Does General Solicitation Improve Access to Capital for Small Businesses? Evidence from the JOBS Act

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Comments welcome

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Abstract

We examine whether Title II of the JOBS Act increases small firms' access to capital. Under Title II, firms can sell private placement securities to the public via general solicitation (GS) or privately (non-GS). We find that GS offerings tend to be of lower quality than non-GS offerings. After accounting for selection, GS offerings are less likely to succeed, raise less capital, and incur substantial brokerage costs for advertising and verifying that investors are accredited. Our results imply the need to craft policies that induce better ways of signaling firm quality or more transparent approaches to reducing information asymmetry.

JEL classification: G24, G28, G32, G38, K22, L26

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1. Introduction

Private capital markets have contributed significantly to capital formation in the U.S. economy, particularly for small businesses that are considered to be an engine for job creation and economic growth (see, e.g., Zhao, Harris, and Lam, 2019). Capital raised in private markets has outpaced that raised in public markets during recent years. In 2017, public markets raised $2.1 trillion in the U.S., while private markets raised over $2.4 trillion. Almost 70% of the latter amount was raised via private placements, i.e., sales of unregistered securities through private offerings, mostly to accredited investors.[1]

On April 5, 2012, the United States adopted the Jumpstart Our Business Startups (JOBS) Act, which allows startups to raise capital from a broader investor pool. Under Title II of the JOBS Act, which became effective September 23, 2013, small businesses can advertise and sell securities in private placements via general solicitation, such as advertising in newspapers or on the internet, as long as the sales are made only to accredited investors, verified using a reasonable process. Empirical evidence on Title II's effect on small business funding is quite limited. This paper aims to fill this gap by examining how Title II of the JOBS Act affects the financing of small businesses by allowing them to publicly advertise their securities offerings. To our knowledge, this is the first paper to empirically analyze the efficacy of Title II in raising capital. This topic is also of interest to market participants in these offerings (investors, entrepreneurs, brokers), regulators and policymakers.

Specifically, a firm that needs to raise capital can offer and sell securities without registering the offering with the Securities and Exchange Commission (SEC) under rule 506 of a Regulation D exemption. Under Title II, this exemption provides two alternate ways to structure

[1] The rest was raised via initial coin offerings, crowdfunding and debt sales to large investors. See Eaglesham, J. & Jones, C. "The fuel powering corporate America: $2.4 trillion in private fundraising." *Wall Street Journal*, April 2, 2018.

securities offerings: rule 506(c) and rule 506(b). Title II added the new rule 506(c) to the traditional rule 506, now called rule 506(b). Rule 506(c) allows issuers to contact investors through advertising and social media but requires issuers to ensure that the buyers are accredited investors, using an elaborate verification process. An offering under rule 506(b) cannot use general solicitation or advertising to market the securities, but investors can self-certify that they are accredited simply by checking a box on an issuer-provided questionnaire. Moreover, rule 506(b) allows issuers to sell to 35 or fewer unaccredited (but financially sophisticated)[2] investors, while rule 506(c) does not allow sales to any unaccredited investors.

While the market for private placements has grown in size and importance, its full extent and functioning and the role of financial intermediaries in this market have not been systematically investigated. Using a comprehensive set of private placements, this paper investigates the impact of the JOBS Act on firm financing. Our analysis yields three sets of results. First, we identify the characteristics of firms and offerings that choose general solicitation, hereafter, GS (i.e., 506(c)) offerings over non-GS (i.e., 506(b)) offerings. We find that firms that choose GS offerings are of lower quality in that they tend to have lower revenue and fewer existing investors. They are more likely to make offerings that remain open for over a year. While roughly three-fourths of private placements under both GS and non-GS are for equity securities, the proportion of offerings for equity (debt) securities is somewhat lower (higher) in GS offerings than non-GS offerings.

Second, we find that GS offerings are substantially more likely to employ a broker (23% vs. 13%) and pay larger brokerage fees than non-GS offerings. These findings suggest that GS increases payments to financial intermediaries, likely to cover the costs of verifying accredited investors and advertising. Third, GS offerings have lower funding success rate (i.e., they fail to raise the target amount of capital) and raise less capital than non-GS offerings. The net proceeds raised (= Amount sold – Sales commissions and finders' fees - Proceeds paid to insiders) are also substantially lower in GS offerings than in non-GS offerings.

[2] A financially sophisticated investor is one who, alone or with a representative, has the knowledge and experience in financial and business matters to evaluate the merits and risks of the prospective investment. Investors can self-certify that they are sophisticated simply by checking a box on an issuer-provided questionnaire.

If Title II of the JOBS Act is successful, then we might expect a new set of issuers to take advantage of the new GS method to raise capital in private placements from the general public. These new issuers may differ from issuers using the non-GS method, who rely only on their and their brokers' existing professional networks to place securities. These potential differences can create a challenge for empirically testing whether the Act broadened access to capital to a new set of firms that could not access this market earlier, because of the lack of a counterfactual. This would be especially problematic if there are unobservable characteristics of the firm, issue, or project that are related both to the likelihood of using the GS method and the likelihood of financing success. However, we find that there is little difference in the proportion of new entrants to the securities market between the two offering methods.

While selection concerns are generally difficult to rule out completely, we try to mitigate them by using four different approaches. First, in our baseline tests, we control for a number of measures of offering quality such as firm age, revenue, number of investors, longer offering and the type of security offered, and include fixed effects for state of firm location, year, and firm or industry. Second, we employ an approach that combines propensity score matching with difference-in-differences (PSM-DiD) using several different control samples. Third, we separately analyze the subsample of firms that raise capital under both exemptions in the same year, and include firm fixed effects in these regressions to remove the effect of firm characteristics that might affect both the choice of GS and the success rate of financing, and to differentiate across project-specific effects within a given firm. This approach further mitigates selection concerns arising from different types of firms choosing different offering methods because we examine the same firm that chooses both offering methods at roughly the same time. We further analyze partitions of this subsample based on whether the first offering by a firm in a given year is GS or non-GS. Finally, we conduct a variety of robustness checks of our main results. While each of these approaches has its own strengths and weaknesses, our main findings are remarkably consistent: GS offerings have lower success rates and raise less capital than non-GS offerings.

