

Loopholes And Financial Innovation

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Abstract

The loophole phenomenon occurs in financial services, bureaucratically controlled marketplaces, as well as in our everyday lives. Whenever an entity writes a rule, that entity simultaneously creates many loopholes (Kane, 1977). Loopholes provide a way to pervert regulations and may even stimulate innovation. Different parties search out loopholes to adapt to changes as processes evolve over time. We discuss how various parties have reacted to specific loopholes. Our discussion seeks to provide a better understanding of the evolutionary interplay between financial innovation and regulation as well as to provide instruction on how to identify and exploit loopholes.

Introduction

Do loopholes exist through carelessness, or meticulous planning? Is utilization of a loophole deviously underhanded, or ingeniously brilliant? These answers depend on the circumstances. Loopholes can be tools for innovation, or a means to avoid well-intentioned regulation.

Technological change spurs loopholes, because rule makers cannot envision all future advancements when they write laws. The usefulness of these loopholes depends on how easy they are to discover and exploit. Technological improvements may cause some regulations to become obsolete. Regulation is an iterative and ever-evolving process. Every time a rule maker writes a rule, the rule maker simultaneously writes many loopholes to the rule (Kane, 1977). Naturally, regulated parties seek to exploit and pervert the regulatory process. Regulated parties search for weaknesses in the letter of a law.

Regulated parties also search for weaknesses in the enforcement of a law. One need only witness the speeds traveled by automobiles on U.S. interstate highways to realize that rules without sufficient enforcement do not cause regulated parties to abide by the letter of a law.

Our discussion seeks to provide a better understanding of the evolutionary interplay between financial innovation and regulation as well as to provide instruction on how to identify and exploit loopholes.

Regulatory Circumvention

Some parties seek to avoid or pervert regulations well beyond the lawmaker's original intent. These parties search for loopholes in the law to provide a means to circumvent regulation.

Renovations

Many buildings in New York City reside on land that could support higher and better economic uses. Often, there are legal restrictions that prevent the land from being used for a better economic purpose. For instance, a building might be owned by religious or educational institutions and thus might not be subject to property tax. Consequently, there is less cost imposed on the institution for not earning the opportunity cost on the land on which it's building sits.

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Alternatively, a building might have some sort of rent control or rent stabilization imposed upon the units in the building. The rent controls prevent building owners from charging market rental rates. Builders may have accepted rent controls for tax abatements when they constructed the building. Tenants do not want to vacate, because they could not replicate the value that they derive from their units in non-rent controlled apartments at market rates (Tierney, 1997). Due to tenant rights, building owners cannot simply evict the residents and utilizing the real estate in economically better ways either. Nevertheless, some building owners have found mechanisms to evict the tenants to make way to bigger and better structures. For instance, an owner may knock down their building after it is condemned by the city. There are many owners would like to have their buildings condemned. How might a ruthless building owner accomplish this feat legally?

The owner might hire a structural engineer to perform “renovations.” These “renovations” follow all building codes and procedures but are actually detrimental projects that harm the building. Eventually, these “renovations” might induce the city condemn the building due to safety code violations (Tierney, 1997).

80/10 Mortgages

Federal law requires that mortgages written for amounts more than 80% of the appraised value of a property have Private Mortgage Insurance (PMI) to be a conforming mortgage that is eligible for Government Sponsored Enterprise (Fannie Mae, Freddie Mac) to purchase. PMI is costly to underwrite individually. It may even be unnecessary when secondary securitizers pool mortgages into portfolios and then sell the cash flows that are generated from the principal and interest payments, because the act of pooling of mortgages into portfolio provides diversification for investors (Smith and Kane, 1994).

To avoid paying PMI premiums, borrowers who do not want or cannot make a 20% down-payment will choose to borrow 80% of the appraised price with a first mortgage, and take a second mortgage for the remaining 10%. While it is likely that the customer will pay a higher interest rate for on second mortgage, it may be more than offset by not having to make PMI premiums. Further, the higher interest payments are tax deductible for a homeowner whereas PMI Premiums are not tax deductible.

Homeowners often use another loophole to avoid paying PMI. When there has been substantial appreciation of their homes, they have their property reappraised so that the loan to value ratio will be recorded above 20% of the amount of the loan. This eliminates the legal requirement for PMI.

Re-appropriations

Some entities may pad their budgets with appropriations for events that are possible, but are not very probable. For instance, we consider a flood that occurs with a frequency of once every fifty years. By budgeting for this possible expense, there will be funds available if such flooding does occur. However, in the more likely events that flooding does not occur, there are additional funds that the entity may use for other purposes. These other purposes might not be able to survive the higher scrutiny that they might receive if they were regular budget appropriation.

End of period projects

By scheduling expensive new projects to begin at the end of a budget cycle, planners may build in slack for budget overruns. They may delay new projects for the short while until the next budget cycle and chose to use the current budget appropriation for other purposes.

Tax Deductions

We may also view Federal tax deductions for special activities (for instance, the interest expense on a mortgage on one’s primary residence) as Federal budget loopholes. The Federal government compensates taxpayer

for undertaking special activities through deductions that lower their income tax burden. Although there is no budget appropriation, it is as though the government has paid taxpayers for undertaking special activities.

