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Mandatory versus contractual disclosure in securities markets: Evidence from the 1930s

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1. Introduction

Securities laws around the world require that publicly-traded companies make particular financial and narrative disclosures to regulators and investors. When such laws do not exist or do not apply, firms may make disclosures voluntarily or pursuant to an agreement with the exchange or other market on which their shares are listed. Mandatory disclosure laws are motivated by a belief that these voluntary or contractual disclosures are sub-optimal.

This paper studies mandatory disclosure documents filed during the period 1933-35 in response to the Securities Act of 1933 (Securities Act), which requires disclosure in connection with public securities offerings, and the Securities Exchange Act of 1934 (Exchange Act), which requires periodic disclosures by all companies listed on a stock exchange. Our sample companies are all listed on the New York Stock Exchange (NYSE) and therefore subject to the NYSE's disclosure requirements at the time of the filings. We ask whether the additional disclosures contained in the filed documents constituted information. Using newly-available daily price, volume, and bid-ask spread data, we test whether the filings are associated with changes in bid-ask spreads, turnover, volatility, and no-trade days.

The empirical literature on the effects of mandatory disclosure laws is small and inconclusive. A few papers test whether the Securities Act affected the returns realized by investors in new issues of stock (Stigler 1964; Simon 1989). Benston (1973) examines the effects of the periodic financial disclosures required by the Exchange Act. More recently, Greenstone, Oyer and Vissing-Jorgensen (2004) and Ferrell (2004) examine the effects of a 1964 statute that extended the Exchange Act's periodic disclosure provisions to companies traded over the counter.

In general, these papers look at long-run stock returns for affected companies before and after enactment of the disclosure laws or compare post-enactment returns for affected and unaffected companies. By contrast, we look for changes in the short-run trading behavior of the affected stocks around the time the company filed a disclosure document, using daily data. Although we examine trading in the companies' common stock for evidence of reduced informational asymmetry, the filings may be triggered by public offerings of either debt or equity securities.

We also exploit an interesting and potentially important source of interfirm variation in the informativeness of the regulatory filings. Under the Securities Act, any firm that issued and sold securities to the public after July 27, 1933 had to file a disclosure document. Under the Exchange Act, every firm with a class of equity or debt listed on an exchange had to file a substantively similar disclosure document during the period beginning in February 1935 and ending July 1, 1935. Some of the firms in our sample sold securities to the public, and therefore filed a disclosure document under the Securities Act, prior to their first Exchange Act filing. Others made public offerings during our sample period but after their initial Exchange Act filing. If the mandated

disclosures reduced information asymmetry, then those Securities Act filings that preceded the company's initial Exchange Act filing should have a more substantial average impact than those that followed the initial Exchange Act filing.

[Our results so far show no significant effects on information asymmetry. We have not yet completed all the tests we plan to run. I will give an outline of the remaining work later in the paper.]

Despite the relative dearth of empirical investigation, the role of public regulation and enforcement in securities markets is a vitally important topic (La Porta *et al.* 2005). Dozens of emerging-market countries currently face choices similar to those the United States made in the 1930s. Understanding the impact of those choices is valuable.

Section 2 describes the Securities Act and Exchange Act. Section 3 summarizes prior findings on the effects of mandatory disclosure laws. Sections 4 and 5 describe our tests of the effects of the Securities Act and Exchange Act, respectively. Section 6 concludes.

2. The 1930s disclosure laws

Prior to 1933, listed companies' disclosure policies were largely determined by their managers and the stock exchange(s) that listed their shares. Many state governments had a "blue sky" law under which the sale of securities in that state triggered certain disclosure requirements. However, the blue sky laws of several states, including New York, did not require specific disclosures but merely prohibited fraud (Mahoney 2003). Although it was not always clear how these laws applied to multi-state transactions, if the buyer's broker were located in New York and the broker took delivery for the buyer, it is probable that only New York's blue sky law would apply regardless of

the buyer's residence (Loss & Cowett 1958). Thus, blue sky laws did not create a broadly applicable mandatory disclosure system. State public utility laws and the federal Interstate Commerce Act imposed some disclosure requirements on public utilities and interstate railroads, respectively, to aid in rate regulation.

The Securities Act became law on May 27, 1933 and required registration with the Federal Trade Commission (FTC) of any securities sold to the public on or after July 27, 1933. Because the Act permitted sales no sooner than 20 days after filing, the FTC accepted registration statements beginning on July 7. The statute included a schedule of required disclosures but gave the FTC broad authority to determine their form and content. Accordingly, in early July 1933, the FTC adopted Form A-1 as the primary registration form. Additional forms were adopted over time for various categories of issuers and offerings.

