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Insider Trading, Informed Trading, and Market Mechanisms: A Comparative Perspective from Taiwan

by

Huan-Ting Wu

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of the Science of Law (J.S.D.)

in

School of Law

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Steven Davidoff Solomon, Chair
Professor Christine A. Parlour
Professor Adam Badawi

Spring 2019

Insider Trading, Informed Trading, and Market Mechanisms: A Comparative Perspective from Taiwan

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Abstract

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Huan-Ting Wu

Doctor of the Science of Law (J.S.D.)

University of California, Berkeley

Professor Steven Davidoff Solomon, Chair

It is the unsolvable paradox of human nature that makes the research of insider trading law wonderfully but strangely attractive. Although nowadays most countries in the world have an insider trading law, hundreds of thousands of scholars still invest their time and efforts in debating whether the acts of insider trading should be banned, and to what scope should the acts be illegalized. In this dissertation, I will lead the readers to a journey of exploring insider trading law. Particularly, the three main chapters of this dissertation are respectively composed by three related but independent papers on different aspects surrounding the insider trading law of the US and Taiwan. In Chapter 2, I am going to examine the recent development of the US insider trading law imposed on market professionals, from the perspective of both law and financial economics. We are going to see how the US courts assess the dual roles of market professionals —— enhancing the price efficiency of stock prices while exploiting the other investors —— and balance the contribution and harm market professionals bring to the market, when they are drawing the line between the illegal insider trading and lawful informed trading. Chapter 3 of this dissertation moves to examine the insider trading law of my home country Taiwan. In this chapter, the methodology of comparative studies will provide the readers with different lenses through which they can compare the philosophy of a civil law country when dealing with the problem of insider trading. Chapter 4 investigates and develops an empirical methodology that allows a government to test whether its insider trading enforcement is successful compared to other jurisdictions. Specifically, it uses the "pre-announcement price run-up" before the good news arrives at the market as the proxy for measuring the effectiveness of an insider trading law. Chapter 5 concludes.

To my dearest family who unconditionally supports me in this amazing journey and all my mentors who constantly inspire me to become a better scholar.

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ACKNOWLEDGEMENT

It was a challenging, fun, amazing, but long journey. The seed was planted in 2013, when the NCTU Law student group visited Berkeley Law. That was the first time I ever thought about coming to this energetic and smart country, and this best public school of the world to study. 6 years after, I am lucky enough to be able to attend my second commencement ceremony at Berkeley Law, this time for my J.S.D. degree. I am going to become a teacher!!

I would like to thank the members of my dissertation committee, Professor Solomon, who has always been helpful in every aspect, guiding and assisting me through this journey of pursuit of wisdom; Professor Parlour, who provides me with interesting thoughts from another school of discipline; Professor Badawi, who shares with me the helpful tips about how to become a good academic writer; Professor McCrary, who opened the door of the PhD and law and economics world for me. I would also like to thank Professor Chien-Chung Lin, who led me into the wonderland of business law and has always been there for me in my academic life, supporting me, encouraging me, and spurring on me; Professor Fernholz, who chose me as his TA for 3 years in a row, where I get to teach and learn from the best lawyers in the world. I would like to thank all the Berkeley Law faculty for teaching me and inspiring me to become a better scholar.

4 years is a long period of time. Some people join my life, and some left. Tears and joy. In 2016 I became a husband, forming a new family with my love Monica. Thank you for always believing in me more than I do. In 2017, my beloved grandma left the world in spring, without saving some time for me to say good bye. Now, I can finally look at the sky and tell her I did not fail her. In 2018 I became a father, welcoming my little girl Callie to join our family, and to become the best lovely distraction in the process of my dissertation writing. In 2019, I have already become a US lawyer, and soon will become a doctor. Thank you dad, mom, sis, my love, and my girl. Without you, I would not have gone this far. I am the most fortunate man in the world to have your unconditional support and accompany, making this lonely academic journey so meaningful and successful. The honor and achievement I ever made, if any, all belong to you.

I would like to thank my men Jason, Burgess, Ching-Fu, and Hsien-Chung, as well as Lily of BATS basketball and all other friends from BATS who I get to spend every weekend with all these years. Basketball is the only hope that helps to survive this endless and exhausting reading, legal memos, translation, exams, and researching law school life. You have made life in Berkeley Taiwanese and home. Lastly, I would like to thank the younger me who made the brave decision that started this journey, keeping the hard work, persisting, and never giving up. You made it!

Huan-Ting, 05.09.2019 @ UC Village

CHAPTER 1. PROLEGOMENON

Insider trading is the act of trading in securities while in possession of material nonpublic information.[1] It is an extremely interesting subject of research. It simultaneously tests and reflects the greed and envy of human nature, in that you do not like to see someone earn easy money from knowing something you don't know, but the truth is, if you know something unknown to others, it is highly likely that you won't disclose the information to others and save it for yourself either. For example, consider the following story: A is looking to purchase a land and targets one called blackarce. The landlord B is willing to sell A the land at $10 (say that will give B a profit of $2) and A agrees on the price. One day before the deal is closed, A accidentally finds out that there is gold hidden under the land worth $10. In this situation, if you are A, what will you do? What about you are the angry B who later finds out the fact about the gold after the land is sold at $10?

Unlike homicide or arson, the acts that apparently and strongly violate social norms and morality, we cannot easily find out who is harmed by the acts of insider trading. In this simple example, if the law does not require A to disclose what she knows, B walks away from the deal with a profit of $2, and A with a profit of $10 from the value of the gold. However, if you are the angry B, you will claim that you will not sell at $10 but at least $20 if you know about the gold. A cheated on you. But standing from the position of A, you will respond by: what makes you think you deserve the additional $10 while it is I who discovers the gold? That's the eternal paradox of human nature: both A and B seem to have a good point from their point of view. As Professor Henning smartly put it, ". . . . the short answer to the question of why insider trading is illegal is the one that an exasperated parent is wont to give to a misbehaving child: 'Because it is!'"[2]

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[1] Stephen M. Bainbridge, *The Law and Economics of Insider Trading 2.0*, at 3 (2019), *forthcoming* in ENCYCLOPEDIA OF LAW AND ECONOMICS (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3312406 (last visited: April 30, 2019).

[2] Peter J. Henning, *What's So Bad About Insider Trading Law?*, 70 BUS. LAW. 751, 770-71 (2015). "The studies seem to suggest instead that (1) the majority of people think that insider trading remains prevalent despite being regulated; (2) though most people think it is wrong, they cannot identify the harm; and (3) they would trade on inside information themselves if they had the chance." ANDERSON, *supra* note 182, at 193.

It is such seemingly unsolvable paradox of human nature that makes the research of insider trading law wonderfully but strangely attractive. Although nowadays most countries in the world have an insider trading law,[3] hundreds of thousands of scholars still invest their time and efforts in debating whether the acts of insider trading should be banned, and to what scope should the acts be illegalized.

The commonly seen metaphor of insider trading is that someone in the game of poker plays with marked cards.[4] In any casino, when someone wins, someone has to lose. This is a zero-sum game. As a result, when the normal blackjack players in the casino find out someone is able to see through the cards and correctly bark "hit me" again and again, they will definitely cry out "it's not fair!" and quit the table. Suppose we are the runner of the casino, we definitely want to kick out these "cheaters" who make the game "unfair". Similarly, if today it is the dealers on the gambling table who mark the cards in advance and then play informedly with those marked cards against other customers, no one will go to the casino anymore, because when players enter the casino, they assume that the dealers of the casino are just serving as the counter-players and opening tables for people who are willing to play. That is to say, as the bankers on the tables, they need to play unbiasedly without utilizing their banker identity and edges. Otherwise, players will leave the tables as soon as they believe the bankers themselves are cheating.

Indeed, trading in the stock market is just like playing poker games in a casino. Most normal investors (as opposed to the market professionals) trade without possessing advanced knowledge about the firms, and therefore their returns go up and down randomly, as if they were playing blackjacks —— probability is the only determining factor —— at least, this should be what they believe. The casino and poker game metaphor wonderfully demonstrates the two fundamental thoughts of why insiders should be prohibited from trading in the stock market: first, the players should have equal access to the information. We do not want any player play with marked cards in the market. That is unfair to others. Second, a special duty is owed by the insiders. We think that someone affiliated with the company whose stocks are traded owes a special duty not to utilize her insider identity and edges when trading, just like the bankers of the casino should be required to play unbiasedly because they know much more than other players due to their insider affiliation with the casino. These two

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[3] By 2000, an overwhelming number of 87 countries had enacted insider trading regulation. See Uptal Bhattacharya & Hazem Daouk, *The World Price of Insider Trading*, 57 J. FIN. 75, 77 (2002).

[4] See, e.g., Patricia H. Werhane, *The Indefensibility of Insider Trading*, 10 J. BUS. ETHICS 729, 730 (1991).

schools of thought reflect the ultimate goal of the casino/stock market: assuring the normal players that the games are fair, everyone has a chance to win, and their victories are solely based on probabilities —— in other words, we level the playing field and give angry losers hopes so that they will stay and play.

Thing turns more complicated as we move to consider a more complex scenario: suppose we are still the runner of the casino, and we find out that some players are "smart players" who can memorize the cards and calculate the games (like the "MIT Blackjack Team" in the movie "21"), but they are not cheating with any marked card, should we also kick them out because their expertise will enable them to always perform better than other "dumb players" who yell "that is unfair!!", or even to rip off the casino? Let's further assume, what if there are more players willing to come to our casino to gamble after they heard about the story of the MIT Blackjack Team and think that they might have higher chance to win in our casino (while their probabilities of winning in fact do not change)? Under this hypo, although allowing the "smart players" to enter the casino will cause the dealers and the players on that table to lose, if there are more "dumb players" coming to our casino at the same time, it might be possible that the loss to the MIT Blackjack Team can be evened out and our casino still profit as a whole.

In this new scenario, we can easily find that "fairness" is not the only factor we are considering. Instead, the key point seems to be whether everyone involved in the games —— the casino, the smart players, and the dumb players —— is better off, or at least not harmed. After all, we have to realize the truth is not all players in the casino are equally dumb or smart. Someone is just in a better position than others. When facing these smart players, sometimes we consider the way they play just being "smart", but sometimes when they are "too smart" that people would not want to play with them anymore, we create the rules and define their "smartness" to be "cheating" (i.e., illegal). That is how the rules of insider trading prohibition are created.

In the real world, these "smart players" can be the corporate insiders, or the market professionals who invest resources to get access to special information which is advantageous and unknown to other traders. They make profits by trading on the private information unknown to the market. Corporate insiders should be banned from trading on inside information, because they owe a fiduciary duty to the company whose stocks are being traded. But how about the market professionals? Since they are not traditional corporate insiders, they do not owe any duty to the company. As we shall see later in this dissertation, in the recent years, the boundary line of whether these "smart players"

should be held liable under the modern insider trading law regime has been pushed back and forth in the US courts.

In this dissertation, I will lead the readers to a journey of exploring insider trading law. Particularly, the three main chapters of this dissertation are respectively composed by three related but independent papers on different aspects surrounding the insider trading law of the US and Taiwan. In Chapter 2 of this dissertation, I am going to examine the recent development of the US insider trading law imposed on market professionals, from the perspective of both law and financial economics. We are going to see how the US courts assess the dual roles of market professionals —— enhancing the price efficiency of stock prices while exploiting the other investors —— and balance the contribution and harm market professionals bring to the market, when they are drawing the line between the illegal insider trading and lawful informed trading. As we shall see, it is an invisible line which is extremely difficult to draw and moves dynamically according to the judges' personal attitude toward the "smart trading" in individual cases. Chapter 3 of this dissertation moves to examine the insider trading law of my home country Taiwan. In this chapter, the methodology of comparative studies will provide the readers with different lenses through which they can compare the philosophy of a civil law country when dealing with the problem of insider trading. Chapter 4 investigates and develops an empirical methodology that allows a government to test whether its insider trading enforcement is successful compared to other jurisdictions. Specifically, it uses the "pre-announcement price run-up" before the good news arrives at the market as the proxy for measuring the effectiveness of an insider trading law. Chapter 5 concludes.

CHAPTER 2. INSIDER TRADING OR INFORMED TRADING? HOW TO REGULATE THE TRADING OF MARKET PROFESSIONALS?

I. Introduction

The trend to pursue after the trading of market professionals has been conspicuous for the last decade[5]. According to empirical evidence, from 2009 to 2013, the proportion of market professional defendants and their tippees constitutes around 25% of the total number of the defendants.[6] However, from the perspective of financial economics, market professionals (the informed traders) like analysts and portfolio managers play an important role in market mechanisms.[7] When they cumulatively reflect the value of the discovered information into the stock prices by informed trading, other investors (the uninformed traders) will then be better off for being able to realize the change of conditions of the companies through the signals sent from the informational leakage of informed trading. In this way, market professionals serve to strengthen the price efficiency of the market.

However, the trade-off for market professionals to provide information efficiency to the market, is the informational inequality suffered by other market participants. The reason is simple — nothing is free. In order to acquire private information unavailable to other investors and thus become informationally superior to others, market professionals need to dedicate an immense degree of resources in researching and evaluating the news collected and the change in the fundamental value of the companies.

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5 In a 2007 press release announcing the SEC charged 14 defendants in an insider trading scheme, SEC Chairman Christopher Cox declared "Our action today is one of several that will make very clear the SEC is targeting hedge fund insider trading as a top priority . . . ." See SEC Press Release 2007-28, *SEC Charges 14 in Wall Street Insider Trading Ring* (March 1, 2007), https://www.sec.gov/news/press/2007/2007-28.htm (last visited: April 2, 2019).

6 Chien-Chung Lin & Eric Hung, *U.S. Insider Trading Law Enforcement: Issues and Survey of SEC Actions from 2009 to 2013*, 11 NTU L. REV. 37, 57 (2016); similarly, the other research documents that from 1996 to 2013, the portion of market professional defendants is 21.2% (buy side manager 9.7%, and buy side analyst/trader 10.5%) out of the total number of defendants, see Kenneth R. Ahern, *Information Networks: Evidence from Illegal Insider Trading Tips*, 125 J. Fin. Econ. 26, 34 (2017).

7 "[T]he hedge fund industry represents just 5% of U.S. assets under management. But hedge fund trading often accounts for almost one-third of the daily volume on the NYSE and NASDAQ." RALPH C. FERRARA ET AL., FERRARA ON INSIDER TRADING AND THE WALL § 2B.03 at 3 (2019).

Accordingly, they will be willing to do so only if they are benefited. It is the advantageous, undisclosed information utilized in their informed trading that gives them the edge over other investors, thus enabling them to scoop out the abnormal returns from the value of such private information to cover their costs of information discovery.

These considerations establish the Supreme Court's decisions to adopt the classical theory of fiduciary relationship over the theory of equal access to information as the limitation of insider trading enforcement. However, the attitude toward these market professional, i.e., how tolerating should the insider trading law and the enforcement be on their informed trading, differs among the regulatory agencies, different courts and judges because of the nuanced relationship between market professionals, the market, and other players in the market. As a result, when it comes to market professionals' trading activities, the boundary line between illegal insider trading and legal informed trading has always been ambiguous and dynamically pushed back and forth.

In this chapter, I am going to investigate the dual roles of market professionals from the perspectives of law and financial economics. In particular, the research will focus on how the economic theories affect the courts' reasoning process when they are drawing the line between culpable insider trading and desirable (or at least, legal) informed trading. Part II of this chapter explores the relationship between insider/informed trading and market mechanisms observed by the courts as well as the financial economists. Part III of this chapter analyzes insider trading enforcement and cases where market professionals are involved, and the two different perspectives argued by the government and different courts when assessing the illegality of their trading. Part IV of this chapter summarizes the status quo and limitation of the development of the modern insider trading law in the U.S. Part V concludes.

II. Insider Trading and Market Mechanisms

A. The Courts' View on Market Mechanisms

When the courts are drawing the boundary of the culpability of insider trading, how the market mechanisms will be shaped and influenced by the law has always been the core concern. In *Chiarella*, a financial printer managed to deduce the identity of the acquirer and target from the M&A documents sent by the parties for printing, and purchased the target's stocks in advance. In this case, the SEC and government tried to

extend the position they took in *Cady, Roberts*[8] and T*exas Gulf Sulphur*,[9] where they believed "the federal securities laws have 'created a system providing equal access to information necessary for reasoned and intelligent investment decisions.'"[10] However, by officially embracing what has later been known as the "classical" theory, the Supreme Court rejected such "equal access to information" theory, acknowledging that "not every instance of financial unfairness constitutes fraudulent activity under §10(b)."[11] The Court further explained "A duty arises . . . *not* merely from one's ability to acquire information because of his position in the market."[12] After *Chiarella*, the classical theory becomes the very foundation and limitation on which the courts depend when assessing the trading of market professionals.

Later, in *Dirks*,[13] a securities analyst received a tip from the whistleblowers of an insurance/mutual fund corporation about the overstatement of the corporation's assets caused by fraud. He did not trade on the information himself but shared the news with his clients, who discharged their positions in the corporation. The news also spread. When maintaining the holding of the *Chiarella* court, the Supreme Court explicitly explained its view on the market mechanisms, where it believed that

> Imposing a duty to disclose or abstain solely because a person knowingly receives material nonpublic information from an insider and trades on it could have an inhibiting influence on the role of market analysts . . . . It is commonplace for analysts to "ferret out and analyze information," . . . . and

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8 In the Matter of Cady, Roberts & Co., 40 S.E.C. 907 (1961). In this case, Cheever Cowdin sit on the board of Curtiss-Wright Corporation, while he was also a partner in Cady, Roberts & Co., a brokerage firm. When Cowdin learned from the board about Curtiss-Wright's decision to reduce the dividends, he passed the information to another partner of the brokerage firm, Robert Gintel, who then moved to dump the shares held by the accounts he managed.

9 S.E.C. v. Texas Gulf Sulphur Co., 401 F.2d 833 (1968). In this case, the mineral exploration group of Texas Gulf Sulphur Company ("TGS") found the sample they discovered contained extraordinary content of copper, zinc, and silver in November 1963. The president of TGS immediately instructed the members of the team to remain silent about the result, so that TGS could promptly arrange the acquisition of the mineral rights to all the lands adjacent from the innocent landowners. Before the discoveries were made public in April 1964, however, several TGS officers, directors, and employees had traded on this nonpublic information.

10 Chiarella v. U. S., 445 U.S. 222, 232 (1980).

11 *Id.*

12 *Id.* at 231 n. 14.

13 Dirks v. S.E.C., 463 U.S. 646 (1983).

> this often is done by meeting with and questioning corporate officers and others who are insiders . . . . It is the nature of this type of information, and indeed of the markets themselves, that such information cannot be made simultaneously available to all of the corporation's stockholders or the public generally (citation omitted).[14]

Dirks is the first case that the Supreme Court articulated the special function and role financial analysts served in the market, which is an important factor considered by the judges when they try to decide the legality of market professionals' trading.

O'Hagan[15] is a case where the Supreme Court looked at one of the benchmarks of the market functionality —— liquidity. In this case, a lawyer acquired the news of a potential tender offer from his law firm which represented the bidder of the deal (note that he was not in charge of the deal), and purchased positions in the target. The Supreme Court adopted the "misappropriation theory" to "outlaw[] trading on the basis of nonpublic information by a corporate 'outsider' in breach of a duty owed not to a trading party, but to the source of the information."[16] If the scope of the enforcement is not expanded, the Court explained, the market will be considered systematically populated with transactors trading on misappropriated information. Accordingly, "some investors will refrain from dealing altogether, and others will incur costs to avoid dealing with such transactors or corruptly to overcome their unerodable informational advantages."[17] It should be noted that the approach adopted by the Court illegalized "the deception committed against the source while the harm was imposed upon the market".[18] In particular, the Court interpreted that "[t]he Exchange Act was enacted in part 'to insure the maintenance of fair and honest markets[.]'"[19] In addition, it considered the misappropriation theory "designed to 'protect the integrity of the securities markets . . . .'" and ". . . . well tuned to an animating purpose of the Exchange

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14 *Id.* at 658-59.

15 U.S. v. O'Hagan, 521 U.S. 642 (1997).

16 *Id.* at 652-53 (In this case, the source of the information was both the client and the law firm from which the lawyer misappropriated the news of tender offer).

17 *Id.* at 659.

18 JOHN P. ANDERSON, INSIDER TRADING LAW, ETHICS, AND REFORM, 48 (2018), citing O'Hagan, 521 U.S. at 656 ("a fraud or deceit can be practiced on one person, with resultant harm to another person or group of persons").

19 O'Hagan, 521 U.S. at 653 and 657.

Act: to insure honest securities markets and thereby promote investor confidence."[20] We can see that in this case, the philosophy of the Court focuses on preserving the willingness and confidence of the general investors, whose trading helps to create the liquidity of the market.

In a recent case *Newman*,[21] the Supreme Court looks at the other benchmark of the market functionality —— efficiency. In this case, the earnings numbers of Dell and NVIDIA were tipped from corporate insiders through long tipping chains[22] to several investment portfolio managers, who then traded on the information. Citing Judge Winter's concurring opinion in *Chestman*,[23] the Second Circuit elaborated that "Efficient capital markets . . . . also require that persons who acquire and act on information about companies be able to profit from the information they generate . . . ."[24] Accordingly, with a view to limiting the government enforcement's reach to the market professionals, the Second Circuit held that *Chiarella* and *Dirks* chose breaches of fiduciary duty over informational asymmetries to be the basis of insider trading liability, and to serve as the "critical limitation on insider trading liability that protects a corporation's interests in confidentiality while promoting efficiency in the nation's securities markets."[25]

The other line of cases where market efficiency is considered the key issue, is the private securities litigation. In *Basic v. Levinson*,[26] where the plaintiff investors sued the defendant company for making false statements to deny the news about the pending merger discussions, the Supreme Court acknowledged that to assert the application of the "fraud-on-the-market theory",[27] a plaintiff must allege and prove "that the shares

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20 *Id.* at 658.

21 U.S. v. Newman, 773 F.3d 438 (2d Cir. 2014).

22 For the introduction about the facts in detail, see *infra* III.

23 United States v. Chestman, 947 F.2d 551, 578 (2d Cir. 1991).

24 *Newman*, 773 F.3d at 449.

25 *Id.*

26 Basic Inc. v. Levinson, 485 U.S. 224 (1988).

27 Traditionally, to assert a Section 10(b) and Rule 10b-5 securities fraud, one of the essential elements to be proved by the plaintiff, is the direct reliance on the misrepresentations made by the defendant. However, as the *Basic* Court observed, it is "an unrealistic evidentiary burden" imposed on the Rule 10b-5 plaintiff (which is usually composed of a group of investors) to certify a class. The fraud-on-the-market theory adopted by the *Basic* Court relieves the plaintiff of such burden, by presuming that most publicly available information, including the misstatements of the defendant, is reflected

were traded on an efficient market."[28] Later, in a case regarding misrepresentation and fraud of financial statements, a New Jersey district court further provided a test which lists five possible evidentiary facts that can be used to demonstrate the stocks are traded on an efficient market. It includes (1) there existed an average weekly trading volume . . . . in excess of a certain number of shares; (2) a significant number of securities analysts followed and reported on a company's stock; (3) the stock had numerous market makers; (4) the Company whose stocks are traded are entitled to file an S–3 Registration Statement; and (5) empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price.[29]

From these factors, we can see that the mechanism and the speed of how the stock prices reflect the value of information, as well as the liquidity of the stocks (trade volumes and the number of market makers), are the two major benchmarks that a court looks at when judging whether the market is efficient. In addition, the roles of the two key market participants, market makers and securities analysts, are the other fundamental elements to understand the market mechanisms. Although the concept of efficient market and the deciding factors in this context of cases have not been linked to the market efficiency the courts try to preserve in the context of insider trading cases, the overall views of the courts on the value of market efficiency taken together are at least the starting point to begin with, when we try to evaluate and decide the culpability of the trading of market professionals.

B. It is A Market at An "Equilibrium Degree of Disequilibrium"

In the last section, I examine how the US courts utilize the concept of market efficiency in insider trading cases and other cases of securities litigation, as well as the market mechanisms the courts observe and try to preserve. In this section, in order to assess and decide the culpability of the trading of market professionals, in particular, to weigh the harm and benefits they bring to the market, we are going to dig deeper into the market mechanisms from the perspective of financial economics, and understand the roles played by different market players.

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in the stock price traded on any impersonal and well-developed market. Accordingly, the reliance element is met by the plaintiff's reliance on the integrity of the stock price set by the market. *See id.* at 241-47.

[28] *Id.* at 248 n. 27.

[29] See Cammer v. Bloom, 711 F. Supp. 1264, 1286-87 (D.N.J. 1989).

1. The market mechanisms: price efficiency and liquidity of the market

As early as the 1970s,[30] scholars in the area of financial economics already observed the zero-sum game nature of the market, and discussed the interaction between those who possess and trade on advantageous information and those who trade on inferior information or who do not rely on information to trade. The interaction between these two major different groups of traders, together with how the liquidity provider —— the market makers react, form the financial economists' modern understanding of the market mechanisms. The other important string is the influential efficient capital market hypothesis ("the ECMH"), which was developed by the Nobel Prize winner Eugene F. Fama in 1970.[31] The hypothesis, based on how fast and to what extent a market reflects the value of information on the stock prices, categorizes market efficiency into weak, semi-strong, and strong form. The ECMH has soon received wide acceptance and use by both the field of financial economics and law (especially securities law) since the late 1970s.[32] The influence of the ECMH has been ever prominent after the Supreme Court in *Basic* officially recognized that the fraud-on-the-market theory can be supported by the showing " . . . . that the market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations."[33] These two schools of thoughts demonstrate the two major benchmarks of how regulators can weigh specific traders' influence on the

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30 Jack L. Treynor, one of the co-inventors of the Capital Asset Pricing Model (CAPM), first addressed the issue of trading on advantageous information and the defending mechanism performed by market makers (later known as the "adverse selection" model) in a concise article, *see* Walter Bagehot (pseud. for Jack L. Treynor), *The Only Game in Town,* 27 FIN. ANAL. J. 12, 12-14 (1971). The adverse selection model was later further developed by a series of financial economic papers, *see,* e.g., I.R.C. Hirst, *A Model of Market-Making with Imperfect Information,* 1 MANAGERIAL & DECISION ECON. 12 (1980); Thomas E. Copeland & Dan Galai, *Information Effects on the Bid-Ask Spread,* 38 J. FIN. 1457 (1983); Lawrence R. Glosten & Paul R. Milgrom, *Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders,* 14 J. FIN. ECON. 71 (1985); Albert S. Kyle, *Continuous Auctions and Insider Trading,* 53 ECONOMETRICA 1315 (1985). For the summary of the development of the adverse selection model, *see* Stanislav Dolgopolov, *Insider Trading and the Bid Ask Spread: A Critical Evaluation of Adverse Selection in Market Making,* 33 CAP. U. L. REV. 83, 94-98 (2004).

31 Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work,* 25 J. FIN. 383 (1970).

32 For the summary of the acceptance and use of ECMH in the early periods, *see* Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency,* 70 VA. L. REV. 549, 549-53 (1984).

33 Basic, 485 U.S. at 246-47.

functionality of a market —— liquidity and price efficiency —— when designing securities policies.[34]

Price Efficiency

The foundational understanding of the market mechanisms arises from the dichotomy of the informed and the uninformed traders. Informed traders are those who make efforts to get access to special information which is advantageous and unknown to other traders, making profits by trading on such information.[35] Uninformed traders, on the other hand, include those who trade on relatively inferior information, or those who do not trade on information but for other utilities.[36] The trades of uninformed traders randomly produce noise which drives the stock price away from the fundamental value of the company and makes the price system less informative, while the trades made by informed traders causes stock prices to be more informative and reflect the value born by the information. [37] Information costs.[38] Therefore, only if the benefits of trading on private information surpass the cost of information, will the informed traders have the motive to trade. And only if the market is full of sufficient informed traders, will the price system become informative and beat the noise created by the uninformed traders. All in all, market efficiency is constructed under the repeated process of the balance of the influence between the informed and uninformed traders.

The economic model established by Professor Grossman and Stiglitz well explains such process, in which they believe that the market will dynamically remain at an

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34 See Zohar Goshen & Gideon Parchomovsky, *The Essential Role of Securities Regulation*, 55 DUKE L. J. 711, 720-22 (2006); *see also* Merritt B. Fox et al., *Informed Trading and Its Regulation*, 43 J. Corp. L. 817, 832-35 (2018).