Cash and Accrual

The Internal Revenue Service bases its system of taxation on cash accounting. This means revenues and expenses are recognized when they are received or paid out. This differs from accrual accounting when revenues and expenses are recognized when they are incurred. Revenue earned in first year but received in the next year belongs on the next year's income tax statement. Similarly, expenses incurred in the first year but paid in the next year will lessen next year's tax burden. Consequently, entities might choose to manipulate when they receive their revenues and expenses to lower their tax burden. We consider an individual who has a tax year with a lower a marginal income tax rate than usual, perhaps due to a change in employment. Such an individual might elect to accept more discretionary income during that tax year. For instance, that individual might choose to exercise stock options before their expiration date to take advantage of the low marginal income tax rate for a given year.

The seams between accrual accounting and cash accounting are ripe with loopholes because the two methods of accounting for cash flows necessarily conflict. Due to deficiencies of cash accounting with respect to long-term assets and liabilities, some special items follow accrual accounting within cash accounting income statement. For example, the IRS allows companies to record as current year expenses the contribution to their employee defined benefit pension plans. In order to qualify as a current year expense, the IRS stipulates that pension funding does not exceed 110% funding requirement set by a licensed actuary hired by the company. The 110% threshold has some leeway. An actuary is a person who guarantees that pension plans have sufficient funds. Because an actuary is personally liable when a pension plan has insufficient funds, actuaries tend to be conservative in their estimations to increase the likelihood that there will be sufficient funds. For example, an actuary might use a relatively small rate of return on accrued funds. All else equal, companies may prefer over funded defined pension plans, because they provide future flexibility. For instance, over funded plans may allow managers to smooth out their cash flow to appear less risky to debt holders and other creditors. Managers may also manipulate pension fund contributions to meet stock market analyst expectations and thereby demonstrate or create the illusion that their companies are managed well.

Checking with Interest

Federal law prohibits depository institutions from paying explicit interest on demand deposit accounts. Nevertheless, it has always made economic sense that institutions compensate depositors with explicit interest on their checking accounts, because depositors forego other investment opportunities that they might otherwise undertake. After all, it is easier to pay explicit interest rather than employing loopholes to pay implicit interest (Kane, 1977). For instance, banks used to have luxurious lobbies, many friendly employees, and even gave "gifts," items such as candies and small appliances to encourage customer to open new accounts.

We consider a time deposit account that functions as a demand deposit (checking) account that pays interest. With a time deposit, withdrawals are not tied to a specific account. Instead negotiated orders of withdrawal are obligations of the depository institution. Institutions may have the right to delay payment for up to five days before honoring the withdrawal. However, an institution can honor all their negotiated orders of withdrawal immediately just as if they were checks drawn on demand deposit accounts. Indeed, institutions cannot regularly exercise their option to delay payment, because they would likely lose valuable customers if they did so.

Depository institutions also exploit sweep accounts to circumvent checking with explicit interest prohibitions. Sweep accounts are demand deposits by day, but at night the funds are swept out into an interest bearing account. Thus consumers may earn explicit interest overnight while maintaining all the benefits of a demand deposit. Sweep accounts have the added benefit that they reduce the minimal level of required sterile reserves (they earn no explicit interest for the financial institution) that institutions must maintain with the Federal Reserve, because funds are not in demand deposits overnight.

In retrospect, depository institutions needed to find a way to provide *de facto* checking with interest to prevent their customers from taking their deposit and placing them into money market mutual funds. Depository institution supervisory regulators purposely did not close these loopholes. They need to have constituents to regulate (Kane 1989). Further these loopholes did improve economic efficiency. After all, it is unlikely that there are substantial economies of scope between selling “gifts” and banking. Indeed, depositors may prefer to spend explicit interest on other economic goods rather than purchasing “gifts.” When *de facto* checking with interest became more prevalent, many institutions reduced their level of service and most discontinued “gifts” for customers that open new accounts.

Government Sponsored Enterprises

We may view Government Sponsored Entities (GSEs) as a Federal budget loophole. GSEs are for profit publicly traded companies with public purpose objectives. Shareholder alignment schemes such as executive stock options may induce managers to forgo public purpose objective to enhance returns to shareholders even though Federal government officials sit on the Board of Trustees (E. Kane, 1999). GSEs are not explicitly backed by the full faith and credit of the United States government, but the Federal government implicitly guarantees them. GSEs are creations of the Federal government and they have a direct credit line with the U.S. Treasury. Further when Fannie Mae, a housing GSE, was in financial distress in the mid-1980s, bond holders did not foreclose, because they correctly perceived that they would not suffer losses. Indeed, debt market participants view GSE debt as a close substitute for U.S. Treasury debt, since it generally trades one credit grade (approximately six to eight basis points) above U.S. Treasury debt yields at similar maturities (E. Kane, 1999).