Importantly, one cannot determine on a priori grounds whether these required disclosures should have improved traders' ability to value securities issued by NYSE-listed companies. Form A-1 calls for information similar to that required for an initial listing on the NYSE. The listing requirements are discussed in Meeker (1930) and include narrative descriptions of the company's business, legal status (when and where incorporated, for example), management, properties, capital structure, terms of outstanding debt, the purpose of the new issue and associated expenses, and financial statements. Form A-1, however, describes the required information in more detail than do the listing standards and has fewer qualifications such as "if available." The difference is notable in the case of financial statements. The listing standards require "earnings for the preceding five years, if available with interest charges, depreciation, and

federal taxes," while Form A-1 provides a list of more than 40 potentially required line items in the income statement.

Form A-1 also requires some notable disclosures not contained in the listing application, such as management's compensation, transactions between the company and its directors, officers, underwriters, and promoters, a list of principal shareholders and their holdings, and a description of any contracts not made in the ordinary course of business. As Mahoney (1995) and La Porta, Lopez-di-Silanes and Shleifer (2005) note, such disclosures inform shareholders about potential sources of misappropriation and managers accordingly have an incentive not to make them.

Finally, the Securities Act created liabilities for erroneous disclosures and gave the FTC the authority to prevent companies from selling securities to the public if it concluded that the disclosures were incomplete or misleading. Even if the content of the mandated disclosures were identical to the NYSE-required disclosures, then, the Securities Act disclosures could be informative if the enforcement mechanisms made them more reliable.

The Exchange Act became law on June 6, 1934. It required each company with securities listed on an exchange to file an application (also called a registration statement but distinct from a Securities Act registration statement) and then to update the required information annually. The statute also created the Securities and Exchange Commission (SEC) and made it the administering agency for both the Securities Act and Exchange Act, replacing the FTC. In September 1934, the SEC announced that it would grant temporary registration until June 30, 1935 to companies already listed on an exchange. In February 1935, it adopted Form 10, the primary form for permanent registration.

Form 10 requires narrative and financial information about the company substantively similar to that of Securities Act Form A-1. Initial Form 10s were due no later than July 1, 1935, the day after temporary registration expired.

1933 and 1934 were moribund years for public offerings. Moreover, some of the major investment banks, unhappy with the Securities Act's liability provisions, refused to underwrite new issues while they bargained (successfully) with Congress to reduce underwriters' statutory liabilities (Seligman 2003). Perhaps to ward off criticism, the FTC (and later the SEC) publicized its work by issuing press releases that listed the most recent registration statement filings and occasionally made a pitch for more new issues by arguing that the registration process was less difficult and costly than critics claimed. These press releases, which are available through the LEXIS/NEXIS service, were issued at least weekly. A filing by a prominent company was often the subject of a stand-alone press release, typically issued the day after the filing. In March through June 1935, the SEC also issued press releases nearly every business day identifying the listed companies that had filed Form 10 registration statements required under the Exchange Act.

3. Prior studies of the securities laws

Stigler (1964) studies the Securities Act's impact on investors in new stock issues. He compares market-adjusted returns, excluding dividends, for samples of new issues during 1923-28 and 1949-55 and finds that two-year compounded annual returns are approximately the same for both groups. He finds differences over longer time periods but attributes them to specification error. Stigler also notes that the cross-sectional standard deviation of these returns is lower for the post-Securities Act sample and concludes that the Act drove out higher-risk securities. Jarrell (1981) carries out a similar

study using a market- and risk-adjusted approach derived from the Capital Asset Pricing Model, with qualitatively similar results.

Simon (1989) also studies new issues before and after the Securities Act but partitions her sample based on assumed levels of pre-Securities Act informational asymmetry. In particular, she distinguishes initial public offerings from issues of seasoned companies, arguing that seasoned companies may have a larger reputational incentive to provide high-quality voluntary disclosure. She similarly distinguishes companies listed on the NYSE, and therefore subject to its disclosure standards, from unlisted companies. Simon finds no evidence of a post-SEC change in average abnormal monthly returns, cumulated for up to 60 months, for companies that were seasoned or traded on the NYSE. The performance of unseasoned companies not traded on the NYSE, however, improves after 1933, leading Simon to conclude that mandatory disclosure provided useful information when neither reputation nor third-party bonding was available to provide appropriate incentives for voluntary disclosure. Simon also finds that the cross-sectional variance of long-run abnormal returns decreases after 1933. Contrary to Stigler, she interprets this as a reduction in forecast errors resulting from lower informational asymmetry rather than a reduction in risk.

Benston (1973) considers the effects of the financial disclosures required by the Exchange Act. Like Simon, he partitions his sample based on a proxy for pre-Exchange Act informational asymmetry. Benston contends that prior to the Exchange Act, a large majority of NYSE companies disclosed the main financial statement line items later required by Form 10, except for sales. He therefore compares average and cumulative abnormal market- and risk-adjusted returns over an approximately two-year period for

firms that voluntarily disclosed sales prior to 1934 with those that did not and finds no significant difference.

