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IPO Regulators Gone Wild

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KEVIN K. BOEH & CRAIG G. DUNBAR

IPO REGULATORS GONE WILD

A complex set of regulations is intended to guide and control the capital markets and the equity initial public offering (IPO) process, with the goal of creating efficient markets for equity capital and investor protection. Often in response to market innovations, regulators impose new, and reinterpret existing, regulations. We document key US securities regulations over the last two decades that have affected the IPO process. While motivated by good intentions, many of these regulations have led to burdens on issuing firms and have had deleterious effects on the US capital markets. We posit that these effects are driven by the burdens placed on firms, the incentives of firms to pursue alternatives to an IPO, the disincentives for banks to conduct IPOs, and the attractiveness of more profitable (and less regulated) alternative activities available to banks. This opens a set of questions for IPO researchers concerning the effects of such regulations.

1. INTRODUCTION

Given the essential economic benefits that a well-functioning capital market provides to an economy, securities regulations (broadly speaking) promote stock market development and protect the welfare of investors (see La Porta et al., 2006, for a cross-country review). An issuer considering accessing the public capital markets must consider the regulatory costs and benefits, both of the listing process and the requirements to stay listed. The motivations driving capital markets regulation, especially those involved in the issuance process, which involves substantive information asymmetry and agency costs (Mahoney,

1995), should, therefore, align with the creation of efficient markets for raising capital, including raising capital in IPOs.

Our first goal here is to provide a timeline and discussion of regulatory changes that have affected the IPO process, with a focus on the last two decades. The stated intentions behind the regulatory changes are broad, but include easing the process of raising capital, providing greater market liquidity, ensuring greater investor protections, and increasing transparency, among other reasons, some of which are not specific to the IPO process. Nevertheless, we discuss regulatory changes that we theorize have had an effect on either (potential) issuers or the investment banks that facilitate the IPO process. While the underlying goals of capital market efficiency and investor protection should be primary, we discuss whether the imposition of regulatory changes has had unintended consequences and deleterious effects on the functioning of the markets for growth-oriented firms seeking to access public market capital. In large part, we bring a detailed chronology of regulatory burdens driving much of what Gao, Ritter, and Zhu (2013) call the “regulatory overreach hypothesis.”

In each case, we provide the motivations driving the regulatory change and, where possible, review research that has included the (potential) effects on the market for IPOs. Where little (or no) literature exists, we provide an agenda for future researchers wishing to consider open questions regarding the impact of regulations on the IPO market. To the extent that enacted regulations have the desired effects on issuers and the IPO market (as opposed to the null of no impact), open questions remain about whether there are also unintended consequences. Beyond research specifically focused on the impacts of regulations, we posit that most IPO research with sample frames that include implementation of these regulations should include controls from our chronology. Many research studies include time period control variables, but mostly these are based on calendar years. We believe a more thoughtful approach would be to define time period variables corresponding to periods having common regulations. Finally, we believe our chronology of regulatory changes can be of use to researchers beyond those solely examining the market for IPOs. Most corporate finance research faces challenges due to endogeneity, so researchers often attempt to find “natural experiments” in which exogenous variation is created by a rule change that can be exploited to test alternative theories. We believe many of the regulatory changes documented here could be useful for such research design (e.g., Hayes, Lemmon, and Qiu, 2010, use adoption of FAS 123R in 2005 as an exogenous shock to test whether option-based compensation is primarily driven by the desire to create economic incentives for managers).

Through our chronology and discussion, we find several common themes concerning the impacts, whether intentional or not, of regulatory changes. Most impacts support the notion that the increasingly burdensome regulatory environment has made the US IPO market less competitive and less attractive. The first (of three) themes concerns changes that have made either the IPO process or the burden of being public thereafter relatively unattractive to a potential issuer. In some cases, alternatives to the IPO have become more attractive while not directly affecting the IPO process itself. A second theme relates to changes that have affected investment banks, making it less attractive (profitable) to conduct IPOs or the accompanying services typical of the IPO process, such as producing research coverage or market-making in the newly issued securities. Critically, the fall of the Glass-Steagall Act allows banks to shift from investment to commercial banking activities if the latter activities are more lucrative or less burdensome. A final theme relates to consequences, mostly unintended, that have had the impact of lowering transparency for investors. While some changes had other intentions,

we argue that the amount or quality of disclosure, research coverage, or information available to investors may have increased information asymmetry for investors, surely counter to the goal of investor protection. We further expect that decreases to transparency and increased information asymmetry, all else being equal, would have the effect of crowding out some issuers in the IPO market.

While this chapter presents no original empirical research, we complement some of our discussion of regulatory changes with descriptive statistics on US IPOs between 1998 and 2014. We obtain data on all US firm- commitment IPOs from the Thomson Financial Securities Data (TFSD) New Issues database. Consistent with many prior studies, we exclude issues by banks, unit offerings (combinations of equity and warrants), and other non- equity securities, real estate investment trusts (REITs), special purpose acquisition companies (SPACs), American depositary receipts, American depositary shares, global depositary receipts (or global depositary shares), and closed- end funds. Issuers must list on major US exchanges (NASDAQ, American [NYSE MKT], and New York Stock Exchanges) with trading data (price and volume) available on CRSP. The full sample consists of 2,548 issues.

We offer several contributions. First, the chronology of regulatory changes that have affected IPO issuers and bankers should be of interest to (potential) issuers, bankers, and investors. While those in the regulatory bodies are surely aware of the history, we provide an outside discussion of intended and (potentially) unintended outcomes from the perspective of efficient markets for equity capital. In some cases, this suggests considering a more careful *ex ante* examination of the (potential) longrun consequences of legislative changes that may have been enacted in response to near- term stimuli. Finally, while we discuss some literature that has focused on regulatory impacts, it becomes clear that future empirical studies with data frames crossing the dates on which such changes were implemented need to account for the relevant changes.

2. IPO REGULATION

2.1. Background— The 1933 and 1934 Acts: Origins

The primary body of regulation that guides the IPO process comes from the Securities Act of 1933 (the “Securities Act”) and the Securities Exchange Act of 1934 (the “Exchange Act”).¹ Have the Acts been successful? A study of the level of dispersion of abnormal market returns before and after the implementation of the 1933 Act shows that the greater information disclosure by firms led to less return dispersion for new issues (Simon, 1989). However, other research on already listed issues (mostly regulated by the 1934 Act) showed no discernible change in information asymmetry after the Acts (Mahoney and Mei, 2006). It should be noted that the Acts were enacted to reduce fraud, rather than information asymmetry.

While research can often show some support for conflicting positions, our concern is whether the imposition of regulation has unintended (and often negative) consequences. The original Acts originally applied only to New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) listed securities. In 1964, the Acts were broadened to include firms trading on over- the- counter (OTC) markets. Research on that extension of the Acts shows that firms (and investors) encountered no gains from the additional regulatory requirements, but instead that numerous firms decided to move to the NYSE instead of staying on the OTC, given that such disclosures were required anyway (Battalio et al., 2011). The primary beneficiary was the NYSE, and not investors. In 1999 the 1934 Act was extended to OTC Bulletin Board (OTCBB) stocks. In a study of the effects, Bushee and Leuz (2005) find that over three- quarters of the sample firms on the OTCBB delisted, presumably because of the additional costly compliance burdens. Investors in the delisted firms suffered dramatic reductions in liquidity and loss of value. The firms that remained listed (the largest ones), however, experienced increases in liquidity, consistent with reduced information

asymmetry, but also consistent with there being fewer stocks to trade, forcing investors to choose from among the surviving firms.

The Acts have been frequently amended and interpreted through the years, requiring an ongoing regulatory compliance effort for firms. Following the spread of the Acts to OTC and OTCBB markets, numerous regulatory changes were enacted that have had a more direct impact on the IPO markets. We detail some of these in the paragraphs that follow.