35 Gilson & Kraakman, *supra note* 32, at 563-64; LARRY HARRIS, TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS, 290 (2003); Goshen & Parchomovsky, *supra note* 34, at 722-24; Stanislav Dolgopolov, *Insider Trading, Informed Trading, and Market Making: Liquidity of Securities Markets in the Zero-Sum Game*, 3 WM. & MARY BUS. L. REV. 1, 12-13 (2012); Fox et al., *supra note* 34, at 825.

36 HARRIS, *supra note* 35, at 235-36; Goshen & Parchomovsky, *supra note* 34, at 724-25.

37 Sanford J. Grossman & Joseph. E. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 AM. ECON. REV. 393, 394 (1980); Goshen & Parchomovsky, *supra note* 34, at 729. For the analysis of the different mechanisms (including universal informed trading, professionally informed trading, and derivatively informed trading) through which the value of information is transferred to the stock prices by informed traders, *see* Gilson & Kraakman, *supra note* 32, at 568-79.

38 Gilson & Kraakman, *supra note* 32, at 553.

"equilibrium degree of disequilibrium":[39] First, in a market where uninformed traders exist, informed traders are motivated to conduct research in private information and detect the discrepancies between the real value of the stocks and the market prices distorted by the noise caused by uninformed traders. Informed traders then trade on the private information, scooping out the value born by the information at the expense of the uninformed traders. The stock prices become more informative with the increase of informed traders. Second, such process continues and comes to an end when the proportion of the informed to uninformed traders passes a certain threshold, in which there are sufficient traders in the market who become informed and the price-value discrepancies disappear. At this moment, because the value of the information has been fully reflected, informed traders exit the market until the next time when the market is full of sufficient uninformed traders again.[40] According to the model, such dynamic cycle repeats constantly, so that the efficiency of the market will never stop at either end of the cycle. When the market is fully efficient (all the traders are informed), informed traders exit the market, pushing the price efficiency toward the other end of the spectrum; when the market is fully insufficient (stock prices are complete noisy), informed traders are motivated to enter the market and exploit benefits from uninformed traders.[41]

Having the economic model in mind, now we can turn back to look at the views taken by the courts on the price efficiency of the market. All in all, they seem to be not too deviated from the understanding of the financial economists. First, when the *Chiarella* court held that "one's ability to acquire information because of his position in the market" does not incur an absolute duty to disclose[42] (and thereby rejected the parity of information theory), it can be inferred that the Supreme Court already observed and allowed the difference of capability to exist between the informed and uninformed. However, because this is not a case directly involved with market professionals, the Court did not have a chance to talk about market mechanisms. Later, with the defendant as a securities analyst, the *Dirks* Court had a chance to address market mechanisms. It expressly acknowledged that not all of the information is immediately made available to the public, and it confirmed market analysts' role to

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39 Grossman & Stiglitz, *supra note* 37, at 393.

40 *Id.* at 393-95.

41 *Id.* at 393-95. *See also* Gilson & Kraakman, *supra note* 32, at 577-78; Goshen & Parchomovsky, *supra note* 34, at 729-30.

42 Chiarella, 445 U.S. at 231 n. 14.

"ferret out and analyze information".[43] The Second Circuit in *Newman* took an even aggressive perspective in viewing the benefits deriving from the asymmetry of information as the rewards that should be given to those who acquire and distribute information, so as to promote market efficiency.[44]

Second, market efficiency is not an absolute concept.[45] As Professor Grossman and Stiglitz's model suggests, either end of the price efficiency is just a phase in the repetitive cycle we just analyzed. In addition, "[a]n efficient market response to one information set does not necessarily mean that the market will respond efficiently to a different set."[46] Accordingly, scholars have argued that "it is not appropriate to classify markets as either 'efficient' or 'inefficient' based on the level of price accuracy."[47] Instead, "[i]t is more appropriate to classify markets based on whether they have an effective mechanism for correcting price deviations."[48] Such understanding is aligned with the views of the Supreme Court. In *Basic*, while observing that the federal courts had been using the ECMH as the foundation to construct the evolving jurisprudence of Rule 10b-5 (i.e., the fraud-on-the-market theory), the Supreme Court, nonetheless, took a relatively prudent view in the way it utilized the market efficiency theory.[49] In particular, instead of endorsing the economic presumptions or empirical findings regarding market efficiency, the Court focused on the conditions and market mechanisms that create the integrity of stock market prices, on which the plaintiff investors can rely when trading.[50] Following such philosophy, when the district court

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43 Dirks, 463 U.S. at 658.

44 *See Newman*, 773 F.3d at 449.

45 Although ECMH does hypothesize a "strong-form" efficiency of the market which presume stock prices fully reflect all the available information (past and future, public and private), it is, as admitted by Fama, "obviously an extreme null hypothesis". In a real world, factors such as transaction costs, the cost of information, and the capability of investors are all sources that drive the market toward the inefficient end. See Fama, *supra note* 31, at 388.

46 Gilson & Kraakman, *supra note* 32, at 559.

47 Goshen & Parchomovsky, *supra note* 34, at 730.

48 *Id.*

49 Citing Gilson and Kraakman, the Supreme Court shared with their observation that ". . . . the legal culture's remarkably rapid and broad acceptance of an economic concept that did not exist twenty years ago is not matched by an equivalent degree of understanding." Basic, 485 U.S. at 253 n. 4.

50 "We need not determine by adjudication what economists and social scientists have debated through the use of sophisticated statistical analysis and the application of economic theory. For purposes of accepting the presumption of reliance in this case, we need only believe that market professionals generally consider most publicly announced material statements about companies, thereby affecting

sought to establish the prerequisite market efficiency foundation to apply the fraud-on-the-market theory in *Cammer*, the evidentiary facts it instructed the plaintiff to present also focused on the objective market conditions, such as the trading volume of the stock, the number of analysts covering the stock, and the number of market makers trading the stocks, rather than requiring the plaintiff to run a statistic or economic model proving that the market is efficient.[51]

Liquidity

It takes two parties to form a transaction. That is to say, when there is a willing trader, he/she has to wait until the counterparty appears to trade with him/her. This is the basic explanation about liquidity: when you want to trade, can you get your trade completed fast, at low cost, and in the desirable amount?[52] The concept of liquidity can be dissected into three dimensions that we just saw: the time transactions take, the prices of executions (including the bid-ask spread paid to the middlemen), and the size of the trades. These three dimensions complement with one another: when a trader focuses on one dimension, he/she might sacrifice other dimensions as the trade-off. For example, when small investors focus on the immediacy of the executions of their trades, they might not get the best price from the market. Also, the timeliness of their trades can be achieved for their relatively small size of trades. On the contrary, block traders might not care to wait a little bit longer for the best price to show up and round up the entire block.[53]

Legal academics widely view the decrease in market liquidity caused by the "adverse selection problem" [54] as the strong justification for insider trading regulation.[55] The maintenance of market liquidity is also a firm argument brought by the SEC to expand insider trading enforcement.[56] In *O'Hagan*, the Supreme Court

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stock market prices." Basic, 485 U.S. at 246 n. 24.

51 Cammer, 711 F. Supp. at 1286-87.

52 HARRIS, *supra note* 35, at 512.

53 *Id*. at 398-400.

54 See *infra* II.B.2: the role of market makers in the market.

55 See the summary of such type of arguments collected by Dolgopolov, *supra note* 30, at 103-06.

56 "Insider trading may also inflict significant economic injury on exchange specialists or market makers [that] provide market liquidity . . . . This liquidity creates . . . . an orderly market which is advantageous to all investors. But exchange specialists and market makers cannot protect themselves from inside traders. Their market making obligations sometimes force them to trade

expanded the scope of insider trading liability to corporate outsiders, because it observed that the market players will exit the market or incur protective costs when they are exposed to the traders who possess and trade on misappropriated information.[57] Putting all these views together, the simple concept of liquidity seems to be that the market will be better off when there are more traders willing to enter the market. This is not a price efficiency claim, but a logic of demand and supply. For market makers, the more the traders, the thicker the cushion which protects them from being required to trade against the direction of the stock price movement. If they lose the cushion, they need to increase the bid-ask spread to protect themselves,[58] and that raises the transaction cost. The increase of transaction cost will again stifle the traders' motives to enter the market, then the vicious circle occurs. Accordingly, the fairness, honesty, and integrity of the market, as well as investor confidence, become the goals for the government to achieve, so that investors will be willing to stay in or enter the market. This is the key rationale proposed by the *O'Hagan* Court when it factually expanded the scope of insider trading law by adopting the misappropriation theory.[59]

2. The players in the market

In the last section, I have examined the two assessing benchmarks of market functionality —— price efficiency and liquidity —— from the perspectives of the courts and financial economists. In this section, I move to analyze how different market players are affected by the shift of the line of insider trading enforcement, and how does that influence the two benchmarks of market functionality.

Existing literature has different ways to categorize market players, either by the informational position they possess, the role they play in the market, or the characteristic and purpose of their trading.[60] For the purpose of discussion, I will focus

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securities with insiders at prices not reflecting the value of the inside information and, as a result, they may incur losses great enough to cause them to go out of business." *Memorandum of the Securities and Exchange Commission in Support of the Insider Trading Sanctions Act of 1984* (Sept. 15, 1983), *in* H.R. REP. No. 98-355, at 23 (1983).

57 O'Hagan, 521 U.S. at 659.

58 See *infra* II.B.2: the role of market makers in the market.

59 O'Hagan, 521 U.S. at 653, 657-58.

60 For instance, see Harris, *supra note* 35, at 290 ("Informed traders include value traders, news traders, information-oriented technical traders, and arbitrageurs"), 233 ("People trade to invest, to borrow, to exchange assets, to hedge risks, to distribute risks, to gamble, to speculate, or to deal"), and 360 (liquidity suppliers); Goshen & Parchomovsky, *supra note* 34, at 722-26 (divide market players into

on the market players who are more relevant to the context of this chapter —— drawing the line of market professionals' potential insider trading liabilities.

Different traders enter the market for different purposes. Profit-motivated traders "trade only because they expect to profit".[61] To ensure they consistently profit from trading, they need to know when is the best timing to trade. Therefore, they research, acquire information, analyze, and become "informed". The informational position enables these informed traders to trade in the correct direction —— whenever the stock prices are deviated from the true value of the companies, they built positions and wait for the correction of stock prices.

One group of informed traders, *value traders*, focus on the fundamental value of companies. They collect, analyze public information and assess the value of a company. Then they trade when difference exists between the market price and the true value of the company they estimate.[62] On the contrary, *news traders* base their informational advantage on the information which has not been discovered by other traders (private information). Their profits come from the value born in that piece of corporate information, but not about the evaluation of the fundamental value of companies. For them, all that matters is how to get the access to the private information and trade fast enough before other competitors become knowledgeable.[63]

Corporate insiders can be considered the very extreme kind of news trader. Given the proximity to their company, they sit on the top of the informed trading pyramid and enjoy the best informational position against all other market players (the only challenger is probably the SEC and DOJ). As for the various kinds of market professionals, such as fund managers, institutional investors, and analysts —— the core observations of this chapter —— are the main informed traders.[64] Depending on the way they collect and utilize information in their trades, they can be either value traders, news trades, or even both. Sometimes, when their information directly comes from the

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insiders, information traders, liquidity traders, noise traders, and market makers); Fox et al., *supra note* 34, at 825-26 (informed traders include fundamental value traders and announcement traders) and 827-28 (uninformed trades and liquidity suppliers); ANDERSON, *supra note* 18, at 184-85 (simply categorize market players into insiders, long-term investors, and speculators).

61 HARRIS, *supra note* 35, at 258.

62 HARRIS, *supra note* 35, at 296-97; Fox et al., *supra note* 34, at 6.

63 HARRIS, *supra note* 35, at 299-300.

64 Goshen & Parchomovsky, *supra note* 34, at 722-23.

corporate insiders, they might even become the derivative insiders that the SEC will be watching for. No matter which kind of informed traders they are, legal or illegal, the information collecting and analyzing activities, as well as the trades they make, help to push the stock prices moving toward the true value of the companies.

"Uninformed traders" enter the market for other utilities. *Liquidity traders*, for example, trade for the purpose of allocation of assets. The common example used by scholars, is the scenario where parents acquire a position in the market as the college or marriage savings for their children, and redeem the position on the day the bills come. Accordingly, theirs sales and purchases of stocks have little to do with the corporate information nor true value of the company.[65] *Noise traders* are those who believe they have valuable information but in fact they do not, or those who trade randomly without a specific pattern.[66] In this sense, their trading is just like tossing a dice for results; sometimes good, sometimes bad. It does not mean that they will always lose (they still win by probabilities). It just means that their trading utility might be closer to that of a gambler. On the one hand, because their trades usually do not reflect valuable information, they bring noise to the price system, making stock prices less informational. On the other hand, their existence, however, is essential to the market. As we discussed, they are the counterparties of informed traders, and their loss goes to informed traders' pockets. Once benefitted, informed traders will remain motivated and keep playing their role as the price fixer. In addition, serving as the cushion of market makers, uninformed traders also provide additional liquidity to the market, keeping the cost of transaction less expensive.

The last important group is the market makers. Market makers are the liquidity providers of the market. They are neutral and passive traders who hold positions and quote bid-ask prices for those who want to trade. They profit from the difference between the bid and ask prices (the "spread") when trading as counterparties with liquidity demanders, but not from the valuation of companies nor the exploitation of private information.[67] In some modern markets, high frequency traders ("HFTs") become important liquidity providers.[68] Market makers cannot distinguish informed

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65 *Id*. at 724; *see also supra note* 18, at 184-85.

66 Goshen & Parchomovsky, *supra note* 34, at 724-25; Fox et al., *supra note* 34, at 827.

67 HARRIS, *supra note* 35, at 260 and 362; Goshen & Parchomovsky, *supra note* 34, at 725-26; ANDERSON, *supra note* 18, at 187.

68 Fox et al., *supra note* 34, at 828 ("HFTs employ high speed communications to continuously update their information concerning transactions and quotes at every trading venue and revise their own

traders from uninformed traders.[69] In addition, as the traders of last resort, e.g., the specialists of NYSE, market makers are required to trade when no one else is willing to trade.[70] As a consequence, when their counterparties are insiders or informed traders, market makers will be forced to trade in the opposite direction against the price movement (that the informed traders are pushing toward). In other words, they are subject to "adverse selection" and "losing".[71] In response to the adverse selection risk, market makers usually protect themselves by increasing the bid-ask spread, so as to deter a portion of informed traders and make up for their losses.[72] The increase of bid-ask spread is the increase of transaction cost, and that is why the regulation of insider (and possibly informed) trading activities is important to other market players.

All in all, the market is a zero-sum game.[73] When someone profits, someone loses. The way the insider trading law is designed might bring different effect to different groups of market players. In the next section, we are going to see how market professionals play their role in the recent insider trading cases, and how the judges evaluate their acts from the perspective of law.

III. The Insider Trading Enforcement on Market Professionals

As Professor Anderson well summarizes the theory proposed by Professor Kahan and Posner, "an enterprising politician or prosecutor could effectively change public attitudes concerning the moral permissibility of insider trading by linking the behavior to a catastrophic market event, such as a market crash, and then aggressively prosecuting individuals for insider trading under a vague criminal law, such as securities fraud."[74] In response to the 2008 marker crash, Preet Bharara, then US Attorney for the Southern District of New York, declared publicly that they will "bring people back

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quotes accordingly").

69 Dolgopolov, *supra note* 30, at 89.

70 HARRIS, *supra note* 35, at 638.

71 *Id*. at 371; *see also* Dolgopolov, *supra note* 30, at 89.

72 Dolgopolov, *supra note* 30, at 89; Goshen & Parchomovsky, *supra note* 34, at 728.

73 HARRIS, *supra note* 35, at 234.

74 John P Anderson, *Insider Trading and the Myth of Market Confidence*, 56 WASH. U. J. L. & POL'Y 1, 3 (2018), citing Dan M. Kahan & Eric A. Posner, *Shaming White-Collar Criminals: A Proposal for Reform of the Federal Sentencing Guidelines*, 42 J. L. & ECON. 365, 376-78 (1999).

to a level of confidence in the market" by exposing more insider trading activities.[75] Indeed, empirical evidence shows that from 2009 to 2013, SEC initiated a total of 249 civil enforcement cases of insider trading, including 78 parallel criminal actions. That involved a total of 506 defendants, with 129 (25%) of them being market professionals or their tippees.[76] For the purpose of understanding how do the acts of market professionals cross the line, in this section, I am going to explore the case of *SAC Capital* and *Newman* —— the two recent and prominent cases where Wall Street hedge fund managers suffered serious legal attack from prosecutors and regulators.

A. The Trading of Market Professionals

1. The "systematic insider trading" of SAC Capital

In 2013, by unwrapping the complicated relationships on multiple tipping chains from the perspective of networking structure (displayed graphically by Professor Ahern as copied in Appendix I),[77] the United States Attorney's Offices ("USAO") successfully tracked down a group of affiliated hedge funds ("SAC") controlled by the owner Steven A. Cohen. According to the indictment, SAC

> . . . . functioned as a collection of dozens of individual portfolios, each headed by a portfolio manager responsible for his or her portfolio's profit-and-loss results, and each charged with sharing the best trading ideas with [Steven A. Cohen] . . . . Each portfolio manager [("PM")] . . . . employed one or more research analysts [("RA")] to assist with the development of investment ideas for the SAC PM's portfolio, ... had substantial discretion to make investment decisions in his or her portfolio, ... and was compensated principally based on the performance of his or her own portfolio . . . . Likewise, SAC RAs were compensated largely at the discretion of the SAC PM . . . .[78]

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75 Steve Schaefer, *Wall Street Sheriff Preet Bharara Talks Insider Trading*, FORBES (Jul. 18, 2012), https://www.forbes.com/sites/steveschaefer/2012/07/18/wall-street-sheriff-preet-bharara-talks-insider-trading/#4d299fea6690 (last visited: April 4, 2019).

76 Lin & Hung, *supra note* 6, at 57 and 62.

77 Ahern, *supra note* 6, at 41.

78 Indictment, United States v. S.A.C. Capital Advisors, L.P., at 1-2, 5-6, No. 13-CR-541 (S.D.N.Y. July 25, 2013),

In addition, Cohen managed the largest portfolio of SAC, making investment decisions "principally based on trading recommendations from SAC PMs".[79] In fact, Cohen "required each SAC PM to share 'high conviction' investment ideas —— i.e., the investment recommendations in which the SAC PM had the greatest confidence —— with [him]."[80]

USAO charged SAC with violation of Section 10(b) & Rule 10b-5 securities fraud and wire fraud, asserting that the hedge fund, through the conduct of their agents, "sought to obtain and trade upon Inside Information on multiple occasions, increasing their returns and escaping the expected loses at the expense of members of the investing public between 1999 and at least 2010."[81] The indictment described the acts of SAC as "systematic insider trading"[82]:

> (1) the SAC . . . . routinely sought to hire SAC PMs and SAC RAs with networks of contacts likely to have access to Inside Information; (2) SAC PMs and SAC RAs were required to share their best investment ideas with [Cohen] while indications that those ideas were based on Inside Information were often ignored; and (3) the SAC . . . . failed to employ the necessary compliance measures to detect or prevent trading on Inside Information.[83]

Later in 2013, SAC agreed to plead guilty to the insider trading accusation and paid 1.2 billion fine to resolve the criminal charges. It also agreed to stop managing money for outside investors.[84] In January 2016, the SEC announced that Cohen "will be prohibited from supervising funds that manage outside money until 2018 in order to settle charges for failing to supervise [Mathew Martoma, the] former portfolio manager who engaged in insider trading while employed at his firm."[85] Other than that, however,

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79 *Id.* at 6.

80 *Id.*

81 *Id.* at 3-4, 34-39.

82 *Id.* at 4.

83 *Id.* at 13.

84 See Peter Lattman & Ben Protess, *$1.2 Billion Fine for Hedge Fund SAC Capital in Insider Case*, THE NEW YORK TIMES (November 4, 2013), https://dealbook.nytimes.com/2013/11/04/sac-capital-agrees-to-plead-guilty-to-insider-trading/ (last visited: April 4, 2019).

85 See SEC Press Release 2016-3, *Steven A. Cohen Barred From Supervisory Hedge Fund Role* (January 8, 2016), https://www.sec.gov/news/pressrelease/2016-3.html (last visited: April 4, 2019).

Cohen basically survived the attack initiated by the prosecutors and regulators. As analyzed by the commentator, although Cohen used the "conviction rating" system which required his employees to report the degree of the "information edge" (from 1 to 10) to him, he avoided knowing how did his employees come up with the rate. And this tactic in the end shielded him from the criminal prosecution.[86]

On the other hand, the employees of SAC, most of whom were PMs, RAs, or their subordinates, were also charged with committing insider trading in a series of cases: including the case of Wes Wang (RA), Choo-Beng Lee (RA), Jon Horvath (RA), Noah Freeman (PM), Donald Longueuil (PM), Mathew Martoma (PM), Michael Steinberg (PM) and Richard Lee (PM).[87] All the defendants were plead guilty except for Martoma and Steinberg.

In the case of *Martoma*,[88] the inside information was the results and news about the clinical trials on a drug used to treat Alzheimer's disease jointly developed by Elan Corporation, plc and Wyeth ("Elan and Wyeth"). At that time, Mathew Martoma was one of the PMs at SAC and made a position in Elan and Wyeth. He frequently contacted Sidney Gilman and Joel Ross, both of whom supervised the safety of the drug and knowingly disclosed confidential information regarding the clinical trials to Martoma in exchange for "consulting fees" ranging from $1000 to $1500 per hour.[89] After knowing from Gilman that the final efficacy results contained "'two major weakness in the data' that called into question the efficacy of the drug . . . .", he informed Cohen.[90] As a result, SAC began to reduce its position in Elan and Wyeth and entered into short-sale and options trades,[91] which in the end led to "approximately $80.3 million in gains and $194.6 million in averted losses for SAC."[92] Compared with the case of *Steinberg* and *Newman* (as we shall see soon), this is a relatively simple case where defendant

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86 See John Gapper, *How Steven Cohen survived an insider trading scandal*, FINANCIAL TIMES (February 7, 2017), https://www.ft.com/content/efda2ca2-ec69-11e6-930f-061b01e23655 (last visited: April 4, 2019).

87 *See* Indictment, United States v. S.A.C. Capital Advisors, L.P., at 8-12, No. 13-CR-541 (S.D.N.Y. July 25, 2013).

88 United States v. Martoma, 894 F.3d 64 (2d Cir. 2017).

89 *Id*. at 68-69.

90 *Id*. at 70.

91 *Id*.

92 *Id*.

Martoma is the direct tippee and the consulting fees paid to the tipper-insiders constitute the "personal benefit" element established in *Dirks*.[93] In June 2018, the Second Circuit upheld Martoma's conviction and 9-year sentence made in August 2017.[94]

2. The Wall Street tipper-tippee chains

Steinberg's case,[95] on the contrary, was relatively subtle and complicated. The inside information in this case was the earnings numbers of Dell, Inc. ("Dell") and NVIDIA Corp. ("NVIDIA"), and such tips were passed through four levels of tipper-tippee relations. Michael Steinberg was another PM at SAC who traded on tips coming from corporate insiders. By trading on the Dell tip, he earned $1,469,593 for the portfolio; the NVIDIA tip, on the other hand, brought a profit of $349,756 to his portfolio.[96] The two tipper-tippee chains are summarized in Table 1 and Table 2 below:

Dell	Tipper	Tippee-1	Tippee-2	Tippee-3	Tippee-4
Name	Rob Ray	Sandy Goyal	Jesse Tortora	Jon Horvath	Michael Steinberg
Identity	Investor relations	Analyst	Analyst	Analyst	PM
Affiliation	Dell	Neuberger Berman	Diamondback	SAC	SAC
Quid pro quo /relationship	Earnings number (the tip)	Career advice and assistance	Money	Information exchange in the analyst group	Horvath's PM

Table 1. Dell—SAC Tipper-Tippee Chain (*Steinberg* case)

NVIDIA	Tipper	Tippee-1	Tippee-2	Tippee-3	Tippee-4
Name	Chris Choi	Hyung Lim	Danny Kuo	Jon Horvath	Michael Steinberg
Identity	Finance unit	Former executive	Analyst	Analyst	PM
Affiliation	NVIDIA	Broadcom and Altera	Whittier Trust	SAC	SAC
Quid pro quo /relationship	Earnings number (the tip)	Family friend from church: trade NVIDIA stocks for Choi	Payments and exchange of tips	Information exchange in the analyst group	Horvath's PM

93 Dirks, 463 U.S. at 662-63.

94 Jonathan Stempel, *Conviction of SAC's Martoma upheld despite jury instructions*, REUTERS (June 25, 2018), https://www.reuters.com/article/us-sac-insidertrading-martoma/conviction-of-sacs-martoma-upheld-despite-jury-instructions-idUSKBN1JL1XH (last visited: April 4, 2019).

95 United States v. Michael Steinberg, 21 F.Supp.3d 309 (S.D.N.Y. May 15, 2014).

96 *Id*. at 312.

Table 2. NVIDIA—SAC Tipper-Tippee Chain (*Steinberg* case)

Steinberg was convicted and sentenced 3.5 years in May 2014.[97] However, it is worth noticing that Steinberg's conviction was vacated and the indictment against him was also dismissed[98] after Second Circuit made a disputed decision which significantly raised the government's burden to establish the knowledge element of insider trading in *Newman*.[99]

Newman[100] is a highly related case where the PM defendants (outside of SAC) shared the same sources of inside information and similar tipper-tippee chains with defendants in the case of *Steinberg*. The four tipper-tippee chains are summarized from Table 3 to Table 6 below:

Dell	Tipper	Tippee-1	Tippee-2	Tippee-3
Name	Rob Ray	Sandy Goyal	Jesse Tortora	Todd Newman
Identity	Investor relations	Analyst	Analyst	PM
Affiliation	Dell	Neuberger Berman	Diamondback	Diamondback
Quid pro quo /relationship	Earnings number (the tip)	Career advice and assistance	Money	Tortora's PM

Table 3. Dell—Diamondback Tipper-Tippee Chain (*Newman* Case)

Dell	Tipper	Tippee-1	Tippee-2	Tippee-3	Tippee-4
Name	Rob Ray	Sandy Goyal	Jesse Tortora	Spyridon Adonakis	Anthony Chiasson
Identity	Investor relations	Analyst	Analyst	Analyst	PM
Affiliation	Dell	Neuberger Berman	Diamondback	Level Global	Level Global

97 Nate Raymond, SAC's Steinberg gets 3-1/2 years prison for insider trading, Reuters (May15, 2014), https://www.reuters.com/article/us-sac-steinberg/sacs-steinberg-gets-3-1-2-years-prison-for-insider-trading-idUSBREA4E12B20140516 (last visited: April 4, 2019).

98 In addition, charges against six other people (government witnesses who pleaded guilty and cooperated with prosecutors) were also dropped. See Ahiza Garcia & Evan Perez, *Insider trading charges dismissed against Michael Steinberg*, 6 others, CNNMONEY (October 22, 2015), https://money.cnn.com/2015/10/22/news/michael-steinberg-insider-trading-charges-dismissed/ (last visited: April 4, 2019).

99 Although the holding of *Newman* was factually vacated in a later Supreme Court case in 2016 (*Salman*), Steinberg's case had already been dropped. For the legal discussion of the different interpretations of the *Dirks* elements between the Supreme Court and the Second Circuit, see *infra* III.B.

100 *Newman*, 773 F.3d.