Greenstone, Oyer and Vissing-Jorgensen (2004) study the effects of the 1964 extension of Exchange Act periodic disclosure to all OTC companies meeting certain size thresholds. They make use of the fact that companies were affected differentially by the 1964 amendments. Following a 1936 amendment, any OTC company that sold securities in a public offering registered under the Securities Act thereafter became subject to most of the Exchange Act's periodic disclosure requirements. Thus, some OTC firms were required to file periodic disclosures with the SEC prior to 1964, but others were not. Listed companies, of course, were already subject to periodic disclosure. Thus, Greenstone et al. divide their sample firms into groups based on the extent to which the 1964 amendments altered their disclosure obligations. They find that the firms most affected by the statute, on average, earned positive cumulative weekly abnormal returns during the 20-month period beginning when the amendments were first proposed and ending when they were enacted. Greenstone et al. also find that the affected firms earned positive abnormal returns over a 10-week period around the time they filed their first disclosure document.

Ferrell (2004) also studies abnormal returns for OTC companies around the time of the 1964 amendments. Using monthly data and a slightly longer event window, he obtains results qualitatively similar to those of Greenstone et al. Ferrell also finds that the cross-sectional variance of returns, as well as the average time-series variance, falls for OTC stocks after the 1964 amendments and concludes that investor forecast errors declined because of the mandated disclosures.

Our approach differs from prior studies of the U.S. securities laws. Most notably, we look at short-run changes in bid-ask spreads, liquidity, and volatility rather than long-term returns. There are several reasons to believe that this approach provides a more appropriate test of whether the securities laws reduced informational asymmetry. If investors price risks appropriately, returns will not be sensitive to differences in informational asymmetry. We attempt to measure information asymmetry more directly rather than relying on abnormal returns. In addition, the measurement of long-run abnormal returns is vulnerable to specification error. This is surely a concern for any studies that include the 1930s.

In addition, our research focus differs somewhat from that of the prior literature. We do not attempt to determine whether the Securities Act or Exchange Act were, on balance, beneficial to investors. Rather, we ask simply whether the disclosures mandated by the FTC and SEC under authority of those statutes constituted information as to companies already listed on the NYSE. Alternatively, one might pose the question as whether the NYSE's disclosure requirements already produced information substantively identical to that mandated by the securities laws. We believe this is a critical policy question because it sheds light on whether securities laws need to be concerned with companies traded on relatively liquid, organized markets.

4. The effects of the Securities Act

A. Data and Methodology

Our basic research design is to compile a sample of companies that filed registration statements with the FTC or SEC under the Securities Act and compare various measures of information asymmetry for periods before and after the filing.

Although our approach is similar to an event study, we do not focus on the traditional three-day event window around the time of filing. This is so because, although we can identify filing dates, we cannot precisely identify the date on which the market learned the information contained in the filing. The issuing company and its underwriters typically waited a brief period while the SEC reviewed the registration statement filing, then distributed a preliminary version of the prospectus (Loss & Seligman 1989). The Securities Act prohibited other publicity measures during this period. The key point for our purposes is that the registration statement contents became public knowledge only with a delay. This would be a substantial problem were we to focus on abnormal returns, but changes in bid-ask spreads and liquidity should persist for some time after an event that reduced informational asymmetry.

Our pre-filing period is the 30 trading days ending 20 trading days prior to the filing. Because the Securities Act made it illegal to begin pre-offering publicity before filing a registration statement, the contents of the registration statement should not be public knowledge during this "quiet" period. To further reduce the likelihood that our results are tainted by information leakage, we select a measurement period that ends 20 trading days before the filing.

Our post-filing period is the 30 trading days beginning 20 trading days after the filing. The Securities Act provides that a registration statement becomes effective, and the securities can therefore be sold, 20 calendar days after filing. This 20-day period is subject to various exceptions, but it is clear from SEC press releases that—contrary to current practice—most registration statements did become effective after only 20 calendar days in the early 1930s. The Act also required that each purchaser receive a

prospectus containing most of the information contained in the registration statement. We therefore believe that the information contained in a registration statement should be widely available to the market by the start of our post-filing period. To the extent the disclosures in the registration statements constitute information, information asymmetry should be lower in the post-filing than in the pre-filing period.

We use daily return, volume and bid-ask spread data obtained from the Center for Research in Security Prices at the University of Chicago (CRSP). At the time of writing, CRSP was in the process of extending its daily data back to 1926 and had produced a preliminary "beta cut" covering the years 1926-1935. Our study uses the preliminary data.

We identify every NYSE-listed firm that filed a Securities Act registration statement during the period beginning July 7, 1933 (the first date on which registration statement filings were accepted) and ending in early November 1935.[1] To do so, we check by hand the FTC and SEC press releases described above against a list of NYSE companies taken from the CRSP data. In all, 58 NYSE-listed companies filed 70 registration statements during our sample period. In a few instances, the same company filed two registration statements covering different classes of securities within a few weeks of each other. In those cases, the company-specific information in the two filings should be essentially identical, so we consider only the first filing. This reduces our final sample to 65 registration statements.