To our knowledge, this is the first study to analyze the effects of Title II of the JOBS Act. Title I of the Act, which relates to initial public offerings (IPO), has been widely investigated in the literature (see, e.g., Dambra, Field, and Gustafson, 2015; Barth, Landsman, and Taylor, 2017; and Chaplinsky, Hanley, and Moon, 2017). An SEC white paper discusses the regulatory

framework and aggregate statistics of private placements (see Bauguess, Gullapalli, and Ivanov (2018)). We contribute to this line of research by providing a systematic empirical analysis of the effectiveness of Title II of the JOBS Act.

Our paper also contributes to the literature on entrepreneurial finance (e.g., Agrawal, Catalini, and Goldfarb, 2015), crowdfunding (e.g., Hellmann, and Thiele, 2015; Estrin, Gozman, and Khavul, 2018; Mochkabadi, Kazem, and Volkmann, 2018), and private placements of public equity (e.g., Chakraborty, and Gantchev, 2013).

The paper proceeds as follows. Section 2 discusses the related literature. Section 3 details the data and sample. Section 4 presents our baseline results. Section 5 presents identification tests, and Section 6 concludes.

2. Background, Literature Review and Hypothesis Development

2.1 The JOBS Act

This study analyzes unregistered securities offerings pursuant to Regulation D of the Securities Act. Before the JOBS Act, rule 502 of Regulation D of the Securities Act of 1933 prohibited the general solicitation or advertising of securities in rule 506 offerings.[3] Section 201 of Title II of the JOBS Act removes this prohibition, allowing issuers to approach a wide pool of investors, potentially raising more capital. The new rule 506(c) under Title II of the JOBS Act allows companies to engage in general solicitation or advertising of unregistered securities offerings, provided the securities are sold only to accredited investors.[4]

[3] One way to demonstrate that there was no general solicitation in an offering is for the issuer to show that it had a pre-existing substantive relationship with all its investors. The SEC considers a relationship substantive if the issuer can evaluate whether the investor's financial circumstances qualify them as accredited investors.

[4] Rule 501 of Regulation D defines an accredited investor as an individual with a net worth over $1 million or annual income over $200,000 (or $300,000 with a spouse) during each of the last three years. The following are also accredited investors: 1) banks, insurance companies, and registered investment companies; 2) employee benefit plans with total assets over $5 million; 3) charitable organizations with total assets over $5 million; 4) an individual director, executive officer, or general partner of a company selling securities; 5) a business where all equity owners are accredited investors; and 6) a trust with assets over $5 million.

To participate in a GS offering, the issuer must take 'reasonable steps' to confirm that each participating investor is accredited. Typically, this involves obtaining a letter from a financial professional who knows the investor, such as an accountant, lawyer, or investment or tax advisor. The SEC also indicates that issuers may verify an investor's income for eligibility purposes by reviewing IRS documents, and may review their bank and brokerage statements and credit reports to determine net worth. While accreditation need not take place for each and every investment, the SEC mandates that accreditation should be recertified every three months. The rule requires issuers or their brokers to follow these high standards in the selection of each accredited investor, which is a fairly involved and time-consuming process.

2.2 Literature Review and Hypothesis Development

This section presents the conceptual framework behind this paper. A private firm's choice to issue securities using GS vs. non-GS can be explained as a separating equilibrium, which means that different types of firms choose different actions. For example, lower quality firms choose GS and advertise to the general public, while higher quality firms choose non-GS because the firms are already known and attractive to investors.

If Title II of the JOBS Act is effective, firms with fewer connections to potential investors would be able to raise capital successfully using GS. Prior literature offers conflicting predictions on whether the JOBS Act would be effective in providing access to public capital to small, unconnected firms. Jeng (2012) argues that the JOBS Act can have a positive impact on capital formation and investor protection by allowing firms to publicly solicit and advertise. An entrepreneur's professional connections have been found to reduce information asymmetry between the entrepreneur and investors in the crowdfunding market (see, e.g., Vismara, 2016a, 2016b; and Ahlers, et al., 2015). If the law reduces small businesses' cost of accessing public capital via advertising, that should also improve their future access to capital by broadening their investor base.

However, other studies suggest that adverse selection due to information asymmetry can lead to the law having unanticipated negative consequences for small firms. For example, GS offerings may raise less capital due to the lower quality of firms attracted to it. Because of the Act, a new set of firms may come to the market to raise capital which could not raise capital as easily

before. These firms may be less attractive to investors, so they are more likely to fail to raise capital and to raise less capital when they do succeed. This can happen for at least three reasons. First, a large theoretical literature shows that small firms have difficulty in raising capital due to information asymmetry with potential investors (see, e.g., Amit, Glosten and Muller, 1990; Chan, Siegel and Thakor, 1990; and Gompers 1995). In other words, potential investors are reluctant to invest in startups because they have less information about the issuer's prospects than the issuer (see, e.g., Sufi, 2007). Similarly, Hildebrand, Puri, and Rocholl (2017) show that without financial intermediaries to reduce information asymmetry, lead investors can wrongly place higher bids on low quality issues.[5] Chen (2017) also shows that adverse selection is a first-order barrier to crowdfunding, and can lead to market failure. He calls for new market mechanisms to solve the adverse selection problem in this market. Dorff (2014) finds that promising startups which can raise capital from professional investors such as venture capitalists (VCs) do not use crowdfunding, leaving this market to less promising ventures.[6]

Second, advertising may not help small businesses raise more capital due to investors' local bias. Investors prefer making early-stage investments in local firms (see, e.g., Lin and Viswanathan, 2016) for at least two reasons. First, general solicitation exposes startup firms to distant investors through online platforms such as Kickstarter and AngelList. However, early-stage investments often involve distance-sensitive costs, such as identifying opportunities, conducting due diligence, and monitoring progress (see, e.g., Lerner, 1995; Seasholes and Zhu, 2005; and Nieuwerburgh and Veldkamp, 2009). These costs deter distant investors from investing in response to general solicitation. Second, in the absence of regulatory disclosures and monitoring, investors in startups seek reputation and trust, which are built through social interactions mostly between co-located individuals (see, e.g., Agrawal, Catalini, and Goldfarb, 2015). So distant investors are unlikely to invest in these firms due to lack of reputation and trust.

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[5] A large literature analyzes how financial intermediaries such as VCs overcome information asymmetry (see, e.g., Chan, 1983; Gompers, 1995; and Lerner, 1995).

[6] Chemmanur and Yan (2009) study registered equity offerings, which are not allowed to be advertised under the Securities Act of 1933. They argue that product advertising has a positive spillover effect by reducing information asymmetry in equity markets, and find that firms increase their product advertising when issuing equity.