Quid pro quo /relationship	Earnings number (the tip)	Career advice and assistance	Money	Information exchange in the analyst group	Adonakis's PM

Table 4. Dell—Level Global Tipper-Tippee Chain (*Newman* Case)

NVIDIA	Tipper	Tippee-1	Tippee-2	Tippee-3	Tippee-4
Name	Chris Choi	Hyung Lim	Danny Kuo	Jesse Tortora	Todd Newman
Identity	Finance unit	Former executive	Analyst	Analyst	PM
Affiliation	NVIDIA	Broadcom and Altera	Whittier Trust	Diamondback	Diamondback
Quid pro quo /relationship	Earnings number (the tip)	Family friend from church: trade NVIDIA stocks for Choi	payments and exchange of tips	Information exchange in the analyst group	Tortora's PM

Table 5. NVIDIA—Diamondback Tipper-Tippee Chain (*Newman* Case)

NVIDIA	Tipper	Tippee-1	Tippee-2	Tippee-3	Tippee-4
Name	Chris Choi	Hyung Lim	Danny Kuo	Spyridon Adonakis	Anthony Chiasson
Identity	Finance unit	Former executive	Analyst	Analyst	PM
Affiliation	NVIDIA	Broadcom and Altera	Whittier Trust	Level Global	Level Global
Quid pro quo /relationship	Earnings number (the tip)	Family friend from church: trade NVIDIA stocks for Choi	payments and exchange of tips	Information exchange in the analyst group	Adonakis's PM

Table 6. NVIDIA—Level Global Tipper-Tippee Chain (*Newman* Case)

In this case, the Second Circuit held a relatively protective view on market professionals' information discovering and trading activities. In contrast, the district court Judge Sullivan took a relatively rigid attitude toward market professionals in *Steinberg*. As mentioned, the charge against Steinberg had been dropped because of the holding of *Newman*, and the holding of *Newman* was later vacated by the Supreme Court in *Salman*.[101] However, it is still worth comparing the different views and value considered by different judges in these cases. I am going to discuss the interpretation of the knowledge element and the potential effect on the financial industry in the next section.

[101] Salman v. U.S., 137 S.Ct. 420 (2016) (As we shall see in *infra* III.B., the Court refused to expand the reading of the knowledge element of *Dirks* as suggested by the Second Circuit).

B. Informed Trading or Insider Trading? Where is the Line?

The uniqueness of market professionals' insider trading lies in that the inside information is tipped through multiple layers of tipper-tippee chains. Such kind of factual patterns usually creates room for the defendant to establish creative defense. For example, because the multiple layers of tipper-tippee chains give rise to the remoteness between the corporate insider and the end tippee-traders, the defendants might argue that the accuracy and the credibility of information (i.e., the materiality), as well as the knowledge about the breach of the insider (i.e., the scienter) is accordingly diluted due to such remoteness. In addition, given the sophistication of market professionals in information discovery and trading, they might also argue that the information they trade on does not come from one single source, especially the sources which comes from the insider. These defenses, as we are going to see in this section, are not all accepted by the courts. Nonetheless, the elements that amount to an insider trading tipper-tippee liability under *Dirks* still leave some equivocal room for both parties to argue their case.

1. Dirks

Dirks is the leading case providing the elements required to establish the tippee's liability. According to the *Dirks* Court, "[t]he tippee's duty to disclose or abstain is derivative from that of the insider's duty."[102] In other words, "a tippee assumes a fiduciary duty to the shareholders of a corporation not to trade on material nonpublic information only when the insider has breached his fiduciary duty to the shareholders."[103] To hold the tippee with insider trading liability, the government has to prove that (1) the insider has breached his fiduciary duty, and (2) the tippee knows or should know that there has been a breach."[104] The test of whether the tipper has breached the fiduciary duty is "whether the insider receives a direct or indirect personal benefit from the disclosure, such as a pecuniary gain or a reputational benefit that will translate into future earnings."[105] The Court explained, the government can look for some objective facts and circumstances which infer "a relationship between the insider and the recipient that suggests a quid pro quo from the latter, or an intention to benefit the particular recipient."[106] In addition, the breach of fiduciary duty also exists "when

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[102] Dirks, 463 U.S. at 659.

[103] *Id.* at 660.

[104] *Id.*

[105] *Id.* at 663.

[106] *Id.* at 664.

an insider makes a gift of confidential information to a trading relative or friend".[107]

The Supreme Court found Dirks not guilty because the whistleblower breached no duty to their company when tipping Dirks to expose the fraud of the company. The whistleblower also did not receive monetary or personal benefit amounting to a "quid pro quo" from Dirks. In addition, the relationship between him and Dirks clearly indicates that the tip was not intended as a gift of valuable information to Dirks.[108]

When applying the *Dirks* elements to the trading of market professionals, especially in the context where complicated tipper-tippees chains and information nets exist, several issues can arise: First, the breach (personal benefit) element: what is the motive that induces the corporate insiders to tip an outsider? How can the government prove that the relationship between the tipper and the first-level tippee infers or demonstrates a quid pro quo? Second, the scienter/knowledge element. This is the main battle field in these market professionals' insider trading cases. As we have seen, the tipper-tippee chains in *Steinberg* and *Newman* case all expanded to three or four levels of tipper-tippee relations. Accordingly, it will be a logical and powerful argument for the end tippee-traders to claim that the knowledge about the breach of tippers (if any) has already been diluted. Indeed, Cohen's survival in the criminal investigation clearly shows that in absence of direct evidence, such as the evidence acquired by wiretapping in the *Galleon* case,[109] it is extremely hard for the government to directly prove the mens rea of the defendants. In addition, the defendants can argue that their investment decision does not depend solely on the single source of insider that the government is alleging, given their expertise in information collection and analysis. Accordingly, the remaining question is, when will a court recognize the knowledge element is sufficed if the evidence is only circumstantial? It all depends on a court's attitude and understanding about the financial industry —— a line that has been pushed back and forth by various economic and legal arguments and rationales.

2. The camp holding against market professionals

Before *Newman*, the Second Circuit had already made several decisions regarding market professionals' trading. *Obus* had a specific discussion about how to apply the knowledge element of *Dirks* in the tipper-tippee chain scenario, and *Jiau* adopted a

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107 *Id.*

108 *Id.* at 665-67.

109 Johanna Kassel, *Key quotes from the Galleon wiretaps*, FINANCIAL TIMES (May 11, 2011), https://www.ft.com/content/d2f32724-7bfe-11e0-9b16-00144feabdc0 (last visited: April 4, 2019).

broader approach when recognizing the personal benefit requirement. Lastly, in *Steinberg*, a case derived from the insider trading scheme of the SAC Capital, Judge Sullivan put *Obus* and *Jiau* together and attributed defendant's knowledge of insider's breach to market professionals' sophistication in trading.

In *Obus*,[110] a potential acquisition was under negotiation. The tipper was in charge of conducting due diligence on behalf of the banking company that provided the finance for the acquirer. The tipper tipped the information to an analyst (his college friend) who belonged to a hedge fund group which already had a large position in the target company. The analyst again passed the information to his boss, who then traded on the information. The stock price of the target company doubled after the announcement of the deal.[111] In this case, the *Obus* court took a relatively severe view on market professionals' trading, by declaring that "[c]hain tippee liability may also result from conscious avoidance."[112]

For the scienter of the tipper, the *Obus* court held that the government can prove a tipper's scienter by showing that the tipper intentionally or recklessly relays the information to someone he knows will likely (1) trade on the information or (2) disseminate the information further for the first tippee's own benefit, which suffices the scenario of "making a gift of information to friend" provided by *Dirks*.[113] On the other hand, as to the scienter of the tippee, the court held that it can be established by circumstantial evidence showing that the tippee knew or had reason to know that confidential information was initially obtained and transmitted improperly.[114]

In this case, although there is no direct evidence showing the end tippee-trader's knowledge of the insider's breach, the court inferred the scienter from the fact that (1) he believed the analyst's information was credible and thus knew that it originated from someone entrusted with confidential information, and (2) he recognized that the tipper might lose his job as a result of tipping and promised to offer the tipper a job or help him find a job on Wall Street, which demonstrated his knowledge that the tipper had acted inappropriately.[115] It is worth noting that the court did also mention that the sophistication of the defendants (as an analyst and a hedge fund manager) might

110 SEC v. Obus, 693 F.3d 276 (2d Cir. 2012).

111 *Id.* at 279-82.

112 *Id.* at 288-89.

113 *Id.*

114 *Id.* at 288.

115 See *Id.* at 281 and 293.

matter,[116] but the court did not derive any theory based on such sophistication in this case because the aforementioned circumstantial evidence was enough for the jury to infer the scienter of the defendants.

Jiau[117] is another case involving the tipper-tippee chains of market professionals. In this case, the corporate insiders tipped the quarterly financial results of NVIDIA and Marvell Technology to a middleman. The NVIDIA tipper received gifts (an iPhone, live lobsters, a gift card, and a jar of honey) and insider information about other stocks. The Marvell tipper obtained the access to an investment club. The middleman then turned the tips to financial analysts for trading.[118] The court in this case declared that "[p]ersonal benefit is broadly defined to include not only pecuniary gain, but also . . . . any reputational benefit that will translate into future earnings and the benefit one would obtain from simply making a gift of confidential information to a trading relative or friend (citation omitted)."[119] Accordingly, the court held that "[i]n joining the investment club, [the tipper] entered into a relationship of quid quo pro with [the middleman], and thus had the opportunity to access information that could yield future pecuniary gain."[120]

In the case of *Steinberg*,[121] the two disputed elements —— insider's personal benefit and the end tippee-trader's knowledge of the breach —— again become the center of the battle field. Based on *Obus* and *Jiau*, the district court Judge Sullivan adopted the "conscious avoidance" doctrine used in *Whitman*,[122] holding that to suffice the knowledge element, the government only needs to show that "Defendant either knew of or was willfully blind to the tippers' breaches of duty."[123] In addition, the court added, "[a] jury can find that a defendant was willfully blind 'where a defendant's involvement in the criminal offense may have been so overwhelmingly suspicious that the defendant's failure to question the suspicious circumstances establishes the

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116 *Id.* at 288 ("This is a fact-specific inquiry turning on the tippee's own knowledge and sophistication and on whether the tipper's conduct raised red flags that confidential information was being transmitted improperly.") and 292-93.

117 U.S. v. Jiau, 734 F.3d 147 (2d Cir. 2013)

118 *Id.* at 150 and 153.

119 *Id.* at 153, citing Dirks, 463 U.S. at 663 and Obus, 693 F.3d at 285.

120 Jiau, 734 F.3d at 153.

121 See *supra* III.A.2 for facts.

122 U.S. v. Whitman, 904 F.Supp.2d 363 (2d Cir. 2012). In this case, the insiders of Polycom, Google, and Marvell Technology tipped material inside information to the middleman, who in turn tipped the information to the end tippee-trader.

123 Steinberg, 21 F.Supp.3d at 316.

defendant's purposeful contrivance to avoid guilty knowledge.'"[124]

In application of the conscious avoidance doctrine, the court found the defendant either knew of or was willfully blind to the tippers' breaches of duty, because: first, the defendant's subordinate analyst testified that the information was "'quite accurate, very accurate' and that he knew came from a contact inside" the company because "he had never heard of anyone getting that kind of information before it was publicly announced."[125] Second, the subordinate analyst stated that he told the defendant that the information came from an insider when passing the information.[126] Third, as an "experienced investment professional", it can be inferred that the defendant "understood what kinds of information are available through legitimate channels and what kinds of information are not . . . . Defendant was savvy enough to understand that there is no such thing as a free lunch."[127]

It is important to know that in this case, the court rejected the defendant's theory to treat "knowledge of benefit" as a separate element from "knowledge of the breach of duty".[128] However, this theory was later adopted by the Second Circuit in *Newman*, which further confused the interpretation of the knowledge element established in *Dirks*.

3. The Newman court's protective view on market professionals

While the government brought the similar arguments made in the aforementioned precedents[129] to *Newman* and expected to achieve the same result, the Second Circuit drastically shifted its position to adopt an approach that is extremely favorable to the market professionals. In particular, as to the knowledge element, the Second Circuit rejected the government and Judge Sullivan's conscious avoidance theory and demanded the government to prove that the end tippee-trader "**knew the information**

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124 *Id.*, citing U.S. v. Whitman, 555 Fed. Appx. 98, 105 (2d Cir. 2014).

125 Steinberg, 21 F.Supp.3d at 316.

126 *Id.*

127 *Id.*at 317.

128 *Id.*at 317-19.

129 E.g., the government claimed that "as sophisticated traders, they must have known that information was disclosed by insiders in breach of a fiduciary duty, and not for any legitimate corporate purpose." In addition, the government argued that "given the detailed nature and accuracy of these updates, [the end tippee-traders] must have known, or deliberately avoided knowing, that the information originated with corporate insiders, and that those insiders disclosed the information in exchange for a personal benefit." Newman, 773 F.3d at 443-44 and 454.

was . . . . divulged for personal benefit [of the tipper] (emphasis added)."[130] The first reason provided by the court, is that "*Dirks* clearly defines a breach of fiduciary duty as a breach of the duty of confidentiality in exchange for a personal benefit."[131] Secondly, the court's narrower interpretation of the knowledge element essentially lies in the remoteness between the tipper and the end tippee-trader. That is, the length of the tipping chain. In particular, the court argued, " . . . . the Government has not cited, nor have we found, a single case in which tippees as remote as [the end tippee-traders in this case] have been held criminally liable for insider trading."[132]

The other change made in *Newman* was the recognition of the personal benefit element, in which the Second Circuit again interpreted the term in a relatively narrow view. The court observed, the relationships between the Dell insider and the first-level tippee were not "close" friends even though they had both attended business school and worked at Dell together. Further, the tippee advised the insider "on a range of topics, from discussing the qualifying examination in order to become a financial analyst to editing [his] résumé and sending it to a Wall Street recruiter" *before* the insider began to provide the tips. The tippee testified that "he routinely did so for industry colleagues."[133] On the other hand, the NVIDIA insider and the first-level tippee were family friends who went to church together.[134] Accordingly, the court held that such circumstantial evidence could not infer the government's argument that insiders had received any personal benefits in exchange for the tips. Otherwise, the court argued, "practically anything would qualify."[135]

Lastly, recognizing market professionals' role and capability of discovering and processing information, the court also emphasized the fact that the employees of NVIDIA and Dell "regularly engaged with analysts and routinely selectively disclosed the same type of information."[136] Therefore, the accuracy of information, the court suggested, might be produced by the "analyst modeling" which evaluates all the accessible information obtained through analysts' effort. Such understanding of market mechanisms will rebut the inference that whenever the information is highly accurate, it is "so overwhelmingly suspicious" that the tippee-traders must have known that the

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130 *Id.* at 450.

131 *Id.* at 449.

132 *Id.* at 448.

133 *Id.* at 452-53

134 *Id.*

135 *Id.*

136 *Id.* at 455.

information comes from an insider in breach of duty.[137]

As a result, the court reversed the convictions of the two hedge fund PMs. After this decision was made, according to the tracking of a commentator,

> . . . . dozens of defendants, both within and outside the Second Circuit, have sought to have their criminal convictions or civil liability determinations overturned, or their guilty pleas or settlements vacated. And the government has now either dismissed or lost on appeal fourteen of the eighty-seven convictions that Southern District of New York U.S. Attorney Preet Bharara amassed in insider trading cases, including many involving expert networks.[138]

In 2016, the Supreme Court partially discussed the disputes arising from *Newman* in a case *not* involving tipper-tippee chains of market professionals. In *Salman*, the tipper and the first-level tippee were brothers in a very close relationship, and he and the second-level tippee were brothers in law.[139] The parties disputed on the "personal benefit" element. Pursuant to *Newman*, the defendant argued that government should but failed to prove "a meaningfully close personal relationship that generates an exchange that is objective, consequential, and represents at least a potential gain of a pecuniary or similarly valuable nature."[140] The Supreme Court rejected such interpretation of *Dirks* made by the Second Circuit, and held that "when an insider makes a gift of confidential information to a trading relative or friend . . . . the tip and trade resemble trading by the insider followed by a gift of the profits to the recipient."[141] Accordingly, the personal benefit element is sufficed when the evidence shows a close family or friendship relationship.

Although the *Salman* Court solved the issue of the personal benefit element, it did not touch the knowledge element which was also disputed in *Newman* because the context of this case was different from the context of Wall Street tipper-tippee chains that we have seen in the previous cases.

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137 *Id.* at 454-55.

138 FERRARA ET AL., *supra* note 7, at 7-8 (2019).

139 Salman, 137 S.Ct. at 424.

140 *Id.* at 425.

141 *Id.* at 427.

4. Summary

In this section, we have examined the different views taken by the judges in different decisions. Interestingly, no matter which approach the judge chooses, it has to do with market professionals' sophistication in collecting and processing information. Standing from the perspective of the camp that holds against market professionals, it is their professional sophistication that makes them more likely knowledgeable about "what kinds of information are available through legitimate channels and what kinds of information are not."[142] On the other hand, the camp that is more friendly to market professionals argues that their sophistication gives them the ability to obtain and condense all accessible information into the accurate and valuable kinds. In this sense, they do not need to know about the source of the information (be it inside or not), but only need to focus on the quality of the information.

All in all, I am of the opinion that these reasons are given only after the judges have already decided whether they want to side with or punish the derivative trading of market professionals. In other words, these reasons are more of the different interpretations of the elements established by *Dirks*, for the purpose of attorneys' attack or defense in the litigations, rather than a meaningful thinking process that can lead to a clear and decisive conclusion on the destiny of the derivative trading of market professionals. In the end, after each camp devotes a lot of resource in a series of Wall Street tipper-tipee cases to promote its own position, the current case law still seems relatively ambiguous and vulnerable even to a little change of facts in the future cases.

IV. The Zero-sum Game: Line-drawing of Law and Redistribution of Profits of Information

Market is a zero-sum game.[143] Although controlling the trades of one certain group of market players might lessen the harm of one group of victims, it might simultaneously cause different effects on the other group of market players. It has long been argued by the scholars promoting legalization of insider trading, that insider trading law does not change the economics of the market, it only redistributes the privilege of exploiting the value of information from the corporate insiders to the

142 Steinberg, 21 F.Supp.3d at 317.

143 HARRIS, *supra note* 35, at 234.

financial industry and market professionals.[144] Indeed, from the perspective of financial economics, both the trading of insiders and market professionals push the stock prices closer to the true value (bringing the same benefits), and both cause the adverse selection problem to market makers (causing the same harm, if any[145]), as well as the informational inequality to the uninformed investors. There is no way to tell the difference between the effects incurred from insiders and informed traders. In fact, in the eyes of financial economists, they belong to the same category of market players.[146]

The remaining key determinant, as Professor Grossman and Stiglitz's model suggests, is the level of participation of the uninformed traders. In the language of the SEC, the prohibition of insider trading promotes the investors' confidence in the market, and thus the willingness to trade. Interestingly, this theory has also been rebutted by Professor Anderson, from the point of sociopsychology, by showing that the confidence theory is also "subject to the problem of false consciousness——investor behavior may be affected by false beliefs about the economic and moral consequences of insider trading" and empirically unproven and perhaps unprovable.[147] Professor Kahan and Posner's theory well explained the government's use of the confidence argument, in that the enactment (after the Great Depression) and the increased enforcement (after the 2008 market crash) of insider trading law appropriately responded the people's desire for a solution, even if there could not be a parallel universe for testing whether other alternatives work better than the current insider trading regime. Still, another school of scholars takes the view from the public choice theory, arguing that the current insider trading regime is the product of the lobbying from financial industry.[148]

No matter which theory is more persuasive, the status quo is not whether we should

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144 See, e.g., Henry G. Manne, *Insider Trading and Property Rights in New Information*, 4 CATO J. 933, 941-43 (1984); JONATHAN R. MACEY, INSIDER TRADING — ECONOMICS, POLITICS AND POLICY 13-16 (1991); STEPHEN M. BAINBRIDGE, SECURITIES LAW: INSIDER TRADING, 147-54 (2007).

145 One scholar argued that "there is little evidence that the adverse selection theory was articulated by the market makers themselves". In fact, he finds "[a] spokesman for the NYSE Specialists' Association, which represents the 456 Big Board stock specialists, says insider trading isn't an issue for its members." Dolgopolov, *supra note* 30, at 108-09. He even finds that in order to motivate clients to trade (and make profits from the brokerage commissions), brokers are willing to provide inside information to their clients. *See* Stainslav Dolgoplov, *Insider Trading, Chinese Walls, and Brokerage Commissions: The Origins of Modern Regulation of Information Flows in Securities Markets*, 4 J. L. ECON. & POL'Y 311, 343-44 (2007).

146 See *supra* II.B.2.

147 *See generally* Anderson, *supra* note 74, at 16.

148 See, e.g., David D. Haddock & Jonathan R. Macey, *Regulation on Demand: A Private Interest Model, with An Application to Insider Trading Regulation*, 30 J. L. ECON. 311 (1987).

enforce insider trading law,[149] but how do we enforce insider trading law. Considering the dual roles played by market professionals in the market (that they exploit the uninformed traders but at the same time provide the market with price efficiency), it is understandable why different judges have adopted different positions toward their derivative trading. The current consensus of the case law is still the elements established in *Dirks* which derive from the fiduciary duty a corporate insider owes to the company. Such philosophy links back to the very original ideology of *Chiarella*, where fiduciary relationship serves as the limitation of insider trading law and enforcement, which recognizes the balance between the need of market integrity and investor confidence, as well as the truth that difference in informational capability does exist among different group of investors and is necessary for the market mechanisms to work. However, the boundary line has still been pushed back and forth according to the difference existing in the factual and circumstantial evidence of each case. The difficulty lies in that there is no way to prove one approach will make the market better off than the other. Accordingly, in addition to relying on the currently unstable and dynamic insider trading case law regime, finding other parallel alternatives to regulate the trading of market professionals might also be another way out.

V. Conclusion

This chapter analyzes the enhanced enforcement of insider trading law against market professionals in recent years from the perspectives of both law and financial economics. Specifically, there are two camps of thoughts. One focuses on the market professionals' contribution to the price efficiency, and thus takes a tolerating attitude toward their informed trading. The other camp, led by the regulatory agencies, emphasizes the importance of the equality of access of information which encourages investors to participate in the market. From the viewpoint of financial economic model, each side has its point because market efficiency and informational inequality is in a trade-off relationship. As a result, the boundary line of the law is continuously pushed back and forth based on the nuanced difference existing in the facts of each case, and the personal philosophy of the judges.

Given the uniqueness of the roles played by market professionals, I am of the opinion that the framework of traditional insider trading law is not able to ascertain

[149] Given that by 2000, an overwhelming number of 87 countries had enacted insider trading regulation. See Uptal Bhattacharya & Hazem Daouk, *The World Price of Insider Trading*, 57 J. FIN. 75, 77 (2002)

legal predictability for the market professionals to design trading strategies and appropriate compliance to fend themselves from legal risks. This might force them to take the most conservative approach when acquiring information and trading. Such result might not be beneficial to the market. The split views of different courts also create the factual randomness of insider trading enforcement. For example, in the case of *SAC*, those who pled guilty case found that their case were later dropped after *Newman*, while those who did not plead guilty and appeal would find out that they were convicted because *Newman* was later vacated by *Salman*. Nonetheless, the factual patterns confronted by these defendants were almost the same.

Currently, it seems that their destiny is left to the judicial system to decide. This chapter suggests that other parallel alternatives to regulate the trading of market professionals, which are statutory-based, should be enacted by the legislative branch so that the regulatory agencies will have clearer basis to develop a more certain and predictable enforcement regime in addition to the traditional insider trading framework.

Appendix I

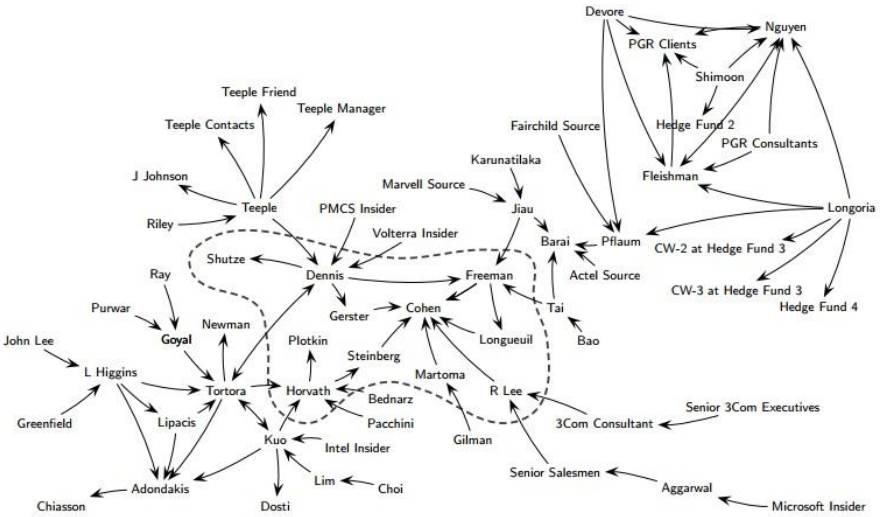

Figure 1: The Information Net of SAC Capital (source: Ahern, 2017)

CHAPTER 3. LEGAL TRANSPLANT IN EASTERN ASIAN COUNTRIES —— THE CASE OF INSIDER TRADING LAW IN TAIWAN

I. Introduction

The existing legal diffusion/transplant literature has fruitful analysis and discussion on legal families and origins, as well as the comparison between civil law and common law system, which composes various transplant and diffusion theories. In addition, some other commentators avoid basing their theory on such premises, explaining legal diffusion by political economics theory. Still another comparative law study simply observes how the same subject matter of law is designed or adopted in different jurisdictions through cross-country comparison. Whatever theories are being proposed, however, most of them stand from the western, or more specifically, law-exporting countries' perspective. What had been omitted in the discussion, in addition to assigning a label of a single legal family, a legal system, or certain degree of political inclination (left or right wing) to a law-importing country, is the curiosity to investigate what happens during the process of transplantation as well as after the law has been imported into that country.

To be fair, one might argue that it is a question to be answered by those law-importing countries. Indeed, it is likely that a law selling (exporting) country's research interest will be no more than asking who are buying our brand (be it the French family, the common law system, or the left-wing philosophy), what is our market share compared to the competitors, and what might be the causes, as they might only want to see which system/family prevails in which specific areas (that is, who is the better brand?).[150] To them, each law-importing country is only a data-point. Research stops after they prove which brand is better in a certain areas, say economic development or corporate law design. However, for those law-importing countries, while choosing among different "brands" to learn from might be something customarily appealing, the more important question which they most of the time forget to ask, is whether they are better off after borrowing a law from a foreign country.

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[150] A school of papers runs regression to explain the relationship between the legal families and economic development, implicitly proposing that some "brands" might be better than others. Similarly, some commentators try to establish and prove the impression that common law system is better for economic development, and still others claim that the only determining factor is whether the country is left or right wing. See the discussion in infra Part II.

The answer lies in the process of policy diffusion. As argued by Professor Linos, traditional transplant theorists pay too little attention to "the domestic actors who eventually determine policy adoption".[151] These actors range from judges and policy makers to other experts such as scholars, lawyers, and even the domestic voters. The involvement of these domestic elements will provide the researchers with the possible channels to better interpret the results they observe from the other large cross-country quantitative studies.

Inspired by Professor Kanda and Milhaupt's paper on assessing the transplantation of American fiduciary duty law to Japan,[152] this chapter aims to adopt a new methodology that provides a viewpoint that a law-importing countries can stand from when they seek to assess the successfulness of their importation of foreign laws. To be specific, the methodology of this chapter differs from the traditional comparative studies in the following aspects:

1. Noticing the fact that every law-importing country has its own need and agenda of legal development, this chapter is not to found another abstract and universal theory to categorize the legal diffusion among different countries, but is more like a methodology for law-importing countries to self-examine their legal transplant efforts.
2. Instead of categorizing countries by the traditional dichotomy such as core/periphery, developed/undeveloped, colonizer/colonized,[153] which impliedly but unnecessarily preconditions the foundation and direction of legal diffusion (that some jurisdiction always has to be superior to another), this chapter uses the straight-forward importing/exporting dichotomy to identify the observations.

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151 KATERINA LINOS, THE DEMOCRATIC FOUNDATIONS OF POLICY DIFFUSION: HOW HEALTH, FAMILY, AND EMPLOYMENT LAWS SPREAD ACROSS COUNTRIES (2013), at 16.

152 Hideki Kanda & Curtis J. Milhaupt, *Re-examining Legal Transplants: The Director's Fiduciary Duty in Japanese Corporate Law*, 51 AM. J. COMP. L. 887 (2003).

153 The sense of "we are core and they are periphery" might prevent the researchers from sitting themselves in the shoes of the research targets. For example, the subject of this chapter —— insider trading law —— was initially enacted by U.S. in 1930s, and later pervasively spread to the world in a relatively short period of time between 1980s to 1990s. Mechanically applying the traditional core/periphery or developed/undeveloped logic will render all those countries importing insider trading law "periphery" or "undeveloped", while recognizes U.S., the first country adopting insider trading law, to be the only "core"/ "developed" / "advanced" country in the world. Contrarily, the discussion will become more meaningful when researchers use "law-importing" and "law-exporting" as the foundation of comparison.

