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**THE EFFECT OF DISCLOSURE REGULATION ON M&A ACTIVITY: EVIDENCE FROM THE OVER-THE-COUNTER MARKET**

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# THE EFFECT OF DISCLOSURE REGULATION ON M&A ACTIVITY: EVIDENCE FROM THE OVER-THE-COUNTER MARKET

ANTHONY UCCELLINI[1]

*Abstract* – This paper tests the impact of mandated disclosure regulation on merger & acquisition (M&A) activity by studying the extension of the U.S. mandated disclosure regime to companies trading on the over-the-counter (OTC) securities market, the Securities Acts Amendments of 1964. The Securities Acts Amendments are an excellent test case of the effects on M&A activity due to (i) the large number of affected OTC companies, (ii) the typical paucity of disclosure among OTC companies before the passage of the legislation, (iii) the absence of any severe macroeconomic shocks during the test period and (iv) the natural control group provided by the non-OTC companies not affected by the Securities Acts Amendments. The paper tests the impact of mandated disclosure on M&A activity among OTC companies during the 1955-75 period in two ways, regression analysis and comparison with M&A activity among non-OTC companies. Both tests in the paper strongly support the views of several academics and practitioners that mandated disclosure provides useful information to the market and that this information encourages higher levels of M&A activity.

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**The Effect of Disclosure Regulation on M&A Activity:**
**Evidence from the Over-the-Counter Market**

## I. Overview

This paper studies the effect on M&A activity of the 1964 extension of mandated disclosure requirements ("1964 Act")[2] to public companies traded on over-the-counter ("OTC") markets. By studying the 1964 Act, this paper provides strong evidence that enhanced mandatory disclosure regulation can cause merger and acquisition ("M&A") activity levels to increase. This paper uses both regression analysis on M&A activity among newly-covered OTC companies[3] and a comparison between M&A activity levels among companies already covered by the mandated disclosure requirements through prior legislation[4] and the newly-covered OTC companies to test the effect of the 1964 Act on M&A levels. As explained in Part II.c, the 1964 Act presents an ideal test case for the effects of mandated disclosure on M&A activity. The data required for these tests was aggregated in a database created specifically for this paper from publicly available documents as detailed in Part III. As illustrated in Part IV, these tests show an abnormal and episodic increase in M&A activity for newly-covered OTC companies in the ten years after the 1964 Act was implemented that supports the claim by several academics and practitioners that improved disclosure regulation can improve the information provided to the market and trigger a resulting increase in M&A activity levels.

This result is important in informing the general debate over the validity of mandated disclosure regulation discussed in Part II.a and in particular with regard to the effects of the

[2] Securities Acts Amendments of 1964, Pub. L. No. 88-467, 78 Stat. (codified as amended at 15 U.S.C. § 78 (1964)) [hereinafter "Securities Acts Amendments"].
[3] *See infra* Part III.b, pp. 9-11 for definition of "newly-covered OTC companies."
[4] Prior legislation includes the Securities Act of 1933 and the Securities Exchange Act of 1934 (mandating disclosure for exchange-listed companies) as well as the Investment Companies Act of 1940 (mandating disclosure for banks and other investment companies).

recently passed Sarbanes-Oxley Act of 2002[5] ("SOX"). Part II.b discusses the consensus that has emerged that the far-reaching disclosure regulation in SOX will have an unintended impact on M&A activity.

## II. Disclosure regulation and M&A activity

### *a. The theoretical support and critique of the link between disclosure regulation and M&A activity*

There are theoretical arguments both supporting and questioning the idea that mandated disclosure will have an impact on M&A activity. In support of this contention, first, as Henry Manne noted in his seminal piece on M&A, the "fundamental premise underlying the market for corporate control" is that managerial efficiency must be reflected in the market price of a company's shares.[6] To do so, information regarding managerial efficiency must be available. Second, an increase in publicly available information will lower the search and verification costs associated with identifying and analyzing M&A targets. Third, more and accurate information reduces the information asymmetry between buyer and seller, thus alleviating the potential for a bidder to suffer a 'winner's curse' situation, therefore encouraging more bids and, thus, more M&A activity.[7]

The primary theoretical counter to the idea that mandated disclosure will impact markets, including the M&A market, is that even without mandated disclosure there is already a market for disclosure. In the disclosure market companies and investors will effectively buy and sell information. If this market is working properly with sufficient competition, then the market should ensure that an efficient level of disclosure occurs in the absence of mandated disclosure. This argument has been advanced by some commentators to argue that regulatory disclosure is

[5] 15 U.S.C.A. §§ 7201 et seq. (2002).
[6] Henry G. Manne, *Mergers and the Market for Corporate Control*, 73 J. OF POL. ECON. 110, 112 (1965).
[7] *See*, *e.g.*, Nikhil P. Varaiya, *The 'Winner's Curse' Hypothesis and Corporate Takeovers*, 9 MANAGERIAL AND DECISION ECON. 209, 211 (1988).

ineffective and inefficient.[8] However, proponents of securities regulation have long argued that collective action problems among shareholders create failures in the disclosure market that prevent an unregulated market from producing an efficient level of disclosure.[9]

*b. The importance of studying the effect of disclosure regulation on M&A activity*

Given the important policy implications of the debate surrounding mandated disclosure, empirical evidence supporting or undermining the various theoretical positions on the issue is critical. The sweeping legislative reaction of Congress to the corporate scandals of the late 1990s and early 2000s, the Sarbanes-Oxley Act,[10] has reignited deliberation over the virtues and transgressions of mandated disclosure, in particular with regard to M&A activity. SOX is focused on improving corporate accounting and public reporting practices. While SOX does not explicitly mention an intended effect on M&A activity, the legislation is expected to have a significant impact on the pace of M&A transactions.[11] The majority opinion seems to be that SOX will have a negative impact on M&A activity.[12]

This concern is primarily based on the implications of SOX Sections 302 and 404,[13] which require, respectively, SEC-registered companies to provide quarterly and annual certifications of internal controls for the whole company, including any acquisitions.[14] Failure to include acquisitions or to accurately reflect acquisitions in these certifications would run a company afoul with the SEC and potentially lead to personal liability for a company's executive

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[8] Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 YALE L.J. 2359 (1998).
[9] *See* JAMES M. LANDIS, THE ADMINISTRATIVE PROCESS 36-37 (1938).
[10] 15 U.S.C.A. §§ 7201 et seq.
[11] *See*, *e.g.*, Megan Zietsman, Deloitte & Touche LLP, *Sarbanes Oxley: Impact on Corporate M&A* (Mar. 30, 2004), at 3 (*available at* www.bvdep.com/expertforum/Deloitte-Sarbanes-Oxley.pdf).
[12] *See* Jo Lynne Koehn & Stephen Del Vecchio, *Ripple Effects of the Sarbanes-Oxley Act*, THE CPA J., Feb. 2004.
[13] 15 U.S.C.A. §§ 7241 ("Section 302") and 7262 ("Section 404").
[14] Zietsman, at 7. *See also* PriceWaterhouseCoopers, *Corporate Development Roundtable: The Impact of Sarbanes-Oxley on M&A Transactions* (July 20, 2004), at 4-5 (*available at* http://www.pwc.com/extweb/pwcpublications.nsf/docid/259A5E80D557E6D885256ED70054A0CD).

officers. As a result, it is expected that companies will feel compelled to spend more resources on due diligence of a target's internal controls and accounting practices during the M&A process, and that smaller companies that cannot afford the high cost of SOX compliance will no longer be acceptable targets for SEC-registered companies.[15] Given the higher transaction costs, reduction in available targets and risk that an acquisition will interfere with an acquiror's SOX compliance, a natural conclusion is that M&A levels will drop as a result of SOX.

However, a minority of commentators believe that SOX will have a beneficial long-term impact on M&A activity and some expect SOX to reinvigorate the M&A market for several reasons. First, SOX should ensure "complete and accurate disclosure, more transparency and more confidence in the integrity of the public and private disclosure system that underpins all M&A."[16] Studies of post-SOX stock returns and volatility have already provided evidence that SOX improves the quality of information available to investors.[17] Second, SOX imposes high compliance costs that are difficult for small companies to bear, making M&A an attractive alternative to, or exit from, the public markets for some, smaller companies.[18] The theory is that

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[15] Howard Stock, *Sarbanes Jitters Intensify Due Diligence in M&A*, INVESTOR RELATIONS BUSINESS, June 9, 2003, at 1 (discussing the effects of Sarbanes-Oxley on M&A due diligence). *See also* Zietsman, at 17-19; PriceWaterhouseCoopers, at 10.