Finally, low quality startups may try to raise larger amounts than they can raise because less talented entrepreneurs often tend to be overconfident about their abilities (see Cooper, Woo and Dunkelberg, 1988). Given entrepreneurs' optimism, we predict lower funding success for low quality firms. Motivated by the literature, we hypothesize the following:

H1: *Low quality firms choose GS offerings, while high quality firms choose non-GS offerings.*

H2a: *GS offerings have higher success in financing than non-GS offerings.*

H2b: *GS offerings have lower success in financing than non-GS offerings.*

We follow the literature and measure firm quality by the types of securities offered. Potential investors induce entrepreneurs to self-select and disclose information by using contractual rights or security designs that overcome information asymmetry (see, e.g., Gompers and Lerner, 2000). For example, Gompers (1997) notes that VCs use convertible securities and covenants to delay their investment until the outcome of the venture is revealed. Sahlman (1990) notes that venture capital contracts provide the VC with the right to abandon the firm if negative information is revealed. These contractual rights select appropriate entrepreneurs by shifting the risk of inappropriate selection to the entrepreneur. High quality startups would offer these terms if they are confident about their ability and committed to the venture (see, e.g., Sahlman, 1990). Thus, we posit that high-quality firms offer the option to acquire securities that delay their investment.

In terms of debt and equity, debt investors can demand collateral to cover the risk of total failure, while equity investors provide capital beyond the level that can be guaranteed by a venture's assets. As a result, equity investors bear greater risk of loss (see, e.g., Shane and Cable, 2002). Thus, sophisticated investors are more likely to buy equity of high-quality firms and to buy debt of low-quality firms. So, we posit that high-quality firms offer equity and low-quality firms offer debt.

Finally, firms without social or professional ties to investors must rely on general solicitation to raise capital. These types of firms must choose to issue under GS and rely on third parties such as financial intermediaries to find potential investors, resulting in higher fees to brokers and dealers. Investors benefit from brokers via lower search costs (see Bergstresser, Chalmers, and Tufano, 2008, for a review). But prior studies find that brokers do not deliver substantial benefits

for investors who pay higher fees to them (see, e.g., Bolton, Freixas and Shapiro, 2007; and Inderst and Ottaviani, 2011). So, GS offerings may fail to raise the target amount despite paying larger brokerage fees. This hypothesis implies that the JOBS Act has unintended consequences due to excessive broker commissions for private placement. Therefore, we hypothesize:

H3: *GS offerings require larger brokerage commissions than non-GS offerings.*

H4a: *GS offerings that pay larger brokerage commissions have higher success rates than non-GS offerings.*

H4b: *GS offerings that pay larger brokerage commissions have lower success rates than non-GS offerings.*

3. Data and Key Variables

3.1. Institutional background

Firms can offer and sell securities without registering them with the SEC through a Regulation D exemption under the Securities Act of 1933 by filing Form D. While rule 504 (505) allows offerings of up to $1 million ($5 million) within a 12-month period, rule 506, which has two parts—506(b) and 506(c)—allows offerings of unlimited amounts.

An issuer must file a new Form D with the SEC for each new security offering within 15 calendar days after the date of first sale, which is the date on which the first investor commits to invest. Depending on the contract's terms and conditions, this can be the date on which the issuer receives the investor's subscription agreement or check. If there is any change or material mistake of fact or error in the previously-filed Form D, the issuer must file an amendment (Form D/A) to correct the problem as soon as practicable after the change, and annually, on or before the first anniversary of the most recent previous filing, if the offering is still continuing at that time.

3.2. Sample selection

To evaluate the effect of Title II, we examine all the issuers of securities offerings covered by a Regulation D exemption via rule 506 that are required to file a Form D with the SEC over the 2010-2019 period. We consider both the existing 506(b) exemption and the new 506(c) exemption. Rule 506(c) allows general solicitation or advertising to the public as long as the securities are sold only to accredited investors, while rule 506(b) does not allow general solicitation or advertising to

the public, but allows the securities to be sold to accredited investors and up to 35 unaccredited investors.[7] Beginning March 16, 2009, Form D must be filed with the SEC electronically. We obtain data on Form D filings from the Audit Analytics Private Placement Database.

Panel A of Table 1 describes our sample selection process. We start with all electronic Form D and D/A flings under rule 506 of Regulation D, excluding pooled investment funds, over 2008-2019. We drop offerings: (1) by firms located outside the United States, (2) by financial and investment firms, i.e., firms in banking, financial services and real estate,[8] (3) by firms traded on NYSE or Nasdaq, (4) filed during 2008-2009 because electronic Form D filing became mandatory starting only in March 2009, (5) with unreported or zero offering amount, and (6) where the issuer does not disclose its revenue.[9]

Our final sample consists of a firm-funding round panel dataset of 31,900 filings made by 18,638 unique firms over 2010-2019. The number of firms that filed before (after) Title II is 8,490 (11,303). Of the firms that filed after Title II, 1,924 (9,715) firms issued under GS (non-GS). We obtain an unbalanced panel where the individual dimension is a firm, and the time dimension is a funding round. For a given funding round, firms are only raising through GS or non-GS. Thus, our unit of analysis is firm-funding round level.[10]

Panel B of Table 1 shows the number of private offerings conducted under different parts of rule 506 of Regulation D by year over our entire 2010-2019 sample period. The last column of Panel B shows the percentage of GS offerings out of all offerings under Title II. GS offerings

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[7] How does an issuer find investors for its non-GS offering? Under the SEC's safe-harbor provision, an issuer can solicit investors with whom it has substantive pre-existing relationships that allow it to determine that they are accredited investors. The issuer can also use a broker who can solicit their existing brokerage clients.

[8] We drop financial and investment firms because these firms (e.g., Softbank and many hedge funds) have been raising large sums via private placements and are fundamentally different from startup operating firms, which typically raise much smaller amounts of capital.

[9] In our main analysis, we limit our sample to offerings that disclose firm revenue because we use revenue to control for the quality of the offering. This requirement entails a substantial drop in sample size. However, as we discuss in section 5.3.3, our main results remain essentially unchanged when we add offerings that do not disclose revenue to our sample.