How does GSE debt impact the Federal budget? No explicit Federal budget appropriation goes to GSEs, but GSE debt does indirectly impact the budget through higher yields on U.S. Treasury debt. The yield on U.S. Treasury debt would be lower if did not have to compete with GSE debt (E. Kane, 1999). Thus by creating GSEs, politicians have been able to fund some public purposes objectives they might not have been able to fund through the normal budget appropriation process.

Asset Securitizations

We argue that asset securitizations are a regulatory arbitrage loophole around the Basel risk-based capital requirements. Asset securitizations involve the packaging and selling of assets, often receivables, from originators to investors. Greenbaum and Thakor (1987) argue that asset securitizations may be a cheaper source of funds than bank deposits. The Basel risk-based capital requirements (equity and long-term debt used to absorb losses in front of government guarantees such as federal deposit insurance) are especially taxing on low risk-low return assets, because the requirements do not distinguish risk within assets classes (Hiemstra, Jacques and Kane, 1998). By engaging in asset securitizations of low risk-low return assets, managers increase the risk of their remaining portfolio and hence the return to the benefit of shareholders. Asset securitizations function as if an originating institution has issued additional debt. Hence, banks increase financial risk through effective leverage (Kane and Megbolugbe, 2002, Kane and Muzere, 2003).

Normally a firm must absorb financial risk by issuing a large amount of debt, because debt holders might foreclose and prevent profitable projects from continuing to the benefit of shareholders. However, debt holders do not have much incentive to foreclose, because they are likely to be made whole – especially if depository institutions are not likely to be resolved by federal supervisory regulators.

Risk-based capital requirements stipulate that there be no explicit recourse to the originating institutions to relinquish capital requirements against securitized loans. Nevertheless, many originating institutions structure many asset securitizations so that they shield the credit risk away from the buyers, making them low risk-low return debt-like instruments (Johnson, 1999). Essentially these structures give *implicit* recourse to buyers (Kane and Megbolugbe 2002). Special purpose entities purchase the receivables and issue securities backed by the receivables. This arrangement ensures that investors have the highest claim in the event of bankruptcy of the originating institution.

Credit enhancements protect investors from the obligators who may not pay, or may not pay in a timely fashion. Credit enhancements may include the following: excess spread reserve accounts, over collateralization, subordinated structures, early amortizations, and third party insurance (Johnson, 1999).

Excess spread is the yield on a pool of loans minus the expenses of securitization, servicing and expected losses. Excess spread functions like the equity in a securitization. The asset seller generally holds the excess spread portion of a securitization. Often, excess spread funds are held in a reserve account. These funds may be used to pay securitization buyers if higher than expected losses arise.

The seller may retain a portion of the receivables called over collateralization, too. Depending on the terms of the securitization, the yield from the seller's portion of the receivables may be used to pay buyers if higher than expected losses arise.

Many asset-backed securities are sold in tranches. The most subordinated tranches protect the higher tranches by absorbing losses 1.5 to 2 times the expected loss. The junior tranches protect the senior tranches. The riskier lower tranches may have credit ratings ranging from BB to BBB, and are often placed privately, while senior tranches have ratings from A to AAA and absorb losses from 2 to 5 times the expected loss (Johnson 1999).

Early amortization of the investor's principal may occur if the cash flow from the receivables deteriorates beyond a specified threshold. For instance, an early amortization of credit card receivables might occur when non-performing receivables exceed 7%. To prevent early amortizations, it may be in the best interest of the originating institution to replace non-performing receivables with performing receivables that it has acquired elsewhere. Indeed, originators may do this without early amortization clauses. Originating banks want to protect the low cost source of funds provided by securitization just as manufacturers provide warranty for the quality of their products to achieve better prices for their products. Consequently, an institution will stand behind their securitizations, unless the institution is under severe financial distress.¹

Sometimes originating institutions may not disclose enough information on their securitizations to allow market participants to properly evaluate the cash flows resulting from the receivables. Insufficient disclosure suggests the market participants may not perceive they are buying actual cash flows, but are instead purchasing a cash flow that is implicitly guaranteed by the originating institution. Not surprisingly, market participants trade senior tranches of securitized receivables as if they were secured debt of the originating institution. If it is rated like secured debt, and has yields that are comparable to debt that is secured, is it *de facto* secured debt (Kane and Megbolugbe 2002)?

Trusts

Although policy makers have debated removing or reforming estate tax, it is likely that estate taxes will survive the foreseeable future. The federal government receives more revenues from income taxes than they do with wealth taxes. In part, this is because it is easier for the IRS to enforce income taxes. Ideally, a government would prefer to tax wealth instead of income, since by taxing income the government create a disincentive to work, since the taxpayer receive less income than they produce. Unfortunately taxing wealth is difficult to accomplish. Wealth can easily flee a country, hide and can create political force to protect itself. Income is harder to export, disguise and protect politically. Sales taxes may do a better job of tax wealth, but they discourage spending and they are regressive. Regressive taxes have been unattractive politically, because they tend to place a relatively larger burden on citizens who have less ability to pay taxes.