[16] Charles M. Nathan, *The Joy of SOX*, THE DAILY DEAL, Oct. 16, 2002 (Nathan is a partner at the law firm Latham & Watkins and co-chair of its M&A practice group). *See also*, *Interview with James Stynes*, THE DAILY DEAL (Mar. 4, 2005) (Stynes, Managing Director and Vice Chairman of the Corporate Advisory Group at Deutsche Bank Securities, discusses how the more trustworthy public financials created by SOX could lead to more hostile M&A transactions).

[17] *See* Pankaj K. Jain & Zabihollah Rezaee, The Sarbanes-Oxley Act of 2002 and Security Market Behavior: Early Evidence 30-31 (May 16, 2005) (unpublished manuscript, *available at* www.ssrn.com)(discussing how abnormal returns associated with the passage of SOX suggest that SOX provides "incentives and mechanisms for both public companies and their auditors to better signal the quality, reliability, and transparency of their financial statements as well as the effectiveness and credibility of audit functions"); *but see* ROBERTA ROMANO, THE SARBANES-OXLEY ACT AND THE MAKING OF QUACK CORPORATE GOVERNANCE 95-102 (Center for Law, Economics and Public Policy Research Paper No. 297, 2004) (citing studies that show positive abnormal returns among "opaque" bank holding companies incident to SOX certification, but no impact on returns or volatility among companies failing to certify).

[18] Nathan. *See also* Stanley B. Block, *The Latest Movement to Going Private: An Empirical Study,* 14 J. APPLIED FIN. 36, 37 (2004) (discussing the disparate cost impact of SOX on small companies in the context of increased going-private transactions post-legislation); *and* EHUD KAMAR, PINAR KARACA-MANDIC & ERIC TALLEY, GOING-PRIVATE DECISIONS AND THE SARBANES-OXLEY ACT OF 2002: A CROSS-COUNTRY ANALYSIS (USC Center in Law,

this combination should encourage the incremental, deliberate return to M&A transactions after a wave of poor corporate acquisitions in the late 1990s.

While there has been some attention given to the influence of prevailing corporate governance standards or other legislative changes (i.e. tax policy) on M&A activity, there has been little study of the impact of disclosure regulation on transaction levels.[19] While there has been speculation and some study in the literature that the 1968 Amendments to the Exchange Act (the Williams Act)[20] influenced M&A levels in the 1970s,[21] there has apparently been no study of the effects of the 1964 Act on M&A levels.[22] Although there has been no empirical study to date of the effect of the 1964 Act on M&A activity, previous studies and commentary suggest such a relationship should exist. For example, in studies of the English securities market over the past century, some commentators have attributed the conception of a market for corporate control in the United Kingdom after World War II to the introduction of a mandated disclosure regime for company financials in the 1950s.[23] Also, shortly after the 1964 Act went into effect SEC Commissioner Francis Wheat noted the value that the public filings required by the

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Economics and Organization Research Paper No. C06-5, 2006) (using a cross-country study to show an abnormal increase in going-private transaction among small American companies under SOX).

[19] *See*, *e.g.*, BENGT HOLSTROM & STEVEN N. KAPLAN, CORPORATE GOVERNANCE AND MERGER ACTIVITY IN THE U.S.: MAKING SENSE OF THE 1980S AND 1990S (Nat'l. Bureau of Econ. Research, Working Paper No. 8220, 2001) (explaining the differences in composition of the merger waves in the 1980s and 1990s as reactions to the different contemporary corporate governance regimes employed by firms); Myron S. Scholes & Mark A. Wolfson, *The Effects of Changes in Tax Laws on Corporate Reorganization Activity*, 63 J. BUS. S141 (1990) (gauging the impact of the Economic Recovery Tax Act on 1981 and the Tax Reform Act of 1986 on M&A activity during the 1980s).

[20] Securities Exchange Act Amendments, Pub. L. No. 90-439, 82 Stat. (1968) (codified as 14 U.S.C. § 78n (1968)).

[21] *See* MARK J. WARSHAWSKY, BOARD OF GOVERNORS IF THE FEDERAL RESERVE SYSTEM, DETERMINANTS OF CORPORATE MERGER ACTIVITY: A REVIEW OF THE LITERATURE (Staff Study 152, 1986), at 4 (suggesting the ownership disclosure required by the Williams Act limited takeover activity); John A. Polonchek and Marie E. Sushka, *The Impact of Financial and Economic Conditions on Aggregate Merger Activity*, 8 MANAGERIAL AND DECISION ECON. 113, 116-117 (1987) (an empirical study that indicated the Williams Act had little effect on M&A activity).

[22] *See* ROBERT F. BRUNER, APPLIED MERGERS & ACQUISITIONS 69-97 (2004); Devra L. Golbe & Lawrence J. White, A TIME-SERIES ANALYSIS OF MERGERS AND ACQUISITIONS IN THE U.S. ECONOMY, in CORPORATE TAKEOVERS: CAUSES AND CONSEQUENCES 265, 280-286 (Alan J. Auerbach ed., 1988) (surveys of past empirical attempts to explain merger waves, neither of which discuss the 1964 Act).

[23] JULIAN FRANKS, COLIN MEYER & STEFANO ROSSI, OWNERSHIP: EVOLUTION AND REGULATION 4 (ECGI – Finance Working Paper No. 09/2003, 2005).

Securities Acts Amendments were already yielding information to attorneys representing corporate buyers in the M&A process.[24] Lastly, as there currently exists near universal belief that changes in disclosure regulation have a significant impact on the level of M&A activity, especially among practitioners, it seems relevant to test this general assumption in order to determine the potential effects of SOX on the current M&A market.

*c. The opportunity presented by the 1964 extension of mandated disclosure*

The 1964 Act is an ideal test case for the effects of mandated disclosure on M&A activity. First, the 1964 Act has been in place for over forty years, enabling the several-decades-long analysis typical of M&A studies.[25] Second, the 1964 Act was one-sided in that it improved disclosure without increasing M&A transaction costs, and should therefore have a unidirectional effect. The improved disclosure in the 1964 Act came primarily through the extension of the periodic (10-Q and 10-K) and event-driven (8-K and shareholder proxy) reporting required by the Exchange Act as well as the stringent anti-fraud provisions contained in the Exchange Act (i.e. Rule 10b-5). That the 1964 Act implicated these two areas is important, because empirical studies have shown that, of the various available securities laws, required disclosure and investor-friendly liability rules have the greatest impact on stock market development.[26] Third, the 1964 Act extended already established legislation to a new group of companies. Unlike greenfield legislation, the 1964 Act at implementation could leverage the thirty years of case law and administrative rulings surrounding the Securities Act and Exchange Act, which clarified and

[24] Francis M. Wheat, *"Truth in Securities" Three Decades Later*, 13 Howard L. J. 100, 102-03 (1967).
[25] *See supra* note 35.
[26] Rafael La Porta, Florencio Lopez-De-Silanes & Andrei Shleifer, *What Works in Securities Laws?* 61 J. OF FIN. 1 (2006).

tightened the statutory language. Lastly, the period surrounding the passage of the 1964 Act was relatively calm and devoid of major shocks.[27]

The OTC market in the 1960s provides an exceptional setting to study the effects of disclosure legislation. By the early 1960s the OTC market represented a significant securities market with representative companies of various sizes and from across a broad range of industries.[28] The 1964 Act immediately extended the Exchange Act to approximately 800 to 1,000 OTC companies.[29] The 1964 Act was meaningful in that prior to the 1964 Act "most OTC companies either [made] no reports to shareholders at all or their reports [were] meager and inadequate."[30] For instance, when surveying pre-1964 Act OTC reporting, the SEC found that the majority of companies either provided no financial statements to shareholders or provided statements that were incomplete, based on non-standard accounting methods or were otherwise deficient.[31] Correspondingly, the *Wall Street Journal* described the Securities Acts Amendments as "the first major overhaul of the Federal securities laws in a quarter-century."[32] Furthermore, as exchange-listed securities were already subject to the Exchange Act, they provide a natural control group for effects of the 1964 Act on the OTC market. For these reasons the 1964 Act has attracted recent scholarly attention to test the effect of disclosure on stock returns.[33]

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[27] ALLEN FERRELL, JOHN M. OLIN CENTER'S PROGRAM ON CORPORATE GOVERNANCE, MANDATED DISCLOSURE AND STOCK RETURNS: EVIDENCE FORM THE OVER-THE COUNTER MARKET (Discussion Paper No. 453, 2003), at 4.
[28] *Id.* at 10.
[29] *Id.* at 14-15; MICHAEL GREENSTONE, PAUL OYER & ANNETTE VISSING-JORGENSEN, LAW AND ECONOMICS, STANFORD UNIVERSITY, MANDATED DISCLOSURE, STOCK RETURNS, AND THE 1964 SECURITIES ACTS AMENDMENTS (Olin Working Paper No. 296, 2004), at 41.
[30] REPORT OF SPECIAL STUDY OF SECURITIES MARKETS, H.R. Doc. No. 95-3, at 10 (1963).
[31] *Id.* at 10-12.
[32] Louis Kohlmeier, *Securities Law's Impact*, WALL ST. J., Aug. 21, 1964, at 4.
[33] *See*, *e.g.*, Ferrell (2003); Greenstone (2004). *See also* Romano, at 2376 (commenting on the curious lack of empirical study on the 1964 Act prior to 1998).