2.2. Order Handling Rules (1997) and Regulation ATS (1998; Effective April 21, 1999)

The Order Handling Rules (“OHRs”) for NASDAQ were enacted by the Securities and Exchange Commission (SEC) in 1997.² In short, the SEC enacted major changes to the way that traders and the NASDAQ handle trades. The rule changes included several major provisions. Limit orders had to be displayed in the NASDAQ best bid and offer screens, thereby allowing more investors to compete with market makers. It also required market makers to publicly display their best quotes from across trading systems, meaning that even bids on an electronic communication network (ECN) had to be included, thereby allowing market participants access to the “best” bids. The OHR also allowed market makers to adjust their spreads from 125% of the average narrowest spreads to 150% of the average of the three narrowest spreads during that month. This allowed market makers some flexibility in setting their spreads. Finally, the OHRs allowed market makers to reduce their minimum quote size (depth) from 1,000 to 100 shares, with the intention of allowing market makers to reduce risk and thereby be willing to make more competitive trades. The implementation of the OHRs had the effect of reducing spreads by 30% (Barclay et al., 1999). The new rules reduced overall trading costs, spreads, and tick sizes (Chung and Van Ness, 2001).

The SEC adopted Regulation Alternative Trading Systems (ATSS, aka “Dark Pools”)³ to help promote the adoption and use of innovative trading systems that would increase market liquidity by giving investors access to alternative markets (see Domowitz and Lee, 2001). The regulation exempted ATSS from exchange registration requirements, although it did impose other regulatory requirements if trade sizes exceeded a threshold or exceeded 5% of the trading volume in a particular security. As such, these dark pools generally do not disseminate public bids or offers on shares. Similar to the effect of OHRs, the result has been to create competing systems to market maker- driven trading exchanges. The increased competition for trading has had the effect of lowering spreads and volumes, thereby decreasing the profitability of market making— these profits were traditionally a key source of (potential) income for underwriters after underwriting an IPO. As of 2013, such ATS and dark pool trading represented about 36% of all US stock trading volume (Rosenblatt Securities, 2013).

The OHRs and ATS regulations reduced trading costs and provided a near- term win for many investors. The net effect, however, was to reduce the spread available to market makers— the mechanism by which they make money, resulting in less incentive to do so. The reduction in depth likely hurt larger investors with a demand for immediacy. When market makers do not make markets, there is less liquidity— by definition, a critical problem for a new issue. A key component of the IPO issuance process is the market making that underwriters provide in order to ensure sufficient liquidity of the newly issued stock. The mean quoted spread on NASDAQ traded stocks fell almost 70% from a mean of \$0.0390⁴ in 1999 to \$0.0128 in 2006 (Chung and Chuwonganant, 2014), evidence of the magnitude of the declining economics of market making. These small

spreads create little incentive for market makers, and reduce the opportunity for a market maker to place an aggressive order inside the spread to induce liquidity. A market maker's volume is driven by how aggressively it quotes stock prices (bids and asks), and this effect is greater in a more competitive market (Klock and McCormick, 2003). However, competition has fallen dramatically— Chung and Chuwonganant (2014) also report a 56% reduction in the number of dealers on NASDAQ, from 516 in 1999 to 221 in 2006, likely because there were fewer rents to be shared. The result is that there are fewer dealers competing to conduct IPOs. It should be noted, however, that trading volumes have not declined; high- frequency traders have replaced both market makers and specialists.

In Table 3.1 we provide mean post-IPO trading volume by year to complement our discussion of the effect of regulatory changes on market- making incentives. We examine both the early aftermarket (the first two days of trading), as well as a longer period post- IPO (from the 3rd to 90th trading day). We consider large- (based on pre- IPO revenues) and small- firm IPOs separately given changes in the mix of IPOs over time documented by Gao, Ritter, and Zhu (2013).⁵ As seen in Table 3.1, initial aftermarket trading has declined significantly for small firms over time, while trading over the first three months declined substantially after 2004 but has recovered in recent years. The trading data are consistent with our conjecture that regulatory changes have altered IPO economics for investment banks.

[INSERT TABLE 3.1 ABOUT HERE]

2.3. Plain English (1998; Adopted January 22, 1998; Effective October 1, 1998)

Under the leadership of (former) SEC Chairman Arthur Levitt, the Commission decided that investors would benefit from being able to more clearly understand what they were buying by having IPO filings (and other SEC documents) written in plain English rather than complex jargon and legalese. The SEC adopted Rule 421(d), requiring that the prospectus cover, back pages, summary, and risk factors be written in plain English, while Rule 421(b) required the entire prospectus to be written in this manner (SEC, 1998).⁶ While the implementation of the rule has substantively changed firm reporting behaviors (Loughran and McDonald, 2014), textual analyses of prospectuses before and after the change often do not account for the dramatic difference (e.g., Loughran and McDonald, 2013).

While the intention was to make documents accessible to the average investor, there have been some unintended consequences. As reported in Loughran and McDonald (2013), the typical prospectus in 1997 had 40,000 words, while the typical 2010 IPO document had about 80,000. They also find that firms “improve” their prose in anticipation of seasoned equity offerings. The latter practice brings into question whether marketing spin is used in financial filings to persuade naive investors. Using IPOs from 2009– 2012, PriceWaterhouseCoopers (2012) finds that prospectus printing costs represent perhaps 3%– 6% of typical IPO expenses, at \$0.2M for offerings below \$50M, to an average of \$0.5M for offerings above \$300M (ranging as high as \$9.8M). While small in magnitude, a 28% increase in page count equates to a commensurate increase in printing costs.

2.4. Glass- Steagall Repealed by Gramm- Leach- Bliley Act (1999)

Glass- Steagall refers to provisions of the Banking Act of 1933 that created a separation of commercial and investment banks. Over the years leading up to its overturn, federal regulators slowly chipped away at its provisions until it was officially overturned by the Gramm- Leach- Bliley Act (GLBA) of 1999 (enacted November 12).⁷ In the late 1997– 1999 period, some banking firms were offering both commercial and investment banking services, the latter through their “section 20” subsidiaries, often referred to as a “banc” rather than a “bank” so as to reduce investor confusion.

When a pre- IPO firm has an existing relation with a bank that then manages its IPO, there is a reduction in asymmetric information that results in significantly lower IPO underpricing (Schenone, 2004). This relation only became possible with the fall of Glass- Steagall. This should bode well for private firms with existing (e.g.) lending relationships with commercial banks that then decide to go public.

2.5. Regulation FD (2000)

In October 2000, the SEC ratified Regulation Fair Disclosure (“Reg FD”)⁸ to promote equal access to information by all investors, from large funds to the individual investor. The intent was a more transparent market in which all investors received access to information at the same time. A common practice among public firms is to use investor conference calls to discuss financial results. Firms commonly restricted access to these calls to sell- side research analysts, who would then interpret and analyze the information before disseminating it to investors. Before Reg FD, individual investors did not have equal access to information.

After Reg FD, conference calls were open to the public. An interesting outcome is that stock volatility and the amount of individual investor volume increased significantly during the actual call window (Bushee et al., 2004). This suggests that individual investors used the newfound access to information to speculate on outcomes.