Estate taxes do tax wealth, but there are loopholes. For instance, the statute allows for an exempted amount. The exemption varies depending on the year of death, and then all assets above the exempted threshold are subject

¹ While one the authors worked at Chase Manhattan Bank, the credit committee managed internally its securitized receivables as if they were still part of Chase's portfolio due to reputation consideration. The committee did this even though Chase had sold their receivables without any explicit recourse.

to tax. When the first spouse dies and the surviving spouse inherits everything but there is no estate taxes imposed. The IRS does not assess the tax until the second spouse dies, then the temporary tax exemption due to the death of the first spouse expires. By establishing separate trusts for each spouse, however, estate planner may maintain separate exemptions. When the first spouse dies the assets remain separate from the surviving spouse's assets for tax purposes. Then, when the second spouse dies, there are two sets of taxable assets. Each trust is eligible for a separate tax exemption. Consequently estate planners may effectively double the tax-exempted threshold.

An Open-end mutual fund exchanges units of the Registered Investment Company (RIC) for cash when investors subscribe and redeem. As a result, the funds need to buy and sell securities to invest or raise cash to accommodate investors. A Closed end fund only sells fund shares at inception. Afterwards investors need to exchange shares with each other, because there is no primary market for the shares. This reduces the transaction costs incurred by the fund, but makes fund shares less liquid. Consequently this is a contributing reason for why shares tend to trade at a discount to Net Asset Value (NAV), the current market value of shares contained in the fund.

Exchange Traded Funds (ETFs) combine some of the best features of both open and closed end funds. They do not sell shares for cash, or allow shareholders to liquidate their holding for cash. This eliminates the need to buy and sell securities. Fund shares are traded on exchanges just as closed end funds. They do allow shareholders, however, to exchange shares for a "distribution in kind," generally a diversified conglomeration of securities similar to the funds in composition and market value. Because of this feature, ETF shares trade closer to their NAV than closed-ended funds. Otherwise there might be an arbitrage opportunity created by the "distribution in kind" option.

What loophole permits these ETFs to exist? Tax law (Internal Revenue Code (IRC) Section 351) allows for a tax-free transaction when a diversified basket of securities is transferred into or out of a RIC. This is actually disadvantageous to ETFs, because the accounting involved in keeping the transaction tax-free is cumbersome. To avoid this inconvenience, ETFs take advantage of a loophole in the tax code. The allowance for a tax-free transaction occurs only if the transferor of securities owns at least 80% of the company. Therefore, ETFs only allow this transaction if the 80% threshold is *not* met and thus creating a taxable event.

Tax law (IRC 852(b) (6)) allows for RICs to distribute property without taxing the gain or loss on the property. This allows ETFs to transfer the securities with the lowest purchase cost (the highest unrealized gain or smallest loss) to redeeming shareholders. The fund retains stocks with higher purchase costs for eventual sale or "distribution in-kind" at a later date. This reduces an ETF's capital gain tax burden compared with ordinary open or closed end mutual fund.

Accounting for Derivatives

Derivatives have long been enigmas for the accounting profession, because they do not conform easily to asset or liability definitions. With many derivatives such as futures and swaps there is no purchase or sale when parties enter into a contract. This makes the balance sheet treatment of these instruments problematic. Further, the timing of income ramifications of derivative transactions is ambiguous. To reduce its tax burden, a corporation might like to delay gains as long as possible and realize losses as quickly as possible. A speculative derivative must be "marked-to-market" at the close of a tax year so that gains are realized in two separate years (assuming the contract spans two tax years). A hedging derivative is realized at the close of the derivative contract. Consequently, it may be advantageous for any derivative gain to have been a result of hedge.

From the perspective of the IRS, capital losses can only be used by corporations to offset capital gains -- and only within a certain window of opportunity (three years prior to five years hence). A speculative derivative contract is considered an investment, and therefore it is a capital gain or loss. A loss incurred from a derivative used to hedge is treated as a normal business expense. This expense reduces Earnings before Tax, and therefore tax incurred. Naturally, corporations had an incentive to classify all derivative losses as hedging expenses.

The Financial Accounting Standards Board issued FAS 133 to help alleviate some ambiguity. Corporations now declare what asset or liability is being hedged when the corporation enters into a derivative contract for risk management purposes. This is similar to the game of pool. A shooter declares a ball and pocket of the pool table. If the queue ball strikes the declared ball first and then it ricochets into the declared pocket, the ball is eliminated from the table. If the ball falls instead into another pocket, however, then the ball may be returned to the table and the player loses his or her turn. In theory declaring underlying hedges is not a problem, because corporations have extensive balance sheets and inventive people can make derivative instruments to suit their needs. In practice the implementation of this regulation has been expensive and time consuming. FAS 133 stipulates that the hedge be "highly effective in offsetting exposure" and that the effectiveness be demonstrated quarterly. By the mitigating this loophole, regulators may discourage some well-intentioned hedging due to compliance costs, but overall, FAS 133 seems to be a palatable compromise.