## III. Data and methodology

*a. The relevant timeframe*

Compliance with the 1964 Act was required by May 1965, but past studies have assumed implementation for all of 1965 as was in reality the case.[34] Therefore, this paper studies M&A activity from 1955 to 1975. This is a longer timeframe than used in papers studying the capital markets effects of the 1964 Act, and is more in line with prior studies of the determinants of M&A activity.[35] Given the well-documented increase in aggregate M&A activity in the U.S. and U.K. in the late 1960s, an expanded timeframe also tests the impact of the 1964 Act during more 'normal' M&A markets.

*b. The database of M&A activity*

The existing databases of M&A activity are not sufficient for a comprehensive study of M&A activity amongst the newly-covered OTC companies. Therefore, a unique database with the necessary information was created for this paper to study M&A activity amongst the group of newly-covered OTC companies for the period of January 1955 to December 1975.

To create the database, first the relevant group of OTC companies was assembled for the relevant time period. The relevant OTC companies are those which were likely to meet the disclosure requirements of the 1964 Act. The 1964 Act required registration within 120 days after the last day of a corporation's fiscal year after the effective date for companies with more than 750 shareholders and over $1 million in assets.[36] The 1964 Act also required registration within 120 days after the last day of a corporation's fiscal year two years after the effective date

[34] Ferrell, at 12.
[35] *Compare* Golbe, at 278-280 (a review of the literature reveals nine prior major studies with timeframes of 20 to 55 years, with a median timeframe of 25 years) *and* Poloncheck, at 113 (uses at timeframe of 22 years to study the impact of the Williams Act on M&A activity) *with* Ferrell, at 4 (using the 1962-68 timeframe to study the effect of the 1964 Act on stock returns) *and* Greenstone, at 16 (using the 1963-66 timeframe to study the effect of the 1964 Act on stock returns).
[36] Securities Acts Amendments (codified as amended at 15 U.S.C. § 78 (1964) with July 1, 1964 as the "effective date").

for companies with between 500 and 750 shareholders and over $1 million in assets.[37] The companies listed on the main *Wall Street Journal* and *Barron's* listings of OTC companies typically either met, or were sufficiently close to, the threshold for registration that registration would have been the likely course of action.[38] Separately-listed banks and insurance companies were excluded from the group of relevant OTC companies because of the different disclosure regimes already existing for those types of companies.[39] Therefore, the non-bank and non-insurance companies listed on main OTC listings[40] on the first day of each year from 1955 to 1975 were recorded. Obviously, companies that were acquired prior to 1964 had no chance of being covered by the 1964 Act, but their inclusion as newly-covered OTC companies is necessary to track the comparable M&A activity in the pre-1965 time period. Over 4,557 relevant OTC companies were identified during the 1955-75 time period, forming the group designated as the newly-covered OTC companies.

Once the group of newly-covered OTC companies was determined, M&A activity among the group was recorded. This was done primarily through a survey of the *Directory of Obsolete Securities*.[41] The *Directory of Obsolete Securities* records every major corporate action for publicly-traded securities, including mergers, acquisitions, major asset sales, liquidations, redemptions, bankruptcies, dissolutions, charter cancellations, stock splits (including fractional share cash outs), name changes, reincorporations and reorganizations. Due to the breadth of corporate actions covered by the *Directory of Obsolete Securities*, almost all of the newly-covered OTC companies had some sort of entry evidencing their M&A activity (or lack thereof)

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[37] *Id.*
[38] *See*, *e.g.*, Ferrell, at 14-15. *Accord* REPORT OF SPECIAL STUDY OF SECURITIES MARKETS, at 20-35.
[39] Ferrell, at 14-15.
[40] The "main" listing was determined as follows: all companies listed in the *Wall Street Journal* OTC section for 1955-56, the "National" and "Eastern" lists in the *Wall Street Journal* for 1957-61, the "Primary" (combined National and Eastern lists) list in *Barron's* for 1962-65, the "National" list in *Barron's* for 1966, and all OTC companies listed in *Barron's* for 1967-75.
[41] FINANCIAL INFORMATION, INC., DIRECTORY OF OBSOLETE SECURITIES (2004)

during the 1955-75 period. Newly-covered OTC companies not appearing in the *Directory of Obsolete Securities* were often still active, which could be verified through a search of the SEC's EDGAR database and other sites on the World Wide Web. For a small number of newly-covered OTC companies, no information was available.

Acquisitions, major asset sales and mergers among the newly-covered OTC companies, that were part of control transactions in which a newly-covered OTC company was the target, were counted as M&A transactions in the database. Given the existence of the *General Utilities* doctrine during the 1955-75 time period,[42] liquidations for cash and/or securities among the newly-covered OTC companies that were part of a control transaction, were also counted as M&A transactions in the database.[43] In the case of a merger between two newly-covered OTC companies, only one M&A transaction was recorded. When ambiguity existed as to whether a particular merger or liquidation was a true control transaction (rather than a method of reincorporation or dissolution, for example), a search for other information that could clarify the situation was performed, primarily using documents on the World Wide Web. When this ambiguity was not resolved, the transaction was not considered a control transaction and not counted in the M&A activity levels in the database. During the 1955-75 time period, 1,041 M&A transactions were recorded among the newly-covered OTC companies.

The database also tracked name changes as well as non-M&A end-of-life events, such as bankruptcies, non-M&A liquidations, charter cancellations and dissolutions. During the 1955-75 time period, there were 506 non-M&A end-of-life events and name changes among the newly-

[42] The doctrine, making acquisitions structured as liquidations or distributions to shareholders preferable from a tax perspective, was in effect between 1935 and 1986. *See General Utilities Co. v. Helvering*, 296 U.S. 200 (1935) (case establishing the principle of non-recognition of corporate-level gain on appreciated property in a distribution or liquidation); *see also* BERNARD WOLFMAN & DIANE M. KING, FEDERAL INCOME TAXATION OF CORPORATE ENTERPRISE 25-37 (4th ed. 2005) (discussing the doctrine and its eventual repeal in the Tax Reform Act of 1986).
[43] *See Hariton v. Arco Elec., Inc.*, 188 A.2d 123 (Del. 1963), for an example of transaction structured as an asset sale for stock followed by a dissolution and the acceptance of such transactions by the Delaware courts.

covered OTC companies. An annual tabulation of the number of companies in the dataset was then created by tracking the cumulative number of unique companies that had been added to the dataset while subtracting out companies that disappeared due to M&A activity, non-M&A end-of-life events or name changes. The total number of net newly-covered OTC companies in the dataset, by year, is presented in Table 1.

**Table 1: Cumulative number of newly-covered OTC companies, 1955-1975**

| Yr. | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | 437 | 480 | 574 | 625 | 704 | 791 | 892 | 1,129 | 1,281 | 1,372 | 1,423 |
| Yr. | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | |
| # | 1,438 | 1,554 | 1,632 | 1,884 | 2,262 | 2,382 | 2,563 | 2,724 | 2,982 | 3,009 | |

Once M&A activity among the newly-covered OTC companies was identified, it was also possible to track the aggregate annual deal values for 1955-75. Due to limited availability of certain company data (i.e. market capitalization and consideration paid) and for the benefit of comparison with other data,[44] deal value was tracked on the basis of the target company's asset value immediately prior to the consummation of the M&A deal. Where two newly-covered OTC companies merged, only one asset value was counted towards the aggregate deal value for the year. The proportion of annual M&A activity for which target asset values were available ranged from 27% to 77% with a mean / median of 58% / 59% during the 1955-75 period. To make up for disparities between years in the proportion of M&A deals with available target asset values, the aggregate annual deal value used was 'grossed up' by adding the actual reported aggregate asset value and an estimate of the deal values for the unreported portion of M&A activity. Based on the assumption M&A activity represented disproportionately smaller target

[44] *See supra* note 65.

companies, the unreported portion of asset valuation was calculated by assuming that the unreported deals in a given year had an average deal size that was 50% of the reported median deal size by asset for that year.