[10] Multiple filings by a firm in the same year may represent different projects of the firm. The funding round is determined from the order of Form D filings made by a firm.

represent 15.1% of all offerings over the entire post-Title II sample period (2013-19), fluctuating between 13.8% to 16.9% over the years. Panel C of Table 1 shows the number of GS and non-GS offerings under Title II by industry, as reported in Item 4 of Form D. Besides the group of 'other' industries, firms in 'other technology' and oil and gas industries made the largest number of both types of offerings.

Panel D of Table 1 shows the distribution of the number of separate offerings by firms during our 2010-2019 sample period. About 71% of the 18,638 sample firms make just one offering, 15% make two offerings, 6% make three offerings, and the remaining 8% make four or more offerings. Collectively, these firms make a total of 31,900 offerings shown in Panel B.

Figure 1 shows that the number of firms making private placements under rule 506 over our sample period has decreased over time starting in 2013. Most small firms continue to issue under the original rule 506(b) that prohibits GS even after that prohibition was lifted under the new rule 506(c). This may be due to non-GS issuers wanting to signal their higher quality over GS issuers.

Figure 2 shows the geographic distribution of offerings sold under GS and non-GS. There are large concentrations of both types of offerings in certain states such as California, Texas, Florida and New York, particularly in certain metro areas such as Silicon Valley, New York City, Houston, Dallas and Atlanta.

3.3. Variable construction

We use two dependent variables to measure the success of a private offering: (1) offering *Success Rate* = total amount sold / total amount offered, and (2) *Ln(1+Sold)* = ln (1+total amount sold).[11] We control for offering and firm characteristics motivated by the prior literature. For

[11] We also try to examine the two main positive exit outcomes for investors in young firms as additional measures of financing success, namely initial public offerings (IPOs) and being acquired in an M&A, as well as an extreme negative exit outcome, i.e., bankruptcy. Using the IPO, M&A, and Bankruptcy databases of Audit Analytics, which provide comprehensive coverage of these events for US firms during our sample period, we search for the incidence of IPO, bankruptcy or acquisition of the firms in our sample after their private offering. As shown in Panel A of Table 2, almost none of these firms do an IPO or go bankrupt during our sample period. While 2% each of the firms doing GS and non-GS offerings are acquired subsequently, this proportion is too small to permit meaningful empirical analysis.

example, prior studies find that successful fundraising in startups tends to concentrate in certain states such as California and New York (see, e.g., Nanda and Rhodes-Kropf, 2013; and Stangler, Tareque, and Morelix, 2016). Our control variables include an indicator of an issuer located in California or New York, the number of existing investors, offering amount, firm age, revenue, Long offering, indicators for the types of securities offered, an indicator of an offering made as part of a business transaction (e.g., merger, acquisition, or exchange offer), and an indicator for a firm's first offering.[12] The regressions include dummy variables for industry, state of firm location, and offering year.[13]

4. Results

4.1. Determinants of general solicitation

We start by considering the possibility that firms doing general solicitation GS offerings differ from those doing non-GS offerings. For example, if GS allows issuance by firms that were previously too small to access these private markets, then we would expect their issue size to be smaller. A similar story might explain the relation between fees and outcomes. Smaller, less experienced, and less connected firms may pay higher fees, raise less capital, and be less successful because they are lower-quality firms that would otherwise have been unable to issue. To test this hypothesis, we use the offering amount to measure firm size and use an indicator for the firm's earliest filing to measure firm experience in the capital market. We control for firm connection using firm age, assuming that younger firms are less connected. Finally, our first hypothesis posits that high-quality firms choose to issue under rule non-GS, while low-quality firms issue under GS. We use revenue as a measure of firm quality. In addition, as discussed in section 2.2, the prior literature argues that high-quality firms offer equity and the option to acquire securities that delay

[12] To offset higher fees, GS offerings may need to be larger, which can mechanically lower success rates. We control for offering amount to deal with this possibility. We include an indicator for a firm's first offering to control for possible differences in information environments between initial and later round offerings.

[13] Our data is from Form D filings, not equity crowdfunding platforms like Angel List or Kickstarter, where the data coverage is limited to firms using the specific platform. While Form D filings lack data on investor characteristics, they represent a comprehensive dataset of all private placements made in the US starting in 2010.

their investment, while low-quality firms offer debt and avoid securities that would delay investment. Accordingly, we use the types of securities offered by an issuer to infer firm quality.

4.1.1. Univariate comparisons

Panel A of Table 2 presents univariate comparisons between the two types of offerings. GS offerings have a substantially lower mean success rate than non-GS offerings (28.2% vs. 45.2%). The median amount raised under GS is also substantially lower than that under non-GS ($30,000 vs. $225,000), although the former group includes some very large offerings, which make their mean value larger than the latter. The median percentage brokerage fee (i.e. actual or estimated broker sales commission and finders' fees / *$Offered*) is somewhat higher in GS offerings than in non-GS offerings (4% v. 3.6%); the presence of outliers make the mean values larger and further apart (11.2% vs. 5.4%).[14] The median net proceeds are substantially lower in GS offerings than in non-GS offerings (0 vs. $180,000), although the mean value is higher for the former due to some very large outliers. In terms of firm quality, GS offerings (1) have a higher probability of lasting more than a year, (2) are more (less) likely to offer debt (equity) securities, and (3) their issuers have lower revenues than those that make non-GS offerings. These results suggest that firms that offer under GS are lower-quality firms, consistent with the idea that lower-quality firms have lower revenue, are more likely to offer debt rather than equity securities, and take longer time to raise capital.

Are worse outcomes for GS offerings due to new entrants with poor quality? Surprisingly, Table 2 shows that although statistically significant, economically there is little difference between the proportion of new entrants to the securities market (*Entrant*) between the two offering methods: 57% for GS offerings and 53% for non-GS offerings. This finding suggests that the lower success rate of GS offerings is not due to a greater proportion of new entrants than in non-GS offerings.

The offering size of securities is larger in GS offerings than in non-GS offerings. The mean (median) dollar amount of securities offered under GS is about $11.7 million ($2 million), while it is $8.8 million ($1.5 million) in non-GS offerings. The *ZeroFee* variable shows that more GS

[14] Appendix B shows the top 10 sales compensation recipients in GS and non-GS offerings in our sample by the total amount sold.

offerings hire a broker than non-GS offerings (23% vs. 13%). While the proportion of offerings that hire a registered broker is similar across the two types of offerings (8% vs. 9%) in our sample, GS offerings are much more likely to hire unregistered brokers, also known as finders (14% vs. 3%), who have been linked to a variety of misconduct.[15] The *Regd broker* variable indicates that among the offerings that hire a broker, while only 36% of the GS offerings choose registered brokers (rather than unregistered brokers, i.e., finders), as many as 71% of the non-GS offerings choose registered brokers. All these comparisons generally mirror those when we compare GS offerings under the new rule to non-GS offerings before the JOBS Act in Panel B of Table 2.