Although the FTC or SEC press releases usually provide the actual filing dates, they sometimes do not. In those cases, we assign a filing date based on the average delay

[1] The CRSP daily data end at December 31, 1935. For two of our sample companies, the 30-day post-filing window ends three or four business days after that date. We hand-collect price, bid-ask spread, and volume data for those two companies from the *New York Times*, the underlying source of the CRSP data.

between filings and press releases. When the press release relates to a single company, the typical delay was one business day and when it relates to multiple companies, the average delay was 8 business days. Because there is a 40 trading-day window between our pre-filing and post-filing periods, a few days' error in estimating filing dates should not matter. The earliest filing date in our sample is August 28, 1933 and the latest is November 4, 1935; the median filing date is in early May, 1935.

During both the pre- and post-filing periods, we measure common proxies for information asymmetry. Leuz and Verrecchia (2000) use percentage bid-ask spreads, turnover, and return volatility as proxies for information asymmetry to analyze the decision of some German companies to adopt more transparent financial accounting standards. Leuz (2003) uses bid-ask spreads and turnover as proxies while comparing U.S. generally accepted accounting principles and international accounting standards.

Bid-ask spreads are widely viewed as a direct measure of information asymmetry because rational market makers respond to adverse selection risk by increasing their quoted spreads (Glosten & Milgrom 1985). We accordingly take the percentage spread (the difference between daily closing ask and bid prices divided by their midpoint) as our first proxy for information asymmetry.

Diamond and Verrecchia (1991) demonstrate that information asymmetry and liquidity are inversely related. Intuitively, uninformed traders should be more willing to trade as the risk of making losing trades to better-informed traders decreases. We use share turnover as defined by Lo and Wang (2000)—the number of traded shares divided by total shares outstanding—as our first proxy for liquidity. We also use a separate proxy appropriate to our setting. Bekaert et al. (2005) contend that in emerging markets, the

percentage of days on which a stock does not trade serves as a natural measure of liquidity.[2] They show that this measure is more closely related to returns than the turnover measure. Jiang, Mahoney and Mei (2005) note that no-trade days are common for individual stocks on the NYSE in the late 1920s. We therefore use the percentage of no-trade days as an additional liquidity measure.

Following Leuz and Verrecchia (2000), we also measure the time-series volatility (standard deviation) of returns before and after the filing of a registration statement while recognizing that this may be a less reliable measure of information asymmetry. West (1988) argues that idiosyncratic volatility should be decreasing in informational efficiency, and Kelly (2005) provides confirming empirical results. Nevertheless, as Kelly notes, one could argue alternatively that rapid reflection of information should lead to more nearly discontinuous jumps in prices and thus higher volatility.

Table 1 summarizes the pre-filing measures of information asymmetry for our 58 sample companies and compares them to measures for all NYSE listed companies. Panel A provides data on average bid-ask spreads, turnover, no-trade days, and volatility for the sample companies during the pre-filing period. As a basis for comparison, Panel B provides the same measures for all NYSE stocks averaged over the first 30 trading days of 1935. We select this period because it is close to the median Securities Act filing date in our sample but still prior to the onset of Form 10 filings under the Exchange Act.

The sample firms have less information asymmetry by each of our measures—they have lower average bid-ask spreads, higher turnover, and fewer no-trade days. They also have less volatile returns. This raises the possibility of self-selection bias. It is

[2] Technically, they use days on which there is no price change as a measure of liquidity because their data do not include trading volumes.

possible that only firms that already disclosed voluntarily most of what was required by Form A-1 chose to file registration statements and raise new capital through public offerings. In that event, we would expect registration statement filings to have no effect on information asymmetry even if the Securities Act's disclosure requirements represented an improvement over the NYSE's disclosure requirements. Alternatively, the differences may simply reflect the substantial secular improvement in spreads and liquidity as market conditions improved in 1935. The possibility of self-selection bias motivates our analysis of Exchange Act filings below.

B. Results

We first compare pre- and post-filing data for all sample firms, as shown in Table 2. The changes are in the direction we would expect if the registration statement disclosures reduce information asymmetry for the spread and no-trade measures. Only the change in no-trade days is significantly different from zero.

Of course, the event that prompts disclosure—the public offering—has some informational content independent of the disclosures and the before-and-after differences alone do not distinguish the two. We attempt to control for the information content of the public offering using a difference-in-differences approach. Our sample firms filed their initial Form 10 disclosure documents in March through June 1935.[3] The company-specific financial and narrative disclosures called for in that document are very similar to those required in a Securities Act registration statement. To the extent the filing of a Securities Act registration statement improved the information environment, the

[3] A small number of NYSE firms, including one of our sample companies, failed to meet the July 1 deadline and filed Form 10s later in the year. It does not appear that the SEC imposed any penalties for the late filings.

improvement must be greater for those firms that filed Securities Act registration statements prior to their Form 10 filings. Any Securities Act filing made after the issuer had filed a Form 10 but before the end of 1935 would contain essentially the same company-specific information as in the Form 10 filing (which was required, among other things, to contain audited financial statements as of the end of 1934).