The net effect of Reg FD surely lowered the value of sell- side stock research, however. Institutional investors (managing mutual funds, hedge funds, pension funds, etc.) invest on behalf of their investors. Institutions historically “paid” sell-side research analysts for their ideas and analyses, delivered by way of research reports and phone calls from institutional (sell- side) sales professionals who called with ideas from their analysts. Payment came in the form of informal reciprocity agreements whereby a fund manager would trade through the brokerage house that had delivered the idea (research), paying commission rates above the cost of execution, with this incremental revenue known as “soft dollar” payments. Commission dollars generated were payment for access to unique, timely, and valuable research ideas, as well as access to allocations of underpriced IPOs. Reg FD reduced the ability to deliver such information without widespread dissemination. The net effect was that institutions no longer paid as much for research, without which underwriters have little incentive to provide research. We posit that this led to a lower quantity and quality of research, given that many sell- side analysts left for the hedge fund world.⁹

A basic premise behind financial regulation is to encourage market efficiency by way of transparency. There is high information asymmetry about new issues, and the typical mechanism by which investors are informed about new issues is by way of sell- side research coverage. The initiation of sell- side coverage on uncovered publicly traded stocks results in a 4.86% abnormal return (Demiroglu and Ryngaert, 2010), and 4.1% for IPOs (versus 0.1% for those with no

coverage) following initiation of coverage (Bradley, Jordan, and Ritter, 2003)— evidence that research coverage is impactful. Further, Bradley et al. find that the abnormal return is correlated with the number of analysts that initiate coverage. To the extent that regulatory conditions lessen the quantity or quality of research, we posit that the efficiency of markets is reduced and investors may be harmed. In theory, this should reduce the attractiveness of pursuing an IPO, but we will leave this to future research.

To complement the discussion on the economics of analyst coverage, we present mean analyst following statistics in Table 3.2. We again consider large- (based on pre-IPO revenue) and small-firm IPOs separately. We consider the number of unique analysts following as of three months post- offering, as well as the number of analysts following, excluding book- runner(s) (several researchers have found that the number of book- runners on IPOs have grown over time, so the latter measure provides some insight on the desirability of acting as analysts not considering the economics of the IPO itself). As seen in Table 3.2, while the number of analysts following has grown, the number excluding book- runners has declined for small firm IPOs.

2.6. Rule 477 Revision, and Rule 155 and the Integration Doctrine (Effective March 7, 2001)

The integration doctrine, which had existed in federal securities law since 1933, provides a framework for determining whether multiple securities offerings should be treated as separate offerings or instead as a single transaction.¹⁰ The integration doctrine is meant to prevent an issuer from artificially dividing its securities transactions in a manner to evade different aspects of the securities regulatory system. For example, an issuer wishing to conduct an offering under Rule 506 that would include more than 35 nonaccredited investors (Rule 506 did not permit more than 35 non- accredited investors) may not artificially divide the offering into a series of smaller offerings (each with fewer than 35 such investors) in an attempt to avoid the limitation.

An issuer seeking to avoid integration may look to either the SEC’s five- factor test, or to safe-harbor provisions that are specific to particular types of transactions. A commonly used safe harbor is one contained in Regulation D (a private offering of securities solely to non- retail investors), which provides that transactions that are completed six months before the commencement of a Regulation D offer, or that are not commenced until six months after the completion of a Regulation D offer, will not be integrated with the Regulation D offer. This six- month safe harbor applies beyond Regulation D transactions, with the SEC’s five- factor test serving primarily in those instances when a six- month cooling- off period cannot be accommodated. The 2001 changes to Rule 155 reduced this six- month period to 30 days. For the IPO firm, this meant that failed offerings— as many as one- third of IPO offerings (Boeh and Southam, 2011)— could more quickly retrench and instead find private capital. The rule changes had impact. Boeh and Dunbar (2016) find that less than 1% of withdrawers stated the intent to seek private capital before the rule changes, while over 17% stated the intent afterward. However, they also find that the stated plans in the Form RW (Request for Withdrawal) have little relation to the actual outcomes.

[INSERT TABLE 3.2 ABOUT HERE]

Rule 477 specified that Form RW filers had to state the reason for withdrawal, and that the reason must be consistent with the public interest and the protection of investors. If deemed so, the SEC would grant its consent to withdraw. The Rule 477 Revision changed this such that the withdrawal would be deemed granted immediately upon filing of the Form RW, unless, within 15 calendar days, the SEC notifies the issuer otherwise. The result is that issuers could be less informative in a Form RW (i.e., stating no reason for withdrawal), and if not objected to, could withdraw. Many firms simply abandon their filings (do not file a Form RW), in which cases, the SEC deems the filings withdrawn after 270 days. Boeh and Dunbar (2016) show that 19% of firms abandoned their offerings before the rule change, while only 6% did so afterward. Interestingly, 7% stated no reason for withdrawal before the rule, while 15% did so afterward. This suggests that issuers took advantage of the 15- day rule, while the investing public is left less informed.

These rule changes intended to make it easier to withdraw an IPO filing and, when desired, seek private capital. A study of withdrawn offerings needs to consider this change. An interesting potential (unintended) consequence of these changes is that firms can more easily “test the waters” of the IPO markets. The ease of testing should allow poor- quality firms to test the waters on the off chance that the markets are willing to pay more than a firm was worth. In this sense, more bad firms should slip through the cracks (Type I errors) and become bad public firms, leading to investor losses.

2.7. Decimalization (Implemented April 2001)

The United States had historically used 1/ 8 dollar increments to trade securities. Many trading firms avoided odd- eights prices (such as 3/ 8 or 5/ 8) and thus the effective increment was often 2/ 8, or 25 cents (see Christie and Schultz, 1994). In 1997 the AMEX, NASDAQ, and NYSE all moved to 1/ 16 increments. In January 2000 the SEC ordered the exchanges to adopt decimalization (.01 increments) and to implement the reforms during the September 2000 through April 2001 time frame.¹¹

As discussed in the preceding sections concerning OHRs, ATS, and the reductions in incentives to make markets in stocks, the move to a \$.01 increment further reduced the profits available to a market maker by reducing both the quote and effective spreads (e.g., Bessembinder, 2003).¹² Existing research finds a decline in spreads for large- cap stocks from 7.01 cents to 1.62 cents, and for small- cap stocks from 12.70 to 7.98 cents per share. Market making for stocks, especially smaller (new IPOs) became less attractive and reduced the incentives of banks to conduct IPOs (see Table 3.1 for complementary statistics).

2.8. SRO Rules, Sarbanes- Oxley Act, Global Settlement (2002– 2003)

During the 2002– 2003 period, there were four key regulatory milestones. The self-regulatory organizations (SROs) (the NASD and NYSE) proposed a first round of reforms in 2002.¹³ The US Congress enacted the Sarbanes- Oxley (SOX)¹⁴ legislation in 2002. The Global Analyst Research Settlement (“Global Settlement”)¹⁵ that occurred in 2003 was quickly followed by a second round of amendments by the SROs to comply with SOX and the Global Settlement.

In February 2002, the SROs proposed a set of reforms that would separate banking from research. This included restrictions on research analysts soliciting underwriting business, compensation linked to underwriting, and personal trading, while also requiring quiet periods, disclosure of conflicts, and disclosure of the distribution of buy/ hold/ sell ratings. The SEC

approved these proposals on May 10, 2002, and they went into effect on July 9, September 9, and November 6, 2002.

On July 30, 2002, the US Congress enacted the SOX Act, requiring the adoption (by July 30, 2003) of rules to address conflicts of interest involved in securities analyst recommendations. Many provisions had already been approved by the SEC in the May 2002 round. Several provisions directly affected IPO issuers, including extending from 25 to 40 calendar days the “quiet period” during which insiders and outsiders (research analysts of managing underwriters) could make or publish statements about the newly issued IPO. Dealers (but not managing underwriters) were required to wait 25 days, while all were required to remain quiet within 15 days of a lock- up expiration (or waiver). IPO issuers were affected by the SOX Section 402 ban on loans to directors and officers at the time of filing an initial S- 1 to kick off the IPO process. SOX Section 404 has perhaps received the most attention. It requires the firm to have an external attestation of internal controls. As well, SOX Section 906 required officer certification of filed financial statements after becoming a public company, with heavy personal penalties for failure. SOX Section 301 imposed restrictions on audit committees, including that all members had to be independent, atypical of closely held private firms, where boards are often largely made up of investors (VCs) and founders.