*c. Analytical models*

By using well-developed M&A regression models and comparing the newly-covered OTC company M&A data with that of other groups, an abnormal increase in OTC M&A activity can be detected by controlling for the factors that otherwise affect M&A levels. There have generally been two methods for testing the effect of policy changes on M&A activity. The first method ("regression") is to place the implementation of the legislation as a dummy variable into a regression analysis with other metrics that typically predict the level of M&A activity, such as average stock company valuations, the cost of capital, the size of the economy, changes in tax regimes, changes in prices, divergence of opinions on future economic performance, and antitrust regulation activity.[45] The second method ("composition") is to examine the type of M&A activity before and after the policy change, predicting what types of M&A activity should be encouraged or discouraged by the policy and then analyzing whether those predictions were reflected in the subsequent data.[46] In the case of the 1964 Act, a third method ("comparison") could be added – comparing the M&A activity within the newly covered group of OTC companies to companies previously covered by the Exchange Act. This method has been used previously when, for example, comparing M&A activity in different countries.[47] In this methodology the M&A activity and aggregate deal value among the broader Federal Trade

[45] *See*, *e.g.*, Polonchek, at 116 (uses a dummy variable for the Williams Act in an M&A regression model); *see also* Golbe & White (a discussion of previous empirical studies on determinants of U.S. merger activity and a ranking of the most relevant independent variables for M&A regression analysis); Warshawsky, at 6-9 (discussing the impact of antirust policy on M&A activity).
[46] *See*, *e.g.*, Scholes, at S153-54, 58 (analyzing the number of management buyouts, leveraged buyouts and acquisitions of U.S. companies by non-U.S. companies to test the impact of tax policy changes in the 1980s).
[47] *See*, *e.g.*, John J. McGowan, *International Comparisons of Merger Activity*, 14 J.L. & ECON. 233 (1971).

Commission ("FTC") dataset serves as a natural control to the newly-covered OTC M&A activity and aggregate deal value.

The composition method is not viable to test the 1964 Act. First, there is limited detail in the M&A data available for the 1960s, which makes using the composition method difficult. Secondly, while disclosure might be expected to increase the absolute level of M&A activity, there is no reason to think it will change the composition of that M&A activity. Therefore, the focus of this paper is on the regression and comparison methods.

*i. Regression method*

For the regression method of analysis the following model was used:

$$M\&A_t = \alpha_t + \beta_1 Q_t + \beta_2 CK_t + \beta_3 GNP_t + \beta_4 PPI_t + \beta_5 LS_t + \beta_6 ANT_t + \beta_7 D65_t$$

Where M&A is the number of annual M&A deals completed during the period, Q is tax-adjusted Tobin's q, CK is cost of capital, GNP is U.S. Gross National Product, PPI is the variance in the U.S. Producer Price Index, LS is the variance in Livingston Survey of economic opinion, ANT is the adjusted number of antitrust cases instituted by the Department of Justice, and D65 is a binomial dummy variable for the 1964 Act.

The general determinants of M&A activity in the regression model follow the determinants of M&A activity already identified in the literature. Golbe & White in their study of M&A time-series analyses identify and justify the independent variables that have been used in previous analyses of M&A activity. They identify valuation, variance in price levels, divergences in economic opinion, the real cost of capital, the size of the economy and tax law as the principal determinants of M&A activity in the post-war period (1948-84).[48] For the post-war period they found that nominal GNP and Tobin's q (tax-adjusted and unadjusted) had positive,

[48] Golbe, at 280-84.

significant effects on M&A activity.[49] Real interest rates, variances in price levels, divergences in economic forecasts and a dummy variable for tax regimes (used only with the unadjusted Tobin's q) did not have a significant impact generally.[50]

In addition to the Golbe & White variables, the regression analysis includes a variable designed to capture the impact of antitrust activity. This variable was added to the regression because of the general recognition that stricter antitrust enforcement can influence M&A activity[51] and the belief among many that a crackdown on conglomerate M&A activity by antitrust regulators was the principal reason that M&A activity declined in the late 1960s.[52]

A dummy variable was added to capture the effect of the passage of the 1964 Act. Dummy variables are the typical method for testing the effect of legislative changes such as the 1964 Act.[53] The dummy gives a value of one for the years 1965-75 and a zero value for years 1955-64.

A variable representing the year was also added for trend control in some regressions. This variable simply takes the value of the year in question.

*ii. Comparison method*

The comparison method of analysis involves the comparison of the M&A within the OTC group and a broader group (the FTC dataset), which serves as a natural control group. A comparison can be made both based on the number of deals as well as the aggregate asset values of the firms involved in the deals. To account for differences in sample sizes, past studies have compared the ratio of M&A to metrics such as the number of firms, aggregate market

[49] *Id.* at 292-93.
[50] *Id.*
[51] Warshawsky, at 7 (note on the relationship between the DOJ's antitrust expenditures and M&A during the 1980s).
[52] Bruner, at 74 (discussing antitrust enforcement as the key reason for ending the 1965-70 merger wave but not citing any empirical support).
[53] *See*, *e.g.*, Polonchek, at 116 (uses a dummy variable for the Williams Act in an M&A regression model).

capitalization or aggregate book value of assets.[54] Given the limited information in both the OTC M&A dataset and/or the FTC dataset regarding the number of firms, aggregate market capitalization and aggregate book value, these types of comparisons will not be available. However, a comparison can still be made across groups by indexing M&A activity levels to their respective starting levels in 1955.

*d. Data sources for the regression and comparison models*

The metrics for the independent variables required for the M&A regression model are widely available. Economy-wide valuation levels for the purpose of M&A regression are typically estimated by using the Tobin's q ratio of an asset's market value to its replacement cost.[55] The changes in tax regimes can either be accounted for by including a dummy variable or by using a tax-adjusted Tobin's q ratio metric.[56] Given the proximity of the Kennedy tax reforms to the 1964 Act, a tax-adjusted Tobin's q seems preferable over a dummy variable. An annual economy-wide, tax-adjusted Tobin's q metric for the U.S. economy for the 1955-75 period is widely available in the literature.[57] The cost of capital is usually captured by the real rate of interest on corporate bonds, which is tracked by services such as Moody's Investor Services.[58] The size of the economy can be measured by the nominal U.S. gross national

[54] McGowan, at 238 (uses share of total assets acquired to compare M&A activity across countries); Gregor Andrade, Mark Mitchell & Erik Stafford, *New Evidence and Perspectives on Mergers*, 15 J. ECON. PERSPECTIVES 103, 238 (2001) (uses ratios of M&A activity to firms and aggregate market capitalization to compare M&A activity over time).
[55] Golbe, at 284-85; BOYAN JOVANOVIC & PETER L. ROUSSEAU, THE Q-THEORY OF MERGERS (Nat'l. Bureau of Econ. Research, Working Paper No. 8740, 2002) (examining the use of Tobin's q to explain merger activity, but suggesting that merger activity during the 1960s is not explained by changes in Tobin's q data).
[56] Golbe, at 285.
[57] *See*, *e.g.*, Lawrence H. Summers, Barry P. Bosworth, James Tobin & Philip M. White, *Taxation and Corporate Investment: A q-Theory Approach*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY 67, 90-91 (1981).
[58] Golbe, at 285. Moody's data complied in Nathan S. Balke & Robert J. Gordon, HISTORICAL DATA, in THE AMERICAN BUSINESS CYCLE 781, 783 (Robert J. Gordon ed., 1986) (yield is on Moody's Baa rated corporate bonds, which can be adjusted by price changes to get the real interest rate).

product ("GNP"), which is tracked by the U.S. Bureau of Economic Analysis.[59] Price changes can be estimated by the producer price index ("PPI"), tracked by the U.S. Bureau of Labor Statistics.[60] Divergences of opinion on economic growth projections can be measured through the Livingston Survey data maintained by the Federal Reserve Bank of Philadelphia.[61]

Antitrust regulation has been approximated by the number of antitrust cases instituted by both the Department of Justice ("DOJ") and private parties, or by the expenditures of the DOJ's Antitrust Division.[62] Given the other influences on the government budgetary process, the number of cases instituted seems to be a better proxy for the regulatory stance in a given period than expenditures. When using the number of cases instituted as the proxy for antitrust enforcement, the number of cases should be adjusted for changes in the absolute number of firms or a surrogate, such as GNP.[63]

The typical data used to track aggregate U.S. M&A activity during the 1950s, 1960s and 1970s was complied by the FTC.[64] The FTC data covers the period from 1948 to 1979 but is limited to mergers in the manufacturing and mining sectors where the target had assets greater than $10 million.[65] The FTC data also contains the asset values for the target companies in the dataset as well as annually aggregated asset values for all included M&A deals.