4.1.2. Multivariate regression results

We next consider what firm or offering characteristics are associated with the choice of GS in a regression framework. Table 3 presents estimates of marginal effects from logit (in column (1)) and coefficients from OLS or Linear Probability Model (LPM) (in column (2)) regressions of firms' choice of the method of private offerings made after the adoption of Title II. The dependent variable equals 1 (0) for GS (non-GS) offerings. GS issuers appear to be of lower quality: they have lower revenue, long offerings (i.e., expected to last for >1 year), are less likely to accept delayed investment, and are more likely to offer debt securities. GS offerings also have lower number of current investors and larger offering amounts, and their issuers are less likely to locate in the financial hubs of California and New York.

4.2. Cost of general solicitation

Our results so far suggest that firms pursuing general solicitation are of lower quality, which implies that a broker assisting such firms would have to work harder and thus earn a higher commission. Moreover, the large difference in brokerage costs for GS offerings may be due to the requirement of verifying investor accreditation as well as advertising costs. Thus, we test whether Title II leads to greater brokerage fees for GS offerings.

[15] See Eaglesham, J. & Jones, C., "A private-market deal gone bad: Sketchy brokers bilked seniors and a cosmetologist," May 7, 2018; "Firms with troubled brokers are often behind sales of private stakes," June 24, 2018; Wall Street Journal.

We obtain data on the cost of general solicitation from item 15 in Form D filings, which reports the amount of sales commission and finders' fees separately. We compute the total dollar amount paid to brokers as *sales commission$* plus *finders' fee$*. Using the post-JOBS Act sample of GS or non-GS issuers, we estimate the following regression of an issuer's choice to use a broker, and of brokerage commissions for the subset of offerings that use a broker:

$$y_{i,t} = \alpha_0 + \alpha_1 GS_{i,t} + \alpha_2 Controls_{i,t} + \alpha_3 Year\ FE_t + \alpha_4 Firm\ FE_i + \alpha_5 Security\ Type\ FE_k + \varepsilon_{i,k,t}$$

The dependent variables are: (1) *Zero Fee* equals one if an offering has zero commission and fee (i.e., it does not use a broker), zero otherwise, (2) *Ln(1 + $Fee)* = Ln(1 + Sales Commissions + Finders' Fees), and (3) *%Fee* = (*$Commissions* + *$Finders' fees*) / *$Offered*. *GS* equals one (zero) if firm *i* issues using GS (non-GS). *Controls* is a set of control variables for firm and offering characteristics that consists of *Revenue*, *Ln(1+Firm age)*, *Ln(1+#Investors)*, *Ln(1+ $Offered)*, *Long offering*, *Business transaction*, *First-round offering*, and *CA_NY*.[16] The variables are defined in Appendix A. The regressions include security type, firm and year fixed effects. Standard errors are clustered at the firm level. Appendix A defines the variables. Our main interest is in the coefficient α_1, which compares the propensity to use a broker (in model 1) or the cost of offering (in models 2 and 3) under GS vs. non-GS.

Table 4 shows OLS estimates of this model.[17] Column 1 shows that GS offerings are substantially more likely to hire a broker (i.e., less likely to have zero fee filings). Moreover, within the subsample of offerings that use a broker, GS offerings have considerably larger brokerage costs and finders' fees than non-GS offerings, in both dollar and percentage terms (see columns 2 and 3). In terms of economic magnitude, GS offerings have 8% fewer zero fee filings (i.e., are 8% more likely to hire a broker) and 1% larger *Fee* when they do hire a broker than non-GS offerings. These findings suggest that general solicitation via GS offerings incurs substantially higher

[16] Since *Revenue* is a categorical variable showing revenue range, we also try revenue fixed effects in an alternate specification. Our main results are similar in that specification, not tabulated for brevity.

[17] The results are similar using logit models with industry, state, and year dummy indicators in column (1), or after excluding observations for which either the commissions or fees reported in Form D are estimated, instead of actual, values.

brokerage costs than non-GS offerings, likely because of advertising costs and the need to verify that investors are accredited.

4.3. The effects of JOBS Act on small business financing

In this section, we examine the outcomes of the JOBS Act on small business financing. Using a sample of offerings using GS or non-GS, we estimate the following regression:

$$y_{i,t} = \alpha_0 + \alpha_1 GS_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

where the dependent variables measure the success rate of solicitation (*Success Rate*) or the total amount sold (*Ln(1+Sold))* of offering i, defined as follows: *Success Rate* = *$Sold / $Offered*, and *Ln(1+Sold)* = ln(1+Total amount sold in the offering). The control variables are the same as in Table 4. The regressions include fixed effects for security type, year, and either firm or industry and state of firm location.

Table 5 presents our baseline estimates from pooled OLS regressions of small business financing. We find that GS offerings, newly enabled by the law, have a 5% to 6% lower funding success rate than non-GS offerings. Moreover, GS offerings raise substantially less capital. The total amount sold is about 61% (= $e^{-0.93}$ - 1) to 66% (= $e^{-1.08}$ - 1) lower in GS offerings than non-GS offerings. These findings are striking because GS was created to allow small businesses to raise more capital by allowing entrepreneurs to solicit from a wider pool of investors. Instead, we find that general solicitation is associated with negative outcomes. However, these initial results do not account for firms' endogenous choice of offering method (GS vs. non-GS), based on differences in firm quality and other characteristics. That is task we tackle in section 5.