3. This chapter finds Eastern Asian countries, such as Taiwan, Korea, and Japan, to be good cases for researching legal transplant. They are civil law countries but nowadays learning heavily from the U.S. system in shaping their legal framework of business law. They are countries transforming from undeveloped to developed economies. They do not belong to a specific legal family. All these characteristics make them unique from the traditional observations of legal transplant literature. In fact, they are the perfect cases for understanding a country's thinking process behind the legal transplant process.

This chapter uses the case of the transplantation of insider trading law of Taiwan to investigate how and why a law-importing country imports foreign law, and how to assess the successfulness of such process. In other words, this methodology makes a zoom-in on a specific data-point from a large cross-country penal, and focuses on the self-assessment process *within* that country. In particular, this chapter conducts empirical research to observe the roles played by each domestic actor, including the legislation, the courts, and the scholars, during the transplantation.

In the end, the ultimate purpose of this chapter is to promote a new way, or at least a different angle, to think about legal transplant —— it is not about which "brand" is being transplanted, but about the process of the organic legal forestation and localization after the foreign law is imported. In this way, maybe someday the plants of law in these countries will flourish so that they become new law-exporting countries.

Part II of this chapter begins with the theories and methodologies of legal transplant research utilized by existing literature and this chapter. Part III of this chapter provides the empirical evidence of legal transplant from Taiwan. Part IV of this chapter reassesses legal transplant research based on the evidence found in Part III, particularly through the lens of a law-importing country. Part V concludes.

II. Legal Transplant: Theories and Methodologies

A. Legal Transplant Theories

1. Traditional theories

To explain the legal transplant/diffusion phenomenon around the world, comparative law scholars have developed various theories. To name a few,

The *Construction Theory*[154] focuses on the practical utility of the law-importing countries. It explains the practical benefits brought by comparative law, which is also the channels where legal transplant obtains social acceptance. This includes (a) foreign law serves as a tool of construction, where advanced countries serve as the leaders, affecting the legislators of the following countries and saving the efforts of the law-importing countries from starting from zero, (b) foreign law diffuses through legal education, where experts groups theorize foreign policies, providing the rationales for policy makers to adopt, and (c) the fermentation of network effect,[155] where law-importing countries copy what have been adopted by the neighboring countries. In addition, Professor Linos further puts emphasis on the role of the domestic voters, arguing that "voters rely heavily on the media for information. Large, rich, and culturally proximate foreign countries receive extensive and favorable media coverage . . ." and thus domestic policy makers choose to import the policies from these countries or at least consider them as the benchmarks or justification of the legislation.[156]

The *Coercion Theory*[157] derives from the political motivation of the law-importing countries. It attributes the diffusion of foreign policies to the law-importing countries' reliance on the political need, such as the demand for "trade, foreign direct investment, aid, grants, loans, or security",[158] from entities like International Monetary Fund, the World Bank, EU, or countries like U.S. According to the theory, adoption (arguably voluntary or involuntary) of certain required policies or legislation is the

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154 KONRAD ZWEIGERT & HEIN KÖTZ, INTRODUCTION TO COMPARATIVE LAW, 16 (1998); Frank Dobbin et al., *The Global Diffusion of Public Policies: Social Construction, Coercion, Competition, or Learning?*, 33 ANN. REV. SOC. 449, 452-54 (2007); Kanda & Milhaupt, *supra* note 152, at 889.

155 See Franklin A. Gevurtz, *The Globalization of Corporate Law: The End of History or A Never-Ending Story*, 86 Wash. L. Rev. 475, 496-500, 504 (2011), who argues that the network effect of law spreading among neighboring countries is just like "fads and fashions", where "it is not necessary to consider the precise mechanisms causing one nation to imitate corporate laws . . . . just as it is not necessary to understand the precise mechanisms and motives for the influence of clothing fashions in order to appreciate that people follow clothing fashions for the sake of being in fashion." Consequently, non-European countries adopted the corporate form of business by "simply cop[ying] all the features of the institution . . . . without asking what was really necessary or useful."

156 See Linos, *supra* note 151, at 2-4, 13-14.

157 See Dobbin et al., *supra* note 154, at 454-57; Kanda & Milhaupt, *supra* note 152, at 889; Linos, *supra* note 151, at 15.

158 Dobbin et al., *supra* note 154, at 454.

condition for these countries in need to receive help or at least to maintain the relationship with those leading entities or countries. In addition, the abundant research infrastructure owned by those powerful players enables them, either by carrots or sticks, to spread the ideas to the world and form their policy leadership status (such as Germany's influence on EU, or US's policies to the world). The recent trade war between China and U.S over the issues of patents and trade secrets regulation is a rather conspicuous example.

The *Competition Theory* describes the pattern in which a country adopts a policy that gives it a comparative edge over its competitors, which might even force the competitors to follow the same or similar regime.[159] Lastly, the *Learning Theory*[160] argues that governments observe the effects of policies implanted in other countries, draw lessons of good or bad from the experience or experiments of those countries, and update each piece of evidence into its own knowledge base.

2. The legal origins theory and the debate

Following the publishing of their influential piece *Law and Finance,*[161] Professor La Porta et al. ("LLSV") open a school of research regressing the correlation (if not causation) between a country's legal origin/tradition[162] and its corporate law design and thereby its financial development.[163] Ever since then, a fierce debate in the academia has been launched over the decades. "Modern empiricists tend to be extremely skeptical of cross-country regressions."[164] Some dissenters argue that the

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159 *Id.* at 457-60; see also Linos, *supra* note 151, at 14 and the collection of the studies in this field in footnote 10 of the book.

160 Dobbin et al., *supra* note 154, at 460-62; Linos, *supra* note 151, at 14-15.

161 Rafael La Porta, et al., *Law and Finance*, 106 J. POL. ECON. 1113 (1998).

162 According to LLSV, legal origins broadly indicates "a style of social control of economic life (and maybe of other aspects of life as well)." Rafael La Porta, et al., *The Economic Consequences of Legal Origins*, 46 J. ECON. LITERATURE 285, 286 (2008). The difference of style might come from the different philosophies toward market and social control (common law lessi faire vs. civil law state allocation), or result from the history of legal development and transplantation of each country.

163 "[C]ountries whose legal rules originate in the common law tradition tend to protect investors considerably more than the countries whose laws originate in the civil-law . . . ." In addition, "legal investor protection is a strong predictor of financial development." Taken together, LLSV suggests that the difference in legal origin results in the difference in a country's financial development. See La Porta, et al., *supra* note 161, at 1151-52; La Porta, et al., *supra* note 162, at 285-86.

164 Holger Spamann, *Empirical Comparative Law,* 11 ANN. REV. LAW & SOC. SCI. 131, 141 (2015).

LLSV cross-country empirical evidence only tells us about the correlation between the variables on the two sides. It cannot indicate which way the causation actually runs.[165] Some others, on the other hand, criticize that legal origins are not the real factor causing the difference, and it is the other instrumental variables (such as culture, politics, or history) behind legal origins that contribute to the consequences observed by LLSV.[166]

One alternative to the legal origins theory of legal transplants is the *Political Economy Theory* proposed by Professor Roe, who argues that the difference between common and civil law system only gives rise to the difference in their judicial style, but not the difference in corporate rules. Instead, it is the difference in political economic philosophy (that is, the government's attitude toward capital markets) that generates the varied levels of investor protection, and thus the different outcomes in financial development.[167]

Another problem of such cross-country empirical research is, what this chapter refers to, the "brand competition" problem. Conducted from the viewpoint of the western scholars, LLSV is more meaningful in the macro sense in understanding the average performance of a certain cluster of countries of the same legal origins. The implication of the research, is to provide a tool for law-exporting countries to decide "which brand performs better". In contrast, at the micro level, each sample country is only a data-point, or, like an observation in the massive poll used to prove the puzzle of which brand is better. The result generated by such kind of research is less helpful to those law-importing countries which try to explore the solutions for its own legal development, because the difference between each data-point is averaged out in the model. However, it is such difference that is meaningful to the country which is considering importing foreign law.

Putting aside the question of how much weight should we give to the LLSV school when analyzing the legal or financial difference among countries, their legal origins theory has been commonly utilized by comparative law literature to explain the phenomenon of legal transplant. For example, Spamann argues that law diffuses, from

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165 See Mark J. Roe, *Legal Origins, Politics, and Modern Stock Markets*, 120 HARV. L. REV. 460, 511-13; Gevurtz, *supra* note 155, at 500-01.

166 For a comprehensive understanding of the literature and the debate, see La Porta, et al., *supra* note 162.

167 See Roe, *supra* note 165.

core to periphery countries, within the same legal family lines.[168] Similarly, the "who is the better brand" philosophy of research is also commonly seen in the field of comparative law.[169]

B. Eastern Asian Countries —— Outliers of the Traditional Common/Civil Law Dichotomy

The economic and legal development of Eastern Asian countries, such as Taiwan Korea, and Japan, have similar patterns. Around the late 1800s and the early 1900s, when transforming from monarchies to modern countries of constitutionalism, they borrow the legal system from European countries as the foundation. Later, after World War II and during the cold war, U.S. injected economic and political aid to boost the economy of these alliance countries, which had a substantial influence on these countries.[170] Ever since then, these countries developed close trade and political relationship with the U.S. and consequently, the U.S. legal system, especially the business and economic law, were introduced in these Eastern Asian countries.[171] It is also worth noticing that unlike traditional law-importing countries which use the same language as the countries of their legal origins, these Eastern Asian countries speak in totally different language from the languages used in either the European countries or U.S. It is such unique patterns and characteristics of legal development that makes these countries outliers the traditional common/civil law dichotomy of comparative law, where multiple transplants theories could be observed and tested simultaneously.

Taiwan's modern legal development started with copying from the German civil

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168 Holger Spamann, *Contemporary Legal Transplants: Legal Families and the Diffusion of (Corporate) Law*, 2009 B.Y.U.L. REV. 1813 (2009).

169 For example, one recent research compares the texts and language of the antitrust/competition law between the original versions of the two exporting jurisdictions — EU and US, and the versions copied and adopted by other law-importing countries, to decide the respective proportion of laws that resembles the EU and US antitrust/competition law (which means, to judge who is dominant as a brand in the competition of leadership in the field of antitrust/competition law). See Bradford et al., *The Global Dominance of European Competition Law Over American Antitrust Law* (2018) (working paper), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3200154 (last visited: April 30, 2019).

170 For Japan, it was during the period of the post-war re-construction in Japan. For Korea and Taiwan, it was during the period of the post Chinese civil war and Korean War.

171 See Kanda & Milhaupt, *supra* note 152, at 887; Gail J. Hupper, *The Academic Doctorate in Law: A Vehicle for Legal Transplants?*, 58 J. LEGAL EDUC. 413, 448-51 (2008).

law system but has been influenced heavily by the U.S. law after World War II.[172] Similar to Japan and Korea, its legal development is not limited to the "legal family/origin" assigned by LLSV. [173] Instead, it deeply follows its economic and political development needs, i.e., the maintenance of the close relationship with U.S. Record shows that from 1989 to 2019, U.S. is Taiwan's second largest trade partner, with an average trade volume of more than 700 billion dollars per year (in fact, U.S. had been the largest trade partner of Taiwan before 2004).[174] In addition, ever since the breakout of Korean War and during the cold war, Taiwan has stood as an important military gate to obstruct the expansion of communism even until today.[175] The economic and political partnership between Taiwan and U.S. has given rise to the entry of the U.S. legal system to Taiwan.

Putting together the civil law foundation and the influence of U.S. common law, Taiwan absorbs the philosophies and wisdom from both legal systems during the progression of its legal development. The hybrid mode of its business law design is a clear evidence.[176] Such methodology might help to think outside of the box of the traditional comparative and transplant theories, where emphasis is usually put on the "who is the better brand" competition —— be it civil law versus common law, origin of A family versus B family, or left wing versus right wing states, or on the "which comparative law theory best explains the transplant phenomenon" debate.[177]

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172 *See generally* Tay-sheng Wang, *Translation, Codification, and Transplatation of Foreign Laws in Taiwan*, 25 PAC. RIM L. & POL'Y J. 307, 323-25 (2016).

173 LLSV assigned Korea, Taiwan and Japan as the members of the German law family, see La Porta, et al., *supra* note 161, at 1118-19.

174 See the trade statistics recorded by Bureau of Foreign Trade, Ministry of Economics, Taiwan, https://cus93.trade.gov.tw/FSCP040F/FSCP040F.

175 See, for example, Joel Gehrke, *Pence: China should follow Taiwan's lead to democracy*, WASHINGTON EXAMINER (Oct. 04, 2018), https://www.washingtonexaminer.com/policy/defense-national-security/pence-china-should-follow-taiwans-lead-to-democracy (last visited: April 30, 2019).

176 The design of the board of directors in Taiwanese Company law is a prominent example, where Taiwan blends the German "supervisor" design together with the U.S. "independent director" model. Similarly, as we shall see in the later sections, the subject of this chapter — Taiwanese insider trading law also adopts the same hybrid approach.

177 Dobbin et al. criticizes that the isolation of different camps has resulted in the situation where "analysts have rarely developed specific tests of the mechanisms their theories point to and have rarely tested all appropriate theories side by side." Dobbin et al., *supra* note 154, at 462.

Here, the case of legal transplant in Eastern Asian countries demonstrates the "need" theory from a different angle —— the shape of the legal transplant process is formed by the hybrid need of that law importing country, in which construction, coercion, and competition theories might simultaneously apply. In this sense, the unique business law development pattern in these Eastern Asian countries, such as the importation of insider trading and fiduciary duty law, can provide researchers with fruitful materials and scenarios, liberating them from limiting the transplants research to only one of the competing theories. In addition, the renowned competition and convergence of business law theory proposed by Professor Hansmann and Kraakman[178] might also be another interesting theory that provides some satisfactory explanations for the phenomenon.

C. Legal Transplant and the Case of Insider Trading Law

Insider trading denotes the act of trading in securities while in possession of material nonpublic information.[179] Compared with murder or battery, which is per se legally and morally unacceptable and gives rise to its culpable status under natural law, the culpability of insider trading is not as clear. After all, there is no one truly injured,[180] and likewise, the actor might not even feel sorry or wrong about conducting insider trading.[181] As Professor Henning smartly put it, ". . . . the short answer to the question of why insider trading is illegal is the one that an exasperated parent is wont to give to

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[178] Reinier Kraakman & Henry Hansmann, *The End of History for Corporate Law*, 89 GEO. L. J. 439 (2001); *See also* Gevurtz, *supra* note 155, at 485-86, 496-500. (discussing about the "fashions" of independent directors and fiduciary duty model, as well as the prohibition against insider trading spreading around the world).

[179] Stephen M. Bainbridge, *The Law and Economics of Insider Trading 2.0*, at 3 (2019), *forthcoming* in ENCYCLOPEDIA OF LAW AND ECONOMICS (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3312406 (last visited: April 30, 2019).

[180] "In a narrow sense, Manne has been right in saying that insider trading is a victimless crime (at least when done not face to face but anonymously in public markets)." Homer Kripke, *Manne's Insider Trading Thesis and Other Failures of Conservative Economics*, 4 CATO J. 945, 953 (1984); "Although [the subjects of the study] seemed to have strong intuitions that insider trading is wrong, they were unable to isolate the victim in one case from the victim in another." Stuart P. Green & Matthew B. Kugler, *When is it Wrong to Trade Stocks on the Basis of Non-Public Information-Public Views of the Morality of Insider Trading*, 39 FORDHAM URB. L. J. 445, 484 (2011).

[181] "A 1986 *Business Week* poll . . . found that . . . 'Americans don't seem to be particularly upset with the spreading insider trading scandal.' The study found that 67 percent of Americans were convinced it is 'common' for people on Wall Street to engage in insider trading. And while 66 percent thought insider trading should be illegal, 55 said they themselves would trade on an inside tip." JOHN P. ANDERSON, INSIDER TRADING: LAW, ETHICS, AND REFORM, 192 (2018).

a misbehaving child: 'Because it is!'"[182]

However, in reality, prohibiting insider trading has become a global consensus for more than two decades, where most of the countries decided to join the trend of banning insider trading during the 1980s and 1990s.[183] Accordingly, from the viewpoint of comparative law research, the speedy spread of insider trading prohibition, as a product of transplantation, is an interesting subject for researchers to observe and compare: why do these coutries decide to follow? And how?

Insider trading is an appropriate target for comparative law research for several reasons: First, the concept of insider trading law is relatively compact and simple: there is only one rule against one type of action: no trading on material nonpublic information. As a plain vanilla research target, it allows researchers to focus on the comparion of the different philosophies and approaches of the sample countries toward the transplanted policy. In contrast, the immense scale born by the larger projects which conduct comparative research on the whole-package business legal framework might sacrifice the focus of the comparative end, while dedicating too much to the process of unifying or at least reconciling the benchmarks of comparison.[184] The cross-country comparison problem discussed in the previous section might also be worsened by the number of comparing variables. All in all, the methodology to compare and investigate one thing at a time can also be found from Kanda and Milhaupt's paper which engaged in the research on the transplantation of the American fiduciary duty law to Japan.[185]

Second, although the concept of insider trading prohibition is simple, differences

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[182] Peter J. Henning, *What's So Bad About Insider Trading Law?*, 70 BUS. LAW. 751, 770-71 (2015). "The studies seem to suggest instead that (1) the majority of people think that insider trading remains prevalent despite being regulated; (2) though most people think it is wrong, they cannot identify the harm; and (3) they would trade on inside information themselves if they had the chance." ANDERSON, *supra* note 182, at 193.

[183] By 2000, 87 countries had enacted insider trading regulation, where about 80 of which enacted the law during 1980s and 1990s. See Uptal Bhattacharya & Hazem Daouk, *The World Price of Insider Trading*, 57 J. FIN. 75, 77 (2002); Laura N. Beny, *The Political Economy of Insider Trading Law and Enforcement: Law vs. Politics? International Evidence*, in RESEARCH HANDBOOK ON INSIDER TRADING 266, 287-89 (Stephen M. Bainbridge ed., 2013).

[184] Taking the legend paper *Law and Finance* conducted by LLSV as an example, it compares 9 different corporate shareholder rights and 6 different creditor rights of the 49 sample countries at the same time. In the meantime, it also runs a regression of 9 different benchmarks of rule of law for the 49 countries. See La Porta, et al., *supra* note 161.

[185] Kanda & Milhaupt, *supra* note 152.

in legislation and enforcement might still exist among different countries. For example, the scope of the traders who are subject to the law might differ among different countries (in the U.S., the case might even be among different states and courts), as does the definition of material information. In addition, what is the mens rea required to constitute insider trading among different jurisdictions? All these variables provide researchers with spacious room to study, testing different comparative law and legal transplant theories. Here, scholars could investigate the reasons for a country to import insider trading law, as well as the ultimate ends to be achieved. For instantce, is it because of the need to strengthen the integrity and soundness of the securites market (i.e., more of a civil law state-allocation approach that bases on fiduciary law)? The desire to protect the shareholders of the public companies from the exploitation of their agents (i.e., the common law lessi faire private market model)? Is it the result of developing countries copying the law from the more advanced countries, or simply the product of network effect among neighboring countries where they are afraid of being "out of fashion"? All these questions are valid and intriguing from the point of view of comparative law. The answers will demonsrtate the philosophy and approach of a country when it comes to legal transplant.

Lastly, although there is some existing Taiwanese literature researching legal transplant through the localization of foreign civil law, criminal law, civil procedures, and criminal procedures,[186] the area of securities law has not yet been covered from the perspective of legal transplant. It makes insider trading law a good subject for this chapter to observe the importation of foreign laws in Taiwan.

III. Empirical Evidence from Taiwan

A. Formal Route of Legal Transplant —— Transplant of Insider Trading Law

1. Legislation and amendment

Taiwan started its first stock exchange in 1961. The Taiwanese Securities and Exchange Act was later enacted in 1968. However, it was not until 1988, 20 years later, did Taiwan join the global trend of some 80 countries which enacted the insider trading law during the late 1980s and 1990s.[187]

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[186] See, e.g., Wang, *supra* note 172, at 319-22.

[187] Beny, *supra* note 183, at 287-89.

According to the 1987 congressional gazette, the main reasons for enacting the 1988 insider trading law are as follows:[188]

1. The practices that insiders of the publicly traded companies …. acts benefit from using the companies' undisclosed material information to trade are not explicitly prohibited . . . . The lack of regulation violates the fair and honest principle of securities exchange . . . . The soundness of the development of the securities market was encumbered, which becomes an omission to the securities regulation.
2. The prohibition of acts which benefit from using the inside information to trade has become a worldwide trend; countries like the U.S., the U.K., Australia, Canada, the Philippines, Singapore, ... all forbid such conduct by either the corporate law or securities law, providing that those who violate the law are criminally and civilly liable. In order to strengthen the soundness of the development of our securities market, [the congress] makes reference to the pertinent laws of the U.S. and enacts this article…

From the reading of the legislative reasoning, we can see that the first reason addresses the problem to be solved. As to how to solve the problem, the philosophy of a law-importing country can be easily captured from the second reason: first, Taiwan looks around the world, noticing that other countries (especially those which are considered more advanced or are situated around) are adopting a special policy to solve the problem (be it a common or same problem). Second, it looks back to itself, finding that it does not have such legislation yet. Then, it jumps to the conclusion that importing the same regulation is necessary for it to keep up with those countries. Here, we might want to ask: what forms the approach and what are the defects of such approach? We will discuss this question later in Part IV of this chapter.

Next, we move to observe the amendment process of the Taiwanese insider trading law. Facing the change of market environment and the practical need in various aspects

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188 IN-JAW LAI (賴英照), ZUÌ XĪN ZHÈNG QUÀN JIĀO YÌ FĂ JIĚ XĪ (最新證券交易法解析) [THE NEWEST ANALYSES OF SECURITIES AND EXCHANGE ACT], 471-72 (2011), citing 76 (96) The Legislative Yuan Gongbao [The Congressional Gazette], at 75-76; Yu-Chi Sun, *The Fulfillment and Development of the Insider Trading —— Focusing on The Interaction between Judicial Practice and Law Amendment* (June. 2010) (unpublished master dissertation, on file with National Chiao Tung University Library), citing 76 (42) The Legislative Yuan Gongbao [The Congressional Gazette], at 22-23.

where the Taiwanese courts were encountered with difficulty in applying or interpreting the insider trading law, Taiwan amended the elements and scope of the law in 2002, 2006, and 2010. In addition, to enhance the deterring effect, Taiwan also substantially increased the penalties of committing insider trading in 2000, 2004, and 2012.

All in all, the traits of foreign law are still highly visible in the contemplation process of these amendments, especially when it comes to the technicality or justification of the legislation.

For example, to amend the length of the quiet period of trading, the 2006 amendment compared the legislation of the U.S. and Japan (24 and 12 hours after the announcement of the information, respectively) with the domestic conditions of Taiwan, addressing that Taiwan's territory is smaller than the U.S., and reached the conclusion that Taiwan should adopt a 12-hour quiet period like Japan. When expanding the scope of applicable persons, the 2006 amendment referred to Section 166 of the Japanese Securities Exchange Act to include those who lose the insider status less than 6 months. Moreover, in order to clarify the definition of "material information", the 2006 amendment again followed the practice of the U.S. law and Japan law, authorizing the competent authority to take charge of proclaiming the meaning of the term. [189] Later, in order to solve the long-standing dispute about how material information leads to the trades of an insider, the 2010 amendment relied on the wording and interpretation of the 2003 EU Directive on Insider Dealing and Market Manipulation (Market Abuse) with regard to "information of a precise nature".[190]

While the original legislation of Taiwanese insider trading law was modeled on the U.S. insider trading law, we can see that when the Taiwanese congress again resorted to the foreign law during these amendments, it no longer limited itself to the U.S. law. One perspective to think about the reason of this change is that as a civil law country with statutory insider trading articles, it is easier for Taiwan to fix the existing gaps by borrowing the off-the-rack texts from the statutes of other civil law countries, rather than transforming and codifying the U.S. case laws into domestic statutes. Another explanation might be that as a law-importing country, Taiwan has already got used to the philosophy of "shopping around for the best brand".

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189 See LAI, *supra* note 188, at 473, citing Agenda Related Documents of The Congress, No. 727, at 41-46.

190 See LAI, *supra* note 188, at 473; Chia-Chien Lin (林佳蒨), *Zhèng Quàn Jiāo Yì Fǎ Zuì Xīn Xiū Zhèng Jiè Shào (證券交易法最新修正介紹) [The Introduction of The Newest Amendment of Securities Exchange Act]*, 28 SEC. & FUTURES MONTHLY 5, 8-9 (2010).

It is worth noticing that although the influence of foreign practice of insider trading law still plays an important role in these amendments, the Taiwanese congress also starts to adopt a functional approach to localize the law. For example, some amendments aim to make the application or interpretation of the law more foreseeable and certain,[191] some focus on adapting the law to the market environment,[192] while some others take into consideration of the practical need of the local jurisdiction and actors,[193] as well as the rights of the defendants.[194] This can be regarded as a sign of the self-correction process of a law-importing country after the law has been actually and domestically implemented. The transplantation process starts from mechanical copy and paste, but now enters into the phase of reflection and localization.

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191 For example, the 2006 amendment authorized the competent authority to define the scope of material information and proclaim the means of public disclosure, *"to which the judicial entities may refer in litigations . . . . In consideration of 'Nulla poena sine lege' . . . . to accomplish the 'stableness' and 'foreseeability' of law . . . ."* See LAI, *supra* note 188, at 473, citing Agenda Related Documents of The Congress, No. 727, at 41-46.

192 For example, the 2002 amendment expand the scope of the law from "stock" to also include "other equity-type security", so as to *"maintain the flexibility and respond to the continuous innovation of new security kinds."* See LAI, *supra* note 188, at 472, citing 91 (10) The Legislative Yuan Gongbao [The Congressional Gazette], at 423-24. Similarly, the reasons of the 2006 amendment address *"for fear that the elements are too trivial and rigid to keep up with the changing market conditions . . . . revise the scope of material information . . . . in order to maintain the flexibility and meet the need of market supervision."* See LAI, *supra* note 188, at 473, citing Agenda Related Documents of The Congress, No. 727, at 41-46.

193 For example, the 2006 amendment expressly defines a natural person designated to exercise powers as representative according to Article 27 of the Company Act as an insider, because "*in practice, courts have already subject these persons to the [insider trading] law*." It also expands the scope of the law to cover the persons losing the insider status less than 6 months, because "*in practice, it is common that these aforementioned persons resign right before trading the stocks of the issuing company, so as to circumvent the [insider trading] law.*" See LAI, *supra* note 188, at 472, citing Agenda Related Documents of The Congress, No. 727, at 41-46. The 2010 amendment expands the scope of the law to cover nominees, because ". . . . *nowadays investors usually do not trade in the name of themselves, and in practice, courts held that [the insider trading law] also applies to nominees.*" See LAI, *supra* note 188, at 473; Lin, *supra* note 190, at 8-9.

194 For example, the 2006 amendment "*provides that for those violators whose violation is of a light nature, the court may alleviate their amount of damages, because it is not proportionate for them to be liable for such immense amount of damages.*" See LAI, *supra* note 188, at 472, citing Agenda Related Documents of The Congress, No. 727, at 41-46.

2. Court decisions

In the previous section, we observed how foreign law plays a role during the process of the legislation and amendment of Taiwanese insider trading law. Here, we move to examine how the foreign legal design and case laws affect the way Taiwanese courts interpret insider trading law in their decisions. I conduct a ground research on the Supreme Court[195] insider trading decisions collected by Lawsnote database.[196] The research methodology is as follows:

1. First, I uses "insider trading" as the keyword and limits the scope of search to "Supreme Court cases" and "court decisions" (not including statements of the parties). This gives an outcome of 172 search results.
2. Then, through a manual screening process, I excludes all the irrelevant decisions which have insider trading keywords[197] from the final sample. On the other hand, I do not exclude the decisions which come from the same facts or events. That is, it is possible that Supreme Court makes multiple decisions on different legal issues or different parties of the same case. I consider them to be different decisions and includes them all in the final sample. In the end, I obtain a sample of 91 Supreme Court insider trading decisions (77 criminal cases and 14 civil cases) from 2002 to 2019 after screening.
3. Afterward, I conduct the research on the final sample, coding (a) whether Supreme Court refers to a foreign insider trading law in the decision; if yes, what are those countries being referred to, (b) what is the purpose of Supreme Court to cite foreign insider trading laws in that decision, and (c) the legal theories (see the explanation in Part IV.B) adopted by the Supreme Court when interpreting insider trading law.