On April 28, 2003, an agreement between 10 of the largest US investment banking firms, the SEC, NASD, and NYSE, called the “Global Settlement,” was finalized. Fines and other payments totaling US\$1.435 billion were handed out. Specific to IPO issuers, the 10 firms voluntarily agreed to restrict allocations of “hot” IPOs to executives and officers (a practice known as spinning; see Liu and Ritter, 2010).

On July 29, 2003, a second set of amendments was approved by the SEC that further pushed to increase analyst objectivity and reduce conflicts of interest. This second round of amendments was also used to enact the changes mandated by SOX. Major provisions to help the former goal included analyst compensation, the prohibition of analyst involvement in soliciting investment banking business and of making statements/appearances around lock- up expirations, among other provisions. While the first round of SEC amendments that preceded SOX already included much of the SOX regulation, the second round extended the quiet period rules to include all firms involved (underwriters and dealers), required investment banking fee disclosures, and modified the definition of a research report to include communications beyond just those containing a recommendation, among other provisions. The second- round provisions mostly went into effect on September 29, 2003, while others became effective October 17, 2003, or January 26, 2004.

SOX was intended to reduce fraud. While we focus here on its burdens and costs, it should be noted that firms and investors may be willing to endure these costs commensurate with the reduction in the costs from any fraud avoided. While SOX (and the associated 2002– 2003 amendments) made widespread changes, two specific effects are likely to have been most important to the IPO markets. First, the regulatory and explicit costs to an issuer of becoming and staying public grew with the added burdens. Second, the sweeping changes to the conduct of investment banking and analyst activities made it more difficult and less attractive to conduct IPOs. We discuss these in turn in the following.

Iliev (2010) estimates the cost of SOX compliance and finds that SOX reduced the market value of small firms commensurate with the costs of compliance. Iliev also found that certain firms became more conservative in their reporting in the face of SOX 404 requirements. The result of these costs, especially to smaller firms less able to absorb the compliance costs, is shown in research by Piotroski and Srinivasan (2008). Using a sample of 1995–2006 IPOs, while they find no change for large firms, they find that small firms were less likely to list in the United States,

and instead many chose to list on the London Stock Exchange's Alternative Investment Market (AIM).

Another SOX rule limits loans to directors and officers. It had been common for insiders to be extended credit by underwriters (their brokers) to enable the cashless exercise of options in the firm and also to be extended credit to pay taxes due upon the exercise of in-the-money options on stock locked up and unavailable for sale until a lock-up (typically 180 days post-IPO). As expected, many executive officers and directors are also owners in such firms, and often have substantial equity stakes. SOX made the IPO route less attractive, while instead the M&A route (perhaps with immediate liquidity in the form of an acquirer's stock or cash) more attractive. Gao, Ritter, and Zhu (2013) provide evidence that VC exits began tilting toward M&A exits in the early 1990s.

SOX also affected the way banks chose to cover (or not cover) stocks, and the attractiveness of conducting IPOs and of conducting sell-side research. After the Global Settlement, analysts moved to a three-tier ratings system (instead of five), and the overall informativeness of recommendations declined (Kadan et al., 2009). Following SOX, there has been a severe reduction in the amount of information Wall Street has produced for consumption by investors. A 2005 *Wall Street Journal* article (Craig, 2005) laid out the facts nicely: there were 8,726 publicly traded firms in the United States in 2005. Since 2002, 691 of those had lost analyst coverage, of which 99% had market values less than \$1 billion. Part of the Global Settlement required that the 10 firms spend \$432.5 million to fund independent research for clients over the 2003–2008 period, ostensibly to serve as a second opinion to their own sell-side research.

According to Lee and Metaxas (2004), in the year that followed the Global Settlement, research coverage fell by 20% on 1,100 small cap stocks, Morgan Stanley cut US stock coverage by 26%, and Merrill Lynch cut back 30%. They attribute the fall to a doubling of compliance costs (research needs its own compliance group in the wake of the Settlement) and because investment banking fees had formerly funded 35%–40% of research (now disallowed). As the Global Settlement was being hammered out and in the months that followed, Smith Barney lost 16 of its 60 analysts and (at least temporarily) discontinued coverage of 250 stocks (Thomas, 2003). The economics of research relied on trading commissions and monies shifted from investment banking fees for services provided to firms they covered. As a result of reduced investment banking revenue, the inability to tie research compensation to investment banking fees, and dwindling trading revenue, covering smaller, less liquid stocks became economically unfeasible.

2.9. Regulation AC (2003)

Regulation Analyst Certification (“Regulation AC”) took effect on April 14, 2003.¹⁶ AC requires that analysts of brokerage houses certify that the views expressed in their research reports accurately reflect their own personal views. It also requires that an analyst disclose whether she or he had received compensation in connection with the recommendations or views. The brokerage houses are required to obtain periodic certifications by those same analysts in connection with public appearances (where there is no written report).

Regulation AC is a “gotcha” type regulation, similar to the certifications required of executive officers in connection with filing their financial statements. If it turns out that the views expressed in a written report were not those of the analyst, the analyst is on record as having certified the opposite, ensuring a strong legal case for misrepresentation. Informal discussions with several research analysts led us to conclude that these changes made it less attractive to be a sell-side

research analyst, consistent with the exodus of such analysts to the buy- side. The net effect is a reduction in sell- side research and thus a less informed investor base. Further, initiation of research coverage on newly listed firms has been a critical (typical) step in the IPO process, without which capability an investment bank is very unlikely to win an IPO underwriting mandate.

2.10. Prohibition of Research Analysts from Road Shows (and Pitches) (Effective 2005)

Based on proposals from the SROs (NASD and NYSE), the SEC approved proposed changes to the interactions allowed between investment banking and analyst personnel.¹⁷ Effective April 2005, analysts were not allowed on pitches to discuss investment banking services with potential clients. As well, analysts were not allowed on road shows (e.g., to issue securities). Essentially, most three- way interactions (bankers, analysts, and firms) were disallowed. Before this rule change, research analysts regularly participated in pitches for investment bank services, although they were not regular participants in road shows. Analysts are allowed to talk to (perspective) banking clients, although not with an investment banker also present.

2.11. SEC Eliminates Quiet Period (for Issuers) (2005)

On June 29, 2005, the SEC modified the quiet period rules (aka “waiting period”) that restricted the communications an issuing firm could make from the time it files an IPO registration statement with the SEC until the statement is effective.¹⁸ The modification allows issuing firms to distribute materials (in addition to a prospectus). The firm’s representatives may speak publicly as long as they file a copy of the remarks with the SEC. Roadshow presentations need not be filed with the SEC so long as they are made readily available to an unrestricted audience. The changes went into effect December 1, 2005. In practice, research recommendations from managing underwriters are delayed until 25 days after an IPO, even though the wait is no longer mandated.

2.12. Regulation NMS (2005)

The SEC adopted Regulation National Market System (“NMS”)¹⁹ effective August 29, 2005, that intended to foster competition in markets and orders (bids and asks), with the goal of reducing the cost of trading. The rules required price priority (to the best price) across markets by having those quotations be automatically accessible. It required access to data across markets. It also established the \$0.01 minimum price increment for securities above \$1.00. This so- called Sub-Penny Rule prohibits traders from accepting, displaying, or ranking orders based on increments smaller than a penny. This reduced the ability to increase the chances of order execution by having an order appear first (e.g., by bidding \$0.00000001 higher than other orders). Consistent with the other changes that affected market makers, this change makes it even less attractive to make a market in a client’s newly issued securities.

