchange Turnover	0.4569	(0.3961)	3.0134 ***	(0.0013)	0.4846	(0.3703)			0.1267	(0.7555)	9.4159 ***	(0.0032)
Accounting Standards	-0.0595 *	(0.0907)			-0.0613 *	(0.0828)	-0.0226	(0.2687)	0.0513 *	(0.0802)	-0.7848 ***	<.0001
Government Repudiation of Contracts (Lower Score, High Risk)	0.2250	(0.4520)			0.2487	(0.4126)	0.2638	(0.1398)	0.2303	(0.4162)	-3.7439 ***	(0.0057)
Risk of Expropriation (Lower Score, High Risk)	-0.2757	(0.5271)			-0.3263	(0.4612)	-0.1807	(0.4972)	-0.2536	(0.3440)	3.0823 **	(0.0134)
Corruption Index (Lower Score, High Corruption)	-1.0075 ***	(0.0007)			-0.9671 ***	(0.0013)	-0.6009 ***	(0.0017)	-0.5300 *	(0.0556)	-3.8461 ***	<.0001
Bureaucratic Quality	-0.2516	(0.4885)			-0.2416	(0.5099)	-0.1990	(0.3069)	-0.2911	(0.3801)	7.0417 ***	<.0001
Enforceability of Contracts	1.4251 **	(0.0350)			1.4686 **	(0.0306)	0.6571	(0.1508)	1.0616	(0.1078)	16.8477 ***	<.0001
Log GDP per Capita	-0.4791	(0.3006)	0.2056	(0.6955)	-0.4826	(0.2985)	-0.3371	(0.1994)	-0.1438	(0.6999)	-13.7421 ***	<.0001
Legal Mother Is France	1.9369 ***	(0.0031)	-2.9918 *	(0.0542)	1.9308 ***	(0.0032)	1.1052 **	(0.0309)	0.7180	(0.2333)	2.7747	(0.2401)
Legal Mother Is Scandinavia	-0.2040	(0.8726)	-8.8535 ***	(0.0011)	-0.1548	(0.9039)	-0.2341	(0.7814)	3.0826 ***	(0.0062)	25.6538 ***	<.0001
Legal Mother Is Germany	-0.7268	(0.3493)	-4.4019 ***	(0.0015)	-0.7937	(0.3091)	-0.3271	(0.4951)	-0.4478	(0.5596)	-3.6405 *	(0.0791)
Rule of Law	-0.3722 *	(0.0519)			-0.3806 **	(0.0464)	-0.1509	(0.2751)	-0.0079	(0.9622)	3.4762	<.0001
Efficiency of Judicial System	0.5029 ***	(0.0062)			0.5082 **	(0.0059)	0.1974 *	(0.0664)	-0.1650	(0.2657)	-1.2486	(0.3987)
Absolute value of the Latitude of the Country	-7.7705 ***	<.0001	-8.4829 **	(0.0178)	-7.7959 ***	<.0001	-2.4831 **	(0.0126)	0.3623	(0.7820)	-49.3013 ***	<.0001
Proportion of Protestant Population	0.1285 ***	<.0001	0.1480 ***	(0.0003)	0.1253 ***	<.0001	0.0662 ***	<.0001	0.0425 **	(0.0148)		
100-Cath-Protest-Muslim in 1980	-0.0301 ***	(0.0009)	-0.1094 ***	<.0001	-0.0300 ***	(0.0010)	-0.0165 **	(0.0216)	-0.0106	(0.2036)	-26.4735 ***	<.0001
USA	-5.9164 ***	<.0001			-5.8871 ***	<.0001	-2.7150 ***	<.0001	-1.1300 ***	(0.0099)	-47.1119 ***	<.0001
hazard												
Number of Observations	3188		2528		3478		3200		1428			

*, **, and *** indicate that the coefficient is significantly different from zero at the 0.1, 0.05 and 0.01 levels or better, respectively.

Table B3. Cross-Sectional Regressions.
Regression of Insider Trading Profits on Explanatory Variables
Insider trading profits are calculated as:

$$Profits = \frac{\sum_{t=1}^T Vol_{it} \cdot B_{it} - B_{it}}{\sum_{t=1}^T N_{it} \cdot Q_{it} \cdot B_{it} - B_{it}}$$

where

$$Vol_{it} = \begin{cases} Vol_{it} & \text{if } Vol_{it} > Vol_{it-1} + 2\sigma_{Vol} \\ 0 & \text{otherwise} \end{cases}$$