Technological Innovation

Laws and regulators need to adapt to new technological innovations. Many loopholes exist due to technological innovation that did not exist when lawmakers wrote the laws, because all future technological innovation cannot be foreseen when legislation is drafted (Kane 1988). For instance, we have observed copyrighted music and pictures being exchanged over the internet. Laws passed many years ago did not envision this nor prohibit this activity. The financial world has also seen much technological change.

Electronic Check Presentment

Due to technological advances, many banks have switched from using microfilm technology to using electronic imaging technology to archive checks. After switching archiving technology, it was natural for banks to want to reduce their operations cost by exchanging electronic images of checks (photo document files) through an electronic mail system instead of physically presenting paper checks. Legalizing electronic check presentment may have required the banking industry to change to uniform commercial code in all fifty states or to have Congress pass national legislation that superseded the state uniform commercial codes. Before Congress acted, many large banks formed a small value payments company. This facilitated electronic check presentment. Member banks made a multilateral agreement that allow members to electronically present checks from the customer's accounts for payment to each other (Blodgett and Kane, 2003).

Online Trading

With advances in telecommunications, many parties want to trade securities online and to avoid the higher cost of using traditional brokers. Naturally, big brokerage houses fear the ramifications of this trend because it threatens to cannibalize their business by unbundling their basket of services (advice, analysis and order execution). A similar unbundling occurred with the introduction of discount brokers years earlier. Therefore, many brokerage houses had little incentive to make online trading a viable substitute for their bundled services. Indeed, many large brokerage houses did not directly link their on-line to the trading on major exchanges where there was more liquidity. A trader might sell a security online only if there was another online trader who was willing to purchase it (Weaver, 1997). Consequently large trades might still have to occur through brokerage houses due to a lack of liquidity in the on-line market. This structure may have created potential arbitrage opportunities for traders. Due to a lack of liquidity in the online market at a particular moment in time, the same security might be trading at very different prices online and offline. Such price differences might easily overwhelm the cost to undertake the transactions of trading both online and offline. Thus, these arbitrage opportunities did create more liquidity for online trading, but not as much liquidity as would occur if these markets were directly linked due to the transaction costs.

Cost Allocation

Corporate Treasurers assign costs to each division of a company. When a department exists entirely within one division, the cost allocations are straightforward. When an internal department supports many divisions,

however, internal cost accounting must allocate the common costs to the various divisions using the department. While cost allocation methods may be sophisticated, there is no “correct” way to assign common costs among divisions. Thus, corporate treasurers may increase the profits of one division at the expense of the profits of other divisions by how they assign common costs.

Non-Profit Arms

Many corporations have non-profit arms. Some corporate sponsors may use the tax-exempt status of the non-profit entity advantageously. For instance, the sponsor may make a tax-deductible 5% revenue contribution (a tax deductible expense for the sponsoring company) to the non-profit entity such as a university to set up a research facility that might eventually facilitate the sponsor developing and marketing new products and services for a profit.

Information Assymetry

When someone has superior information, they may be able to use it advantageously to the detriment of others. If there is no fraud involved, however, it is often legal, even ethical, for them to do so.

Insider Trading

Society faces a tradeoff between better resource allocations and fairness when enforcing insider trading restrictions. If inside information is used by traders, then prices may lead to more efficient resource allocations by society, but such trading may deter informationally disadvantaged parties from participating directly in securities markets.

According to the Wall Street Journal (Markon and Schmitt, 2002) *inside information* is material nonpublic information, any revelation that have not yet been made public and that would affect a shareholder's decision to buy or sell stock in a publicly traded company. A *tipper* is someone who passes on inside information that they had a fiduciary obligation to keep secret, but who does not trade on the information themselves. A *tippee* is someone who accepts inside information from a person who should not have revealed it, and then trades on it.

It is illegal for someone to trade securities employing material non-public information when they owe a fiduciary duty to the shareholders of the traded security (for instances: insider, officer of the company; and constructive insider, attorneys, investment bankers, accountants hired by the company) not to disclose or use non-public information (Exchange Act Rule 10(b) - 5).

The rules for tippees are ambiguous. For instance, an employee at a third party printing company who appropriates non-public information through the course of the printing of materials may be able to use this information in trading unless they have signed a non-disclosure agreement. In the 1986 case, *The United States versus Chiarella*, the Supreme Court overturned a Federal District court ruling. The Supreme Court argued that Chiarella had misappropriated information, but that he did not owe a fiduciary duty to the shareholders of the company. In a later 1996 case, *The United States versus O'Hagan*, the Supreme Court ruled against O'Hagan, a lawyer who overheard a conversation between other lawyers in his law firm discussing a potential merger involving a client. The Court ruled that O'Hagan had misappropriated information and that he did owe a fiduciary duty to his law firm even though he was not working on the client's proposed merger. Therefore, it was criminal for O'Hagan to use the misappropriated information in securities trading.

In the absence of Congressional legislation that would more precisely define what is illegal insider trading for tippees, the federal judiciary system will continue to decide this issue through legal precedents. For instance, Congress could rewrite insider trading restrictions to make criminal all misappropriation of information. Unfortunately, this might prevent securities markets from allocating resources efficiently due to the ignorance of participants. Consequently many firms have resorted to non-disclosure agreements for employees of business partners, such as printers, suppliers, retailers and commercial banks, who might not owe a fiduciary duty.