The corresponding asset values for the newly-covered OTC companies were collected from two sources. First, to the extent the OTC M&A activity was captured in the FTC data, the

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[59] Golbe, at 285. *See*, *e.g.*, BUREAU OF ECON. ANALYSIS, SURVEY OF CURRENT BUSINESS (February 2004) ("GDP and Other Major NIPA Series, 1929-2003" provides the relevant information).
[60] Golbe, at 286. BLS PPI data *available at* http://www.bls.gov/ppi/home.htm.
[61] Golbe, at 286. Historical data from the FRB Philadelphia *available at* http://www.phil.frb.org/files/liv/datai.html.
[62] Richard A. Posner, *A Statistical Study of Antitrust Enforcement*, 13 J.L. & ECON. 365, 366 (1970) (study of antitrust cases instituted annually from 1890 to 1969); Warshawsky, at 7 (note on the relationship between the DOJ's antitrust expenditures and M&A during the 1980s). ADMIN. OFF. OF THE U.S. CTS., ANNUAL REPORT OF THE DIRECTOR (1956, 1961, 1976) (data on cases).
[63] Posner, at 368.
[64] *See*, *e.g.*, Golbe, at 267; Polonchek, at 113.
[65] BUREAU OF ECON., FED. TRADE COMM'N, STATISTICAL REPORT ON MERGERS AND ACQUISITIONS – 1978 112 (1980).

FTC asset value was used; this method yielded information on 324 deals. Second, to the extent OTC M&A activity was not captured in the FTC data, a search was performed of the *Over-the-Counter Securities Handbook* for the years available in the 1955-75 period.[66] This method yielded information on a further 330 deals. To adjust for changes in price levels over the 1955-75 period, all nominal deal values were converted to 1972 dollar terms.

## IV. Results

### *a. Overview*

Both a comparison to the FTC M&A and regression analysis with general determinants of M&A activity support the conclusion that the 1964 Act caused a material increase in M&A activity among those companies affected by the legislation. In the comparison analysis, annual M&A levels among the newly-covered OTC companies during the 1965-75 period are approximately double the typical levels during the 1955-64 period. The FTC M&A dataset shows no such increase, with M&A activity levels for 1971-75 dropping back to similar levels as the early 1960s after the well-documented 1967-70 merger boom. Moreover, the increase in M&A activity appears episodic, with a sharp jump in late 1964 and 1965, exactly when the effects of the 1964 Act would be expected to appear. The FTC M&A dataset shows no comparable jump in late 1964 and 1965; FTC M&A activity actually fell in 1965 versus 1964.

In the regression analysis, the dummy variable representing the 1964 Act ("1965 dummy variable"[67]) consistently shows a positive, significant effect on M&A activity. When looking across the possible annual dummy variables or other measures of time, the 1965 dummy variable shows the best explanatory power for OTC M&A activity levels. Furthermore, while other

[66] REVIEW PUBLISHING CO., OVER-THE-COUNTER SECURITIES HANDBOOK (1957-58, 1961-62, 1963-64, 1965-66, 1967-68, 1969-70, 1972-73).

[67] The dummy represents the 1964 Act going into effect at the beginning of 1965 such that 1955-64 were given a value of zero and 1965-75 were given a value of one in regressions.

variables, such as nominal GNP and tax-adjusted Tobin's q, also shows significant effects on M&A activity, their impact is nowhere near as consistent as the 1965 dummy variable.

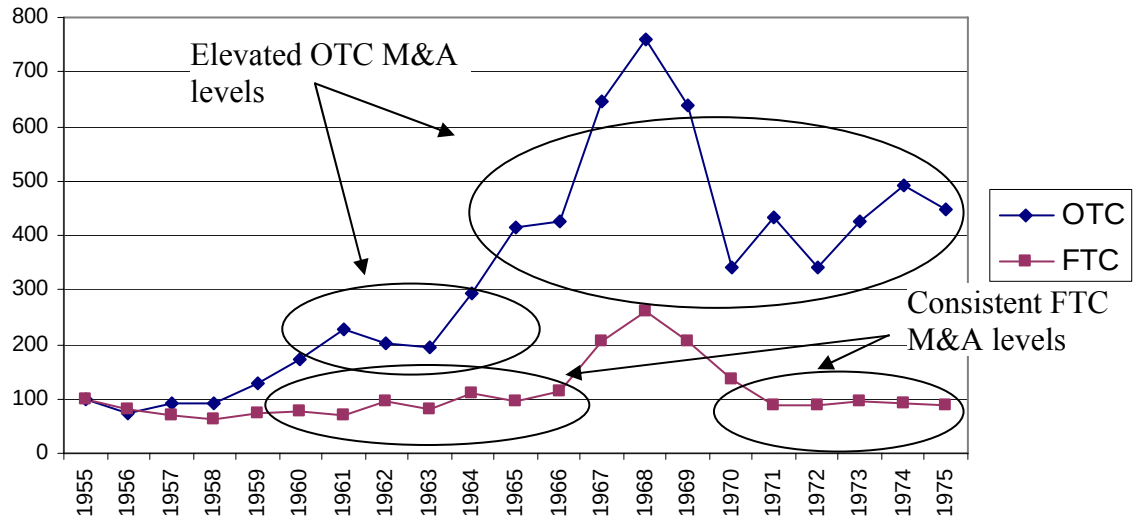
Taken together both methodologies strongly support the noteworthy conclusion that better available information related to mandated disclosure regulation promotes higher levels of M&A activity.

*b. Comparison method*

The data shows that there is a higher level of M&A activity among the newly-covered OTC companies after the 1964 Act became effective in 1965 that is not apparent in the broader FTC M&A dataset. Among the 4,557 newly-covered OTC companies, there were 1,041 M&A transactions between January 1955 and December 1975. Between January 1955 and December 1964, 236 M&A transactions occurred, resulting in an annual average / median of 23.6 / 22.5 transactions. Between January 1965 and December 1975, 805 M&A transactions occurred, resulting in an annual average / median of 73.2 / 65.0 transactions. Therefore, the median annual M&A activity among the newly-covered OTC companies increased 189% for the period 1965-75 over the period 1955-64. This compares favorably to the 23% increase in the median annual M&A activity for the same periods among the broad FTC M&A set of companies and implies a positive impact of mandated disclosure on M&A activity. As evidenced in Figure 1, while both datasets demonstrate increased activity around the well-known 1967-69 M&A boom, the OTC dataset has an elevated M&A activity level for the entire 1965-75 period whereas the M&A activity in the FTC dataset does not jump in 1965 and returns to the pre-boom levels after 1969, showing no post-1965 increase. Similarly, M&A annual aggregate deal values on a constant dollar basis among the newly-covered OTC companies were also higher in the 1965-75 period,

with a 90% increase in 1965 alone, while aggregate deal values among the FTC data returned to pre-1965 levels after the 1967-69 merger boom.