We accordingly divide the companies in our sample into "high" and "low" ex ante information asymmetry subsets based on whether the company had filed a Form 10 prior to its Securities Act filing(s). The high information asymmetry subset consists of firms that made a Form 10 filing after, or less than 20 trading days before, its Securities Act registration statement. Because our pre-(Securities Act) filing period ends 20 trading days prior to the Securities Act filing, any Form 10 filing after that date should not affect the pre-filing data. The second subset consists of the remaining sample firms. For those companies, the information contained in their Form 10s should already have reduced information asymmetry in the pre-filing period. We obtain the dates of Form 10 filings from SEC press releases. Because the SEC reported lists of Form 10 filings on a daily basis, we assume that the actual filing date was one business day prior to the date of the press release. We lose one sample company because we were unable to determine the Form 10 filing date.

Table 3 shows the difference between the post-filing and pre-filing periods for each of the two subsets, as well as the difference in differences between the subsets. None of our measures of information asymmetry differs significantly between the two subsets. Indeed, the signs of the differences are generally not in the direction we would predict if the SEC-mandated disclosures reduce information asymmetry. To this point,

then, we have no reason to conclude that the Securities Act reduced information asymmetry for firms already subject to the NYSE's disclosure requirements.

C. Multivariate analysis

The informational content of a public offering and the associated Securities Act registration statement need not be uniform across companies. It is possible, for example, that the information conveyed by a debt offering is different than that of an equity offering. The company-specific disclosures in the registration statement, by contrast, would be essentially the same. In addition, some of the public offerings in our sample were made by companies in bankruptcy (the SEC adopted a different registration form for companies in bankruptcy, making it possible to identify them). It seems plausible that the company-specific disclosures in the registration statement would be less important for these companies, as any bad news is already well-known. Finally, larger companies may already be more carefully covered by analysts and the financial press, so their regulatory filings may contain less news than those of smaller companies.

To control for these factors, we estimate four ordinary least-squares regressions with the post-filing changes in our four measures of informational asymmetry as the dependent variables. As control variables, we use the log of market capitalization, an indicator for bankruptcy, and an indicator for equity offerings. Our predictor variable of interest is an indicator for whether the Securities Act filing came before or after the relevant Form 10 filing, as discussed above.

The regression results do not change the analysis and we do not report them here. Not surprisingly, the companies in bankruptcy have considerably (and significantly) higher bid-ask spreads and are more volatile. The other control variables do not, in

general, enter significantly. Those Securities Act filings that precede the initial Exchange Act filing are not associated with larger improvements in informational asymmetry.

5. Effects of the Exchange Act

A. Data and Methodology

We now turn to the effects of Exchange Act filings. An NYSE listed company could avoid Exchange Act registration only by delisting from all exchanges and limiting itself to the over-the-counter market. It is clear that very few firms did so. The CRSP daily data set contains 692 NYSE-listed firms as of June 30, 1933 (a date selected to capture only firms that survived the bank crisis of early 1933). All but 19 were still listed on July 1, 1935. The stock prices of several of those companies declined below one dollar per share just before delisting, suggesting that the delisting was a consequence of bankruptcy. Exchange Act filings should accordingly raise little or no self-selection problem.

It is also highly likely that Exchange Act filings, unlike Securities Act filings, were rapidly reflected in transaction data. There is no "quiet period" for Exchange Act filings. Moreover, companies were required to provide a copy of the filing to the exchange on which they were listed simultaneously with the filing. Member brokers, then, should have had access to any news contained in a Form 10 from the day of filing. We therefore look at trading data in a narrow window around the dates of Form 10 filings.

We begin with the 696 companies listed on the NYSE for which CRSP has daily data as of January 1, 1935. The SEC temporarily exempted non-U.S. companies from the filing requirement, which eliminates five companies. From SEC press releases, we are

able to identify Exchange Act filing dates for 657, or 95%, of the remainder. We lose an additional four companies because of missing transaction data, leaving us with a sample of 653 companies.

A substantial majority (607) of the sample companies filed Form 10s during the months of April and May. This makes it challenging to determine expected returns, bid-ask spreads, and trading volumes absent any news. In many cases a substantial fraction (as much as 16%) of NYSE listed companies filed within the same 3-day period, so the market portfolio is not entirely unaffected by the filing event. Using pre-event data for each company is problematic because spreads steadily declined and trading volumes steadily rose during 1935. We cannot be sure whether this trend reflected the beneficial effects of the Exchange Act or economic recovery during 1935.