There is a fine line between rumors and inside information, too. Prosecutors often need to demonstrate that tippees knew that were receiving material non-public information originating from someone who should not have disclosed the information to them. Although it seems like general prudence, there is no obligation on the part of tippees to learn the source of their stock tips before they trade. Consequently, tippees may argue that they were just acting on a hot stock tip (rumor).

Information that is inferred by analysis is not insider trading. For instance, if one learns that the chief scientist of a biotechnology firm has resigned and then *infers* that the Federal Drug Administration's approval of the firm's proposed new drug might not be forthcoming. In this case, one is free to sell the security short, buy put options or sell call options on the security without violating Rule 10(b)-5.

There may be circumstances when the letter of the law is violated, but the action is not prosecutable. This is not a loophole per se, but for practical purposes it is, because establishing prosecutable evidence of insider trading is difficult. Further, it may be difficult if not impossible to make amends to those who have been adversely affected.

Market Risk

Federal regulators allow financial institutions to use internal models to assess their level of risk. Unfortunately for society this creates a principal-agent conflict between the regulators (principals) and the financial institutions (agents), since the regulators cannot properly monitor the financial institutions (S. Kane 1999).

Managers of financial institutions are unlikely to measure their market risk exposure accurately. They have an incentive to understate their risk, since they can then allocate less capital and thus earn a higher return on their remaining capital. Financial institutions also have less reason to allocate capital than a major automobile manufacturer. There is much less going concern value to protect for a financial institution. A major automobile manufacturer has a large nexus of suppliers, retailers, laborers, engineers, managers, patents, and so forth that managers want to protect in the case of an economic downturn or losses resulting from a competitively inferior product line (especially when managers cannot change their product designs quickly). Consequently a major automobile manufacturer needs more capital to absorb potential losses to protect the going concern value of the firm.

Federal regulators impose penalties on firms that fail to have sufficient capital *ex post*. That is, in back testing if they fail to have enough capital more than 1% of the time (even though risk management is inherently about this 1% of the time). Back testing is not much of a deterrent, however. What punishments can regulators really impose on financial institutions when they have insufficient capital *ex post*?

Consequently financial institutions seek out ways to understate their level of market risk. For instance, market risk managers might do this by augmenting a discrete jump process (perhaps following a Poisson distribution) with a continuous process such as Brownian motion as in the Black and Scholes formula. The addition of the discrete jump process will lower the proxy estimated for the volatility and hence lower the estimated risk of the security and thus the amount of capital required to support the underlying risks. Further, if jumps occur much less frequently than 1% of the time, then financial institutions have less reason to worry about having their models failing back testing.

Financial institutions may also take advantage of a conceptual difficulty inherent in using market risk models. Most market risk models use an equity holder's notion of risk to proxy for a debt holder's risk. Because debt holders and shareholders occupy different places in the bankruptcy queue, they face different risks. Activities that increase the upside benefit to shareholders at the expense of the deep downside exposure held by debt holders may be measured as beneficial by market risk assessment models even though the risk to debt holders has increased.

Lending Discrimination

The Equal Credit Opportunity Act, Federal Reserve regulation B, restricts lenders from using the variables: race, color, national origin, sex, age, religion, marital status, and/or receipt of public assistance, in making credit decisions. Nevertheless, lenders may use variables that are highly correlated with prohibited variables, instead. For instance, a lender might use a zip code dummy variable that is highly correlated with race when assessing creditworthiness.

Fund Mergers

Mutual Fund companies regularly merge funds. Losses in poorly performing mutual funds might be more advantageous used as a tax shield to offset gains in more successful funds. The poor performance history is lost after the fund mergers with another fund with a better track record. Thus mutual funds can use this survivorship bias to overstate the performance of their mutual funds for marketing purposes.

Day trading the 401K

Mutual funds trade globally in various markets that are open and closed at different times during a 24-hour day. Many 401K administrators employ closing prices of the securities in the fund for setting the price of shares of their funds at the end of their day. Further, some 401Ks allow transfers from fund to fund using the end of the day closing prices. Thus, the closing price for a fund specializing in the Global equities may be relatively stale compared with funds specializing in securities in the United States with respect to an informational announcement late in the U.S. trading day. Because markets are linked, such timing might create opportunities to advantageously “day trade” between funds. For example, the Federal Reserve might announce a drop in the overnight rate at 3 p.m. Eastern standard time. The price appreciation due to this announcement may be incorporated in U.S. securities, but may not have impacted the price of Japanese or European securities, since their primary markets have not opened yet for trading. A speculator might transfer funds out of a portfolio comprised largely of U.S. securities and into a fund that is comprised largely of foreign securities in anticipation of their price appreciation. We want to warn the reader that this loophole does not represent an arbitrage opportunity, because it involves the risk of a loss. For instance, there may be intervening events that prevent or even overwhelm the anticipated price increase on foreign securities relative to U.S. securities.