The result can be found from Table 7 to Table 9 below:

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195 In Taiwan, Supreme Court is the highest tribunal and court of the last resort for civil and criminal cases, which only resolves legal issues and interprets the law, but is not responsible for deciding the factual issues. Once the part of the legal issues of a case is resolved, Supreme Court usually remands the case back to the lower courts for further application or investigation of the facts according to the Supreme Court's interpretation of the law. See http://tps.judicial.gov.tw/english/.

196 Lawsnote is one of the three largest online court decisions databases, see https://lawsnote.com/.

197 These irrelevant decisions include motions regarding detention, provisional ban of travel, bail, new trial, execution of penalties, recusal, cases on criminal procedures issues, and repetitive results (where a same decision appears twice in the search result).

	Referring to Foreign Law	No Reference to Foreign Law	Total
Number	13	78	91

Table 7. Decisions referring to foreign insider trading law

Country	US	EU	Japan	Other
Number	13	2	5	0

Table 8. Source of the foreign law

Table 7 shows that among the 91 decisions in the sample, only 13 of them cite foreign laws, and all these decisions refer to U.S. insider trading law. Some decisions cite EU or Japanese insider trading law simultaneously. In addition, 11 out of 13 of these decisions were made after 2013. Such result logically reflects the legislation history of Taiwanese insider trading law, where U.S. insider trading law served as the model for the initial 1988 enactment, and U.S., EU, or Japan law were later adopted as reference to the 2006 and 2010 amendment, so as to fill the gap of Taiwanese insider trading law.[198]

When we take a closer look, the empirical result further shows that echoing the legislative history, interpreting the elements of crime, and borrowing the standards used by foreign case laws are the main purposes of Taiwanese Supreme Court to cite foreign insider trading laws. For example, in a 2017 Supreme Court decision,[199] the parties disagreed with the timing of the formation of the material information at dispute, where the prosecutor claimed that a "non-binding MOU" suffices for the materiality element, while the defendants argued that the non-binding nature indicates that the information has not been certain and thus not material to affect the investors' judgment yet. In this decision, Supreme Court referred to the reasons of the 2006 amendment, holding that

> . . . . In consideration of 'Nulla poena sine lege' . . . . [the article] refers to the U.S. and Japanese law, authorizing the competent authority to take charge of proclaiming the scope of material information . . . . so as to accomplish the 'stableness' and 'foreseeability' of law.*[200]*

198 See Part III.A.1.

199 Zuigao Fayuan (最高法院) [Supreme Court], Xingshi (刑事) [Criminal Division], 106 Tai Fei Zi No. 21 (106 台非字第 21 號刑事判決) (2017) (Taiwan).

200 *Id.* at 7.

Next, when examining the standards and scope of material information set by the competent authority, Supreme Court further held that the competent authority's definition of material information, which requires comprehensive analysis on the probability of the occurrence and the potential impact on the investors' investment decision, is consistent with the U.S. Supreme Court's "case-by-case basis" and "equity balancing" approach. Accordingly, the decision instructed the lower courts to adopt the "*TSC* standard"[201] when the upcoming corporate event is certain, and use the "*Basic* probability/magnitude test"[202] if the occurrence of the upcoming event "might or might not happens", or is "uncertain and merely speculative".[203]

Lastly, as we will be discussing in Part IV.B, from the perspective of comparative law, it will be interesting to see which insider trading theory does a country adopt, because it helps us to understand that country's philosophy toward capital markets.

Theory	Equal Access	Fiduciary Relationship	Hybrid	No mentioning
Number	51	0	1	39

Table 9. Fundamental theory

The empirical result shows that among the 91 decisions of the sample, more than 50% explicitly articulate the insider trading theory they adopt, in which all but one follow the Equal Access theory. There is only one exception addressing the hybrid theory[204] and no decision adopting the Fiduciary Relationship theory. Here, it can be observed that the Taiwanese Supreme Court prefers to a more pro state-desired allocation

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201 See TSC Indus., Inc. v. Northway, Inc., 426 U.S. 438, 96 S. Ct. 2126 (1976).

202 See Basic Inc. v. Levinson, 485 U.S. 224, 108 S. Ct. 978 (1988).

203 Zuigao Fayuan (最高法院) [Supreme Court], Xingshi (刑事) [Criminal Division], 106 Tai Fei Zi No. 21 (106 台非字第 21 號刑事判決) (2017) (Taiwan), at 7-8.

204 In a 2013 decision, although Supreme Court remained its position and reiterated the foundational Equal Access Theory, it did have a discussion about the other theory. It considered that Article 20 of Taiwanese Securities and Exchange Act, an article which is quite similar to Section 10(b) of U.S. Securities Exchange Act of 1934, to be the provision regulating the "general securities fraud", and that Article 157 of Taiwanese Securities and Exchange Act, the insider trading prohibition provision, to be the provision regulating the "special securities fraud". Even though such hybrid theory is not adopted by the majority of the Supreme Court insider trading decisions, we can still see the efforts of the judges who tried to balance the conflict between these two fundamental insider trading theories in that case. See Zuigao Fayuan (最高法院) [Supreme Court], Xingshi (刑事) [Criminal Division], 102 Tai Fei Zi No. 3250 (102 台上字第 3250 號刑事判決) (2013)(Taiwan).

philosophy rather than a lessi faire private market model. For example, in a 2011 decision,[205] Supreme Court held that

> . . . . the prohibition of insider trading aims to achieve the symmetry of market information, so that public investors have equal access to information, the fairness of transactions can be maintained, and that the soundness and development of the market can be improved; it does **not** focus on the fiduciary duty of loyalty and duty of care . . . . [where] the 'insiders' owed to the company and the shareholders, ... [and] are considered in breach of their fiduciary duty when trading on and benefiting from inside information . . . . (emphasis added)[206]

, and that the act of insider trading

> . . . . destroys the equality of the trade system of the securities market, which will affect the trust of the general investors toward the fairness and soundness of the securities market, and therefore affect the development of the market . . . ."[207]

All in all, the empirical research on the Taiwanese Supreme Court insider trading cases shows that it is not common to see the Taiwanese Supreme Court cite or refer to foreign laws (compared with the proportion of Taiwanese insider trading journal articles we shall see later in the next section). The timing to cite foreign law usually comes with the context where Supreme Court looks at the legislation history. The other interesting but contradictory phenomenon is the Supreme Court's disproportionate reliance on the Equal Access theory, while the Taiwanese insider trading legislation in fact came from the US law (I will discuss this contradictory phenomenon in detail in Part IV.B). Lastly, when introducing the foreign law, especially the US case law, the Taiwanese Supreme Court only focuses on the abstract standards and methodology which it deems helpful to fill the gaps of Taiwanese law. The context, such as the factual background and the economic theories behind, is censored. I will address the problem of such approach in Part IV.

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205 Zuigao Fayuan (最高法院) [Supreme Court], Xingshi (刑事) [Criminal Division], 100 Tai Shang Zi No. 482 (10o 台上字第 482 號刑事判決) (2011) (Taiwan).

206 *Id.* at 2.

207 *Id.*

B. Other Paths of Legal Diffusion

1. Educational backgrounds of Taiwanese scholars in the field

When researching, scholars of a law-importing country tend to prioritize and refer to the theories and legal design of the foreign country from which he/she earned the highest degree[208] through comparative studies. It can be expected that their teaching might influence their students, who will become the practitioners, judges, or even professors of the next generation in the future. In addition, their research might become the reference or even the foundation of the court decisions, public policies, and drafts of legislature of their country.

I conduct an empirical investigation on the educational background of the law professors in the higher-tier Taiwanese universities who list corporate law, securities law, white color or economic crime, and general business law as their expertise or area of interest.[209] The result can be found from Table 10 below:

Country	China	Germany	Japan	Taiwan	UK	USA	Total
Number	1	4	5	4	2	21	37
%	3	11	14	11	5	57	100

Table 10. Educational background of the Taiwanese law professors

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208 Hupper, s*upra* note 171, at 444-46.

209 The sample of this chapter includes the professors who meet following screening conditions: (a) Those who list either company law, corporate law, securities law, white color crime, economic crime, or general business law as their expertise or area of interest on their faculty profile, and (b) Those who teach in the law school of a public university or Soochow University. After applying these screening conditions, the professors in the sample come from 9 public universities and Soochow University (a total of 10 universities).

The reason to only include the public universities is that, unlike the U.S., in Taiwan, the higher-tier universities are mostly public universities. See Chiang Kao & Hwei-Lan Pao, *An Evaluation of Research Performance in Management of 168 Taiwan Universities*, 78 SCIENTOMETRICS 261, 268 (2009) ("In Taiwan, . . . Most students choose public universities with a higher priority to enter and most professors prefer working at public universities."); and Chang-fa Lo, *Driving An Ox Cart to Catch up with The Space Shuttle: The Need for And Prospects of Legal Education Reform in Taiwan*, 24 WIS. INT'L L. J. 41, 58 (2006) ("private universities are unable to offer a wide range of courses covering new topics, … the public ones, are capable of recruiting professors with expertise in traditional and specialized legal fields and can offer courses covering new, pressing legal issues.") With the focus on only law professors teaching at higher-tier universities, the sample exclude professors of private universities, except for Soochow University —— the only private university whose law school is recognized as high-tiered as law schools of other public universities in Taiwan.

The first interesting observation we can get from Table 10, is that to teach in a law school among these higher-tier universities, it is almost a requirement that the professor has a law degree from a "more advanced" foreign country.[210] The fact that only about 10% of them are wholly educated in Taiwan clearly demonstrates that, at least in the field of business and securities law, Taiwan is still a law-importing country which looks up to and relies heavily on the importation and contribution of the foreign wisdom. Second, when taking a closer look at the composition of the educational backgrounds of these professors, we can see that over 50% of the professors in this area acquired their highest degree from the U.S. This finding precisely reflects the history and the development of Taiwanese securities law (including insider trading law) —— that it was initially modeled on, and still closely follows the case law and development of the U.S. securities law. Lastly, the result presents an exception to the finding of Professor Spamann, who claims that one of the legal diffusion channels, is the students' migration *within* the same legal family lines which helps legal knowledge travel from the core to the periphery country.[211]

2. The nature of Taiwanese insider trading research

Following the investigation of the "PhD motherlands" (the country from which a scholar acquired his/her highest degree) of Taiwanese professors, the next fact to be observed, is how it affects the nature and content of their publication and research? I conduct a ground research on the insider-trading-relevant law journal articles collected by Lawbank database.[212] The research methodology is as follows:

1. First, I use "insider trading" as the keyword and conducts a title search, which gives an outcome of 226 search results. Among them, only 125 search results are on file with Lawbank (although some older articles also appear in the search outcome with some brief descriptions, the content and document of those articles are not on file with Lawbank). After excluding the repetitive results (where a same article appears multiple times with different versions) and 3 irrelevant articles

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210 Same result can also be found from Lo, s*upra* note 209, at 63.

211 See Spamann, s*upra* note 168, at 1849-52. However, it is worth noticing that in other fields of law in Taiwan, US educated scholars generally do not have such influential impact. Most scholars are still encouraged to acquire their highest degrees from civil law countries such as Germany and Japan, see Hupper, s*upra* note 171, at 449.

212 Lawbank is one of the two largest online legal research databases, see https://www.lawbank.com.tw/treatise/pl_index.aspx.

which focus on general criminal law issues rather than insider trading from the remaining 125 results, I obtain a sample of 91 insider-trading-relevant articles in the end.

2. Afterward, I look into the table of the contents, coding (a) whether the article introduces foreign insider trading law in at least one section; if yes, what are those countries being cited, and (b) the category of the topics of the article (see Table 13).

The result can be found from Table 11 and Table 12 below:

	Discussing Foreign Law	No Discussion of Foreign Law	Total
Number	52	39	91

Table 11. The nature of insider trading-relevant journal articles in Taiwan

Country	US	EU	Germany	UK	Japan	Other[213]
Number	49	12	4	6	6	4

Table 12. Source of the foreign law

The empirical result of Table 11 and Table 12 logically reflects the composition of Taiwanese professors' "PhD motherlands" we have observed in Table 10. First, over 50% of the insider trading articles in the sample refer to or introduce foreign law as the justification of their arguments or the comparison to the Taiwanese law.[214] In addition, among those 52 articles discussing foreign law, 49 of them refer to US cases or introduce the history and development of the US insider trading law. It is worth noticing that from the perspective of Taiwanese academia, US and EU are usually the two major sources of insider trading law that the legislative history refers to, where US law derives from the fiduciary relationship of corporate law, as opposed to EU law's different focus on the protection of the abstract legal interest —— market integrity.[215] As a result, among the 12 articles discussing the EU law, 11 of them compare it with the US law simultaneously.

[213] Other countries or jurisdictions, including Hong Kong and Singapore.

[214] Note that most articles cite multiple foreign laws simultaneously. For example, there are 11 articles citing US and EU law simultaneously, and 6 citing US and UK laws simultaneously.

[215] For further analysis, see the discussion in *infra* Part IV.B.

Topic(s) of The Article	**Number (foreign law)**	**Explanation**
Analysis of Elements of Crime	65 (35)	Analyzing the elements of insider trading, including: scope (subjects and acts), materiality (timing, information kind), disclosure, defense, civil liability, use/possess theory, and general interpretation when new law passes … etc.
Analysis of Court Cases	39 (22)	Single case study of a Taiwanese court decision; comprehensive analysis of a series of Taiwanese court decisions on a specific issue.
Punishment Theories	26 (18)	Introduction of/debate about insider trading punishment theories (equal access vs. fraud, fiduciary relationship, and misappropriation) and interests to be protected (market integrity/soundness vs. shareholders benefits)
Financial or Economic Theories	8 (3)	Discussing the financial or economic theories behind (punishing) insider trading, for example, efficient capital market hypothesis, properties rights, law and economics.
Legislative Proposals	14 (10)	Analyzing or introducing the drafts of insider trading legislation or amendment; proposing the author's own version of insider trading legislation or amendment.
Profits and Damages Calculation	8 (3)	Introducing the methods of calculating illegal gains obtained from insider trading activities; discussing how to decide the causation and damages.
Insider Trading Enforcement	3 (2)	Reflecting the status quo of insider trading enforcement in Taiwan and introducing the alternatives.
Quantitative Empirical Studies	0[216]	Quantitative empirical studies on the stock market, insider trading enforcement, court decisions … etc.

Table 13. Category of contents of the article

Next, I move to explore what kinds of topics are commonly-seen in Taiwanese insider trading articles. From Table 13, it can be observed that more than two third of the articles analyze the legal elements of insider trading, and another chunk (about 43%) of the articles adopt case-analysis methodology.[217] In addition, about one-third of the

[216] To double check, I used the keywords "insider trading" and "empirical study" to search, and did find one article on Lawbank conducting an empirical research on insider trading in Taiwan, but the article is not on file with Lawbank.

[217] Similarly, a significant portion of articles discuss multiple topics at the same time. For example,

articles focus on the fundamental theories explaining why a country should illegalize insider trading. These are the three most commonly-seen topics in Taiwanese insider trading articles. On the other hand, the number in the parentheses in Table 13 denotes the articles under that category which simultaneously refer to foreign law. We can see that foreign law plays an influential role among those popular categories (more than 50% of the articles of those categories compare the domestic law with foreign law at the same time). This can lead us to the conclusion that Taiwanese research adopts a more qualitative approach (e.g. case studies and elements analysis) and heavily relies on comparative studies methodology as support. However, there is a lack of empirical approach. For example, evidence of the relationship between stock market performance and the insider trading enforcement (which I will present in the next paper), as well as the quantitative statistics regarding the court decisions (like what this chapter has presented), are both helpful observations for a law-imparting country to assess the efficacy of its insider trading law transplantation. But the current Taiwanese insider trading literature has not been widely exposed to such empirical approach yet. I will address the issue of this approach when it comes to legal transplant in the next section.

IV. Reassessing Legal Transplant Through the Lens of a Law-Importing Country

In the last section, through empirical research, this chapter has investigated the process of the transplantation of insider trading law in Taiwan, as well as the roles played by the different domestic players during the process. In this section, with the evidence gathered by the empirical research, this chapter is going to examine different comparative law and transplants theories, and then evaluate the successfulness of the transplantation of insider trading law into Taiwan.

A. Testing The Different Transplant Theories

The evidence obtained in the last section shows that the transplantation of insider trading law into Taiwan is a good case for testing different transplants theories in several aspects. First, according to the 1987 congressional gazette, one important reason of the importation is that the prohibition of insider trading had become a worldwide trend; countries like the U.S., the U.K., Australia, Canada, the Philippines, Singapore, all forbid such conduct. This is a good demonstration of the network effect of the

there are 28 articles conduct both elements of crime analysis and court decisions analysis at the same time.

Construction Theory, where we can see that starting from zero, Taiwanese congress chose to join the "fashion and fads" of banning insider trading because other more advanced or neighboring countries are doing so.

Second, when enacting the law, Taiwanese Congress chose the US law to be the foundational model. Considering the leading status of the US law in the field of securities law, and the fact that US has always been one of the most significant political and economic partners of Taiwan (see *supra* Part II.B), it can be inferred that Taiwan selected to adopt the "US brand" out of the political motivation suggested by the Coercion Theory.

Lastly, when taking a look at the summary statistics of the educational backgrounds of the Taiwanese in the field, and the nature of Taiwanese insider trading research where foreign law (especially US law) exerts prominent influence, we can easily discover the channels of legal transplant suggested by the Construction Theory —— the legal education and the flows of experts and knowledge between the importing and exporting countries.

B. Transplant Paradox —— Evaluation at the Theoretical Level

In the previous section, it can be observed that on its appearance, the transplantation process of insider trading law into Taiwan seems text-book and caters to several transplant theories. However, when we dig deeper into the inner philosophy of Taiwanese importation of the US insider trading law, a number of intriguing comparative law puzzles will arise at the theoretical level, which conflicts with the assumptions made by LLSV and Professor Roe at the same time. But before starting the discussion, we need to first take a look at the relationship between the two punishment theories of insider trading law and the study of comparative law.

As mentioned, the prohibition of insider trading is an appropriate subject for comparative law and transplants research.[218] At the theoretical level, the two different theories of punishment perfectly represent the different philosophies and attitude toward capital markets:

The "Equal Access Theory" and the "Disclose or Abstain rule" were the first theory developed to justify the prohibition of insider trading by the US Supreme Court in the

[218] See *supra* Part II.C.

1960s.[219] It puts emphasis on the fairness of trade and a leveled playing field where investors should be equally informed before making any decision of trading. It is the integrity of the financial market and the public confidence in the market that are being preserved. Although this philosophy was later abandoned by the US Supreme Court,[220] it was succeeded by the EU law through the promulgation of the Market Abuse Directive.[221] From the perspective of economics, the Equal Access Theory considers inside information to be public properties, redistributing the derivative benefits of such information from the hands of insiders to the public investors. This kind of allocation approach of social control stands closer to the *civil law* philosophy identified by LLSV (or as claimed by Professor Roe according to the Political Economic Theory, the polity less tolerant of capitalism).

On the other hand, the "Fiduciary Duty Theory" was developed later by the US Supreme Court in the 1980s, in response to the fear that stringent insider trading rules might generate a chilling effect, discouraging the investors from seeking useful information and thus hindering the market efficiency.[222] After *Chiarella*, such pro lessi faire private market approach has been consistently maintained by the US Supreme Court until today. As indicated by the name, the theory requires a different element —— the existence and knowledge of a fiduciary relationship between the insider-trader and the company whose stocks are traded by its agents —— to limit the scope of the persons who will be subject to the law. The economic logic behind this theory is to protect the rights of the shareholders from being harmed by the agency problem. Such approach of social control, which seeks to support the development of private market, is the characteristic of the *common law* philosophy suggested by LLSV (or, according to the Political Economic Theory, the polity supporting capitalism).

With the built theoretical foundation, now we can move back to examine the inner philosophy of Taiwanese importation of the US insider trading law. As recorded, the congress claimed that the legislation of the Taiwanese insider trading law was modeled

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219 *See* In re Cady, Roberts & Co., 40 S.E.C. 907 (1961); SEC v. Texas Gulf Sulphur, 401 F 2d 833, 848 (2d Cir. 1968).

220 *See* Chiarella v. United States, 445 U.S. 222 (1980).

221 *See* Katja Langenbucher, *Insider Trading in European Law*, in RESEARCH HANDBOOK ON INSIDER TRADING 429 (Stephen M. Bainbridge ed., 2013).

222 *See* Chiarella v. United States, 445 U.S. 222, 224, 227-35 (1980); Dirks v. SEC, 463 U.S. 646, 654-55 (1983)

on Section 10(b) [223] of the US Securities Exchange Act of 1934 and the US case laws. From the plain reading of this reason, it seems that Taiwan would proceed with the pro private market approach. However, the other reason recorded in the same place contradictorily states that the purpose of the legislation is to strengthen the soundness of the development of the securities market. [224] Such philosophy is frequently interpreted by the Taiwanese Supreme Court as the official endorsement and adoption of the Equal Access theory,[225] which also makes sense given that the general legal infrastructure of Taiwan was initially originated from the German civil law system.

Such theoretical paradox not only exists in the channels of legislation and judiciary, but can also be observed from the status quo of the Taiwanese academia. As investigated, most securities law scholars in Taiwan acquired their highest legal degree from US, with a few from the European region such as Germany and UK. The introduction of the philosophy of regulation of the "PhD motherlands" might easily become the promotion and competition of their own "brands" —— the war of the Fiduciary Duty Theory versus the Equal Access Theory. The scholars of the US school base their arguments on the origin of the Taiwanese insider trading law, while those of the EU school gain the support from the unproportioned endorsement of market integrity value from the decisions of the Taiwanese Supreme Court.

As a result, although the Construction Theory is well-demonstrated by the case of Taiwanese importation of insider trading law, the reality is, when putting together all three channels of transplantation, namely legislation, judiciary, and legal education and research, the result of transplantation remains unstable and dynamic. Of course, one way of solving this theoretical mess is to claim that Taiwan is actually adopting the "hybrid" approach.[226] I argue that such hybrid approach only reflects the status quo, and as we shall soon see in the next section, it does not help to untwine the paradox, and in fact creates more confusion at the enforcement level.

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223 15 U.S. Code § 78j. ("It shall be unlawful . . . . To use or employ, ... any manipulative or deceptive device or contrivance in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of investors.")

224 Note that *Chiarella* (which officially abandons the Equal Access Theory) was made by US Supreme Court in 1980, while Taiwan imported the insider trading law in 1988 (when the Fiduciary Duty Theory had already been adopted for years).

225 See *supra* Part III.A.2

226 This is a powerful claimed made by In-Jaw Lai, the most renowned securities scholar in Taiwan who is a graduate from Harvard Law school and served as the Justice (and later the Chief Justice) of the Taiwanese Constitutional Court from 2003 to 2011.

C. Transplant Paradox —— Evaluation at the Enforcement Level

The theoretical paradox we observed in the previous section is closely related to the paradox at the enforcement level we will see in this section. To examine how a law works in a country, we not only should observe the law in books, but also the law in action. To regulate insider trading, the U.S. adopts a two-layered structure which includes both private litigation and government intervention performed by multiple regulatory agencies through enforcement and criminal prosecutions.[227] Lin and Hung find that from 2009 to 2013, 70% of the insider trading defendants chose to settle with the US government,[228] and Ahern finds that from 2009 to 2014, the DOJ has won 85 cases and lost just one,[229] which evidently demonstrates the deterring effect of the insider trading enforcement in the US. In contrast, the enforcement of insider trading law in Taiwan resorts to either criminal charges or private litigations. The empirical literature on insider trading enforcement in Taiwan shows that the conviction rate of criminal insider trading cases in Taiwanese courts is relatively low, at less than 50%.[230] If we take together the consideration of the detection rate (which is imaginably lower),

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227 *See generally* Chien-Chung Lin & Eric Hung, *U.S. Insider Trading Law Enforcement: Issues and Survey of SEC Actions from 2009 to 2013*, 11 NTU L. REV. 37 (2016). (The SEC adopts a variety of methods to combat insider trading. Civil enforcement such as fines and delicensing sometimes are even more efficient ways than a criminal prosecution, as they directly sanction the wrongdoers by destroying their reputation and disgorging their illegal profits. In addition, the settlement power equipped by these regulatory agencies also serve as an alternative and efficient tool for them to enforce the law while being able to avoid preparing a case to the "beyond a reasonable doubt" evidentiary level as they have to do in criminal cases).

228 *Id.* at 59.

229 Kenneth R. Ahern, *Information Networks: Evidence from Illegal Insider Trading Tips*, 125 J. FIN. ECON. 26, 46 (2017).

230 See, e.g., Tun-Wei Chang, *Rethinking the Culpability of Insider Trading by Game Theory,* at 3 (2013) (unpublished master of laws thesis of National Chao Tung University, on file with NCTU Library) (finding a conviction rate of 40.11% out of 177 insider trading defendants from 1996 to 2012 among the three district courts in northern Taiwan); Chieh-Yu Lin, *Using Empirical Legal Studies Discusses the Retrospect and Prospect of Insider Trading*, at 53 (2018) (unpublished master of laws thesis of National Central University, on file with NCU Library) (finding a conviction rate of 44.35% out of 417 defendants from 1993 to 2016 among all Taiwanese district courts). In addition, one law professor in Taiwan, who graduated from Cornell Law School, published a commentary in 2016 on an insider trading case. In the commentary, the author cited data from the Ministry of Justice and stated, "from July 2000 to the end of 2008, the rate of acquittal of insider trading cases is 64.75%." See Jerry G. Fong, *One more mile for your takeover strategy: Insider trading (Bìng Gòu Cè Lüè Duō Chū Yī Li: Nèi Xiàn Jiāo Yì)*, UDN NEWS, http://paper.udn.com/udnpaper/POE0039/293531/web/ (Mar 2, 2016)(last visited Apr. 19, 2018).

it cannot be persuasive that the insider trading enforcement works successfully in Taiwan.

Here, an obvious paradox can be observed —— how come US, a common law country which is supposed to be more pro-market and has looser regulation regime through fiduciary laws, performs stricter enforcement than Taiwan, a civil law country which enacts the law to level the playing field and preserves the market integrity? In fact, such paradox can also be found from another piece of evidence: in the US, there is a trend in enforcement to pursue after insider trading conducted by financial professionals. In particular, from 2009 to 2013, the proportion of financial professionals and their tippee defendants constitutes around 25% of the total number of the defendants.[231] When looking back to the statistics of Taiwan, we will surprisingly find that no record about a financial professional's insider trading prosecution in courts can be found. In other words, in Taiwan, the scope of the persons applicable to the insider trading law is in fact only confined to the persons who bear fiduciary duty. It is fascinating to see the representative of the fiduciary duty model (i.e., US) expands the scope of enforcement to reach the non-fiduciary financial professionals, while the supporter of informational equality (i.e., Taiwan) barely pursues after these informed traders who are the main cause of information asymmetry.[232]

These two cases of paradox can be well explained by Professor Roe's observation, in which he claims that the distinction between the characteristics of civil and common law system has eroded "by reason of the parallel institutional developments in all nations to satisfy the same societal needs."[233] In fact, one research supports Roe's argument by empirically finding that civil law nations have weaker insider trading sanctions.[234] In particular, US has become in the age of the regulatory state for a long period, where administrative agencies, such as the Securities and Exchange Commission (SEC), are authorized power by the congress to make rules, so as to

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231 Lin & Hung, *supra* note 227, at 57; similarly, the other research documents that from 1996 to 2013, the portion of financial professional defendants is 21.2% (buy side manager 9.7%, and buy side analyst/trader 10.5%) out of the total number of defendants, see Ahern, *supra* note 229, at 34.

232 For more discussions about the financial professionals and insider trading, see Chapter 2 of the dissertation.

233 Roe, *supra* note 165, at 476

234 Laura N. Beny, *Do Insider Trading Laws Matter? Some Preliminary Comparative Evidence*, 7 AM. L. & ECON. REV. 144, 159 (2005).

overcome the delayed, inconsistent, and sporadic nature of the judiciary.[235] In contrast, Taiwanese congress enacts the insider trading law with specific and exhaustive elements so that in theory. Therefore, Taiwanese courts are only responsible for applying the law. It is such difference in the design of judicial style, as argued by Professor Roe,[236] that gives rise to the difference in the effect of insider trading enforcement.