2.13. Regulation FD and Websites (Effective August 7, 2008)

Although SEC rules concerning the use of websites were already in place, in 2008 it provided updated guidance.²⁰ The underlying goal was to help firms clearly disseminate material

information to the public. In short, the SEC guidance suggests that information on a website is “public” for purposes of Reg FD, that a company is liable for what is on its website, and that a disclaimer is insufficient to protect itself from antifraud liability for hyperlinked information. While the guidance is timely given the proliferation of information dissemination via the Internet, there is likely some overreach. Firms must consider whether hyperlinks implicitly suggest some sort of endorsement and must also consider information posted in blogs and whether it complies with securities regulations. The release encourages blogs and other interactive communications with investors, but also warns firms that such communications are subject to antifraud provisions of federal security laws. These changes could present a major concern for firms considering the IPO process given the proliferation of online information sources (on websites) including blogs that contain unmoderated information and content from customers, or anyone else.

2.14. Changes to Rule 144 (Effective February 15, 2008)

For background, the 1933 Act Rule 144 concerns the distribution and resale of unregistered and control securities.²¹ Rule 144 (Sec 4(1)) exempts securities transactions other than by an issuer or an underwriter from 1933 Act registration. Rule 144 regulates restricted securities (securities acquired in a private placement from the issuer or an affiliate) and control securities (securities held by an affiliate of the issuer). Such restricted securities are common in pre- IPO firms and are often received in private placements, Regulation D offerings, and are given to pre- IPO investors and other firms that support pre- IPO firms. These restricted securities cannot be sold in the marketplace unless they are registered with the SEC (e.g., through an IPO process) or are exempt from registration requirements.

In changes that became effective February 15, 2008, the SEC changed Rules 144 and 145 (restricted securities acquired via mergers, combinations, etc.). The Rule 144 changes involved halving the holding period restrictions for resale of restricted securities for both reporting and non-reporting companies (waiting periods for non-reporting firms are longer). Rather than encouraging IPOs for the benefits of liquidity, the changes allow investors to more easily sell their shares outside an IPO process. The Rule 145 changes allowed immediate resale of securities acquired in a business combination, making the merger of a private firm attractive when compared to an IPO.

The 2008 changes made both being a private firm and the process of a backdoor (Form 10) IPO more attractive. One path to becoming a reporting company is by way of a Form 10 SEC registration statement, which is defined under the 1934 Exchange Act, not the 1933 Securities Act. It is used by private firms as a backdoor mechanism to go public, but also is required of firms with over \$10 million in total assets and 750 or more shareholders. The filing of a Form 10 subjects the firm to public company reporting requirements (e.g., annual 10- K, quarterly 10- Q, and periodic 8- K filings). Filing of a Form 10 is used to register a class of securities with the SEC, and once filed, the firm becomes an SEC reporting company, with all its ongoing burdens and disclosure requirements. The Rule 144 and 145 changes brought new liquidity options outside the traditional IPO process, adding another explanation for the decline in traditional IPOs.

2.15. Dodd- Frank Wall Street Reform and Consumer Protection Act (July 15, 2010)

While Dodd-Frank²² brought sweeping changes to the regulation of financial markets in the United States, the reforms were aimed at the overall financial system. We highlight a handful of the provisions of interest to IPO issuers, mostly those intended to bring better governance to public firms.

Dodd-Frank required compensation committee independence for all public company boards. Rules concerning broker discretionary voting require that brokers receive explicit instructions from shareholders in order to vote. Post- IPO firms may find it difficult to re- elect their board members. Dodd- Frank allows shareholders with >3% stake to nominate board members. A firm wishing to continue board momentum (e.g., on ongoing, long- term projects) must take steps to ensure continuity of the existing board members. Dodd- Frank claw- back provisions require that post- IPO firms adopt specific claw- back policies. A claw- back is required whenever a public firm needs to prepare an accounting restatement resulting from noncompliance with financial reporting requirements. The company must claw- back incentive- based compensation paid to executives (that would not have been paid) over the three years preceding the affected year. IPO issuers are often young, growth- oriented firms that use such incentives widely, making this a daunting provision.

“Say- on- pay” provisions required that firms allow shareholders to hold nonbinding votes approving (or not) executive compensation. While the vote is nonbinding, it will likely result in greater investor involvement in compensation matters. The related “sayon-golden parachutes” provision required firms to allow investors to cast nonbinding votes on compensation arrangements related to mergers and acquisitions, unless those arrangements had already been voted upon in a say- on- pay vote. Further, Dodd- Frank required the SEC to enact rules requiring firms to justify why it has a single person in the chair and chief executive officer (CEO) roles, or why it has separated these roles. SEC rules already required a broader discussion of the appropriateness of leadership structure. Finally, an interesting provision of Dodd- Frank is the compensation disclosures. A firm must report the total compensation paid to its named officers and the relation to the financial performance of the firm. Firms must report the relation of executive compensation as a multiple of the median compensation of all (except the CEO) employees. A final important provision, Section 989G, was an exemption for non- accelerated filers (less than \$75 million in market cap) from SOX 404(b), the requirement of an audit of internal control over financial reporting.

The preceding provisions were part of the 2010 Act, but were phased in (or implemented) over time by the SEC. For example, the compensation committee independence requirements were proposed by the exchanges in September 2012, and approved by the SEC in 2013.²³ In its final implementation, newly public firms were required to have at least one independent compensation committee member at IPO, a majority within three months, and a fully independent committee at the one year anniversary.

2.16. SOX 404(c) Exemption from 404(b) for Non- Accelerated Filers (2010)

In September 2010, the SEC conformed its rules to Dodd- Frank’s amendment of Section 404(c) to SOX.²⁴ Non- accelerated filers with under \$75 million in market capitalization became exempt from having to obtain a registered independent auditor’s attestation regarding internal controls over financial reporting. An “accelerated filer” is a firm with a market value from \$75– 700 million, while a “large accelerated filer” is a firm with a market value of \$700 million or greater.

2.17. SEC Widens Permissible Price Range (March 2012)

Previously, the price range at which IPO (and other) securities was a matter of SEC staff interpretation and not a specific statute. Section 5(b)(1) of the 1933 Act states that an issuer can only distribute a prospectus that meets the requirement of Section 10 of the 1933, specifically, that the preliminary prospectus be substantially complete and must contain a bona fide estimate of the range of the maximum offering price. A substantially complete prospectus with a price range (but before becoming effective) is called a “red herring” (without a price range, it is sometimes called a “pink herring”) because certain information must be printed on the cover, such as the statement “subject to completion.” Given the extreme information asymmetry and uncertainty about the market price of an IPO, the range is an important guide used by investors.

Before March 2012, the SEC staff had taken the view that a price range should be no more than \$2 or 10% of the high end of the price range. In comments²⁵ made by the director of Corporation Finance of the SEC in March 2012, the SEC expressed an amended view that the range should be no more than \$2 if the price is \$10 or less, or 20% if the maximum price is greater than \$10. The 20% figure is based on the high end of the range. The Facebook IPO was an example of this greater latitude, with a range of \$28–\$35 ($\$35 - 28 = \$7 = \$35 \times .2$). If the offering is a Dutch auction offering, the staff had already permitted a range of \$4 or 20%, again based on high end of price range. An example of the latter was the Google’s Dutch auction IPO with a price range of \$108–\$135 ($\$135 - 108 = \$27 = \$135 \times .2$).

A consequence is that investors now have less guidance about what issuers consider to be a bona fide range of values for their shares. This change induces uncertainty into the process of finding a market clearing price. On one hand, the pricing latitude may allow issuers to adapt their offering price to meet market demand at the last moment, while on the other hand an issuer can now signal less information. We suspect the result of the latter will be greater volatility in IPO pricing and early aftermarket returns.