We next examine whether first-time issuers successfully raise capital under the JOBS Act. Information asymmetry between a company and its potential investors is more acute for initial offerings than for follow-on offerings. Relatedly, lower-quality firms may fail to attract any funding before the JOBS Act. So, we re-estimate the regressions in Table 5 after adding an interaction term between the indicators for new entrants and GS offerings. While columns (1) and (2) of Table 6 show that the success rate of financing is higher for new entrants that choose GS, columns (3) and (4) show no evidence that they raise more capital. Of course, if GS has enabled new firms that could not access the private placement market before Title II to tap this market and

raise any amount of capital, that can be viewed as success for Title II. We deal with the question of an issuer's selection of a GS offering and the appropriate counterfactual in section 5. The average effect of general solicitation continues to be negative on the outcomes of fundraising for small businesses.[18]

So far, we find that lower-quality firms indeed choose to offer under more lenient rules, and the cost of this choice is higher fees paid to information brokers. We next examine whether general solicitation increases issuers' net proceeds after paying the solicitation fees to brokers and the proceeds due to insiders. We start by estimating regressions of *Ln(1+Net proceeds),* defined as Ln(1+ Total amount sold – Sales commissions – Finders' fees – Proceeds paid to insiders). In column (1) of Table 7, the net proceeds are 41% (= $e^{-0.53}$ -1) lower in GS offerings than in non-GS offerings. We then test our fourth hypothesis, i.e., whether GS offerings that pay higher brokerage commissions are more or less successful. Columns (2) to (5) of Table 7 show regressions of our two measures of offering success for the subsample of offerings that hire a broker. In columns (2) and (3) the main explanatory variables are *GS*, *%Fee* and their interaction. Consistent with our baseline results in Table 5, the coefficient of *GS* is significantly negative in both these columns, which implies that GS offerings are less successful than non-GS offerings. Interestingly, the coefficient of *%Fee* is significantly negative, indicating that higher *%Fee* is associated with lower financing success for non-GS offerings. But there is essentially no such relation for GS offerings, since the coefficient of *GS*×*%Fee* is significantly positive, and the coefficients of *%Fee* and *GS*×*%Fee* roughly offset each other.

Yimfor (2020) finds that private offerings that use registered brokers have better outcomes than offerings that employ unregistered brokers (i.e., finders). So we next examines how this result interacts with the method of offering, i.e., GS vs. non-GS. Columns (4) and (5) of Table 7 show

[18] The result is similar when we redo this analysis after excluding filings where the amount sold is zero. In untabulated analysis, we also examine whether initial private offerings are more successful after the adoption of Title II, regardless of the offering method chosen, GS or non-GS. So, we replace the indicator for a GS offering and its interaction with the indicator for a new entrant with an indicator for post-Title II (*Post*) and its interaction with the indicator for a first offering. Our untabulated results offer no evidence to support the notion that initial private offerings by small firms have become more successful after the adoption of Title II. Instead, we find that both success rate and the amount sold in first-time offerings are *lower* after Title II than before Title II.

regressions similar to those in columns (2) and (3), except that we now replace *%Fee* and its interaction with *GS* by *Regd broker* and its interaction with *GS*. In column (4), the coefficient of neither of these variables is statistically significant in predicting the success rate of the offering. In column (5), the coefficient of *Regd broker* is significantly positive for non-GS offerings, which implies that offerings that use registered brokers rather than finders raise more money for these offerings. However, there is essentially no such relation for GS offerings because the coefficient of *GS*×*Regd* broker is significantly negative, and the coefficients of *Regd broker* and *GS*×*Regd* broker roughly offset each other.

5. Identification: Accounting for selection effects

We find that firms that choose GS offerings differ from those that choose non-GS offerings in that, for example, the former have lower revenues. This causes problems in empirically testing whether the Act helps small firms raise capital under GS because it becomes difficult to compare them to a counterfactual. This is especially problematic if there are unobservable characteristics of the firm, issue, or project that are related both to the likelihood of using GS and the likelihood of financing success. We mitigate these concerns in several different ways. First, in our baseline tests, we control for a number of measures of firm quality such as firm age, revenue, the number of investors, Long offering, and the type of security offered. Second, both in our baseline tests and in the approaches described below, we include fixed effects for year, and either firm or industry and state. Second, we employ a propensity score matching approach combined with difference-in-differences (PSM-DiD). Third, we separately analyze a subsample of firms that raise capital under both GS and non-GS in the same year. This approach compares the outcomes of GS and non-GS offerings by the same firm at about the same time. Finally, we conduct a variety of robustness checks of our main results.

5.1. Difference-in-Differences Tests

We use a difference-in-difference framework to test whether Title II improved outcomes. In an ideal setting, the treatment firms are those that would use GS before the JOBS Act if it were available, and subsequently use GS under the JOBS Act. There are a few issues to consider. First, before the Act, firms have only one option for fund raising, non-GS. After the Act, firms now have

two choices, GS or non-GS. Second, it is impossible to know which firms would have issued under GS before the JOBS Act. We address the first issue by comparing firms that issue under non-GS pre-JOBS Act and switched to GS post-JOBS Act (i.e., *Switchers*) vs. firms that issue under non-GS pre-JOBS Act and continue to non-GS post-JOBS Act (i.e., *Stayers*) and report the results in Panel A of Table 8. To address the second issue, we use a PSM-DiD approach and present the results in Panels B and C of the table.

Table 3 shows that firm and offering characteristics differ between offerings under GS and non-GS. To control for these differences, we create a matched sample of treated offerings (i.e., switchers) and their control offerings (i.e., stayers) that have similar characteristics. We match each switcher offering to a stayer offering from the same industry and same year using the propensity score matching (PSM) method. We match switcher firms to their nearest neighbor in the sample of stayers that has the closest propensity scores obtained from logit regressions without replacement. Matching is based on the following variables: revenue, firm age, the number of current investors, offering amount, and indicators for offerings that last more than a year, offerings made as part of a business transaction, first offering, offerings by firms located in New York and California, and fixed effects for the type of security offered, year, industry, and state of firm location. The standard errors are robust.

The left side of Panel A of Table 8 shows descriptive statistics of the samples of switchers and stayers. We report the mean values and significance levels based on *t*-statistics of the differences. The treated and control samples are quite similar after matching, with no significant differences between the two groups at the 5% level. In DiD regressions on the right side of Panel A, switchers to GS offerings have a 12% lower financing success rate and raise less capital than similar non-GS stayers after Title II took effect.

Next, in Panel B of Table 8, we match each GS offering after Title II (i.e., treated offering) to a non-GS offering before Title II (i.e., control offering) from the same industry, using the matching variables and procedures described above. We then show the single difference estimators to compare the post-Act vs. pre-Act outcomes. The left side of Panel B shows descriptive statistics of this matched sample. The treatment and control groups are quite similar after matching, with no significant differences between them. The single difference estimator shows that GS offerings

post-Act raise less capital than its matched non-GS offerings pre-Act. There is essentially no difference in success rates between the two types of offerings.