Some mutual fund shops have attempted to close this loophole. When an event occurs after the close of foreign markets, some mutual fund companies are now using a benchmark proxy to adjust the price of stocks foreign funds that have not had the chance to trade yet (Sheidt 2001). The benchmark employs an index of American Depository Receipts (ADRs) that trade on U.S. exchanges for relevant foreign securities (ICI 2001). The ADRs of foreign firms have had a chance to appreciate in price even though their primary foreign exchange has not opened yet. Consequently fund accounting may adjust the price of foreign securities in funds by the same percentage as price appreciation of an index of relevant foreign ADRs.

Regulatory Arbitrage

Price arbitrage opportunities use the law of one price. If an identical asset simultaneously has two different prices, then an arbitrager may buy that asset where it is cheaper and sell it where it is more expensive to garner a risk free profit. Similarly, a regulatory arbitrager uses the law of one regulatory profit. That is regulatory benefits minus regulatory burden. A regulated party may take advantage of regulatory profit discrepancies by adapting activities so as to locate them in jurisdictions that will increase the regulatory profit (Kane, 1994).

We discuss social benefits when regulatory regimes compete against each other. Often this competition leads to more efficient regulations. Further, we want to emphasize that the outcome of regulatory competition does not necessarily imply a “race to the bottom” as our corporate governance example shows.

Minivans and SUVs

The government imposes gas mileage standards on motor vehicle manufacturers (Easterbrook, 2003). There are separate quotas for fleets of cars and trucks. All else equal, manufacturers want to sell more profitable vehicles. Often, more profitable vehicles (for instance, sport and luxury cars) have gas mileage numbers below their fleet quotas. Thus to meet their fleet gas mileage average quotas, manufacturers need to sell more fuel-efficient vehicles to offset high gas mileage vehicles. Because light trucks have sold well and they have gas mileage numbers well below the truck fleet quota, the sale of light trucks creates slack on gas mileage quota imposed on the truck fleet. Manufacturers sought a way to convert the gas mileage slack on their truck fleet into gas mileage slack on their car fleet. Minivans and Sports Utility Vehicles (SUVs) are loopholes. These vehicles are classified as trucks, because they are built on a truck chassis. They substitute for low gas mileage vehicles such as station wagons that are built on car chassis. Consequently, manufacturers produced more Minivans and SUVs to displace low gas mileage vehicles from the car fleet. In so doing, manufacturers create gas mileage slack on their car fleet. Therefore, we may view Minivans and SUVs as arbitrage loopholes between cars and trucks.

Holding Companies

Banks may choose their primary supervisory regulators by selecting their charters. For a national bank charter, it is the Office of the Comptroller of Currency. For a state chartered bank that is a member of the Federal Reserve district bank, it is the Federal Reserve. Some large bank holding companies choose to have both national bank and state chartered subsidiary in their holding company. This allows a holding company to be chameleon-like and improve their regulatory profit by advantageously locating activities in the appropriate subsidiary (Kane, 1994). This behavior is similar to a child who strategically plays one parent off against another parent. The child goes to the parent that the child perceives to be the most lenient in hopes of receiving permission or assistance for a desired activity or item. When it is advantageous for an activity to be in a state bank, the holding company places the activity in the state chartered subsidiary. Similarly when it is advantageous for an activity to be in a national bank, the holding company places the activity in the national bank subsidiary. Because the OCC levies examination fees based on the amount of bank deposits and the Federal Reserve does not do so, holding companies tend to place many deposits activities in the state bank subsidiary. Similarly, holding companies tend to place activities such as credit cards in the national bank subsidiary due to more liberal regulations.

Interstate Bank Branching

Redundant regulatory supervision is statically inefficient, since you have two entities performing the same function. Nevertheless, it may be beneficial dynamically, because redundancy may lead to competition between supervisors for constituents. This competition may produce more efficient regulation, because supervisory regulators have a strong incentive to revise their burdensome regulations. Otherwise, constituents might select the competing regulator that offered the best deal and leave the other regulator with few constituents to regulate.

Through lobbying and politicking, regulated constituents attempt to change the regulatory process for their own benefit. Sometimes regulated parties seek loopholes for their intended activities. Often, the regulators are willing accomplices. Regulators understand that regulations need to adapt to economic and technological changes. They realize that loophole exploitation may be the most expedient way to achieve needed regulatory change. For example, it would have been difficult to pass a law that allowed interstate bank branching when there were parties who benefited substantially from the status quo. These parties would have opposed such legislation vigorously. However, the Federal Reserve allowed bank holding companies to circumvent interstate bank restrictions. Only after economic rents earned by parties benefiting from the *status quo* had been dissipated substantially by loophole exploitation was it possible to pass interstate bank branching in 1994 (Kane, 1996).