One way of solving the paradox, is to try and error by diligently amending the law to fill the gaps at the theoretical level. Indeed, as we observed in the previous section,[237] Taiwanese congress clearly articulated in each amendment the reasons to change the law —— which are locally and functionally oriented. However, it is not always easy to find good solutions from the U.S. model, because the development of the U.S. insider trading law is not mainly through the amendment of the legislation, but through the law-making process of its judicial branch by case laws and rule-making power authorized to the regulatory entity. Consequently, according to the Learning Theory of legal transplants (the "learn and experiment" method), Taiwan can only try taking a chance and look at the experience of other civil law countries, this time borrowing from the civil law legislation model —— which, in theory, expected to be more suitable for its judicial environment and need, since Taiwan depends more on the legislation and less on how and what the courts articulate. On the other hand, the other way is to simply increase the alternative measures (such as the civil enforcement model conducted by the SEC of US) or intensity of the enforcement.

D. The Use of Empirical Evidence in Comparative Law Studies

In the previous sections, this chapter tries to answer the essential question commonly faced by comparatively studies: how to evaluate the successfulness of a law-importation process. In other words, how can researchers examine whether the goals of the transplant have been achieved? Traditional comparative work, as Zweigert and Kötz observed, *". . . starts from a particular question or legal institution in [that country's] law, proceeds to treat it comparatively, and ends, after evaluating the discoveries made, by drawing conclusions —— proposals for reform, new interpretations —— for [that*

235 Roe, *supra* note 165, at 484-85.

236 See *supra* Part II.A.2.

237 See *supra* Part III.A.1.

country's] law alone."[238]

Here, if we make an analogy of legal transplant process to the choice that a consumer has to make between the different brands of products in their day-to-day lives, what helps the consumer to make that decision, is the investigation of facts of each brand, as well as the discovery about what the consumer really needs. Such kind of inquiry is also required in the comparative law studies —— an evidentiary based observation.

By utilizing the empirical evidence observed in Part III, this chapter is able to examine the paradox arising from the process of Taiwanese importation of insider trading law, both at the theoretical and law-enforcement level. Indeed, "comparative empirical law"[239] provides the research in this field with a supplementary and objective way to test the different assumptions and theories proposed by comparative law scholars.

It is worth noticing that in the world of social science, there is little chance (except for a natural experiment performed at the right time and the right place) for researchers to create a perfect parallel universe to compare whether the country is better off with or without the injection of a specific policy.[240] With such inherent limitation born in mind, this chapter argues that the best way for a law-importing country to find out whether its law-importing effort works, is by carefully conducting the intra-country empirical studies, and simultaneously observing where it is situated in the large cross-country empirical comparative studies. This helps the law-importing country to dynamically and continuously reflect its own philosophy toward a policy design, at both micro and macro level, which, I believe, is the key step that helps to make comparative studies become a school of "legal science" as suggested by Zweigert and Kötz.[241]

V. Conclusion

In this chapter, I take the transplantation of insider trading law into Taiwan as an

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238 ZWEIGERT & KÖTZ, *supra* note 154, at 46.

239 See Spamann, *supra* note 164, where the collection and categorization of such literature can be found.

240 For the context of insider trading itself, see Chapter 4 of the dissertation, where I use event study methodology to test the effectiveness of an insider trading law.

241 ZWEIGERT & KÖTZ, *supra* note 154, at 45.

example to demonstrate how a law-importing country can assess the successfulness of its attempt to transplant a specific legal design from another country. In particular, this chapter argues that a law-importing country should focus on the intra-country empirical approach when conducting a comparative law study. For instance, when examining the process of the transplantation of insider trading law into Taiwan, this chapter has conducted a ground empirical research on the three major channels of legal transplant —— legislation, court decisions, and legal education and research. Such empirical approach not only helps to test the various traditional western-viewpointed transplant theories in the field of comparative law studies, but also provides the evidentiary foundation for the law-importing country to compare itself to other countries, and thus be able to adjust and localize the imported foreign model for the domestic need.

For the purpose of future research on the topic of assessing the transplantation of an insider trading law, more empirical research could be conducted. For instance, the structure of the capital market of a country (including the composition of market players, the impact of the law on these players, and people's moral value on insider trading, . . . etc.) is a highly relevant target of observation that needs to be explored in order to better understand whether the imported foreign insider trading model fits the demand of the local capital market.

CHAPTER 4. HOW TO TEST AN INSIDER TRADING LAW AND ITS EFFECTIVENESS: PRICE MOVEMENTS AND COMPARATIVE EMPIRICAL DATA FROM TAIWAN

Acknowledgement: This chapter has been published on 57 INTERNATIONAL REVIEW OF LAW AND ECONOMICS 22-36 (2019) *with Professor Chien-Chung Lin as the other co-author*.

I. Introduction

Insider trading law has been a serious headache in securities law ever since its inception. The vexation comes from both the debates on the theoretical level[242] and its application and enforcement. Suppose we accept the desirability of an insider trading law, then the next question that follows, is "How well is an insider trading law performing?" This is a twofold question. On the normative side, it relates to the search for a proper standard for deciding the goal or quality of an insider trading law, be it trading fairness or stock price efficiency. On the practical side, it requires developing an adequate empirical tool to measure how well an anti-insider-trading law performs.

This chapter uses pre-Mergers and Acquisitions (M&A) abnormal price run-ups as a measure of the quality of insider trading law and its enforcement. In theory, pending M&A activity has a strong potential to induce substantial price movement in the public market after its announcement. Therefore, abnormal run-ups *before* the announcement of an M&A reflect a possible information leak. The signs can be used to test the effectiveness and quality of an insider trading law and its enforcement. Pre-announcement price run-ups, along with volume change and other company characteristics, provide a chance to better understand insider trading law, its enforcement, and the surrounding market structure and associated trading behaviors.

Pre-M&A abnormal price run-ups serve as useful metrics for assessing insider trading laws in two related setting. First, diverse insider trading laws in different countries can be analyzed and compared across borders. This is critical because cross-jurisdictional comparison is extremely difficult due to the complexity inherent in coexistent market designs and different stages of market development. Second, to a modest extent, pre-M&A abnormal price run-ups serve as a sensitive tool to measure

[242] Notably, Professor Henry Manne raised the question of the desirability of prohibiting insider trading, both as law and policy. It then became a heated debate among supporters and critics for decades afterward (Manne, 2009).

temporal changes brought about by different legal arrangements within a single country and to quantify the changes or impacts. Therefore, they help to focus on the cost and effect of law and its enforcement. Such approach provides a direct look into how an insider trading law actually functions in a real-world scenario. In addition, it offers a potential means to settle these theoretical disagreements.

This chapter uses M&A data from Taiwan as a test case. Leveraging data collected from Taiwan's Market Observation Post System, an electronic market information bulletin administered by the Financial Supervisory Commission since 2003, we test the pre-announcement adjusted price changes of M&As in Taiwan to gauge the potential size of insider trading and the effectiveness of Taiwan's insider trading law.

Taiwan is now the 22nd largest economy in the world.[243] It started a stock exchange in 1961, and insider trading has been prohibited criminally by the securities law since 1988. Although several amendments later strengthen the prohibition and increase the penalties (in 2000, 2004, 2012), the effectiveness of prohibition is less clear.

Several normative as well as practical implications make Taiwan a suitable example for an insider trading study. First, insider trading law enforcement struggles with a low conviction rate[244] and a prolonged trial process (five years are considered

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[243] Ranked by GDP nominal as of 2017. List of Countries by GDP (nominal), Wikipedia, https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal) (ranking data compiled from the International Monetary Fund).

[244] According to the data compiled by the Securities and Futures Investors Protection Center, insider trading cases in Taiwan often take multiple years to investigate before being formally filed in court. In some extreme cases, they can exceed a decade with no conclusion. See *Class-Action Litigation or Arbitration: Ongoing Cases*, SECURITIES AND FUTURES INVESTORS PROTECTION CENTER, https://www.sfipc.org.tw/MainWeb/Article.aspx?L=2&SNO=XqlDNAZ/9DguYlTrwJhJrQ== (last visited Apr. 19, 2018) and https://www.sfipc.org.tw/WebLoadFileUse.ashx?L=2&SNO=caA2tjKzINCbabLzfCwxrQ== (last visited Apr. 19, 2018).

The Securities and Futures Investors Protection Center is a semi-public entity that is authorized under the Securities Investors and Futures Traders Protection Act of 2003. Basically, it is financially sponsored by the Taiwan Stock Exchange and other organizations in the securities industry, in the form of endowment and monthly contributions by organizations charged for securities transactions. One of its tasks is to file class-action lawsuits on behalf of all private securities fraud victims in Taiwan. By hiring a group of professional securities lawyers, it provides securities litigation services for fraud victims in Taiwan for free. *About SFIPC: Introduction*, SECURITIES AND FUTURES INVESTORS PROTECTION CENTER, https://www.sfipc.org.tw/MainWeb/Article.aspx?L=2&SNO=I6M+rmmp+ncCQmZoO7Z28g==

short and a protracted case can last fifteen years in district court, high court and the Supreme Court combined). This poses problems when people try to form a proper view of the whole system, both substantive and implementation-wise, in the area of insider trading law.[245] Second, on the market side, the Taiwanese stock market has been dominated by midsized companies, and a large portion of the companies have a concentrated ownership structure. Two variables have made the status quo more complicated: First, the trading patterns on the Taiwanese stock market has been changing (from a market dominated mostly by individual investors to more institutional investors).[246] Second, the fiduciary commitment of professional corporate managers, a duty required by law but not the one necessarily prioritized in practice, is also growing but relatively uncertain. We want to examine how these features play out in their relations to the inside trading activities in the comparative law context. Lastly, the dark figure of illegal insider trading activities fundamentally hamper an adequate assessment of the quality of insider trading law and its enforcement, which is a general feature shared by almost all jurisdictions equipped with insider trading prohibition.

All these theoretical and contextual complexities in insider trading law justify a new quantitative approach that is different from the approach taken in more traditional studies. This study takes a streamlined method to answer a rather complicated but fundamental question: How do we decide the merit, quality, and effect of an insider trading law?

The rest of this chapter proceeds as follows. Part II lays out the underlying theory and model of this study. Part III presents the data and our results. Part IV analyzes the results and their meaning for our understanding of insider trading law, both comparatively and specifically in Taiwan. Part V concludes.

(last visited Apr. 19, 2018).

245 The difficult trial process can be partly attributed to the high penalty required by law (three to ten years imprisonment, or seven years and above if convicted of illicit gain exceeding 100 million Taiwan dollars, which is roughly 3.3 million in US dollars). When facing a stiff penalty if convicted, defendants will try every angle in their defense, and the courts are extremely careful in deciding the cases brought before them.

246 According to the market statistics kept by the Financial Supervisory Commission of Taiwan, from 1994 to 2017, the share of individual investors decreased from 93.5% to 52%, while the share of institutional investors increased from 6.5% to 48%. See Market Statistics, Securities and Futures Bureau, Financial Supervisory Commission, https://www.sfipc.org.tw/MainWeb/Article.aspx?L=2&SNO=I6M+rmmp+ncCQmZoO7Z28g== (last visited Apr. 22, 2018).

II. Theory and Model

A. How to Test Insider Trading Enforcement

Traders who possess and exploit advantageous information (e.g., insider traders) are not likely to declare their motives when trading. In fact, they seek to hide their trade or refrain from trading. This is both to avoid investigation for illegal activity and to extend the duration of utility for their privileged information[247] (Beny & Seyhun, 2013, p. 219; Tang & Xu, 2016, p. 108). Therefore, trading activities based on advantageous information can only be inferred from indirect proxies instead of being observed directly.[248]

To trace the footprints of concealed insiders, researchers in finance target corporate events that substantially affect investors' assessment of the value of a company, and they closely follow the daily movement of the company's stock prices around the announcement of the news. Among those corporate events, M&A activities frequently become the object of research in this field (e.g., Keown & Pinkerton, 1981; Cornell & Sirri, 1992; Meulbroek, 1992; Ma, Pagán, & Chu, 2009). In practice, acquirers are willing and often do pay a premium in the purchase price (that is, in excess of the company's net asset value) to gain control of target companies.[249] Therefore, market observers usually consider M&A to be good news to target companies, anticipating that the companies' stock price will move upward (a so-called "run-up") until reaching the deal price.

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247 E.g., Mendelson (1969, p. 473) argues that "the insider can only profit if his activity is unnecessarily delaying the adjustment of the market price of the stock to its appropriate level"; Easterbrook (1981, p. 333) indicates that "prospect of insider gains may delay disclosure". Similar observation can also be found from Beny & Seyhun (2013, p. 219).

248 One way to observe insider trading policies and activities is by conducting large-scale cross-country comparative research (Bris, 2005; Beny, 2007; Durnev & Nain, 2007). The other way, as we shall see in this study, is to narrow down the scope of research targets and focus on the assessment of the quality of an insider trading law and its enforcement.

249 There are a few reasons why acquirers are willing to pay a premium to targets. For example, it may be that acquirers anticipate the private benefits or the shared public benefits of control, or that the premium merely reflects the cost of acquiring a controlling block (Gilson & Gordon, 2003, pp. 787-804; Allen, Kraakman, & Subramanian, 2012, pp. 417-419). One scholar summarily attributes the existence of control premiums to three different kinds of sources: synergy value, expropriation value, and pure control value (Coates, 1999, pp. 1274-1277).

Here, the intuition is that the enforcement of insider trading law moves the *timing* in which stock price run-ups start to appear.[250] In an ideal world, when an effective prohibition of insider trading is in place, the stock price should start to move toward the price of the deal only *after* the news of M&A is publicly announced. Conversely, if the stock price starts to reflect the deal price (when we begin to see run-ups) *before* the public announcement of the news, that implies a likely leakage of non-public information and a failure of the prohibition on insider trading (see Figure 2).

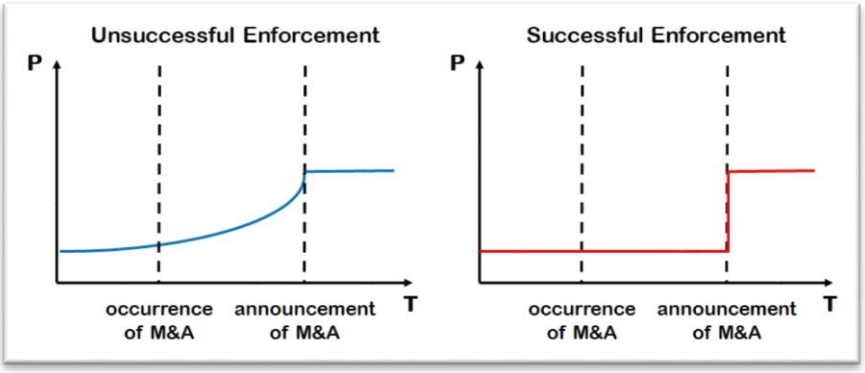

Figure 2. Stock price run-ups: unsuccessful versus successful enforcement[251]

By observing the timing of stock price run-ups, that is, whether significant pre-announcement run-ups occur (how early and to what degree) before the news is out, researchers can approximately gauge the success of insider trading law in suppressing such trade.

B. Event Study Methodology

To observe the signs of informational leakage and insider trading through stock price movement, this study adopts an event study methodology.

Event study has become one of the most successful applications of econometrics and is widely accepted in capital markets empirical research by finance and accounting academics (Ball & Brown, 1968; Fama et al., 1969; MacKinlay, 1997; Bhagat &

[250] For the original discussion, see Manne (2009, pp. 88-102). For a similar view, see, e.g., Carlton & Fischel (1983, pp. 866-868), arguing that insider trading can help the market incorporate non-public information efficiently.

[251] Adapted from Manne (2009, pp. 93, fig.1, 99, fig.3, and 100, fig.4).

Romano, 2002a; Corrado, 2011).[252] In the field of legal empirical studies, scholars have also extended this methodology to the field of corporate law and securities law. For example, Bhagat and Romano introduce a series of studies applying event study to different topics of corporate law (Bhagat & Romano, 2002b, pp. 380-414).[253] In the area of securities law, Mitchell and Netter use event studies to establish the materiality of information as well as to assess the damages in securities actions (Mitchell & Netter, 1994, pp. 572-584). Notably, they argue that because event studies help "the investigator to discern whether information that is used in an allegedly fraudulent action is important to investors and to determine the value of the information," they are particularly useful in securities litigations (Mitchell & Netter, 1994, p. 546).

A similarly broad acceptance can also be observed in the judicial system after the Supreme Court, in *Basic Inc. v. Levinson*, 485 U.S. 224 (1988), adopted the fraud-on-the-market theory.[254] After *Basic*, federal courts started to allow (some even preferred) class plaintiffs in securities fraud litigation to use an event study to establish *prima facie* evidence of the existence of a causal relationship.[255] In 2014 the Supreme Court's majority in *Halliburton Co. v. Erica P. John Fund, Inc*., 134 S. Ct. 2398 (2014), a securities fraud case, determined that both parties could introduce event studies as direct and indirect evidence to show price impact (*Halliburton*, 134 S. Ct. at 2417).[256] The court pointed out that it makes sense to allow both parties to use price impact evidence from event studies—plaintiffs were using event studies to show the market efficiency

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252 The popularity of the method "derives from [its] simple and elegant method of controlling for general market effects and, possibly, other relevant covariates, thereby isolating the causal effects of events" (Gelbach, Helland, & Klick, 2013).

253 In particular, they emphasize the match between the methodology and corporate law, because "the goal of corporate law is to increase shareholder wealth, and event studies provide a metric for measurement of the impact upon stock prices of policy decisions" (Bhagat & Romano, 2002b, p. 380).

254 According to Brav & Heaton (2015, p. 585), "event studies became so entrenched in securities litigation that they are viewed as necessary in every case."

255 See, e.g., *Teamsters Local 445 Freight Div. Pension Fund v. Bombardier Inc.*, 546 F.3d 196, 207–08 (2008), citing *In re Xcelera.com Securities Litigation*, 430 F.3d 503, 512–16 (2005) ("An event study that correlates the disclosures of unanticipated, material information about a security with corresponding fluctuations in price has been considered prima facie evidence of the existence of such a causal relationship"); *Bricklayers & Trowel Trades Int'l Pension Fund v. Credit Suisse Sec. (USA) LLC*, 752 F.3d 82, 86 (2014) ("The usual—it is fair to say 'preferred'—method of proving loss causation in a securities fraud case is through an event study . . . ").

256 For a detailed analysis of how event study was applied in the case, see Fisch, Gelbach, & Klick (2018).

prerequisite required by *Basic*, while defendants were using event studies to counter this evidence by showing a lack of price impact. (See *Halliburton*, 134 S. Ct. at 2405, 2417).

On the other hand, when looking at the application of the event study methodology in Taiwanese courts, we surprisingly find out that although the Supreme Court of Taiwan officially endorsed the fraud-on-the-market theory as late in 2015,[257] the use of event study methodology in securities litigation is still scarce and only limited to the lower-level courts for the purpose of calculating illegal profits or caused damages. In fact, the courts are mostly reluctant to adopt the evidence produced by this methodology.[258]

C. The Model

The aim of event studies is to investigate whether there is a difference between the *expected returns* (the returns presumed to be observed *but for* the intervention/influence of the event) and the *actual observed returns* in the *Event Period*. If a statistically significant difference is observed, researchers may attribute this difference (i.e., the *abnormal returns*) to the intervention or influence of the event they are investigating—that is, the leak of confidential inside information and the trades based on this information. The model has the following steps:

1. Defining the timeline of event studies: the event, the estimation period, and the event period

In designing this study, we first collect data from the major M&A events in Taiwan,

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257 *See, e.g.*, Zuigao Fayuan (最高法院) [Supreme Court], Mingshi (民事) [Civil Division], 104 Tai Shang Zi No. 698 (104 台上字第 698 號民事判決) (2015) (Taiwan); Zuigao Fayuan (最高法院) [Supreme Court], Mingshi (民事) [Civil Division], 104 Tai Shang Zi No. 225 (104 台上字第 225 號民事判決) (2015) (Taiwan).

258 Searching in Lawsnote database, we find only 7 cases where event studies were used by the parties or discussed by the court. Among them, 6 are district court decisions, and only one is a high court decision. For the purpose of calculating illegal profits, the courts all prefer the ascertained amount determined by "the actual gain method" or "the presumptive gain method" to the evidence estimated by event studies. *See, e.g.*, Shinlin Difang Fayuan (士林地方法院) [Shinlin District Court], Minshi (民事) [Civil Division], 93 Jin Zi No. 2 (93 金字第 3 號民事判決) (2004) (Taiwan); Taiwan Gaodeng Fayuan (臺灣高等法院) [Taiwan High Court], Xingshi (刑事) [Criminal Division], 104 Jin Shang Xhong Geng (Si) Zi No. 15 (104 金上重更（四）字第 15 號刑事判決) (2015) (Taiwan).

identified by the Financial Supervisory Commission of Taiwan, from 2003 to 2016. We include any corporate takeover activities in Taiwan when a listed company was involved, which gives us 55 M&A events as the final sample.[259]

The next step is to define the two major windows of an event study: 1) the *Estimation Period*, the control period for which we collect the observed returns of each stock, and 2) the *Event Period*, the window for which we investigate the influence of the event on stock performance. There is no universal standard regarding the length of the *Estimation Period*. MacKinlay (1997, p. 15) suggests the market model parameters to be estimated over the 120 days prior to the event; Bhagat & Romano (2002a, p.146) suggest a 100-to-200-day period; another research proposes a 250-day control period (Corrado, 2011, p. 210). Finally, Tang & Xu (2016, p. 108) use a window between day -295 to day -45,[260] while Ma, Pagán, & Chu (2009, p. 241) have a day -125 to day -6 window. In the Taiwanese context, one paper proposes a 100-to-300-day period (Shen & Lee, 2000, p. 23), while another paper uses a window between day -150 to day -31 Chen, Wang, & Chen, 2011, p. 83). In our study, we let the *Estimation Period* to be from day -180 to day -45 prior to the *Announcement Day*, which roughly reflects the number of trading days within half a year.

Likewise, the definition of the *Event Period* also varies among papers. MacKinlay (1997, p. 17) uses a window from day -20 to day 20; Tang & Xu (2016, p. 108) observes CARs from day -30. Ma, Pagán, & Chu (2009, p. 241) conclude that "if one is looking at the information content of a merger or acquisition with daily data . . . the event window is often expanded to multiple days." After considering the practice of the existing literature, we let the *Event Period* to be from day -30 prior to and day +30 after the *Announcement Day*. In addition, we leave 15 days between the two windows to prevent the parameters estimated in the *Estimation Period* from influencing the event (MacKinlay, 1997, pp. 15, 20) (see Figure 3).

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259 For the detailed description of our sample, see Part III.A.

260 To describe the time order, we use *–t* to indicate the day runs before the *Announcement Day*, and *+t* to indicate the day runs after the *Announcement Day*.

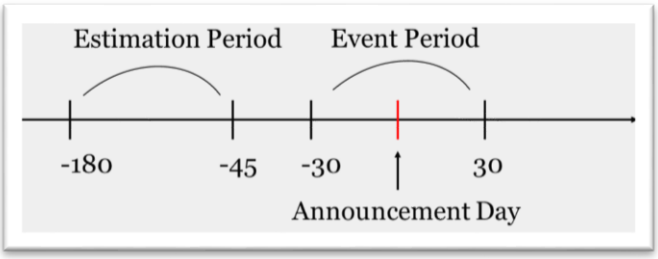

Figure 3. The timeline for this event study

Within these two windows, we then collect stock prices (in the form of daily rate of returns) and run the estimation model to calculate the *abnormal returns*.

2. *Establishing the estimation model and calculating the abnormal returns and cumulated abnormal returns*

In the *Estimation Period*, we adopt the frequently used Market Model in the event studies literature (Keown & Pinkerton, 1981, p. 858; Shen & Lee, 2000, p. 29; Corrado, 2011, p. 210; Beny & Seyhun, 2013, p. 225; Tang & Xu, 2016, p. 108) to estimate the *expected returns*. The Market Model assumes that on any specific day, the *expected return* of a specific stock (R_{it}) can be estimated by the *return of the overall market* (R_{mt}) through a linear regression model using an ordinary least squares (OLS) method:

$$\boldsymbol{R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad t = t_1 \ldots t_2, i = 1,2, \ldots, N} \quad \textbf{[1]}$$

In equation [1], R_{it} is the *expected return* of a specific stock *i* on a given day *t*. R_{mt} is the overall market return on the given day *t*. We use TAIEX[261] as the index signifying the overall market returns. Parameters α_i and β_i address the stock's firm-specific systematic risk relative to the market: that is, the linear relationship between R_{it} and R_{mt}. ε_{it} is the statistical error (or the residuals) given the specific stock *i* on the specific day *t*.[262]

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[261] Taiwan Stock Exchange Weighted Index, the capitalization-weighted index of all listed common shares traded on the Taiwan Stock Exchange. See https://www.bloomberg.com/quote/TWSE:IND.

[262] It indicates the component of the return that cannot be explained by the regression model. The residuals are usually presumed to be Gaussian white noise. That is, ε_it ~ N (0, σ), meaning that it is normally distributed with a mean of zero and a standard deviation σ. Accordingly, it contains the following assumptions:

$\boldsymbol{E(\varepsilon_{it}) = 0}$ (i)

$\boldsymbol{Cov(\varepsilon_{i\tau}, \varepsilon_{i\gamma}) = (0,\ \tau \neq \gamma; \sigma_i^2, \tau = \gamma)}$ (ii)

After acquiring the parameters of the model, α_i and β_i, from equation [1], we can fit the estimation model by multiplying the overall market returns we observed in the *Event Period* by α_i and β_i, to estimate the *expected returns* in the *Event Period* (let it be $\boldsymbol{E(R_{iE})}$[263]), and then compare them with the *actual returns* in the *Event Period*. This step reflects the core idea of the event studies methodology:

E(R_{iE}) is the value that we estimate by fitting the estimation model in the *Event Period*. In other words, *E(R_{iE})* is the value presumed and expected to be observed if there is a parallel universe where the M&A events *did not* happen. We compare the difference between *E(R_{iE})* and the *actual returns* we observe (let it be R_{iE}[264]), acquiring the essence of the event study—*abnormal return* (AR_{iE}):

$$\boldsymbol{AR_{iE} = R_{iE} - E(R_{iE})} \quad \textbf{[2]}$$

Abnormal return indicates the target to be observed: the difference in the stock performance between the real world (where the stock price is influenced by the M&A event) and the parallel universe (where the expected performance of the stock is estimated according to the Market Model, without the intervening event) in the *Event Period*. Accordingly, the hypothesis of event studies attributes the difference to the intervention/influence of the event.

Lastly, because we are interested in how the M&A information affects the stock performance in aggregation and over time before and after the *Announcement Day* of an M&A, we add up each daily abnormal return in the *Event Period*, observing them in the form of *cumulated abnormal returns* (CAR). For the purpose of having an overview of all events in our sample, we next calculate the average CAR of our 55 event

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$\boldsymbol{Cov(\varepsilon_{it}, R_{mt}) = 0}$ (iii)

Equation (i) means that ε_{it} has an expected value of zero. In equation (ii), τ, γ are any two different timespans between t_1 and t_2, and σ_i^2 is the variance of ε_{it}. Equation (ii) means that the ε_{it} of any two timespans (τ, γ) are unrelated to each other (covariance = 0). Moreover, the variances (σ_i^2) of ε_{it} in any given timespan (e.g., τ or γ) are equal to one another (the variance of ε_{it} is homoscedastic). Equation (iii) means that ε_{it} and R_{mt} are independent. (See Keown & Pinkerton, 1981, p. 858; Shen & Lee, 2000, p. 29; Corrado, 2011, pp. 209-10).

263 *E(R_{iE})* denotes that this is an expected value of a specific stock *i* in the *Event Period*.

264 R_{iE} denotes that this is a real observed value of a specific stock *i* in the *Event Period*.

observations (let it be CAR_t[265]).

3. Measuring the statistic and economic significance of the model

To test whether our overall observation of the average CAR is unbiased, we run student *t*-tests on the average CAR of each day to see whether the observed average CARs are statistically significant from zero[266] (see Table 15 in Part III for our findings).