In the next test in Panel C, we define treated offerings as the entire matched sample from Panel B, i.e., GS offerings after Title II and their matched non-GS offerings before Title II. We then match each treated offering to a control offering made under non-GS in the same year and same industry, using the same matching procedure as in Panel A. Panel C shows descriptive statistics of this matched sample and the DiD results. The treated and control samples are quite similar after matching with no significant differences between the two groups at the 5% level. The DiD analysis shows that GS offerings would have a 3% lower financing success rate and raise 47% ($=e^{-0.63} - 1$) less capital after Title II. We conclude that firms that choose to issue under GS are worse off than non-GS issuers.

5.2. Subsample Analysis

We next try to mitigate the identification problem further by analyzing an interesting, though more limited, subsample. Specifically, we limit the sample to firms that raise capital using both exemptions in a given year. This approach largely overcomes selection concerns from different types of firms choosing different methods of raising capital, GS or non-GS. This approach has the advantage that the issuer's financial profile that may affect fund raising outcomes is unlikely to change significantly within the same year.

But even though the two types of offerings are made by the same firm in the same year, maybe they are aimed at financing different projects in the firm, which can still lead to different outcomes for the fundraising effort. We use three specifications. The first specification (in the first two columns of Panel A in Table 9) uses industry fixed effects. The second specification (in the next two columns) uses firm fixed effects to remove any time-invariant firm characteristics that might affect both the choice of offering method and financing success rate. The third specification (in the last two columns) uses fixed effects for industry and state of firm location. All the specifications also include year fixed effects. Because project information is not publicly available, we include controls for offering information reported in Form D in the third specification.

In our sample, 223 firms make one or more GS offerings and one or more non-GS offerings in the same year, for a total of 366 and 312 offerings of the two types, respectively. We redo OLS

regressions similar to those in Table 5 on this subsample of 678 offerings. Panel A of Table 9 shows the results. We find that GS offerings still lead to a considerably lower success rate for a firm than non-GS offerings, even after controlling for selection effects and firm characteristics. In column (3), GS offerings have a 14% lower success rate than non-GS offerings. GS offerings also raise substantially less capital than non-GS offerings. In column (4), the magnitude of this effect is as much as -83% (= $e^{-1.77}$ -1).

Is a GS offering more likely to succeed if it is the first offering, instead of the second offering, during the year in such cases? That does not appear to be the case. In Panel B of Table 9, we report the results of regressions for partitions of this subsample by whether the first offering during the year is made under GS or non-GS. The success rate of the offering as well as the amount sold are consistently lower in GS offerings than in non-GS offerings in both subgroups. The magnitude of this effect is remarkably similar across the two subgroups.

Do firms make a GS offering first, and if it fails to raise enough money, follow-up with a non-GS offering? In Figure 5, the proportion of firms doing a GS offering first in this subsample increases from 2014 to 2017, and declines substantially after that. Firms appear to start out with a preference for using the new GS offering method first once it became available, but gradually lose this preference when they realize that it does not seem to help in raising capital successfully. This pattern is consistent with firms learning from financial markets, as has been found in other contexts in finance (e.g., shareholder rights and stock returns (Bebchuk, Cohen and Wang (2013)), and the use of common M&A advisers (Agrawal, et al. (2013)).

5.3. Robustness checks

5.3.1 Debt or equity offering

Is our main finding that GS offerings are less successful related to firms' choice of issuing debt or equity? To address this issue, we partition our baseline results in columns (2) and (4) of Table 5 for the subsamples of Debt only and Equity only offerings. The regression specification and the control variables are the same as in that table. In Panel A of Table 10, we find that all-equity GS offerings, which represent the majority of the sample, are significantly less successful in fundraising than the corresponding non-GS offerings. For all-debt offerings, there is essentially no difference in success measures between GS and non-GS offerings.

5.3.2 Subsample of last filings

The sample for our baseline analysis includes all Form D or D/A filings for an offering, as discussed in section 3.2. We do this because we treat each successive filing as a different financing round, with each filing providing a snapshot of the success of the offering until that point. An alternate approach is to evaluate the ultimate success of an offering by examining only the last filing for each offering, and control for offering duration, i.e., the number of days since the date of first sale. So we next examine whether our baseline results in Table 5 hold up under this alternate approach. Despite a drop in sample size, Panel B of Table 10 shows that these results are generally quite similar to those in Table 5, both in statistical significance and economic magnitude.

5.3.3 Sample that includes firms that do not report revenue

In our baseline analysis, we include an offering in the sample only if it discloses revenue information. We do this because our sample consists of non-publicly traded firms which are not required to disclose their financial reports. Moreover, revenue is a key piece of information that investors use to assess the performance and life-stage of private firms. However, as the second to the last row in Panel A of Table 1 shows, this sample selection requirement results in considerable loss of sample. Do our results hold up if we add to our sample offerings that don't disclose revenue in their Form D or D/A filings? This is what we do next. The results, shown in Panel C of Table 10, are qualitatively similar to those in Table 5, although the magnitude of our main effect increases. The statistical significance increases substantially, likely due to an increase in sample size.

5.3.4 What if some issuers do not file Form D?

Due to the lack of SEC enforcement, some startups, especially in Silicon Valley, may violate the requirement to file a Form D.[19] While there is no way to reliably assess the magnitude

[19] See https://techcrunch.com/2018/11/07/the-disappearing-form-d/. Bauguess, Gullapalli, and Ivanov (2018, p. 7) note that while Rule 503 of Regulation D requires the filing of a Form D no later than 15 days after the first sale of securities, the filing of a Form D is not a condition to claiming a Regulation D safe harbor or exemption, and it is possible that some issuers do not file Form D for offerings, relying on Regulation D. They refer to a separate SEC analysis of Form D

of this non-compliance, we next examine whether this possibility creates a bias in our approach. First, we include fixed effects for the state of firm location in all the regressions, which should partly relieve the bias arising from certain geographic areas. Second, we include industry fixed effects to deal with a bias arising from some industries. Third, we examine the distribution of Form Ds that are unsuccessful in fundraising. If this distribution is somewhat stable over time, that would suggest that selection into filing a Form D is less of an issue, given press reports that suggest that non-compliance is a recent phenomenon. Figure 3 shows the annual percentage of unsuccessful non-GS offerings pre-Title II and GS and non-GS offerings during the post-Title II period. The percentage of unsuccessful offerings under each category is the number of Form Ds that are unsuccessful in fundraising divided by the total number of Form Ds filed in a given year. We define an offering as unsuccessful if its most recent Form D or Form D/A indicates that the amount sold is less than the offering amount. In Figure 3, the annual proportion of unsuccessful offerings is reasonably stable during our 2010-2019 sample period.