To complement this discussion, we present mean IPO pricing statistics in Table 3.3. We examine all IPOs after April 2012 and separate issuers into two groups: those for which pricing range conforms to the old rules and those for which the pricing range is wider, consistent with the new rules. We again consider large firm (based on pre-IPO revenues) and small firm IPOs separately. We also consider IPOs with a high filing price between \$10 and \$20, as these are the issues most affected by the rule change. IPO pricing variables include IPO Initial Return, defined as 100 times the difference between the closing price on the first day of trading and the IPO price, divided by the IPO price; Absolute Price Adjustment, defined as the absolute value of 100 times the difference between the offering price and the midpoint of initial filing range divided by the midpoint of initial filing range; and Priced outside the initial filing range, defined as a dummy variable equal to one if the offering price is greater (less) than the high (low) initial filing price, and zero otherwise. Our expectation is that fewer IPOs with wider filing ranges should price outside the filing range and have lower absolute price adjustments, as less is learned through the book- building process. Initial returns should also be more positive, reflecting the greater resulting uncertainty regarding firm valuation. As seen in Table 3.3, the data are largely consistent with these predictions. Of interest are firms taking advantage of the wider pricing range rule. Smaller firms that do so exhibit more underpricing (initial returns) (25.5% compared to 13.1%), while large firms exhibit less underpricing (14.1% compared to 19.8%). Further, firms filing between \$10 and \$20 also have

more underpricing (initial returns of 26% compared to 17.5%). While these exploratory statistics are consistent with our expectations, further exploration is warranted.

[INSERT TABLE 3.3 ABOUT HERE]

2.18. Jumpstart Our Business Startups Act (April 5, 2012) (Effective 2013–2016)

In response to the ongoing US recession, the US Congress saw the need to lessen the regulatory burdens on small businesses in accessing capital. Much of what was signed into law were directives to the SEC to study or enact rules to address regulatory burdens. Here we discuss key provisions of the Jumpstart Our Business Startups (JOBS) Act (it has several sections, Titles I–VII) that went into effect from 2013–2016.²⁶

Title I intended to reopen US capital markets to emerging growth companies (EGCs). It defines EGCs as firms with total annual gross revenue <\$1 billion during the most recent year. Firms already public or on file as of December 9, 2011, can be EGCs in arrears. Benefits to EGCs include new (reduced) auditing standards, a confidential S- 1 filing process, and two rather than three years of audited financials. During an offering, an EGC may communicate with qualified institutional buyers (QIB²⁷) to gauge interest before or after filing a registration statement, meaning that bankers may also discuss an offering with investors, without a registration statement. EGCs do not require 404(b) attestation, need not comply with new/revised accounting standards, need not comply with compensation disclosure requirements, and are exempt from “say- on- pay” voting for one to three years after no longer being an EGC. For bankers, NASD quiet period restrictions (40-, 25-, and 15-day) are removed altogether, while banker- analyst interactions are permitted. Finally, the SEC is mandated to study the effects of Regulation S- K and of the impact of decimalization (on trading spreads, etc.).

Title II of the JOBS Act focused on access to capital for job creators. It changed Rule 506 of Regulation D. It eliminated the ban on general solicitation and general advertising of Rule 506 Reg D offerings (provided they are sold to QIBs) and Rule 144A offerings if the seller reasonably believes the buyer is a QIB. Rule 506 is the most common form for conducting private offerings. Rule 144A offerings are unlikely affected, while offerings by funds are likely affected.

Title III of the JOBS intends to allow for crowdfunding as an alternative to the IPO. It defined “funding portals” through which issuers and investors are connected. Such issuers may not have issued over \$1 million in the prior 12 months. An investor may not hold over \$2,000 or 5% of their annual income or net worth in an issue, and an investor with over \$100,000 in net worth or income may hold a maximum of 10% of their net worth or income, but not to exceed \$100,000. Funding portals must file annual reports of operations.

Title IV of the JOBS Act encourages small- company capital formation by creating a new exemption similar to Reg A Section by way of the Section 3(B)(2) Exempt Public Offering. Two tiers of issuers exist. A Tier 1 Reg A offerings is up to \$20 million in capital raised in a 12- month period, while a Tier 2 Reg A offering is for securities of up to \$50 million in capital raised in a 12- month period. An issuer may sell such securities in 12 months without Securities Act registration (n.b., previously, the Reg A limit was \$5 million and required a Form 1- A filed with the SEC).

Such an issuance is exempt from state blue sky laws.²⁸ The new exemption maintains the regulatory limit on the number of investors. However, the new rule requires more disclosure by issuers. Reg A required only a filing disclosing the use of proceeds, while the new regulations required ongoing annual financial filings for Tier 2 issuers. While the greater disclosure is good for the investing public, the ongoing reporting requirement is precisely what (some) previous Reg A filers had been trying to avoid.

Title V changes the threshold number of shareholders of equity for a private firm that triggers ongoing SEC registration and reporting under Section 12(g) of the (1933) Exchange Act. A firm must have at least \$10 million in assets and at least 2,000 shareholders (up from 500) to become subject to registration and reporting requirements. The changes exempt employees (stock obtained via employee compensation plans) and does not apply to pass-through securities (i.e., securities held by a broker in street name count as a single holder, not a count of all the actual owners who have their shares at the brokerage). Previously, when a private firm expanded its employee (equity) compensation, or brought in new investors, it feared broaching the threshold. The change to 2,000 shareholders reduces the need to publicly file financial statements (formerly required for some firms) and so fewer small companies go public, consistent with the arguments in Ritter (2012).

Approximately 90% of all IPOs in 2007– 2011 would have been EGCs (Westenberg, 2013). Consequently, EGCs have disclosure relief, resulting in less disclosure to the investing public following passage of the JOBS Act. Further, Westenberg reports that 90% of EGCs chose to omit CD&A (Compensation Discussion and Analysis, which is not required of EGCs), 80% chose to file the S- 1 confidentially, 33% chose to include two years of audits rather than three, and 20% chose to defer application of new accounting standards. The net result is that IPOs are sold to a far less- informed investing public thereafter. An ongoing question remains concerning whether the public demand for IPOs will fall in the wake of these changes, although it seems rational that investors will at the very least demand greater discounts on IPOs (i.e., greater underpricing to compensate for the lack of disclosure), raising the cost of going public for issuers (see Dambra, Field, and Gustafson, 2015, and Chaplinsky, Hanley, and Moon, 2017, for early evidence on the JOBS Act).

2.19. End of Quiet Period and Analyst Restrictions for EGCs (2012)

The 2012 JOBS Act required that the SEC eliminate quiet periods for EGCs.²⁹ The SEC thereafter approved changes to NASD Rule 2711 and amended NYSE Rule 472 to come into compliance with the JOBS provisions. Most of the changes became effective on October 11, 2012. Effective October 12, 2012, (only for EGCs), analysts may attend meetings with investment bankers and clients, except to solicit investment banking business. The quiet periods that imposed the 40- day (managing underwriters) and 25-day (co-managers) waiting periods after an IPO are waived for EGCs, as is the prohibition on the quiet period surrounding the expiration (or termination) of a share lock- up, typically at 180 days. Using the Westenberg (2013) numbers, the elimination of a quiet period should affect about 90% of IPOs.

2.20. FINRA Increases Filings Fees (2012)

Effective July 2, 2012, the Financial Industry Regulatory Authority (FINRA) increased the filing fee by 50%, from .01% (plus \$500) to .015% (plus \$500) of the offering.³⁰ A new maximum fee

is set at \$225,500, almost three times the previous fee of \$75,500, put in place in 2004. The fee percentage had not changed since 1970, although the maximum has changed. Through 2004 it was \$30,500, and from 2005– 2012, \$75,500, all well above inflation. While these costs are not significant, they have increased by 50%, despite that a fixed percentage nullifies any effect of inflation. This is evidence that the regulatory burden required to review documents has increased, commensurate with the regulatory burden of the filers.