Accordingly, we create a control portfolio by randomly assigning companies to the filing dates in our sample. This should approximate the impact of "no news" for our sample companies on the sample filing dates. For the control sample and our actual sample, we calculate bid-ask spreads, turnover, no-trade days, and the standard deviation of returns over a 4-day event window beginning 1 day prior to the announcement of the filing. We add an additional day to the traditional 3-day event window in recognition of the possibly lower level of informational efficiency in 1935. Bhattacharya et al. (2000) do the same in their study of the effects of corporate announcements in Mexico.

This set-up should capture the marginal impact of the disclosures required by the SEC but not the NYSE. The NYSE required audited annual financial statements and, for most companies, quarterly interim statements. These were filed with the exchange and reported in the press. We searched for the dates on which the *New York Times* reported

1934 earnings for our sample companies, and they are usually a month or more prior to the Form 10 filing. Thus, the financial statements contained in the Form 10 filings should not constitute news. The Form 10s, however, contained data that many companies had not previously made public—particularly management's compensation and the identity of principal stockholders. In February 1935, as companies prepared to make their first filings, a *New York Times* article argued that these new disclosures would be of great interest to investors.

B. Results

Table 4 contains our four measures of the informational impact of Exchange Act filings. Abnormal bid-ask spread, turnover, no-trade days, and volatility are defined as the difference between the actual values averaged over days -1 to +2, subtracted from the values for the same days for the control portfolio. There is a reduction in bid-ask spread and it is almost significant ($p = 0.068$). Abnormal turnover and no-trade days, however, have the wrong sign. There is a slight reduction in volatility, although it is far from significant. On the whole, there is little evidence that the Exchange Act filings constitute news.

We have considered return volatility but not returns because any news contained in the filings could be good or bad. As a rough way of asking whether returns behave unusually during our event window, we look at abnormal returns over a 64 trading day period beginning 60 trading days prior to our event window and continuing through the event window. First, we take abnormal returns as the difference between actual returns and the return on the CRSP value-weighted portfolio. Because of concern that the market portfolio could be substantially affected by the Exchange Act filings, we also calculate

expected returns as the average return for the same stock over the 60 trading days prior to the event window. We then determine the percentage of our 653 sample companies that experienced significant abnormal returns on each of the 64 days. We assess significance using the time-series standard deviations of abnormal returns for each stock individually.

Assuming that abnormal returns are normally distributed, we should observe that five percent of the sample shows a significant abnormal return on each trading day. The actual percentages are shown in Figure 1, and they fluctuate around five percent. Most important for our purposes, there does not appear to be anything unusual about our event window.

We also consider unsigned returns, as per Bhattacharya et al. (2000). For each company on each day during 60 days of pre-event data as well as our 4-day event window, we measure the absolute value of returns. Because unsigned returns are right-skewed, we use Corrado's (1989) nonparametric rank test to determine statistical significance.

Table 5 shows the results of rank tests using both raw and market-adjusted returns. In neither event is the actual rank of absolute returns during the event window significantly different from the expected rank. Once again, there is no evidence that the market reacted to Exchange Act filings.

[Further analysis to come: One might argue that so far we are looking in the wrong place. We have asked whether filings under the federal securities laws constituted information for NYSE-listed companies. One might alternatively believe that the mere existence of the securities laws forced companies to improve the quality of all their disclosures, not merely those filed with the SEC. If so, that might suggest that there is no

"news" in securities law filings—not because the securities laws are irrelevant, but because the companies have already disclosed (for instance in their annual reports to shareholders) everything that they know will go into their securities law filings.

To test that proposition, we are gathering the dates on which companies made earnings announcements or released their annual reports in one post-SEC year (1935) and one pre-SEC year (1927, which also precedes the great run-up in prices that came before the 1929 market crash). If the mere existence of the SEC improved disclosure, then we should expect earnings announcements and annual reports to be more informative in 1935 than they were in 1927. We are still putting together the data.]

Conclusions to come.

Table 1
Sample companies compared to NYSE averages

	Market Capitalization ($ thousands)	Bid-ask spread (%)	Daily Turnover (%)	No-trade days (%)	Volatility (%)
		Panel A: Sample companies (n = 58)			
Mean	36,010	4.43	0.23	16.29	3.58
Standard deviation	62,049	5.35	0.45	22.57	3.01
Minimum	233	0.67	0.00	0.00	0.95
Median	15,264	1.94	0.09	3.33	2.68
Maximum	398,603	26.11	2.76	85.19	15.61
		Panel B: All NYSE companies (n = 696)			
Mean	40,465	7.44	0.09	29.89	3.63
Standard deviation	124,905	10.66	0.15	30.87	2.97
Minimum	38	0.27	0.00	0.00	0.22
Median	7,018	3.60	0.05	16.67	2.77
Maximum	1,886,919	105.92	1.93	100.00	30.56

The sample in Panel A consists of all NYSE listed companies that filed a registration statement for a public securities offering during the period July 7, 1933 to November 15, 1935. Bid-ask spread is the closing ask price minus closing bid price, divided by their average. Turnover is daily shares traded divided by shares outstanding. Both quantities are averaged over a 30-trading-day period starting 20 trading days prior to filing. No-trade days is the percentage of that 30 trading days on which there were no transactions in a given stock. Volatility is the time-series standard deviation of returns during the 30 trading day period. Conditional autocorrelation is the autocorrelation of daily returns conditioned on volume, as measured by the estimated coefficient ? in equation (1). The quantities in Panel B are measured for the first 30 trading days of 1935 and averaged over all NYSE listed companies.