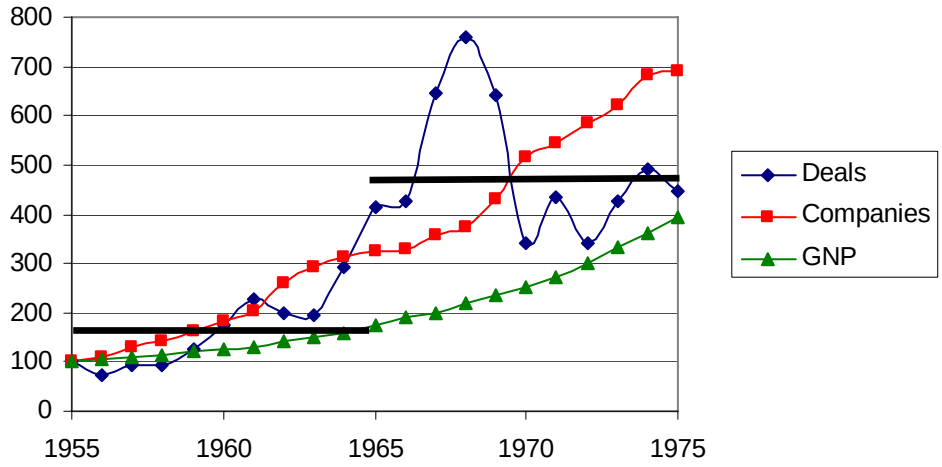
**Figure 1: Indices of FTC and OTC M&A deals, 1955-1975**




Note: 1955 = 100 for both datasets

While one could argue that the increase in post-1965 M&A activity is simply due to the march of time, either through increased economic activity or a larger cumulative set of newly-covered OTC companies, these variables do not appear to explain the increase in OTC M&A activity as well as the 1964 Act. As shown on an index graph (see Figure 2), the OTC M&A activity increases in an episodic or non-linear fashion around 1965, suggesting a single cause rather than the impact of a slow, linear variable, such as from that the increase in the number of companies in the OTC dataset or U.S. GNP.

**Figure 2: Indices of OTC M&A deals, OTC companies and U.S. GNP, 1955-1975**




Note: 1955 = 100 for all datasets
Note: Black lines represent the average annual M&A activity for the 1955-64 and 1965-75 periods

In the annual indices of M&A activity among newly-covered OTC companies, it appears that the year 1964 also experienced a jump in M&A activity. This potentially undermines the conclusion that the 1964 Act prompted higher M&A activity by suggesting that M&A activity was already increasing prior to effectiveness of the 1964 Act. However, a quarterly review of the 1963-66 M&A activity data shows that this jump in the 1964 annual figures actually supports the proposition that the 1964 Act was responsible for the increased M&A activity levels.

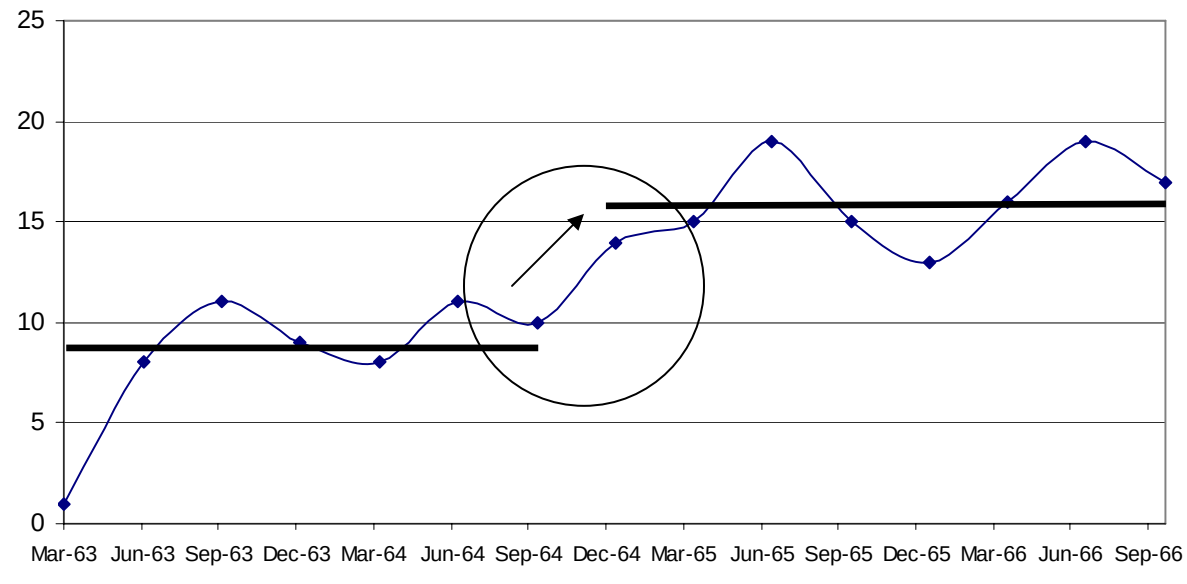
As noted previously, compliance with the 1964 Act was required at the latest by May 1965 and many commentators have assumed companies were compliant for all of 1965.[68] However, the 1964 Act was passed in August 1964 and some companies had to comply with the 1964 Act as early as November 1, 1964.[69] It is likely that many companies pre-complied with the 1964 Act and increased disclosure in the middle part of 1964.

As a result of this timing and given the time lag inherent in the typical M&A deal process, one would expect the impact of disclosure, if there was any, to push deal volume up in

[68] *Supra* note 34.
[69] Securities Acts Amendments, at 566-67. *Accord* Ferrell, at 12.

the later half of 1964. This is in fact what the newly-covered OTC company M&A data shows, with approximately one-third of the M&A activity for 1964 falling in the fourth quarter of 1964. The proportion of fourth quarter M&A activity in 1964 (33%) is much higher relative to fourth quarter M&A activity proportions in the two subsequent years (21% in 1965 and 17% in 1966). Furthermore, in absolute terms, the M&A activity level in the fourth quarter of 1964 (14 deals) more closely resembles the typical 1965-66 quarterly M&A activity level (average of 16 deals per quarter) than the typical 1963-64 quarterly M&A activity level (average of 8 deals per quarter) (see Figure 3). This shows that the increase in the 1964 annual M&A activity was driven by an abnormal increase in fourth quarter 1964 M&A activity to a level consistent with post-1964 Act levels. This effect is consistent with a positive impact of disclosure regulation, considering a detailed review of the staggered implementation timing of 1964 Act. Therefore, the increase in 1964 M&A activity levels supports, rather than undermines, the proposition that increased disclosure was responsible for the increased M&A activity.

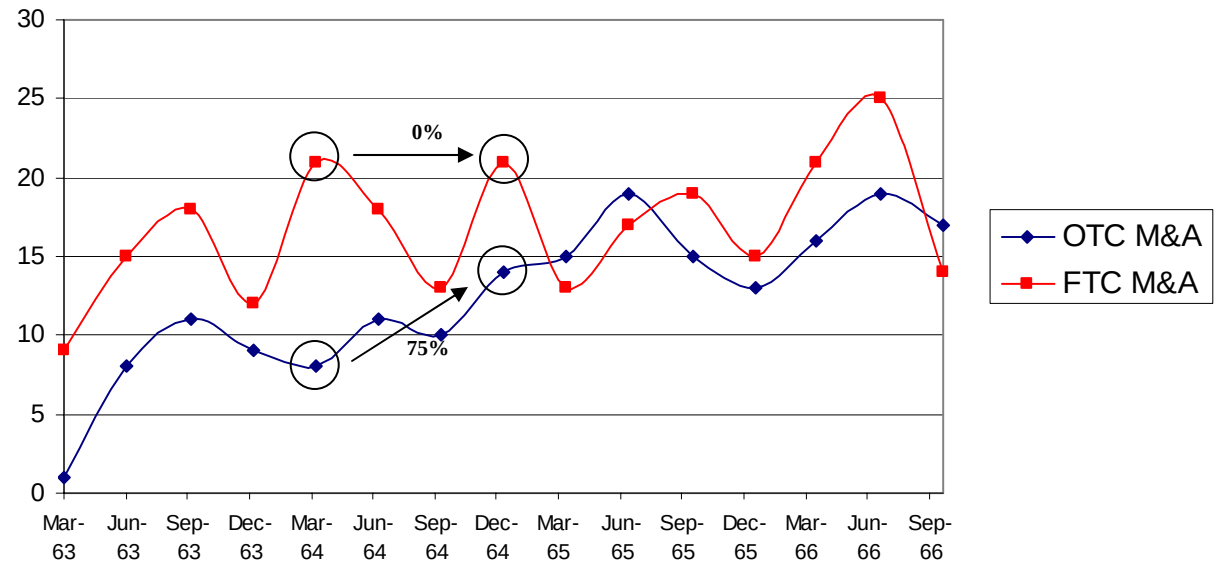
**Figure 3: OTC M&A deals by quarter, 1963-1966**




Note: Dates represent quarters ended in the month shown
Note: Black lines represent the average quarterly M&A activity for the Q1 63-Q3 64 and Q4 64-Q4 66 periods

Moreover, when comparing the quarterly M&A activity among the newly-covered OTC companies and broader FTC dataset, the jump in fourth quarter 1964 M&A activity among the newly-covered OTC companies seems anomalous. While the FTC dataset also experienced a jump in fourth quarter 1964 M&A activity, the jump is only back to the same level as in the first quarter of 1964 and only a 21% increase of the average quarterly M&A activity for the first nine months of 1964. In contrast, the fourth quarter 1964 M&A activity among newly-covered OTC companies is 75% higher than in the March 1964 quarter and 45% higher than the average quarterly M&A activity for the first nine months of 1964 (see Figure 4).