2.21. Approval for Compensation Committees (January 2013)

As a follow- on to Dodd- Frank, the SEC directed the NYSE and NASDAQ to develop listing requirements that required listed firms to have an independent (board) compensation committee (at least one independent member, a majority within 90 days, and all independent within one year).³¹

The requirements phase in over the 2014 timeframe based on the timing of their annual meeting. While the intention is to ensure “fair” and independent executive compensation, this surely reduces the attractiveness for founder- CEOs and CEOs to go, or be, public.

2.22. Form 10 IPOs (2013)

A Form 10 IPO is a direct listing of a firm’s securities using the Exchange Act (1934) only. The offering is typically completed alongside a private placement (similar to a reverse merger with a PIPE, a private investment in public equity, and often a Reg D private offering). The process is common among risky biotechnology firms that attract capital from sophisticated biotechnology private equity firms. Despite that these firms would qualify as EGCs and would benefit from confidential filing, the JOBS Act specifically excludes Form 10 IPOs. While Form 10 IPOs are not changed by JOBS, potential IPO filers from the biotechnology industries may be relatively disadvantaged.

2.23. Reg FD Update for Social Media: The Netflix Case (2013)

On April 2, 2013, the SEC released comments in response to Netflix CEO Reed Hastings’s use of Facebook to post comments about his public firm.³² The Commission suggests that it does not wish to inhibit such communications, but rather to remind firms that all such communications should be analyzed for compliance with Reg FD. In short, issuers must take steps to alert investors and the market of the media channels it uses to disseminate information. While this refers to an already public firm, we include this to suggest that an IPO filer must be careful to consider all of its publicly available media, regardless of channel. Whether this is good or bad for a (potential) filer remains unclear.

3. CONCLUSION AND RESEARCH AGENDA

While this chapter is not intended to offer legal advice— nor do we suggest this to be a “complete” list of all regulations an IPO filer will face during the IPO process or once public— there is an abundance of evidence to support the view that the costs of going public and being public have

increased, resulting in a higher minimum size threshold at which it is optimal to go public, and decreasing the attractiveness of doing so rather than selling out. The costs and burdens both of going and being public have greatly increased over the last two decades. While many examples exist, the Facebook IPO prospectus (SEC, 2012) provides a chilling statement: “The requirements of being a public company may strain our resources and divert management’s attention,” specifically citing the costs imposed by SOX and Dodd- Frank, and that the result of the required disclosures may be more threatened and actual litigation by competitors and others.

In this review chapter, we have attempted to chronicle what we believe to be the most important regulatory changes on the market for IPOs, discussing along the way the impact we believe the changes could have had. In some cases, there has been research to support or refute our claims, and we have tried to summarize the research that does exist. We believe that a deeper understanding of the regulatory environment has several benefits. First, since there is a paucity of research on the effects of some regulatory changes, we hope that this chapter can be a call to action and that future research will attempt to fill the void. We also believe that a basic understanding of key regulatory dates can help researchers to better specify empirical models. Rather than using naive calendar controls, we believe models would be better if time period control variables are constructed to take into consideration the key dates noted herein.

Finally, we believe that this chapter, cataloguing key IPO regulations, can be of use to research that examines issues beyond those of direct relevance in the market for IPOs. As noted previously, most corporate finance research struggles with issues of endogeneity and self- selection. In trying to determine the relative importance of alternative theories for corporate policy choice, researchers ideally look for “natural experiments” where there is some change to the environment that is beyond control of firm managers and yet is likely (based on alternative theories) to impact corporate decisions. The various regulatory changes here may in fact provide the ideal laboratory to test various corporate finance theories.

NOTES

1. See www.sec.gov/about/laws/sa33.pdf and www.sec.gov/about/laws/sea34.pdf.
2. SEC Release 34- 38156.
3. SEC Release 34- 40760.
4. Mean spreads are calculated as $(\text{Ask} - \text{Bid}) / M$, where M is the midpoint of Ask and Bid. Realized spreads over the same period fell by over 80%, from \$0.0205 to \$0.0036.
5. We define large IPOs as coming from firms with at least \$50 million in 2010 dollar revenues in the 12 months prior to the IPO. Actual revenues are multiplied by a consumer price index (CPI) adjustment factor for the month of the IPO, so that pipeline measures are shown in billions of constant 2010 dollars; CPI data are from the Federal Reserve Bank of St. Louis website: <http://research.stlouisfed.org/fred2/series/CPALTT01USM661S>.
6. SEC Release 33- 7497 and SEC Release 34- 39593.
7. Public Law 106– 102, 113 STAT. 1338.
8. SEC Releases 33- 7881 and 34- 43154.
9. There is an extensive literature examining the impact of Regulation FD on analysts. See, for example, Irani (2003); Mohanram and Sunder (2006); and Duarte, Han, Harford, and Young (2008).
10. SEC Release 33- 7943.

11. SEC Release 34- 42360.
12. See also US Securities and Exchange Commission 2012 Report to Congress on Decimalization.
13. See SEC Releases 45908 and 48252 and references therein.
14. Public Law 107–204, 116 STAT. 745.
15. See [http:// www.sec.gov/ spotlight/ globalsettlement.htm](http://www.sec.gov/spotlight/globalsettlement.htm).
16. SEC Release No. 33- 8193 and 34- 47384.
17. SEC Release No. 34- 51593.
18. SEC Release No. 33- 8591.
19. SEC Release No. 34- 51808.
20. SEC Release No. 34- 58288.
21. SEC Release No. 33- 8869.
22. Public Law 111- 203, 124 STAT. 1376. Signed into law July 21, 2010.
23. SEC Release 34- 68639.
24. SEC Release 33- 9142.
25. M. Cross, comments to the ABA Business Law Section 2012 Spring Meeting, Las Vegas, NV (March 23, 2012).
26. US Congress, H.R. 3606.
27. A qualified institutional buyer (QIB), an accredited investor, as defined by Rule 501 of the SEC’s Regulation D, is an institution that owns and invests at least \$100 million. Brokerdealers and savings and loans have different minima.
28. Blue Sky laws refer to state laws governing the sale of securities to the public.
29. SEC Release 34- 68037.
30. SEC Release 34- 67241.
31. SEC Release Nos. 33- 9330; 34- 67220.
32. SEC Release 34- 69279.