Table 2
Information asymmetry before and after Securities Act filings

	Bid-ask spread (%)	Turnover (%)	No-trade days (%)	Volatility (%)
Before filing	4.38	0.22	15.88	3.52
After filing	3.95	0.20	11.06	3.28
Difference	-0.43	-0.01	-4.81*	-0.24
(standard error)	(0.43)	(0.04)	(2.04)	(0.21)

All measures are defined consistently with Table 1. The "Before filing" period is the 30 trading days ending 20 trading days before the relevant sample company filed a Securities Act registration statement. The "After filing" period is the 30 trading days beginning 20 trading days after the same filing.

Table 3
Information asymmetry measures: difference in differences

	Change from pre-filing to post-filing period in:			
	Bid-ask spread (%)	Turnover (%)	No-trade days (%)	Volatility (%)
Securities Act filing first (n = 38)	0.02 (0.55)	-0.01 (0.04)	-3.36 (2.57)	-0.12 (0.34)
Exchange Act filing first (n = 26)	-0.91 (0.70)	-0.03 (0.07)	-4.95 (2.85)	-0.43 (0.22)
Difference	0.93 (0.89)	0.02 (0.08)	1.59 (3.84)	0.308 (0.402)

Standard errors are in parentheses.
All measures are defined consistently with Table 1. Pre-filing and post-filing periods are the same as those identified in Table 2. The first row measures those companies that filed a Securities Act registration statement before (or within 20 trading days after) its Form 10 filing. The second row measures the remaining sample companies, and the third row shows the differences between the two subsamples.

Table 4
Informational asymmetry measures during days -1 to +2 around Exchange Act filings

	Point estimate (%)	Standard error	t-statistic
Abnormal bid-ask spread	-0.419	0.230	-1.826
Abnormal turnover	-0.014	0.008	-1.757
Abnormal no-trade days	1.825	1.014	1.799
Abnormal volatility	-0.082	0.162	-0.506

Expected values of each of the four measures are the values for a control portfolio constructed by randomly assigning sample companies to sample filing dates. "Abnormal" values are the actual results for the sample companies, averaged over days -1 to +2 in event time, minus the expected values. Date zero in event time is the date on which the SEC announced the Form 10 filing for the sample company. Standard errors are calculated as the sample standard deviation of each measure divided by the square root of the sample size.

Table 5
Rank test of unsigned returns at time of Exchange Act filings

	Point estimate	Standard error	t-statistic
Raw returns	5.008	2.934	1.707
Market-adjusted returns	-2.953	1.862	-1.586

The table shows point estimates for a rank test on absolute returns during the event window (days -1 to 2, where day zero is the day on which the SEC announced an Exchange Act filing) for the 653 companies that filed initial Exchange Act reports in 1935. The rank test is taken from Corrado (1989). For each sample company, we sort the absolute value of raw or market-adjusted returns for days -61 to +2. We define $K_{i,t}$ as the rank of the absolute return for company i on date t. By construction, the average rank for the 64 days is 32.5, so we define an abnormal rank $AR_{i,t} = K_{i,t} - 32.5$. The point estimate for mean abnormal rank is then

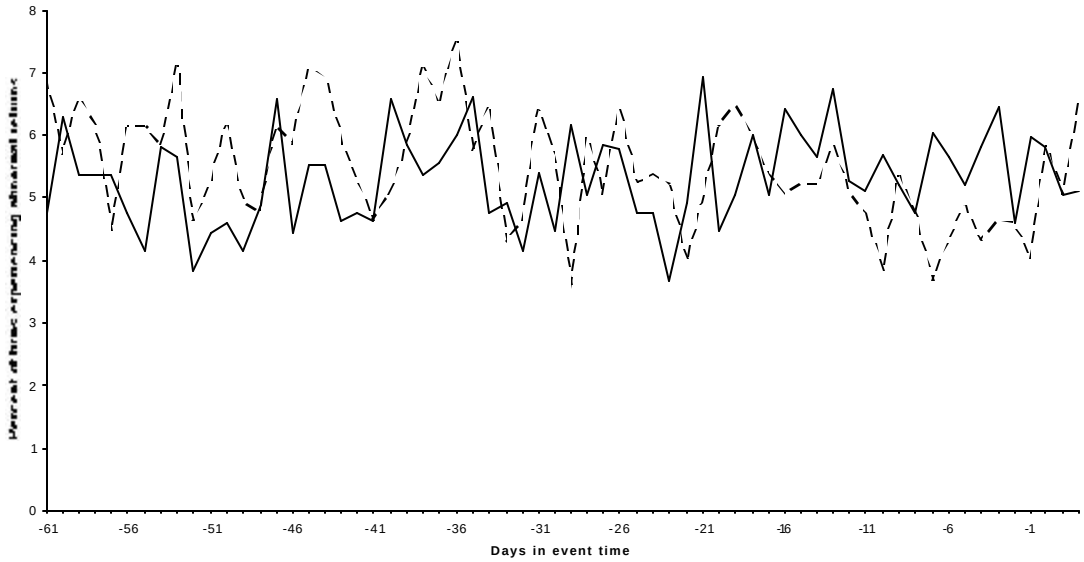
$$\overline{AR} = \frac{1}{N}\sum_{i=1}^{N}\left(\sum_{t=-1}^{2} AR_{i,t}\right),$$