**Figure 4: OTC and FTC M&A deals by quarter, 1963-1966**

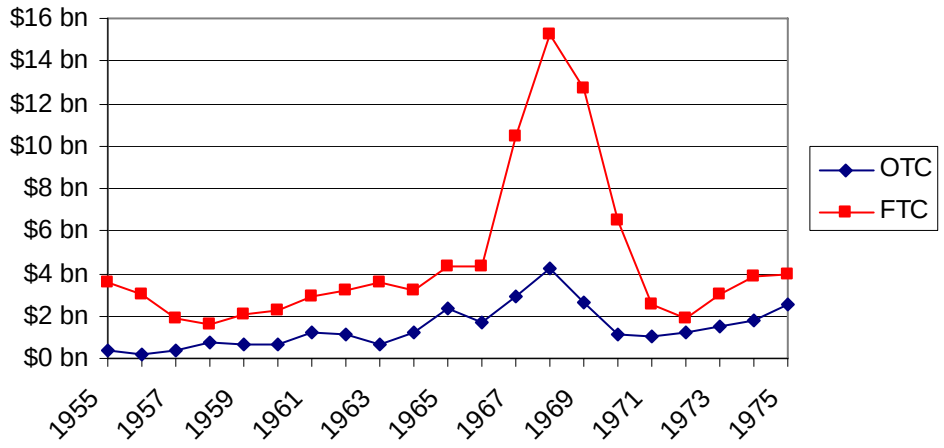



Note: Dates represent quarters ended in the month shown

Not surprisingly, dollar deal volume trends generally follow the changes in M&A activity levels (see Figure 5 and Figure 6). Among the newly-covered OTC companies, there was $7.2 billion in aggregate deal value in 1955-64 and $23 billion in 1965-75. Average / median annual deal value increased from $719 / $640 million in 1955-64 to $2.1 / $1.8 billion in 1965-75, or 191% and 181% increases, respectively. Among the FTC data there was aggregate deal value of

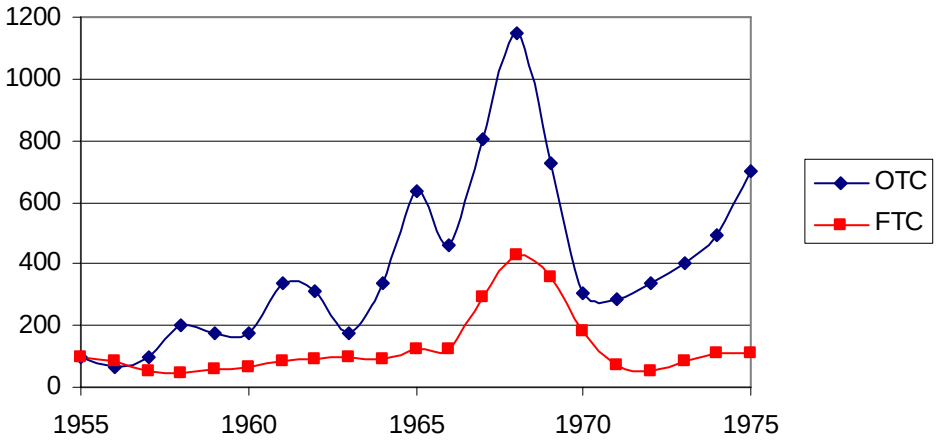
$27.2 billion in 1955-64 and $68.8 billion in 1965-75. Average / median annual deal value increased from $2.7/ $2.9 billion in 1955-64 to $6.3 / $4.3 billion in 1965-75. The increases in average and median annual deal values of 130% and 47% are substantially below the increases in the deal value among the newly-covered OTC companies. Furthermore, after removing the newly-covered OTC companies reflected in the FTC data set, these increases fall to 123% and 42% respectively. As with the M&A activity levels, the newly-covered OTC companies show a sharp jump in aggregate deal values during 1965-66 and the levels of aggregate deal value during 1970-75 remain higher than the pre-merger boom levels. Neither of these trends appears in the broader FTC group data.

**Figure 5: OTC and FTC aggregate annual deal value, 1955-1975**




Note: Deal value based on asset value of target firm in constant 1972 dollars

**Figure 6: OTC and FTC indexed aggregate annual deal value, 1955-1975**




Note: 1955 = 100 for all datasets
Note: Deal value based on asset value of target firm in constant 1972 dollars

*c. Regression method*

When individually regressing the OTC M&A data (see Table 2) against the 1965 dummy variable (Rg 4), a yearly time series (Rg 1), the cumulative number of companies in the dataset (Rg 2), and U.S. nominal GNP (Rg 3), the 1965 dummy variable shows the best explanatory power, even though all the variables have a significant, positive influence on M&A activity as expected.

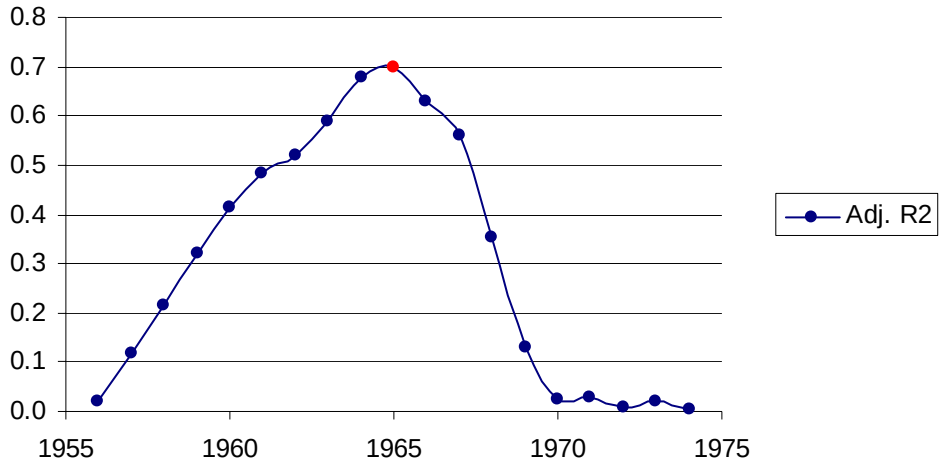
**Table 2: Single regression stats on OTC M&A activity (coefficient and |t stat|):**

| | Regression (numbered) | | | |
|---|---|---|---|---|
| **Parameters** | **1** | **2** | **3** | **4** |
| Year | 3.64***<br>4.97 | | | |
| Companies | | 0.02***<br>3.70 | | |
| GNP | | | 0.05***<br>3.57 | |
| D65 | | | | 49.58***<br>6.88 |
| Adj. $R^2$ | 0.54 | 0.42 | 0.37 | 0.70 |

Note: * is significant at 90%; ** is significant at 95%; *** is significant at 98%

Furthermore, the 1965 dummy variable is the best possible annual dummy variable to explain the OTC M&A activity. Figure 5 graphs the adjusted $R^2$ values for individual regressions of OTC M&A activity run against the annual dummy variables for years 1956-74. With an adjusted $R^2$ of 0.70, the 1965 dummy variable has the highest $R^2$ of a dummy variable and therefore shows a better fit to the OTC M&A data than any other annual dummy variable, further suggesting that the year 1965 represents a true break point in OTC M&A levels over the 1955-75 period.