4. Measuring the proxy for insider trading: the degree of run-ups

Most event studies observing insider trading activities with average CARs go through the above-mentioned four steps. Here, extending the concept of "degree of run-ups" discussed by several papers,[267] we move forward to compare CAR_{-1} with either CAR_1 or CAR_0 to see the degree of run-ups:

$$\textbf{Degree of run-ups} = \frac{CAR_{-1} - Min(CAR_{-30}, CAR_{-1})}{Max(CAR_1, CAR_0) - Min(CAR_{-30}, CAR_{-1})} \ (\%) \quad [3]$$

In equation [3], $Min(CAR_{-30}, CAR_{-1})$ indicates the lowest CAR we can observe in the time period between day -30 and day -1. This calculation sets the floor of the CAR before the *Announcement Day*. And $Max(CAR_{t=1}, CAR_{t=0})$ indicates the bigger CAR of either day 0 (the announcement day) or day +1. Because some M&A announcements are disclosed late on the *Announcement Day* or even when the market is closed, we give an extra day, that is, the next day, to allow the news to be fully reflected in the stock prices. For example, if CAR_1 is 5%, $Min(CAR_{30}, CAR_{-1})$ is CAR_{-30} equal to 0%, and $Max(CAR_1, CAR_0)$ is 20%, then we can get the result that *the degree of run-ups* is

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265 We use CAR_t to denote the average CAR on day *t* in the event period.

266 We use the ordinary cross-sectional method, where the *t*-value we acquire from *t*-tests, $tval_{OCSM}^{CAR_t} = (CAR_t - 0)/\sqrt{Var(CAR_t)}$. $Var(CAR_t)$ is the variance of all the CAR_t across the sample.

267 Different papers have different ways of describing this concept. For example, Keown & Pinkerton (1981, p. 866) indicates that "43.3% of the total price adjustment for listed securities occurs before the announcement date . . . "; Meulbroek (1992, pp. 1675, 1696) defines "run-up as the cumulative abnormal return on insider trading days divided by the abnormal return on the public announcement day" and finds that the "abnormal price movement on insider trading days is 40 to 50% of the subsequent price reaction to the public announcement of the inside information"; Tang & Xu (2016, p. 109) finds that "the preannouncement run-up represents more than one third of the total market reaction to M&A announcements".

25% (*degree of run-ups* = $\frac{5-0}{20-0}$). It means that the influence of the M&A information on the stock performance is 25% incorporated into the stock price in advance of the *Announcement Day*. To illustrate, see Figure 4.

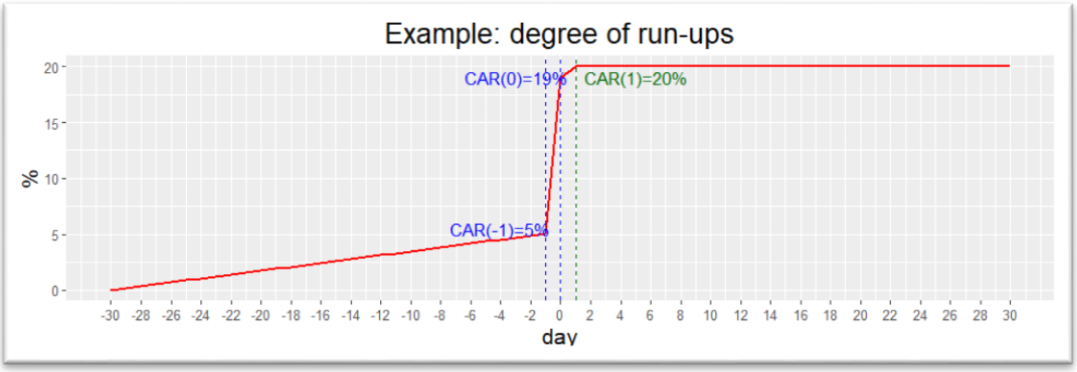


Figure 4. Illustration of the degree of run-ups

We are interested in this value because it reflects the portion of stock price incorporated in advance *before* the *Announcement Day*. This measurement allows us to trace the footprints of concealed insiders by observing to what extent the value of information leaked is reflected in the market *ex ante*. We use this measurement as the proxy for the sign of insider trading activities.

III. Data and Results

As noted in the previous sections, an M&A event is generally considered to be good news to investors in the target company. Correspondingly, the securities regulations of Taiwan define M&A as one type of "information that will have a material impact" on the price of the securities.[268] And those persons who are listed in Article

[268] Article 157-1, para. 5 of the Securities and Exchange Act provides that "Regulations governing the scope of information that will have a material impact on the ability of the issuing company to pay principal or interest as described in paragraph 2, the means of its disclosure, and related matters **shall be prescribed by the Competent Authority**."

Article 2, para. 2 of "Regulations Governing the Scope of Material Information and the Means of Its Public Disclosure Under Article 157-1, Paragraphs 5 and 6 of the Securities and Exchange Act" provides that "information that will have a material impact … **means any of the following:** The company carries out … **corporate merger, acquisition**, or split, share exchange, conversion, or

157-1 of the Securities and Exchange Act (namely, insiders and their affiliates) are forbidden to trade on M&A-related information.[269] Given such legal settings, this study uses data sampling of M&A events in Taiwan to examine the information leakage before their public announcement, if any occurred.

A. Data

We collect 55 M&A events as our final sample from the pool of disclosures on the Market Observation Post System (MOPS) website,[270] which is the official platform where publicly traded companies perform the required disclosure of material information in Taiwan.[271] We screen the announcements of M&A events on the website year by year from 2003 to 2016.[272] If the M&A information comes out in the media first, the leakage effect will be confounding to the design of our study. Therefore, we conduct an additional news search, confirming that no M&A news came out before the official M&A disclosure on MOPS. Here are the conditions of our screening process (summarized in Table 14):

(1) Among the announcements posted on the "acquisition or disposal of assets" webpage of MOPS under the "Merger, Split-up, Acquisition, or Transfer of Shares" category, we filter out announcements of non-M&A activities and repetitive ancillary announcements regarding the same M&A transaction. In addition, we exclude the M&A events where the acquirer and target are related companies (e.g., parent-subsidiary, or two subsidiaries controlled by the same parent).
(2) Due to the accessibility of data, we limit the objects of observation (the acquirer and target of an M&A event) to public companies listed and traded on either the

transfer of shares from others . . .".

269 Article 157-1, para. 1 of the Securities and Exchange Act provides, "Upon actually knowing of any information that will have a material impact on the price of the securities . . . prior to the public disclosure of such information . . . , the following persons shall not purchase or sell . . . shares of the company that are listed on an exchange or an over-the-counter market . . .".

270 MOPS (MARKET OBSERVATION POST SYSTEM), http://mops.twse.com.tw/mops/web/t146sb10 (last visited Apr. 22, 2018).

271 See Article 6 of *Regulations Governing the Scope of Material Information and the Means of its Public Disclosure Under Article 157-1, Paragraphs 5 and 6 of the Securities and Exchange Act*.

272 The MOPS was established in August 2002. In order to examine the trend of M&A events year by year, we collect the M&A news from the website since 2003.01.01.

Taiwan Stock Exchange (TSE) or the Taipei Exchange (OTC),[273] whose price information is available from the Taiwan Economic Journal (TEJ) database. We do not include M&As involving "emerging stock companies"[274] in our sample.

(3) For the ease of overall comparison, we exclude those events where the stock returns (in the form of CAR) drop and go all the way negative after the *Announcement Day* so as to prevent the offsetting effect.[275]

Data description	Number
Total number of announcements found under the "Merger, Split-up, Acquisition, or Transfer of Shares" category on MOPS	1,812
Number of M&A events qualified under the search terms (excluding consolidation of related companies)	85
Number of M&A events with accessible stock price data from TEJ database	60
Number of final M&A events (excluding those displaying a negative price effect)	55

Table 14. Data description

[273] Taipei Exchange (*formally known as* GreTai Securities Market) is the trading center for the over-the-counter market in Taiwan; see *History*, TAIPEI EXCHANGE, http://www.tpex.org.tw/web/about/introduction/history.php?l=en-us (last visited Apr. 23, 2018). For the purpose of identification, we use the abbreviation "OTC" to represent the exchange.

[274] Companies whose capitalization is less than 50 million New Taiwan dollars (or roughly 1.67 million U.S. dollars), with less than 300 shareholders. See *Listing Requirements and Procedures*, TAIPEI EXCHANGE, http://www.tpex.org.tw/web/regular_emerging/apply_way/application_otc/general_listing.php?l=en-us (last visited Apr. 23, 2018).

[275] Due to the specific nature of the M&A context, the prices of the target companies are presumed to move in the same direction—an expectation of price appreciation. This is an important assumption when adopting an event study because, when observing the aggregate effects of information throughout all the sample, those events having negative effects on stock prices will offset those having positive effects. For example, the impact of earnings announcements on stocks may be positive or negative, depending on the numbers revealed. This might lead to a mutual cancellation effect for two events if we do not separate good announcements from bad ones and look at the general effects as a whole. (See Shen & Lee, 2000, pp. 39-40). As a result, the true impact of the investigated events will be underestimated or obscured. Accordingly, our model design assumes that all the M&A events are good news to investors, that is, moving the price in a positive direction. Otherwise, the influence inferred from the event studies will be offset by those M&As having negative effects on stock prices.

Among the sample of 55 events, 11 of them are M&As between financial institutions and 44 of them are M&As of non-financial companies, which are predominantly composed of companies in the technology industry.[276] The full data description appears in Appendix 1.

After isolating our 55 event observations, we acquire the target companies' daily closing stock prices from the TEJ database and leverage them according to the research methodology established in Part II. Specifically, the *Announcement Day* of each M&A event is determined by its disclosure on the MOPS webpage.

B. Empirical Results

1. Overall observation

t (day)	CAR (average)	*t*-value	*p*-value	Statistical significance
-30	-0.175	-0.560	0.711	
---	---	---	---	---
-15	1.264	0.832	0.204	
-14	1.740	1.152	0.127	
-13	1.990	1.258	0.107	
-12	2.140	1.351	0.091	*
-11	2.077	1.299	0.100	*
-10	2.425	1.433	0.079	*
-9	2.439	1.448	0.077	*
-8	2.351	1.362	0.089	*
-7	2.891	1.682	0.049	**
-6	3.395	1.855	0.035	**
-5	3.512	1.906	0.031	**
-4	4.124	2.246	0.014	**
-3	4.639	2.489	0.008	***
-2	5.314	2.702	0.005	***
-1	6.618	3.407	0.001	***
0	9.042	4.648	0.000	***
1	11.249	5.842	0.000	***

[276] Our sampling of non-financial companies include companies in the semiconductor industry, photoelectric and optical industry, information and electronics industry, computer and peripheral equipment industry, and others.

2	11.426	5.902	0.000	***
3	11.225	5.572	0.000	***
4	11.339	5.386	0.000	***
5	11.420	5.307	0.000	***
---	---	---	---	---
30	12.858	5.157	0.000	***

Table 15. Pre-announcement price run-ups

Note:

According to the hypothesis we made in Part II, our model expects M&A events to boost the stock prices in a positive direction. To accurately test this expectation, we conduct a "one-sided" significance t-test. For further discussion of the choice between one-sided and two-sided tests, see Fisch, Gelbach, & Klick (2018, pp. 589-593). In addition, we are aware of the non-normality problem addressed by Gelbach, Helland, & Klick (2013) and Fisch, Gelbach, & Klick (2018, pp. 593-597). Accordingly, we have also run the SQ test for each single firm event study as well as our whole sample. For the full data of results, the associated SQ measures, the adjustment of critical values, and the result of adjusted significance, see Appendix I and Appendix II.

*** denotes that the number is significant at the 99% confidence level.

** denotes that the number is significant at the 95% confidence level.

* denotes that the number is significant at the 90% confidence level.

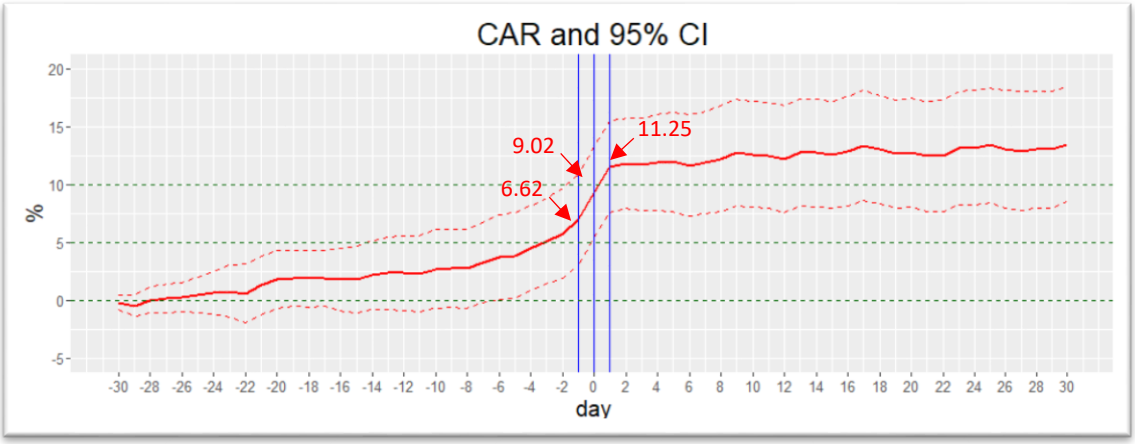


Figure 5. Average CAR of the overall M&A sample

In Figure 5, aggregately, we can clearly see the pre-announcement run-ups in which the average CAR increases stably *before* the *Announcement Day* of M&A events, from day -27 to day -1 (from around 0% to 6.62%). Specifically, the CARs are statistically significantly positive after day -12. On the other hand, the average CAR goes up to around 11.25% one day after the *Announcement Day*. This result shows that

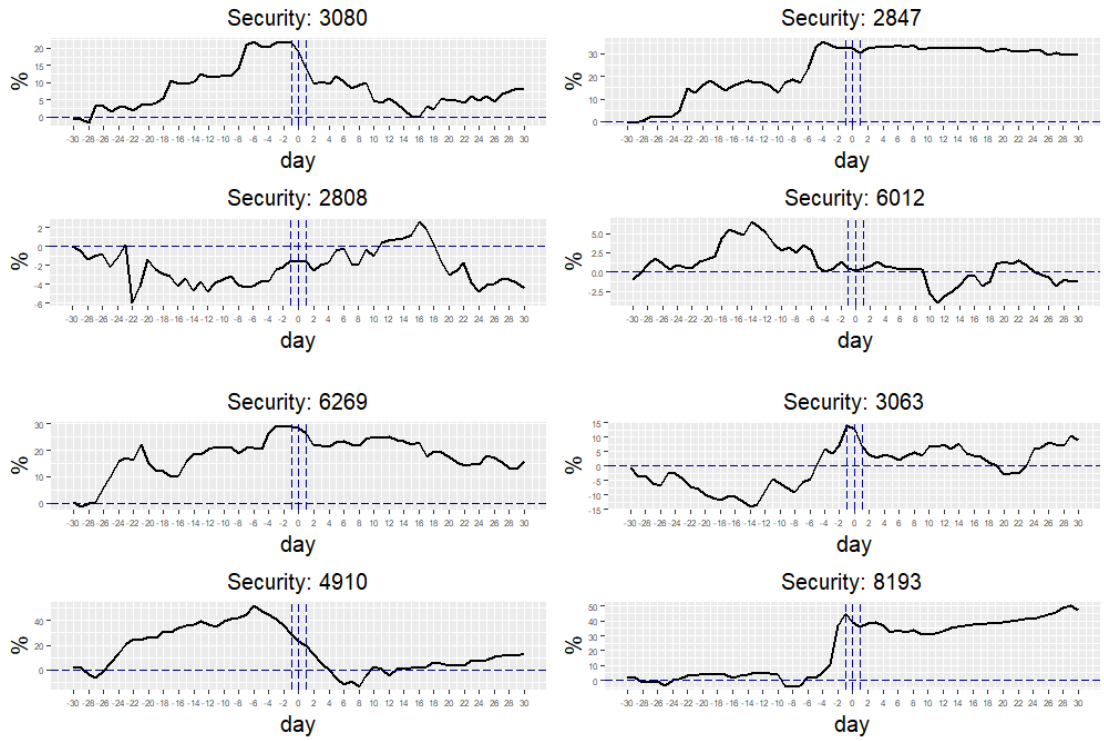
there is a 58.9% ($\frac{6.62\%}{11.25\%}$) pre-announcement run-up (i.e., the *degree of run-ups*) in stock prices *before* the *Announcement Day*. Our interpretation is that, on average, more than half the portion of the value of M&A information is incorporated into stock prices *before* the *Announcement Day*. We acknowledge that the aggregate approach of observing the average CAR may not fully represent the price movement of each individual case in our sample. Therefore, we make a group analysis of our sample in the next section for a closer look.

2. Group observation

Degree of Run-ups	Between 0% and 100%	More than 100%
Number of Observations	45	10

Table 16. Breakdown the degree of run-ups

In the group whose degree of run-ups is more than 100%, the CAR decreases after the announcement of the M&A news. We can infer that, in fact, the value of the information is reflected in the stock prices *ex ante* or over-reflected (see Figure 6).



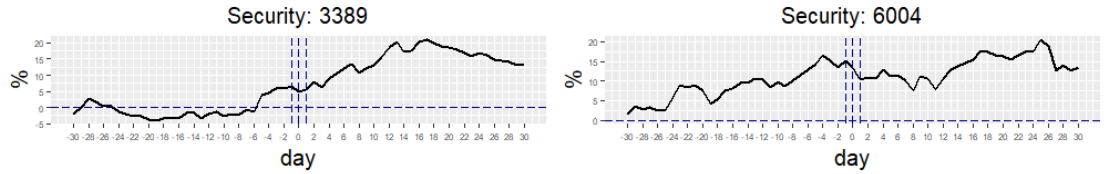


Figure 6. CAR of the observations whose degree of run-ups > 100%

Next, by a closer analysis of the 55 event observations from Table 16, we break down the group in the left column whose run-ups fall in the range between 0% and 100% (Table 17).

Degree of Run-ups (%)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Number of Observa-tions	1	3	3	4	7	5	8	8	4	2

Table 17. Breakdown of the left-column group from Table 16

3. Industrial observation

Functioning as the market intermediary, the financial industry is unique for several reasons. On the one hand, people in the financial industry routinely compete to gain informational advantages to generate a competitive profit. Our suspicion here is that they are closer to the inside information. On the other hand, the financial industry is under stricter administrative regulation or oversight and, presumably, has more internal control in place than other types of companies.[277] In theory, that should lead to less insider trading and a smaller pre-announcement price run-up. With the competing forces pushing for and against insider trading, accordingly, it is worth comparing the

[277] For example, the Financial Supervisory Commission of Taiwan has promulgated detailed rules to enhance internal control mechanisms in financial holding companies, banking institutions, and securities firms. Those rules include Implementation Rules of Internal Audit and Internal Control System of Financial Holding Companies and Banking Industries (promulgated in 2010, containing four chapters and 47 articles, and amended seven times from 2010 to 2018 April, as of this writing) and Regulations Governing the Establishment of Internal Control Systems by Service Enterprises in Securities and Futures Markets (promulgated in 2003, containing four chapters and 39 articles, and amended eight times from 2003 to 2018 April, as of this writing). Basically, the philosophy and style of financial regulatory agencies in Taiwan is rule-based and hierarchical, combining dense regulations and much on-site inspection.

degree of run-ups of the financial industry with that of normal companies.

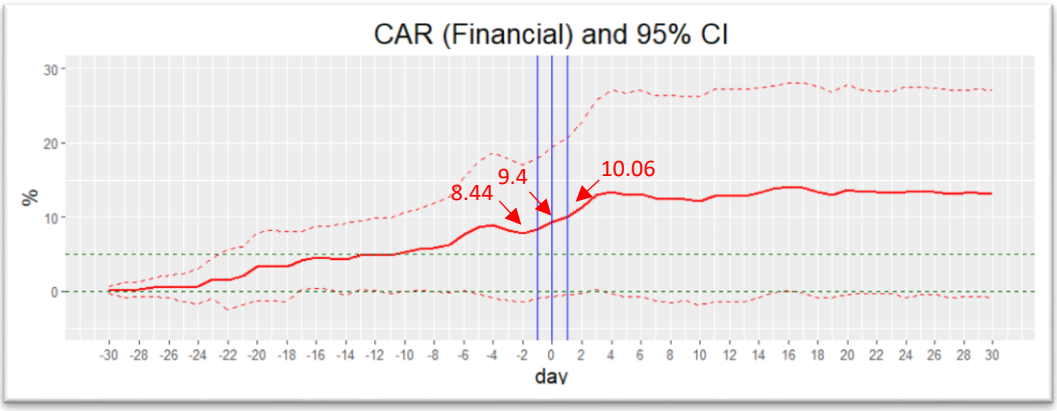


Figure 7. Average CAR and AR of the M&A events of financial institutions

In Figure 7, we carve out and observe the average CAR of those 11 M&A events for financial institutions. The comparison of the degree of run-ups is presented in Table 18.

	CAR_{-1}	CAR_1	CAR_{16}	Degree of Run-ups	
				Cf. Day +1	Cf. Day +16
Financial	8.44%	10.06%	14.12%	83.9%	59.8%
Overall	6.62%	11.23%	12.16%	58.9%	54.4%

Table 18. Comparison of CARs: M&As of financial institutions versus overall sample

First, the pre-announcement run-ups are observable and grow before the *Announcement Day* steadily (from around 0.2% to 8.44%). Second, when comparing the degree of run-ups of financial M&As with overall data, we find that the degree of run-ups in financial M&As is substantially higher than that of overall M&As, at 83.9% on day +1. We consider this finding to be consistent with the hypothesis that people in the financial industry frequently use undisclosed material information when trading, notwithstanding the existence of stricter monitoring mechanisms and rules prohibiting such conduct.

Third, it is also worth noting that the average CAR of financial M&As in this window is a little bit lower, at around 10% on day +1, but it keeps going up to around 14.1% on day +16 after the *Announcement Day*. In contrast to the observation in Figure 5, this suggests that the stock price does not fully absorb the value of M&A information a day after the *Announcement Day*. Accordingly, if we take 14.1% as the ceiling, the adjusted degree of run-ups will be lower and close to 60%. We believe the relatively opaque

nature of financial institutions' M&As, which often involve large asset transfers, complex portfolios, and uncertain reviewing processes, is the main reason for this result.

C. Combined Observation of Trading Volumes and Price Run-ups

We then move to target companies' average trading volume across the *Event Period*, to see if signs of information leakage can also be found from other proxies and the possible interaction between price changes and volume. Hypothetically, the change in the target company's stock price would lead to a change in trade and volume in a continuous manner. Notably, multiple papers choose to place particular emphasis on the insider trading volume (Cornell & Sirri, 1992; Chae, 2005; Chen, Wang, & Chen, 2011) and to "investigate the mechanism by which inside information becomes incorporated into the stock price" (Meulbroek, 1992, p. 1663). If the correlation between the trading volume movement and the stock price movement can be determined, the relationship between information leakage and pre-announcement run-up can be further examined.

Here, we observe the movement of target companies' trading volume in the *Event Period* for each M&A event. Considering that different companies have different levels of average trading volumes, we use "z-scores"[278] in Figure 8 to standardize the fluctuation of each company's trading volume in the window.

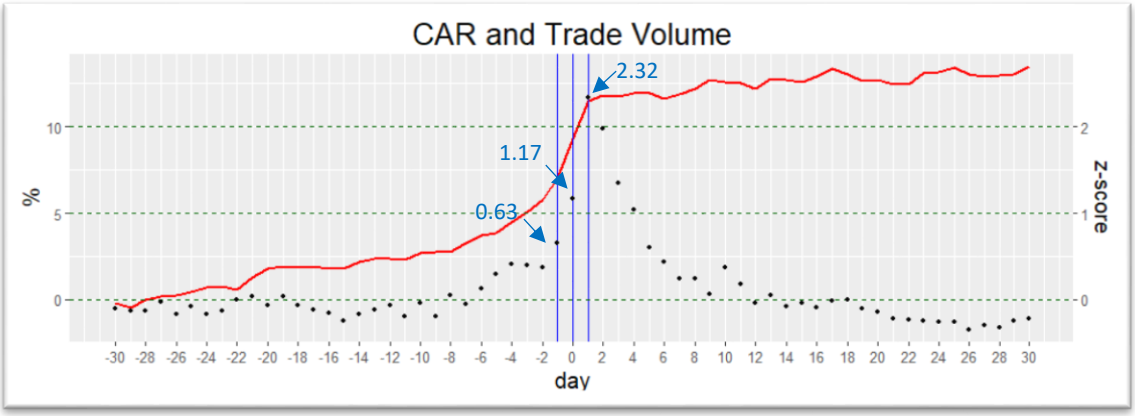


Figure 8. Observing CAR and trading volume together（all companies combined）

[278] Standardized by the sample mean and standard deviation, z-scores are displayed in units of standard deviation. When the z-score attained is negative, it means that the trading volume on that given day is below the mean, and positive when above the mean. For example, if the z-score for a given day is equal to +2, that means the trading volume on that day is above and deviated from the mean by two times the standard deviation.

In Figure 8, the average trading volume (in the form of *z*-scores, represented by the black dots) does not move upward until day -6 before the *Announcement Day*. In comparison, the average CAR (the red line) starts to increase on day -28 before the *Announcement Day*. Only when the days are closer to the *Announcement Day* do we begin to see observable upward movement of positive *z*-scores. In particular, the *z*-score increases to almost 0.63 times the standard deviation above the average trading volume on day -1 before the *Announcement Day*, and then it climbs to around 1.17 times the standard deviation on the *Announcement Day*, and 2.32 times the standard deviation one day after the *Announcement Day*. Notably, the fluctuation of trading volume substantially soared one day *before* the *Announcement Day*.

A possible explanation of this phenomenon is that, in the earlier stage, only a limited number of traders are informed. They, with or without successful communication or coordination with each other, are able to refrain from buying in a quantity large enough to alert regulators or other market observers until a very late stage. The relative size and capability of market participants in Taiwan is adequate to discern a market event before its formal announcement, with prices starting to move at day -27.[279]

D. Corporate Characteristics and Other Factors Explaining The Variance of Degree of Run-ups

We next move to the correlation between certain corporate characteristics and the variance of degree of run-ups for our M&A sample, to investigate the corporate environment as well as the correlation between the environment and the occurrence of potentially enforceable insider trading activities.

Hypothesis 1: The degree of run-ups is higher for smaller-size target companies (Rozeff & Zaman, 1988, pp. 25-27; Cheuk, Fan, & So, 2006, p. 86).

We use a company's average capitalization in the *Estimation Period* as the proxy

[279] For further discussion on informed trading and informed traders, see infra note 287, 288, and accompanying text.

for company size.[280] We divide the sample into two groups by the median,[281] using the dummy *Cap* = 1 to denote the group of bigger-size companies and *Cap* = 0 to denote the group of smaller-size companies.

Hypothesis 2: The degree of run-ups is higher for lower-trading-volume target companies (Easley et al., 1996, pp. 1428-1429).

We use a company's average daily turnover ratio in the *Estimation Period* to measure volumes.[282] We then divide the sample into two groups by the median,[283] using the dummy *Turnover* = 1 to denote the group of higher-trading-volume companies and *Turnover* = 0 to denote the group of lower-trading-volume companies.

Hypothesis 3: The degree of run-ups is higher for target companies in the financial industry.

When the M&A event is between two financial institutions, we let the dummy *Fin* = 1; otherwise, *Fin* = 0.

Hypothesis 4: The degree of run-ups is higher for target companies with a higher ownership concentration (Beny, 2007, pp. 256-258; Chen et al., 2007, pp. 251-252;

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280 The unit used to calculate the size of a company is usually millions, if not billions of dollars. If we directly run a regression to leverage the correlation between the actual size and the degree of run-ups (our dependent variable, in units of percentage) of a company, the coefficient will be very small. As a result, even if we can get statistically significant results, we might not be able to tell their **economic or practical** significance for the purpose of this study (the "insignificance of significance" problem). (See Wooldridge, 2012, pp. 135-138). To make the observation meaningful and simple in the legal context, we decide to divide the sample into two groups—one above the median (the bigger group) and one below the median (the smaller group)—as the basic unit of comparison. The same method also applies to hypothesis 2 (turnover) and hypothesis 4 (control block).

281 In column (1) of Table 19, we use the median capitalization for the 55 observations, which is about 4.9 billion New Taiwan dollars (or roughly 163 million U.S. dollars). In column (2)-(3) of Table 19, we use the median capitalization for the 45 observations whose degree of run-ups is between 0% and 100%. That gives us a median of about 8.3 billion New Taiwan dollars (or roughly 277 million U.S. dollars).

282 Turnover is defined as the ratio of the number of shares traded to the number of shares outstanding. It is used as the volume measure in most previous studies. (See Campbell, Grossman, & Wang, 1993, p. 980).