We calculate $\frac{Vol_{it} - Vol_{it-1}}{Vol_{it-1}}$ as the mean and standard deviation of the daily volume (number of shares traded), in target firm i from day $t-200$ to day $t-100$ relative to the announcement date. B_{it} denotes the adjusted price (in dollars), and Q_{it} is the average target asset price (in dollars) calculated over a window of forty days from $t-100$ to $t-60$ relative to the announcement date. N_{it} is the size of the target firm's trading volume (number of shares traded), in target firm i from day $t-200$ to day $t-100$ relative to the announcement date. Target firm size is the market value of the firm in dollars. 'Hostility' is a dummy variable that takes value '1' when the board officially rejects the offer but the acquirer persists with the takeover, or if the offer is rejected by the board and the acquirer persists with the takeover. 'Rumors prior to the announcement' is a dummy variable that takes value '1' when the transaction originally began as a rumor, and was later confirmed by both parties. 'IT Laws Existence (Enforcement)' is a dummy variable that takes value one when the acquisition is announced in a year when the country of nationality of the acquirer has IT laws in place. 'IT Laws Enforcement' is a dummy variable that takes value one when the acquisition is announced in a year when the country of nationality of the acquirer has IT laws in place. 'USA' is a dummy variable for US acquisitions. 'Hazard Rate' is obtained from a probit regression where the endogenous variable is an indicator that takes value '1' when the estimated IT profits for the firm are positive, '0' otherwise. P-values are White-heteroskedasticity consistent.

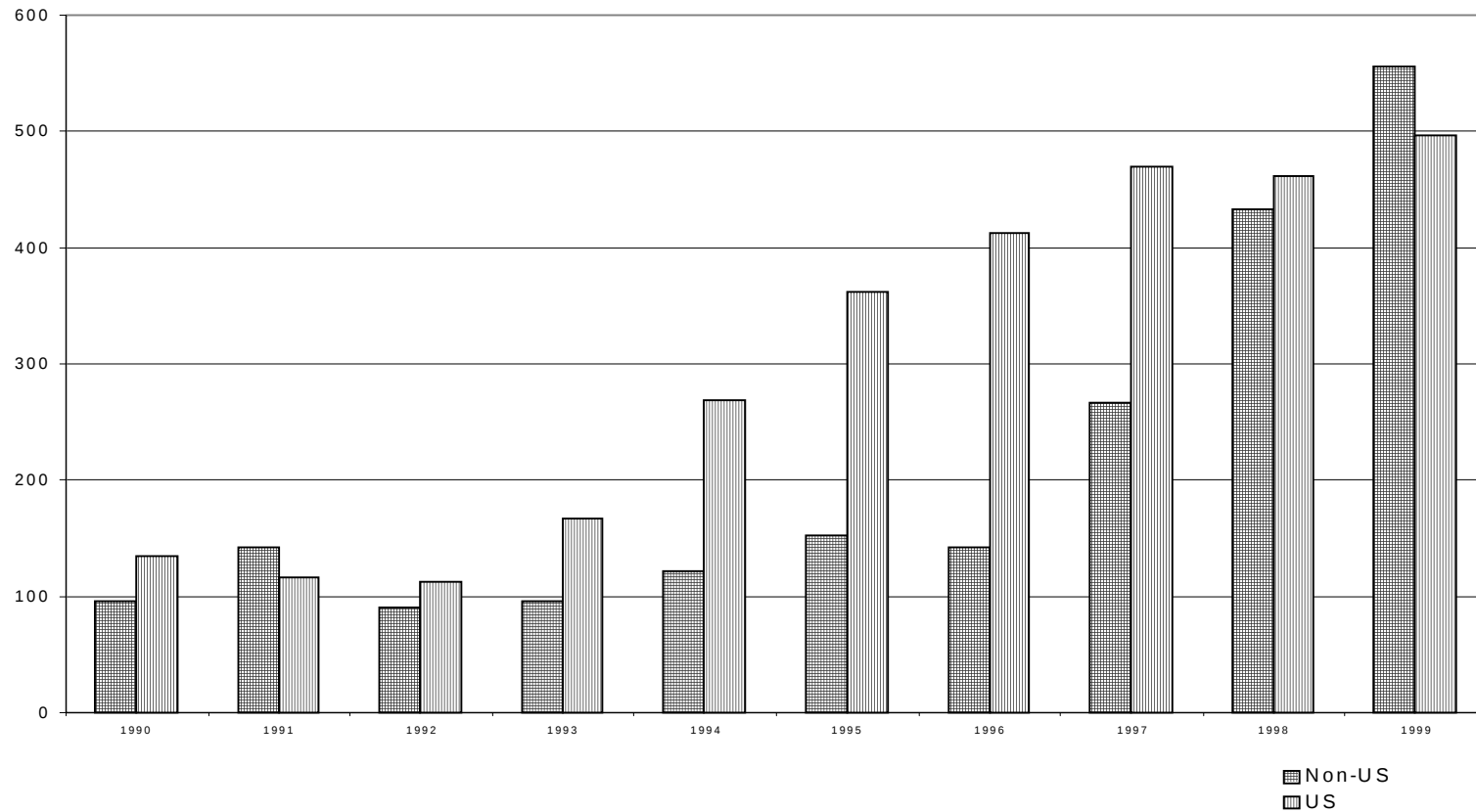


Figure 1. Number of Acquisitions by Year and Region

The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database. Only public companies are considered, and we exclude LBO deals, spinoffs, recapitalizations, self-tender and exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations. Second and subsequent bids that occur within a window of four years relative to an initial announcement are excluded. Non-US data includes acquisitions from 55 countries.