**Figure 5: Adjusted $R^2$ values for single regressions on dummy variables, 1956-1974**




Note: 1965 datapoint marked with a red dot

Lastly, when the 1965 dummy variable is included with the standard determinants of M&A activity from the literature, it is the best explanatory variable of OTC M&A activity. Running the FTC M&A data for 1955-75 against the standard determinants of M&A activity it is possible to generally recreate many of the results found in the literature (see Table 3 and below).

| Table 3: Multiple regression stats on FTC M&A activity (coefficient and \|t stat\|): | | | |
|---|---|---|---|
| | Regression (numbered) | | |
| **Parameters** | **1** | **2** | **3** |
| GNP | (0.03) | 0.04 | 0.04* |
| | 0.60 | 1.26 | 1.95 |
| Tobin's q | 9.70 | 26.46 | 30.21*** |
| | 0.50 | 1.57 | 2.76 |
| Cost of capital | (10.19) | (8.21) | (7.69) |
| | 0.94 | 0.73 | 1.03 |
| PPI variance | (4.96) | (6.93) | (6.81) |
| | 0.92 | 1.26 | 1.42 |
| Econ. opinion | (17.85) | (8.88) | |
| | 0.63 | 0.31 | |
| Antitrust cases | 7.76 | (4.45) | |
| | 0.38 | 0.22 | |
| D65 | 48.69 | | |
| | 1.58 | | |
| Adj. $R^2$ | 0.23 | 0.15 | 0.24 |
| Note: * is significant at 90%; ** is significant at 95%; *** is significant at 98% | | | |

Golbe & White found for the period 1948-84 that Tobin's q and nominal GNP both produced positive, significant coefficients.[70] Real interest rates (or cost of capital) and variance in prices yielded negative coefficients while variance in economic opinions yielded a positive coefficient, but none of these variables were significant.[71] In the FTC M&A regressions for 1955-75 above, similar results are produced, with nominal GNP and a tax-adjusted Tobin's q producing positive, significant coefficients, and price variance and real interest rates producing coefficients with signs that conform to *a priori* expectations, but that are statistically insignificant. Divergences of economic opinion and antitrust activity produced coefficients that neither conformed to expectations regarding sign nor were significant. When dealing with the FTC data the 1965 dummy variable is positive, as in the case with the OTC M&A data, but is not significant.

[70] Golbe & White, at 287-93.
[71] *Id.*

Table 4 shows the 1965 dummy variable along with all of the potential independent variables discussed in the M&A literature run against the M&A activity data for the newly-covered OTC companies. The multi-variate regression analysis further shows that the 1964 Act caused a meaningful increase in M&A activity among the newly-covered OTC companies. In all of the various regressions in Table 4, the 1965 dummy variable consistently appears with a significant, positive effect conforming to *a priori* expectations. The Tobin's q and nominal GNP also show significant, positive effects, as expected, in some models, similar to the FTC regressions. Likewise, the real interest rate and price variance show consistently negative, insignificant effects, and the antitrust variable is insignificant. A year variable was added for trend control in some of the regressions (Rg. 4-5). This variable reduces the explanatory power of the 1965 dummy and Tobin's q variables in the presence of other variables, but has less impact when the other variables are removed. Because GNP serves in part as a proxy for the number of companies (i.e. potential M&A targets), the model was also run replacing GNP with the cumulative number of companies in the OTC dataset. This did not significantly alter the results.

| Table 4: Multiple regression stats on OTC M&A activity (coefficient and \|t stat\|): | | | | | | |
|---|---|---|---|---|---|---|
| | Regression (numbered) | | | | | |
| **Parameters** | **1** | **2** | **3** | **4** | **5** | **6** |
| GNP | (0.00) | 0.01 | | (0.13) | | 0.07*** |
| | 0.08 | 0.58 | | 1.47 | | 4.64 |
| Tobin's q | 6.42 | 14.43* | 11.65** | 0.92 | 12.64** | 24.64*** |
| | 0.61 | 2.02 | 2.23 | 0.09 | 2.35 | 3.63 |
| Cost of capital | (5.31) | (0.92) | | (9.15) | | (2.75) |
| | 0.89 | 0.22 | | 1.48 | | 0.59 |
| PPI variance | (1.39) | (0.48) | | | | (2.96) |
| | 0.47 | 0.18 | | | | 1.00 |
| Econ. opinion | (15.65) | | | | | |
| | 1.01 | | | | | |
| Antitrust cases | 8.63 | | | | | |
| | 0.77 | | | | | |
| Year | | | | 9.53 | 0.96 | |
| | | | | 1.63 | 0.86 | |
| D65 | 43.63** | 38.39** | 46.76*** | 28.09* | 36.46*** | |
| | 2.57 | 2.52 | 7.00 | 1.89 | 2.65 | |
| Adj. $R^2$ | 0.69 | 0.71 | 0.75 | 0.75 | 0.75 | 0.61 |
| Note: * is significant at 90%; ** is significant at 95%; *** is significant at 98%. | | | | | | |

The well-documented 1967-69 merger "wave," one of four such events documented in the last century,[72] affected the M&A activity levels of both newly-covered OTC companies and the broader FTC group. Because these waves are sometimes explained by factors such as managerial psychology ("hubris") and mass behavior ("market manias") that are not easily quantified,[73] it is also useful to perform the regression analyses excluding data from the 1967-69 period. For the OTC data, regression analysis without the 1967-69 data shows great improvement in the explanatory value of the GNP and Tobin's q variables as well as the overall fit of the regression model (see Table 5, Rg. 1-3). The 1965 dummy variable remains significant and positive. Conversely, and similar to the analysis on the full data set, the regressions on the FTC data set without the 1967-69 data (Rg. 4-6) yield low fit metrics and consistently significant

[72] Bruner, at 74.
[73] *Id.* at 75-76.

explanatory power only from the Tobin's q variable. This finding supports the conclusion that the positive, significant effect of the dummy variable for the 1964 Act was not solely driven by the 1967-69 merger boom, but rather from higher M&A activity in the 1965-66 and 1970-75 periods.

**Table 5: Multiple regression stats on OTC and FTC M&A activity excluding 1967-69 data (coefficient and |t stat|):**

| | Regression (numbered) | | | | | |
|---|---|---|---|---|---|---|
| | OTC M&A Activity | | | FTC M&A Activity | | |
| **Parameters** | **1** | **2** | **3** | **4** | **5** | **6** |
| GNP | 0.03*** | 0.02 | 0.03*** | 0.01 | 0.00 | 0.00 |
| | 2.83 | 0.71 | 4.16 | 0.56 | 0.07 | 0.12 |
| Tobin's q | 10.86*** | 9.24** | 11.53*** | 9.71* | 8.05 | 7.88* |
| | 3.20 | 2.27 | 4.03 | 1.85 | 1.22 | 1.75 |
| Cost of capital | 0.66 | | | (1.90) | | |
| | 0.36 | | | 0.68 | | |
| PPI variance | 0.61 | | | (1.52) | | |
| | 0.51 | | | 0.82 | | |
| Year | | 1.12 | | | (0.08) | |
| | | 0.08 | | | 0.04 | |
| D65 | 16.50** | 14.47** | 15.27** | 7.60 | 10.73 | 10.67 |
| | 2.31 | 2.24 | 2.42 | 0.69 | 1.02 | 1.07 |
| Adj. $R^2$ | 0.90 | 0.91 | 0.91 | 0.23 | 0.25 | 0.30 |

Note: * is significant at 90%; ** is significant at 95%; *** is significant at 98%.

## V. Conclusion

Changes in disclosure regulation are believed to have unintended effects on M&A activity levels, however, these effects have not previously been studied. This paper shows an abnormal, positive impact on M&A activity levels from the 1964 extension of the mandated disclosure regulation to over-the-counter securities while controlling for the other determinants of M&A activity levels. This impact was demonstrated through both a comparison with measures of M&A activity levels among companies generally not covered by the 1964 Act as well as regression analysis that controlled for the standard determinants of M&A activity levels. Both methodologies strongly support the conclusion that the 1964 Act increased M&A activity

levels among the newly-covered OTC companies. Establishing that the 1964 Act had a positive influence on M&A activity better informs the current debate about the impact that the recently-implemented Sarbanes-Oxley Act will have M&A activity, by lending support to the minority position that SOX will have a long-term beneficial effect on M&A levels. However, one should caveat any policy conclusions with regard to SOX because of possible differences in the marginal impact of mandated disclosure through the 1964 Act and SOX. As previously stated, disclosure among OTC companies was "meager and inadequate" prior to the 1964 Act.[74] This was clearly not the case for publicly-traded companies prior to SOX and one can expect diminishing marginal returns from disclosure regulation. Nevertheless, in the much more mature debate about the effectiveness of disclosure regulation generally, the results of this paper suggest that mandated disclosure does add new, valuable information to the market.

[74] *Supra* notes 30-31.