where N is the number of sample companies. The standard error of the estimate is

$$SE = \sqrt{\frac{4}{64}\sum_{t=-61}^{2}\left(\frac{1}{N}\sum_{i=1}^{N} AR_{i,t}\right)}$$

The test statistic for the null hypothesis $\overline{AR}=0$ is $\overline{AR}/\mathrm{SE}$

Figure 1. Percentage of firms experiencing abnormal returns around time of Exchange Act filings.



The plot shows the percentage of the 653 sample firms that experience significantly positive or negative abnormal returns using a market-adjusted model (solid line) and a constant average return model (dashed line) over the 64 trading days beginning 60 trading days prior to our event window. Day 0 is the day on which the SEC announced a Form 10 filing for the sample company.

References

Bekaert, G., Harvey, C.R., Lundblad, C.T., 2005. Liquidity and expected returns: lessons from emerging markets. AFA 2004 San Diego annual meetings

Benston, G.J., 1973. Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934. The American Economic Review 63, 132-155

Bhattacharya, U., Daouk, H., Jorgenson, B., Kehr, C.-H., 2000. When an event is not an event: the curious case of an emerging market. Journal of Financial Economics 55, 69

Corrado, C.J., 1989. A nonparametric test for abnormal security-price performance in event studies. Journal of Financial Economics 23, 385-395

Diamond, D.W., Verrecchia, R.E., 1991. Disclosure, Liquidity, and the Cost of Capital. Journal of Finance 46, 1325-1359

Ferrell, A., 2004. Mandated Disclosure and Stock Returns: Evidence from the Over-the-Counter Market. Harvard Law School

Glosten, L.R., Milgrom, P.R., 1985. Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. Journal of Financial Economics 14, 71

Greenstone, M., Oyer, P., Vissing-Jorgensen, A., 2004. Mandated Disclosure, Stock Returns, and the 1964 Securities Act Amendments. Department of Economics, MIT

Jarrell, G.A., 1981. The Economic Effects of Federal Regulation of the Market for New Security Issues. Journal of Law and Economics 24, 613-675

Jiang, G., Mahoney, P.G., Mei, J., 2005. Market manipulation: A comprehensive study of stock pools. Journal of Financial Economics 77, 147

Kelly, P.J., 2005. Information Efficiency and Firm-Specific Return Variation.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., 2005. What Works in Securities Laws? Tuck School of Business at Dartmouth

Leuz, C., 2003. IAS Versus U.S. GAAP: Information Asymmetry-Based Evidence from Germany's New Market. Journal of Accounting Research 41, 445

Leuz, C., Verrecchia, R.E., 2000. The Economic Consequences of Increased Disclosure. Journal of Accounting Research 38, 91-124

Lo, A.W., Wang, J., 2000. Trading Volume: Definitions, Data Analysis, and Implications of Portfolio Theory. Review of Financial Studies 13, 257-300

Loss, L., Cowett, E.M., 1958. Blue sky law. Little Brown, Boston.

Loss, L., Seligman, J., 1989. Securities regulation. Little Brown, Boston.

Mahoney, P.G., 1995. Mandatory Disclosure as a Solution to Agency Problems. The University of Chicago Law Review 62, 1047-1112

Mahoney, P.G., 2003. The Origins of the Blue-Sky Laws: A Test of Competing Hypotheses. The Journal of Law and Economics 66, 229-251

Meeker, J.E., 1930. The work of the Stock Exchange. The Ronald Press Company, New York.

Seligman, J., 2003. The transformation of Wall Street: a history of the Securities and Exchange Commission and modern corporate finance. Aspen Publishers, New York.

Simon, C.J., 1989. The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues. The American Economic Review 79, 295-318

Stigler, G.J., 1964. Public Regulation of the Securities Markets. Journal of Business 37, 117-142

West, K.D., 1988. Dividend Innovations and Stock Price Volatility. Econometrica: Journal of the Econometric Society 56, 37-61