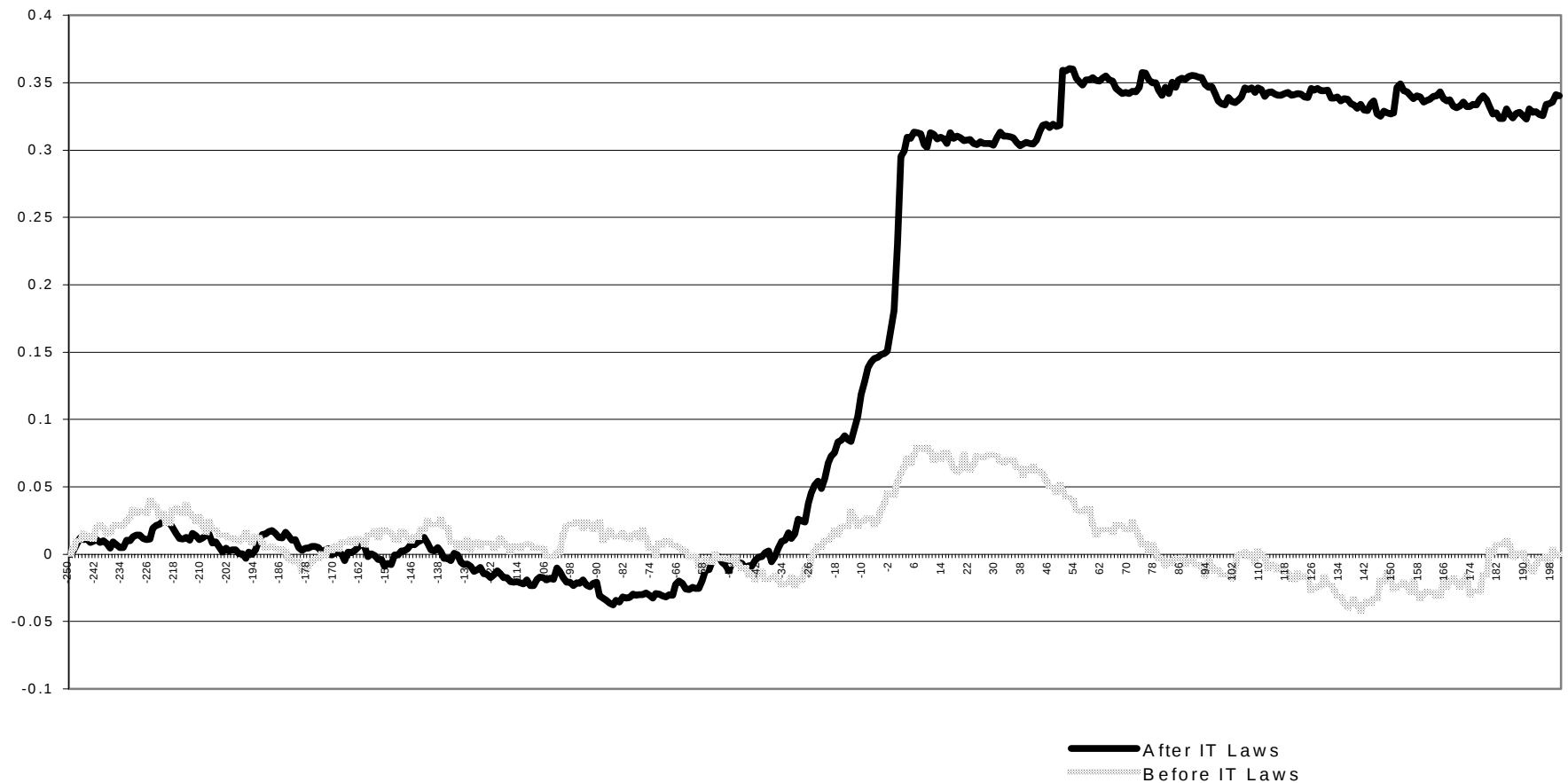


Figure 2. Price Reaction to the Takeover and IT Laws

Stock Price Reaction to the Acquisition before and after the enforcement of insider trading laws.

Data on existence and enforceability of insider trading laws is obtained from Bhattacharya and Daouk (2000). Cumulative abnormal daily returns are estimated from a market model regression in days $t=-250$ to $t=-150$ relative to the announcement data. The total sample includes all takeover announcement that take place between January 1, 1990, and December 31, 1999, available in the Securities Data Corporation Mergers and Acquisitions database, for which stock price information is available. Stock prices are obtained from CRSP, for US announcements, and from Datastream, for non-US acquisitions. All stock prices are in dollars. For each acquisition, the announcement date is the date when the target company is first publicly disclosed as a possible takeover candidate (not rumored). Market Returns are obtained from CRSP (Value Weighted) for the US, and from Datastream for the US. For non-US deals, the market return is the Datastream market index for the corresponding country, except for Kenya (Nairobi Stock Exchange Index), Hungary (CESI Index), Russia (AKM Composite Index), and Zimbabwe (Zimbabwe Stock Exchange Index).