Corporate Governance

The integrity of a regulatory system prevents it from contorting in various ways. Loopholes and innovations may be necessary politically to perturb a legal infrastructure from its current state to a new and improved state of corporate governance and subsequent higher economic performance (Blodgett and Kane, 2003). Interested parties in the regulatory debate are not able to foresee all potential loopholes and innovations. For instance, future technological innovation is impossible to fully anticipate. Parties that perceive that they would benefit from the reform and subsequent economic output have an incentive to seek out loopholes and innovations. Loopholes may catch many parties by surprise. This might deter them from preventing the reform. Loopholes may also circumvent opposing parties by removing them from the decision process, too. Alternatively, loopholes might appease potential opposition by sufficiently protecting their stake in the short run, while still permitting the new activity to take place.

Shareholders require adequate corporate governance to monitor and constrain management. Corporate governance includes accounting disclosures, shareholder voting rights, and insider trading restrictions. Minority shareholders are especially vulnerable. They need protection against blocks of shareholders or managers that might form coalitions and expropriate wealth from them.

Debt holders require legal covenants and recourse. Covenants restrict managers from changing business plans and engaging in riskier activities that benefit managers and shareholders at the expense of debt holders. Recourse helps investors avoid or mitigate losses when there are defaults and generally facilitates assets moving from lower return uses to higher return uses.

A foreign firm may cross-list on NASDAQ or the NYSE and be subject to Security Exchange Commission regulations in the United States. U.S. Listing bonds firms to American regulation (Coffee, 1999). Managers agree to follow Generally Accepted Accounting Principles. Market participants are subject to insider trading restrictions and other SEC disclosure regulations. U.S. listing grants shareholders voting rights over the members of the boards of trustees. The success of American depository receipts (ADRs) shows that investors prefer a common set of rules when conducting initial public offerings and subsequent investing. ADRs may also be seen as a substitute for common investment rules among countries. Investors use familiar SEC regulation and therefore a legal infrastructure that better bonds managers to shareholders.

Listing on an American stock exchange benefits managers by potentially raising stock valuations. This helps managers when they hold a direct equity stake, or if they are compensated with stock options. American listings also make it easier for potential merger partners to evaluate them, and this may facilitate stock for stock exchanges in acquisitions. Mergers may benefit managers when they receive handsome deals for acquiescing to a merger, or if they wind up managing larger and more successful enterprises.

Blodgett and Kane (2003) propose an innovation that might allow American style corporate governance abroad, that is, executive stock options plans to compensate managers and class action litigation to protect minority shareholders from expropriation. Stock exchanges might establish and maintain a binding court of arbitration to settle corporate disputes between stakeholders with the companies that choose to list with them. Sovereigns could agree by treaty to enforce legal judgments of the court sponsored by the exchange. In this way, by choosing which stock exchange managers list their securities on, they would select a corporate governance infrastructure that might supersede national laws without having to change them. Since stock exchanges would sponsor arbitration courts, they would have a strong incentive to foster ruling that would be investor friendly to attract business. Hence, stock exchange listings could serve as a loophole that would allow different corporate governance structures to compete with each other in the same industries and countries. Consequently, an investor friendly corporate governance system could evolve over time without having to harmonize the laws of individual countries (Blodgett and Kane 2003).

A stock exchange that innovates to improve International corporate governance may gain a dominant incumbent position (Blodgett and Kane, 2003). This is generally desirable and especially so in an industry with high

fixed costs and low marginal costs, because incumbents may earn substantial economic rents, since there may be substantial barriers to entry and exit. We consider the competition for incorporation chartering between states. John Coffee (1999) argues that Delaware has a dominant incumbent position. Another state cannot simply copy Delaware's laws and challenge them. Delaware has ambiguous laws that require frequent judicial interpretation. Further Delaware has a long history of making investor favorable rulings. Since Delaware is a small state that is dependent of the revenue generated from corporation chartering, Delaware may credibly promise to continue to deliver investor favorable rulings. Consequently, another state faces substantial barriers to entry to compete with Delaware. Due to the dominant incumbent position, Delaware has been able to *de facto* harmonize incorporation laws. Similarly, Blodgett and Kane (2003) argue that a stock exchange with a dominant incumbent position in fostering better corporate governance through contracting and arbitration rulings may be able to *de facto* harmonize corporate governance systems, too.

Conclusion

By considering specific loopholes, our discussion demonstrates the evolutionary interplay between loophole exploitation and financial innovation. We also provide instruction on how to identify and exploit loopholes. Parties use loopholes to undermine well-meaning legislation as well as to combat misguided regulation. When parties use loopholes to avoid well-meaning laws, these loopholes may induce a net negative externality for society. Consequently, negative externalities often compel regulators to mitigate such loopholes when they been identified and utilized. When a loophole facilitates a better way of doing a socially desirable activity, there may be a large net positive externalities resulting from such loopholes. In these cases, regulators often allow the loopholes to continue. Additionally, sometimes lawmakers intentionally write legislation with known loopholes to allow a socially desirable activity to proceed. 📖

Acknowledgment *The authors would like to thank Chris Argyrople, Richard Aspinwall, Mark Blodgett, John Coffee, Mike Eddleston, Rebekah Jackson, Edward Kane, John Mahoney, George Mair, Mark Muzere, Mouli Nandi, William O'Neill, Bradley Rubin, and Daniel Vildoso for comments, discussions and suggestions that improved this manuscript.*

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