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Table 3.1 IPO Trading Volume (1998–2014)

Year	# of IPOs	Avg Daily Trading Vol, First 2 Days as % of Float	Avg Daily Trading Vol, Days 3–90 as % of Float	# of Small-Firm IPOs	Avg Daily Trading Vol, First 2 Days as % of Float for Small Firms	Avg Daily Trading Vol, Days 3–90 as % of Float for Small Firms	# of Large-Firm IPOs	Avg Daily Trading Vol, First 2 Days as % of Float for Large Firms	Avg Daily Trading Vol, Days 3–90 as % of Float for Large Firms
1998	270	28.0	2.0	191	29.0	2.3	79	25.7	1.3
1999	455	50.4	3.6	379	53.2	3.9	76	36.4	2.0
2000	353	40.3	2.3	283	41.4	2.3	70	36.1	2.2
2001	76	36.0	2.0	27	30.3	2.1	49	39.1	1.9
2002	64	30.9	1.6	18	22.8	1.0	46	34.1	1.8
2003	63	30.2	1.7	21	27.8	2.2	42	31.3	1.4
2004	171	26.9	2.0	77	23.4	2.2	94	29.8	1.8
2005	156	35.3	2.0	52	27.1	2.0	104	39.4	2.1
2006	158	36.6	2.4	67	32.8	2.5	91	39.3	2.2
2007	155	36.0	2.1	65	31.4	1.6	90	39.3	2.5
2008	20	34.3	1.9	4	27.9	1.3	16	35.9	2.1
2009	39	42.1	2.3	5	45.4	3.4	34	41.6	2.1
2010	92	33.0	2.0	26	23.7	1.6	66	36.7	2.1
2011	80	42.3	2.7	27	27.5	1.8	53	49.8	3.1
2012	92	45.9	2.7	17	13.9	1.2	75	53.2	3.0
2013	149	43.2	2.7	45	31.0	2.5	104	48.5	2.8
2014	155	47.6	3.5	70	35.8	2.6	85	57.3	4.3
1998–2003	1281	40.1	2.6	919	42.7	2.9	362	33.5	1.8
2004–2008	660	33.6	2.1	265	28.5	2.1	395	36.9	2.1
2009–2014	607	43.0	2.8	190	30.1	2.9	417	48.9	1.8

Notes: This table reports means of trading volume variables for IPOs. The full sample includes all US firm-commitment IPOs from the Thomson Financial Securities Data new issues database that list on major exchanges (NASDAQ, AMEX, and NYSE), and excludes issues by banks, unit offerings (combinations of equity and warrants) and other non-equity securities, real estate investment trusts (REITs), American depositary receipts, American depositary shares, global depositary receipts, or global depositary shares, limited partnerships, and offerings with issue price below \$5. Subsamples are defined based on firm size. Small (large) IPOs are defined as those coming from firms with pre-IPO revenues (in constant 2010 dollars) of less than (greater than or equal to) \$50 million. Average daily trading volume first two days as a % of float is the sum of the trading volume on the first two days of public trading divided by two times the number of shares offered in the IPO. Average daily trading volume days 3–90 as a % of float is the mean trading volume on trading days 3–90 (or until trading ceases, whichever comes first) divided by the number of shares offered in the IPO.

Table 3.2 Analyst Following IPOs from 2002 to 2014

Year	# of IPOs	# of Analyst Estimates within 3 Months of IPO	# of Analyst Estimates within 3 Months, Excluding Book-Runner(s)	# of Small-Firm IPOs	# Analyst Estimates within 3 Months, Small-Firm IPOs	# of Analyst Estimates within 3 Months, Small-Firm IPOs Excluding Book-Runner(s)	# of Small-Firm IPOs	# of Analyst Estimates within 3 Months, Small-Firm IPOs	# of Analyst Estimates within 3 Months, Small-Firm IPOs Excluding Book-Runner(s)
2002	64	3.47	2.42	18	2.83	1.89	46	4.95	3.73
2003	63	3.30	2.03	21	2.67	1.69	42	3.90	2.66
2004	171	3.65	2.32	77	2.82	2.19	94	4.63	3.32
2005	156	3.51	1.96	52	2.95	2.23	104	4.09	2.81
2006	158	4.09	2.46	67	3.63	2.65	91	4.73	3.06
2007	155	4.46	2.68	65	4.05	2.72	90	5.02	3.25
2008	20	4.00	2.05	4	4.00	2.33	16	4.25	3.09
2009	39	6.10	3.26	5	5.80	3.40	34	6.15	3.55
2010	92	4.96	2.52	26	3.79	2.61	66	5.62	3.25
2011	80	6.00	3.15	27	4.54	2.61	53	6.96	4.00
2012	92	6.14	3.14	17	4.00	2.08	75	6.68	3.80
2013	149	5.83	2.50	45	3.54	1.76	104	6.95	3.52
2014	155	5.57	2.36	70	3.79	1.90	85	7.22	3.66
2002–2008	787	4.09	2.87	304	3.31	2.40	483	4.55	3.12
2009–2014	607	5.85	3.20	190	3.92	2.14	417	6.68	3.62

Notes: This table reports means of equity analysts initiating research coverage on IPOs. The full sample includes all U.S. firm commitment IPOs from the Thomson Financial Securities Data new issues database that list on major exchanges (NASDAQ, AMEX, and NYSE), and excludes issues by banks, unit offerings (combinations of equity and warrants) and other non-equity securities, real estate investment trusts (REITs), American depositary receipts, American depositary shares, global depositary receipts, or global depositary shares, limited partnerships, and offerings with issue price below \$5. Subsamples are defined based on firm size. Small (large) IPOs are defined as those coming from firms with pre-IPO revenues (in constant 2010 dollars) of less than (greater than or equal to) \$50 million. Number of analysts (from I/B/E/S) making estimates within three months of the IPO is the number of unique analysts as reported on I/B/E/S issuing reports on the IPO firm within three months of the offering. Number of analysts (from I/B/E/S) making estimates within three months of the IPO excluding book-runner(s) is the number of unique analysts as reported on I/B/E/S issuing reports on the IPO firm within three months of the offering, not counting analysts working for any of the book-runners on the IPO.

Table 3.3 IPO Initial Returns and Price Adjustments (April 2012–December 2014)

Sample	# of IPOs	Initial Return (%)	Absolute Price Adjustment (%)	Priced Outside the Initial Filing Range
All IPOs April 2012 to December 2014	360	17.1	16.1	0.58
IPOs with price range that conforms with pre-2012 rules	301	17.3	16.5	0.58
IPOs with price range larger than pre-2012 rules	59	16.2	14.0	0.58
All small IPOs April 2012 to December 2014	126	14.2	18.8	0.56
Small IPOs with price range that conforms with pre-2012 rules	115	13.1	18.8	0.56
Small IPOs with price range larger than pre-2012 rules	11	25.5	18.8	0.55
All large IPOs April 2012 to December 2014	234	18.7	14.6	0.59
Large IPOs with price range that conforms with pre-2012 rules	186	19.8	15.1	0.59
Large IPOs with price range larger than pre-2012 rules	48	14.1	12.9	0.58
All IPOs with high filing price between \$10 and \$20	282	18.0	17.4	0.59
IPOs with high filing price between \$10 and \$20 that conform to pre-2012 rules	266	17.5	17.4	0.59
IPOs with high filing price between \$10 and \$20 with range larger than pre-2012 rules	16	26.0	17.3	0.56

Notes: This table reports means of IPO pricing variables (initial returns, absolute price adjustments, and priced outside the initial filing range). The full sample includes all US firm-commitment IPOs from the Thomson Financial Securities Data new issues database that list on major exchanges (NASDAQ, AMEX, and NYSE), and excludes issues by banks, unit offerings (combinations of equity and warrants) and other non-equity securities, real estate investment trusts (REITs), American depositary receipts, American depositary shares, global depositary receipts, or global depositary shares, limited partnerships, and offerings with issue price below \$5. Subsamples are defined based on whether the initial filing range (difference between high and low filing price) conforms with the rules in place prior to April 2012 (the maximum range is the maximum of \$2 or 10% of the high filing price) or is larger than the pre-2012 rules (as of April 2012, the maximum range became the greater of \$2 or 20% of the high filing price). Other subsamples are defined based on firm size. Small (large) IPOs are defined as those coming from firm with pre-IPO revenues (in constant 2010 dollars) of less than (greater than or equal to) \$50 million. Finally, subsamples are defined based on the high filing price. The IPO Initial Return is defined as 100 times the difference between the closing price on the first day of trading and the IPO price, divided by the IPO price. The Absolute Price Adjustment is the absolute value of 100 times the difference between the offering price and the midpoint of initial filing range, divided by the midpoint of initial filing range. Finally, the Priced outside the initial filing range is a dummy variable equal to one if the offering price is greater (less) than the high (low) initial filing price, and zero otherwise.