283 In column (1) of Table 19, the median turnover ratio is abound 0.72 % for the 55 observations. In column (2)-(3) of Table 19, the median turnover ratio is around 0.67 % for the 45 observations whose degree of run-ups is between 0% and 100%.

Huang, Hou, & Cheng, 2012, p. 7).

With reference to Article 11 of "Regulations Governing Information to Be Published in Annual Reports of Public Companies" in Taiwan, we use the aggregate holding of the top ten largest shareholders in the year of the occurrence of the M&A event to define the size of the control block. That is to say, we observe what percentage of the outstanding shares of a company is owned by the control block of that company. Likewise, we divide the sample into two groups by the median,[284] using the dummy *Control* = 1 to denote the group of companies with a larger control block and *Control* = 0 to denote the group of companies with a smaller control block.

Hypothesis 5: The degree of run-ups of target companies decreases over time.

Taiwan enacted its insider trading law in 1988. To increase the deterrence effect, the term of imprisonment for those convicted of violating the insider trading law was steadily raised, from a maximum of two years of imprisonment in 1988, to three to ten years in 2004, which is still in effect today.[285] This increase of sentence severity over time is a logical legislative response to popular perceptions of insider trading and other financial crimes. Here, we test if there is an observable decrease of insider trading activities in response to the increased severity of criminal punishment over the time period surveyed. As the window of our M&A sample extends from 2003 to 2016, we use 2010, the midpoint, as the year dividing our sample into two groups, where *Year = 1* denotes the group of M&A events occurring in or after 2010 and *Year = 0* denotes the group of M&A events occurring before 2010.

The multi-regression model is as follows:

$$\textbf{Degree of Run-ups} = \beta_0 + \beta_1\textbf{Cap} + \beta_2\textbf{Turnover} + \beta_3\textbf{Fin} + \beta_4\textbf{Control} + \beta_5\textbf{Year} + \varepsilon \qquad \textbf{[4]}$$

[284] In column (1) of Table 19, the median percentage of control block is about 35% for the 55 observations. In column (2)-(3) of Table 19, the median percentage of control block is about 33% for the 45 observations whose degree of run-ups is between 0% and 100%.

[285] The length of imprisonment was raised to a maximum of seven years in 2000 first, and then to a minimum of three years (maximum of 10 years), plus a criminal fine of 10 million to 200 million New Taiwan dollars in 2004. If the amount of earned illegal profits is more than 100 million (or roughly 3.3 U.S. dollars), the current punishment is at least seven years imprisonment plus 25 to 500 million New Taiwan dollars in fines.

In Table 19 below, we use the regression model built in equation [4] to investigate two sets of samples: in column (1), we investigate the variance of degree of run-ups among all 55 observations in this study, which includes the 10 observations whose degree of run-ups surpass 100% (see Table 16 and Figure 6). In column (2) and (3), however, we narrow the sample to the 45 observations whose degree of run-ups sits between 0% and 100%. The latter sample isolates those extraordinary observations where the value of the information is reflected in the stock prices *ex ante* or over-reflected.

Run-ups Regression

	Dependent Variable: Degree of Run-ups		
	Sample One (all)	*Sample Two (0-100)*	
	OLS	*OLS*	*Fractional*
	(all)	*(0-100)*	*(0-100)*
	(1)	(2)	(3)
Capitalization	-0.184**	-0.153*	-0.871*
	(0.084)	(0.083)	(0.436)
Turnover	0.153	0.134	0.791*
	(0.092)	(0.083)	(0.431)
Financial institutions	0.221*	0.250**	1.283**
	(0.121)	(0.110)	(0.574)
Control block	0.161**	0.105	0.566
	(0.079)	(0.071)	(0.369)
Year>2010	-0.002	-0.030	-0.217
	(0.079)	(0.068)	(0.355)
Constant	0.555***	0.484***	-0.073
	(0.097)	(0.082)	(0.429)
Observations	55	45	45
R^2	0.154	0.152	0.163
Adjusted R^2	0.067	0.044	0.056
Residual Std. Error	0.277 (df = 49)	0.219 (df = 39)	1.145 (df = 39)
F Statistic	1.778 (df = 5; 49)	1.401 (df = 5; 39)	1.524 (df = 5; 39)

Table 19. Pre-announcement run-ups and the explanatory variables

Note:

In Table 19, we include all the observations of this study in Sample One, running an ordinary least squares regression. Considering that our dependent variable — degree of run-ups — is measured by percentage, in Sample Two, we exclude the observations whose degree of run-ups surpasses 100% (which we consider to be the exceptional situation, see Part III.B.2). In column (2), we run an ordinary least squares regression. In column (3), we use a fractional regression model as an alternative method to test the relationship between the dependent and explanatory variables.

*** denotes that the number is significant at the 99% confidence level.

** denotes that the number is significant at the 95% confidence level.

* denotes that the number is significant at the 90% confidence level.

In Table 19, we observe that the coefficients on *turnover*, *financial industry*, and *control block* are positive, while the coefficients on *capitalization* is negative. In addition, the coefficient on *year* is slightly negative, close to zero. The test results of our hypotheses are summarized in Table 20. Part IV provides a more contextual discussion of the results.

Hypothesis	Test result
1. The degree of run-ups is higher for smaller-size target companies.	Consistent in both samples. The degree of run-ups for the bigger-size group is lower on average than for the smaller group.
2. The degree of run-ups is higher for lower-volume target companies.	Inconsistent in both samples. The degree of run-ups for the higher-volume group is higher on average than for the lower group.
3. The degree of run-ups is higher for target companies in the financial industry.	Consistent in both samples. The degree of run-ups for the financial industry is higher on average than for the non-financial industry.
4. The degree of run-ups is higher for target companies with a larger control block.	Consistent in both samples (but not statistically significant in Sample Two). The degree of run-ups for the larger-block group is higher on average than for the lower group.
5. The degree of run-ups for target companies decreases over time.	Inconsistent. The degree of run-ups does not vary significantly enough to infer a temporal trend of decrease.

Table 20. The test results for hypotheses

IV. Analysis

A. Degree of Run-ups

First of all, in the sample, the overall degrees of pre-announcement run-ups are substantial. The average CAR, after adjusting for market conditions, is 6.62% and constitutes a 58.8% run-up compared with the post-announcement price increase. Such a degree is substantially higher than the U.S. empirical evidence from Tang and Xu (2016, p. 112), which investigates a sample of M&As from 1981 to 2o11 and shows a 37.5% ($\frac{7.5\%}{20\%}$) degree of run-ups.

One way to interpret this result is to say that the enforcement of insider trading law in Taiwan is less effective as a deterrent. This interpretation is not surprising considering that the conviction rate for insider trading in Taiwan is less than 50%.[286] This calculation of risk has already presumed that one is detected and prosecuted in the first place after a protracted investigation. However, insiders are hard to detect in the real world. Under the circumstance, the risk of imprisonment is too low discourage from trading.

Furthermore, when we break down data by subgroups, 10 out of the 55 observations in our sample show a picture of more than 100% pre-announcement run-up (see Figure 6). This result, in our reading, shows a pattern of active trading by the directly informed traders in the beginning, followed by more traders who are derivatively informed.[287] The followers come either by observing abnormal market

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286 For example, one law professor in Taiwan, who graduated from Cornell Law School, published a commentary in 2016 on an insider trading case. This case involved a takeover of Green Point, a cell phone parts manufacturer in Taiwan, by a U.S. company, Jabil, in 2006, and the alleged insider trading case was decided in 2016. In the commentary, the author cited data from the Ministry of Justice and stated, "from July 2000 to the end of 2008, the rate of acquittal of insider trading cases is 64.75%." Notably, this case took nine years of adjudication to convict one director of a nine-year term of imprisonment plus a 100 million New Taiwan dollars fine (roughly 3.3 million USD). This case also aroused discussion about whether the result was fair to the then director who joined the board as a venture capitalist and made the related trades for his fund. See Jerry G. Fong, *One more mile for your takeover strategy: Insider trading (Bìng Gòu Cè Lüè Duō Chū Yī Li: Nèi Xiàn Jiāo Yì)*, UDN NEWS, http://paper.udn.com/udnpaper/POE0039/293531/web/ (Mar 2, 2016)(last visited Apr. 19, 2018).

287 For discussion of how informed traders follow the trades of insiders by engaging in trade decoding or price decoding, see Gilson & Kraakman (1984, pp. 572-79). The economic model of price

activities and making an intelligent guess or by possessing only part of the inside information. In either event, they cannot get a hold of the deal price precisely and make an offer higher than the acquiring company is willing to pay. For the events in the sample that have less than a 100% price rise, diverse degrees of rising are found. Even so, the number of companies that experienced a 40% to 80% pre-announcement run-up is 28, which is more than half of all the companies surveyed (see Table 17). This number matches the average 58.6% run-up in the whole sample mentioned earlier. In short, even with strict insider trading prohibition in place, the non-public news about pending M&A events in Taiwan is substantially incorporated into the stock price before its public announcement.

B. Trading Volume

Trading volume is an interesting and difficult point to observe and interpret, both for its composition and complication. For starters, when referring to the relationship between pre-announcement run-ups and change of trading volume, we notice that changes in trading volume only take place roughly six days before the public announcement. We then read that moment as a cutoff point to set true insiders/derivative insiders and follow-up investors apart. That is, when the surge of volume observably appears, it suggests that a sizable group of careful, derivatively informed investors or market observers have joined the trading. Their joining, in conjunction with other insiders, simultaneously creates the pre-announcement price run-up observed in the sample.

Another puzzle we try to figure out is who are the more likely targets—high- or low-turnover companies—when insiders or informed traders contemplate a trade with undisclosed privileged information. In the beginning, we suspected that insider trading (and its ability to move price upward) would tend to be drowned out by other trading when the target company's daily trading volume is large, so insiders find it easier to hide their trades without setting off regulators' or the market's alarms. However, there are two offsetting dynamic factors here. One is that high-volume companies attract more insiders who seek to invest less visibly, without triggering enough price movement to cause alarm. Ironically, since high-volume companies appear to present a safer opportunity to conceal their informed trading, there tends to be more uncoordinated insider trading as well as informed trading. This probably creates too much unwanted run-up, possibly exacerbated by following the purchases of other

decoding, on the other hand, can be found in Grossman & Stiglitz (1980, pp. 393-408).

sensitive market observers or investors. Therefore, empirical investigation seems necessary to determine which of the two factors may win out in this unsettled tug-of-war.

Per our data, in Table 19, we find that the degree of run-up for the higher-trading-volume group is 15% higher (13% in Sample Two) on average than the lower group. This implies that informed traders (including insiders) collectively tend to invest too much in high-volume companies and move the target stock price in an undesirably excessive way, compared with that of the low-volume companies. Contrary to previous assumption, we conclude that, when viewed from the perspective of an insider trader who is trying to escape detection, placing a bid on high-volume companies to gain informational advantage before good news becomes publicly available may not be a safer trading strategy *ex ante*.

C. Corporate Characteristics That Have A Significant Effect, as Expected, on The Degree of Run-ups

Three variables we examined show initial correlation, though all are in need of further comparative study to prove their theoretical robustness and generalizability.

Company size is an important characteristic for which we wanted to see whether a correlation exists. We originally suspected that a higher possibility of insider trading can be observed in smaller companies, probably because they have less stringent internal control and an immature compliance culture. In our results, the degree of run-ups for the larger group is 18% lower (15% in Sample Two) on average than that of the smaller group, which supports our assumption. However, more data from different countries may help to determine this interrelation with greater reliability.

Secondly, we have two contradicting theories regarding M&As involving the *financial industry* in III.B.3, namely, that (1) insiders in the financial industry tend to enjoy privileged access to information learned at work and so make a profit from informed trading; or, conversely, that (2) insiders in the financial industry tend to be subject to stronger internal control and a firmer fiduciary requirement and thus are less prone to use privileged information to make an illegal profit. After running the multi-regression, we find the degree of run-ups for the financial industry is 22% higher (25% in Sample Two) on average than for the non-financial industry. This finding supports our first hypothesis, that closeness to inside information makes financial institutions a suitable hotbed for insider trading activities. Furthermore, the overall limited number

of financial institutions on the market also makes these organizational transactions easier to predict.

Lastly, *ownership structure* has been a key element in comparative corporate governance. It is widely used to distinguish and explain differences in corporate laws and governance practices around the world. Consistent with our hypothesis, we find the degree of run-ups for the higher-block group to be 16% higher (but not statistically significant in Sample Two) on average than that of the lower group. One possible explanation is that the controller (as well as his/her protégé) of a target company, after enjoying the privilege of running a company with discretion for a long time, would have a stronger tendency to conduct endgame opportunistic behavior. That is possibly the result when the controllers have controlled a company without subjecting themselves to much internal check or need to respect the law. We remain open to alternative explanations. More data and further qualitative investigation into the dynamics of companies with high ownership concentration, domestically or comparatively, would be required to form a more concrete theory.

D. Limitation of Pre-announcement Run-up as A Tool for Detecting Insider Trading Activities

Caution needs to be taken when using pre-announcement run-up as a gauge of the actual or relative size of illegal insider trading activities. Pre-announcement run-up, in fact, works as an estimation or approximation of insider trading activities but not an absolute measure. Reasons for being cautious are provided below.

First, the pre-announcement price run-up, even after adjusting for systemic factors, can be concurrently triggered by various types of informed trading. Informed traders can range from those who know only part of the inside information from core insiders, to analysts who might possess some shred of circumstantial information and are clever enough to complete the puzzle themselves, to traders who mimic market movement without knowing about the undisclosed pending M&A at all.[288] From the perspective of law, not all of them can be automatically classified as insider trading, when strict

[288] Informed trading denotes the trading behaviors that are based on the traders' effort to get access to and utilize private advantageous information and to make profits on the value reflected or realized by such information. Technically speaking, insider trading is the very type of informed trading that is prohibited by securities law. Nonetheless, both insider trading and lawful informed trading are the possible cause of pre-announcement run-ups. (See Gilson & Kraakman, 1984, pp. 563-64; Harris, 2003, pp. 222-243; Goshen & Parchomovsky, 2006, pp. 722-24; Dolgopolov, 2012, pp. 12-13).

legal standards such as materiality, causality, or scienter apply. As noted at the beginning, insiders rarely reveal or declare themselves. While embracing the price run-up as a powerful approximation for the purpose of objective observation, we nonetheless admit that using pre-announcement run-ups as a proxy of insider trading has its limitations.

Secondly, pre-announcement run-ups cannot reveal conclusively which traders are actively engaged in illegal insider trading. Therefore, it is not a sufficient tool for law enforcement to catch insider traders, at least without further individualized investigations. At its best, pre-announcement price run-up can be cause for investigating or for having *prima facie* doubt. This is understood by the limitation inherent to its posterior nature as collective indicia.

Third, from a methodological perspective, given the relatively small sample size we have in this study, we are also aware of the fact that "the power of the event study diminishes as the sample size decreases" (Bhagat & Romano, 2002a, p. 149). In fact, three out of five explanatory variables we observed are statistically significant, but only at a 90% confidence level. Indeed, we suspect that increasing the sample size might be helpful for solving this problem, but the limited number of M&A events in Taiwan is an inherent constraint that we cannot overcome in this study.

In the context of using evidence produced by event studies in court cases, such as *Halliburton*, the question of "whether a sample size of one is acceptable" is amplified (Bhagat & Romano, 2002a, p. 149). Fisch, Gelbach, & Klick (2018) reviews the problems encountered when parties in a court case use event studies as evidentiary exhibits, as well as the corresponding possible adjustment that needs to be made. In addition, Gelbach, Helland, & Klick (2013) proposes an alternative, the SQ test, to solve the problems of "single-firm, single-event" studies. While this study shares the usefulness of event study methodology, to establish a more concrete proxy like the degree of run-ups, we also believe that future work could be done to improve the model so that the proxy can become more accurate and robust.

Other than this limitation to its application and the issue of sample size, the use of pre-announcement run-ups as a proxy to gauge or understand insider trading (or informed trading) also faces another methodological limitation. The "matching problem" between phenomena and variables when inferring their causal link is similar to the general problem other researchers face when using data compilation and analysis to predict certain outcomes or trends. In fact, the link between an observed (or presumed)

trend and individual action may not always be linear. It is rather a dynamic process, and the observed phenomenon could just as easily be mixed or even reversed if forces from the opposite direction are at work.

Though it may show the limitation of the explanatory power of pre-announcement run-up as a factor *a posteriori* or an *ex post* phenomenon, it also shows the importance of deciding which factor in the whole game holds more force than all others. In this case, it is the ability to observe and detect informational leakages objectively that defines the weight of pre-announcement run-up as a proxy for insider trading, which allows for a greater applicability to a single firm, a single nation, or comparatively.

V. Conclusion

Adopting an event study methodology for analyzing stock prices, we observed 55 M&A events from Taiwan from 2003 to 2016. Overall we perceive information leakage in the form of a positive (no matter how large or small) stock price and trading volume movements before the public announcement of M&A events. On average, the degree of run-ups is more than 50%. Such results are comparable and even higher than empirical evidence from the U.S.

This finding of information leakage suggests that 1) insider trading law enforcement in Taiwan does not have a comparatively significant deterrence effect, and investors' pre-announcement trading activities based on M&A information are pervasive so as to signify illegal trading; 2) considering the low indictment rate for illegal insider trading, evidence suggests that, beyond traditional corporate insiders, other sorts of market participants must also have their own ways to discover, speculate, and trade on private, advantageous information, creating a substantial degree of price movement and volume change. This is part of the untold truth of market structure and mechanisms that could be present in any market (Gilson & Kraakman, 1984; Harris, 2003; Goshen & Parchomovsky, 2006; Dolgopolov, 2012).

Lastly, due to the accessibility of data, at this stage, our research includes only 55 M&A event observations for companies whose stocks are traded on the Taiwan Stock Exchange or the Taipei Exchange. Given such a limitation, there is still immense room for variation to be explained. For example, although the signs of capitalization, financial industry, and control block coefficients are consistent with our expectation, the level of statistical significance varies according to different models and samples we leverage.

Moreover, the linear regression models only have moderate explanatory power from the perspective of their R-squared. We believe this study can be refined in the future by including other explanatory factors as well as adopting non-linear models.

Appendix I

Code	Type of Acquirer	Type of Target	Type of M&A	Security Code of Target	Ann. Day	SQ (95%)	SQ (99%)
1	Taiwan Stock Exchange listed	Taiwan Stock Exchange listed	Between non-financial companies	1523	2009.12.18	3.636	5.604
2				2363	2004.02.26	3.502	4.407
3				2366	2005.10.05	2.655	4.007
4				2389	2005.04.12	3.648	6.636
5				2394	2006.06.20	2.971	4.507
6				2403	2010.03.20	4.357	6.64
7				2422	2005.08.15	5.334	6.044
8				2446	2009.03.20	4.776	6.475
9				2452	2009.10.30	5.132	6.032
10				3009	2009.11.14	4.701	6.146
11				3012	2006.04.07	4.507	7.277
12				3061	2014.06.30	4.108	6.563
13				3080	2012.09.13	3.969	5.522
14				3271	2007.11.29	6.545	7.233
15				3367	2011.03.22	2.502	5.503
16				3534	2011.03.16	3.619	5.203
17				3545	2014.04.07	5.013	5.872
18				3598	2015.08.26	2.113	4.134
19				3614	2010.03.11	5.165	6.41
20				3697	2012.06.22	3.648	5.37
21				6119	2011.10.04	1.767	4.836
22				6133	2007.03.21	3.683	5.919
23				6255	2010.02.10	4.475	6.227
24				6269	2005.03.25	4.571	6.103
25				6286	2015.09.07	2.868	3.817
26				8008	2013.01.30	1.705	2.644
27				8078	2013.09.30	4.415	7.101
28				8105	2013.03.11	4.190	6.938
29				8199	2012.08.09	4.919	6.153
30	Taiwan Stock	Taiwan Stock	Between financial institutions	2807	2006.09.29	1.583	2.993
31				2808	2005.06.30	2.179	3.743
32				2822	2005.11.08	1.584	3.478

33	Exchange listed	Exchange listed		2833	2015.05.12	2.229	5.869
34				2837	2014.02.10	1.969	4.509
35				2847	2015.08.21	1.677	3.29
36				2854	2011.04.09	2.354	3.221
37				6008	2012.04.05	2.372	3.23
38				6012	2010.09.20	3.824	6.031
39	Taipei Exchange (OTC) listed	Taiwan Stock Exchange listed	Between non-financial companies	3016	2015.08.06	3.205	6.602
40				3063	2009.12.07	6.137	8.815
41				3559	2016.07.22	2.286	3.996
42	Taipei Exchange (OTC) listed	Taipei Exchange (OTC) listed	Between non-financial companies	3323	2010.08.05	2.759	4.2
43				6130	2005.06.17	7.43	8.28
44	Taipei Exchange (OTC) listed	Taipei Exchange (OTC) listed	Between financial institutions	6023	2011.08.16	0.854	2.018
45	Taiwan Stock Exchange listed	Taipei Exchange (OTC) listed	Between non-financial companies	5344	2003.02.07	6.839	7.502
46				4910	2004.10.29	5.752	6.621
47				5436	2004.12.27	5.232	7.717
48				8235	2005.02.15	1.804	4.319
49				8193	2006.07.10	3.929	10.093
50				3298	2008.02.29	4.15	6.48
51				3389	2011.08.03	3.473	5.801
52				5384	2015.03.02	1.952	5.383
53				8079	2015.12.14	1.101	2.487
54				3553	2016.09.02	3.229	8.724
55	Taiwan Stock Exchange listed	Taipei Exchange (OTC) listed	Between financial institutions	6004	2006.09.19	4.363	6.475

Table 21. Description of the sample

Note: In the last two columns of Table 21, we run the SQ test (Gelbach, Helland, & Klick, 2013, pp.517-518) for each single firm event study at the 95% and 99% quantile, respectively. At the 95% quantile, the SQ measures range from 0.854 (min.) to 7.43 (max.), where the median is 3.648 and the mean is 3.614. At the 99% quantile, the SQ measures range from 2.018 (min.) to 10.09 (max.), where the median is

5.872 and the mean is 5.585. The distribution of the SQ measures provides with another perspective from which we can reflect the accuracy of our event study model.

Appendix II

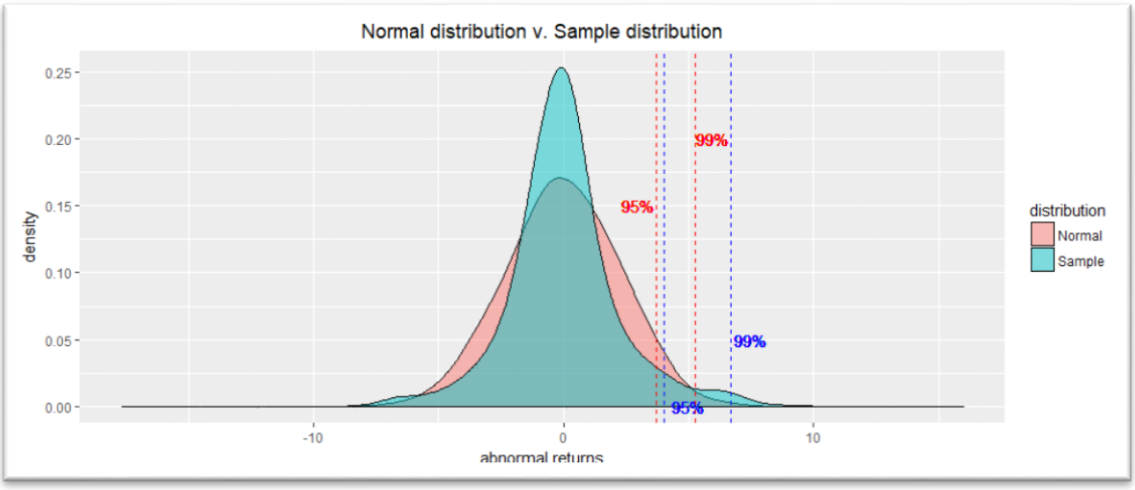

Figure 9. Adjustment: normal distribution versus sample distribution

Note: In Figure 9 and Table 22, we adopt the adjustment method of Fisch, Gelbach, & Klick (2018, pp. 593-597), matching the critical values to the distribution of our sample by the SQ test. The adjusted critical value at the 90%, 95%, and 99% quantile, respectively, is 2.61%, 4.04%, and 6.7%; compared to t = 1.28, 1.64, and 2.32 as the critical values at the 90%, 95%, and 99% confidence levels under the student t-test. The result of adjusted significance test can be found in Table 22.

t (day)	CAR (average)	*t*-value	*p*-value	Statistical significance (student t-test)	Adjusted significance (SQ test)
-30	-0.175	-0.560	0.711		
-29	-0.434	-0.992	0.837		
-28	0.018	0.033	0.487		
-27	0.179	0.294	0.385		
-26	0.275	0.452	0.327		
-25	0.492	0.657	0.257		
-24	0.698	0.786	0.218		
-23	0.798	0.720	0.237		
-22	0.506	0.403	0.344		
-21	1.075	0.851	0.199		

-20	1.554	1.254	0.108		
-19	1.553	1.257	0.107		
-18	1.394	1.079	0.143		
-17	1.354	1.038	0.152		
-16	1.211	0.842	0.202		
-15	1.264	0.832	0.204		
-14	1.740	1.152	0.127		
-13	1.990	1.258	0.107		
-12	2.140	1.351	0.091	*	
-11	2.077	1.299	0.100	*	
-10	2.425	1.433	0.079	*	
-9	2.439	1.448	0.077	*	
-8	2.351	1.362	0.089	*	
-7	2.891	1.682	0.049	**	*
-6	3.395	1.855	0.035	**	*
-5	3.512	1.906	0.031	**	*
-4	4.124	2.246	0.014	**	**
-3	4.639	2.489	0.008	***	**
-2	5.314	2.702	0.005	***	**
-1	6.618	3.407	0.001	***	**
0	9.042	4.648	0.000	***	***
1	11.249	5.842	0.000	***	***
2	11.426	5.902	0.000	***	***
3	11.225	5.572	0.000	***	***
4	11.339	5.386	0.000	***	***
5	11.420	5.307	0.000	***	***
6	11.174	5.104	0.000	***	***
7	11.411	5.158	0.000	***	***
8	11.736	5.124	0.000	***	***
9	12.248	5.311	0.000	***	***
10	12.124	5.301	0.000	***	***
11	12.025	5.252	0.000	***	***
12	11.681	5.037	0.000	***	***
13	12.170	5.215	0.000	***	***
14	12.068	5.079	0.000	***	***
15	11.903	5.021	0.000	***	***
16	12.158	5.023	0.000	***	***

17	12.543	5.103	0.000	***	***
18	12.168	4.985	0.000	***	***
19	11.726	4.793	0.000	***	***
20	11.841	4.774	0.000	***	***
21	11.579	4.662	0.000	***	***
22	11.605	4.605	0.000	***	***
23	12.276	4.849	0.000	***	***
24	12.371	4.817	0.000	***	***
25	12.524	4.841	0.000	***	***
26	12.303	4.741	0.000	***	***
27	12.256	4.756	0.000	***	***
28	12.383	4.828	0.000	***	***
29	12.376	4.847	0.000	***	***
30	12.858	5.157	0.000	***	***

Table 22. Pre-announcement price run-ups (full) with adjusted significance

Note:

*** denotes that the number is significant at the 99% confidence level.

** denotes that the number is significant at the 95% confidence level.

* denotes that the number is significant at the 90% confidence level.

CHAPTER 5. EPILOGUE

In this dissertation, I explore the problem of insider trading and informed trading from three different perspectives: the current development of the US case laws, the transplantation of insider trading law in Taiwan from the comparative law perspective, and the way to gather empirical evidence that helps a government to test the effectiveness of its insider trading enforcement.

All in all, no matter which kind of perspective or methodology is adopted, be it law, financial economics, ethics, or psychology, the ultimate question that we are trying so hard to answer, after investing so much time and resource, is merely an excuse to justify that insider trading ought to be prohibited. That is because the prosperity of a stock market is closely connected to the development of the economy, and the development of the economy is the key to a country's success. Accordingly, the stock market ought to be a solemn place, a system that can be trusted by investors. However, we should also be aware that while we are persuading ourselves that the enactment and enforcement of securities laws such as insider trading law help to create and maintain the conditions for a stock market to work normally, we should not forget that in nature, a stock market is not that different from a casino. Trading rules can be enacted and enforced just like the gambling rules of any casino. Although they can prevent the operation of the stock market/casino from extreme chaos, they cannot stop the inherent greed and envy that are born in the human nature.

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