5.3.5 Separating the effects of Title II from Titles III and IV

Next, we briefly discuss the rules under other parts of the JOBS Act, their effective dates, and how some of them might interact with Title II, the focus of this paper. Figure 4 shows the timeline of separate parts, called titles of the Jobs Act. Title I, effective April 5, 2012, provides reduced disclosure rules for emerging growth companies, defined as companies with annual gross revenue below one billion dollars per year. Title IV (also known as 'Mini IPO'), effective June 19, 2015, updates the existing Regulation A framework for raising capital. Dubbed Regulation A+, it allows issuers to raise up to $50 million from accredited and non-accredited investors and advertise online. Title III, effective May 16, 2016, allows businesses to raise up to $1 million annually via registered online crowdfunding portals from unaccredited investors. The focus of this paper is Title II of the JOBS Act that provides small businesses with broader access to capital prior to IPO. Titles III and IV of the JOBS Act also allow crowdfunding from broader classes of investors, but they were implemented years after Title II. To avoid contaminating our analysis of the effect of Title II

filings by funds advised by registered investment advisers and broker-dealer members of FINRA, which suggests that Form D filings are not made for about 10% of Reg D offerings.

on capital raising in startups, we re-do our analysis after omitting observations in our sample after June 19, 2015. These untabulated results are similar to our baseline results on fund-raising outcomes in Table 5.

5.3.6 What if an offering switches the offering method

Finally, we exclude firms that later file for Form D/A amendments to eliminate the potential selection issue of an offering switching between the different offering methods (GS to non-GS or vice versa). These untabulated results are also similar to our benchmark results in Table 5.

6. Conclusion

On September 23, 2013, Title II of the JOBS Act became effective. Previously, small firms could avoid registering private placement securities with the SEC, but were not allowed to advertise, which limited their potential investor pool. On the other hand, they could sell to some non-accredited investors. Moreover, the burden of proving accreditation status was on the investor, rather than the issuer. And the burden was rather light: investors could satisfy it by simply checking a box indicating that they are accredited on a pre-qualification form provided by the issuer. After the passage of Title II, firms can issue securities using either GS or non-GS.

This paper investigates the impact of the JOBS act on firm financing. We find that after the Act, funding success rate and the amount of capital raised decline. The reason behind this negative result appears to be the costs of advertising and verifying that investors are accredited. While the Act, under the newly added rule 506(c), allows issuers to solicit funds from the general public by advertising, it requires issuers to verify using an intrusive and elaborate process that each investor is qualified to invest.

Our findings cast doubt on the notion that Title II provides greater access to capital markets for small firms that lack prior connections to investors. The paper also points to possible reasons why small businesses still prefer to raise capital through the traditional non-GS offering, and why investment platforms that facilitate matching entrepreneurs to investors appear to dread general solicitation (see, e.g., Clark, 2020). This is because Title II places severe restrictions on who can purchase the securities offered under general solicitation, and brokers charge substantial fees for

advertising private placement securities and verifying that each investor is accredited. Our results imply the need to craft policies that induce better ways of signaling firm quality or more transparent approaches to reducing information asymmetry to improve access to capital for small businesses.

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Figure 1

Number of Issuers Doing Private Offerings

The figure shows the number of unique issuers in our sample that raise capital in private markets in a transaction exempt from registration under rule 506 pre-Title II, and rule 506(c) or 506(b) post-Title II (effective September 23, 2013).

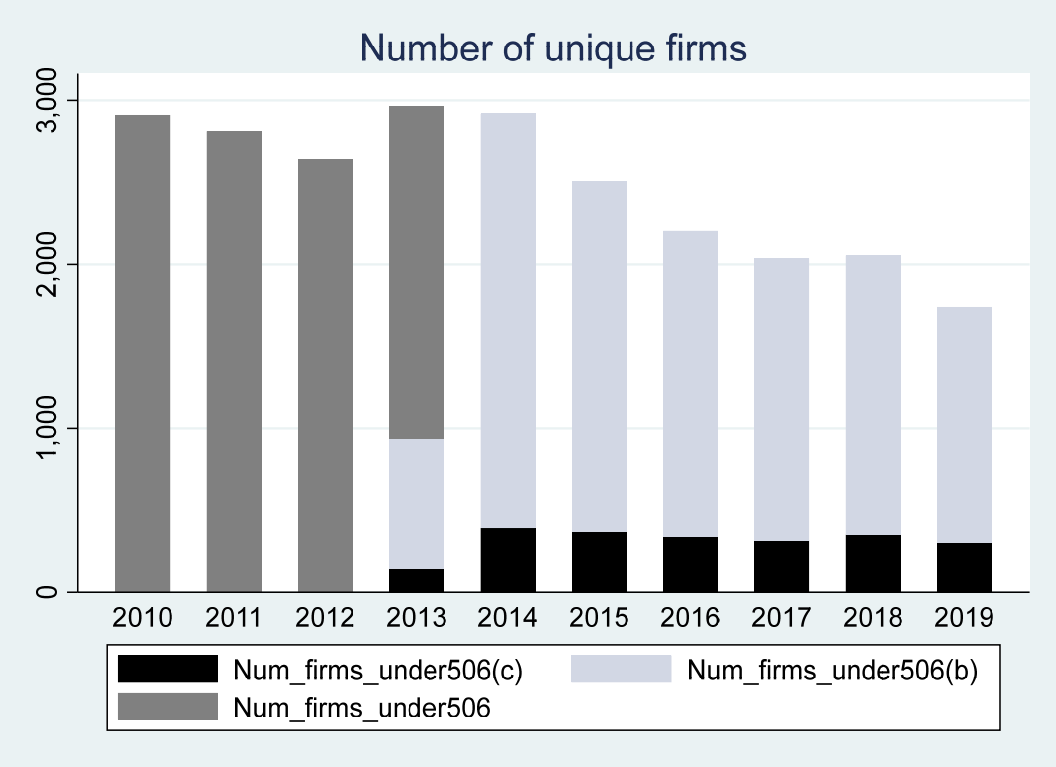
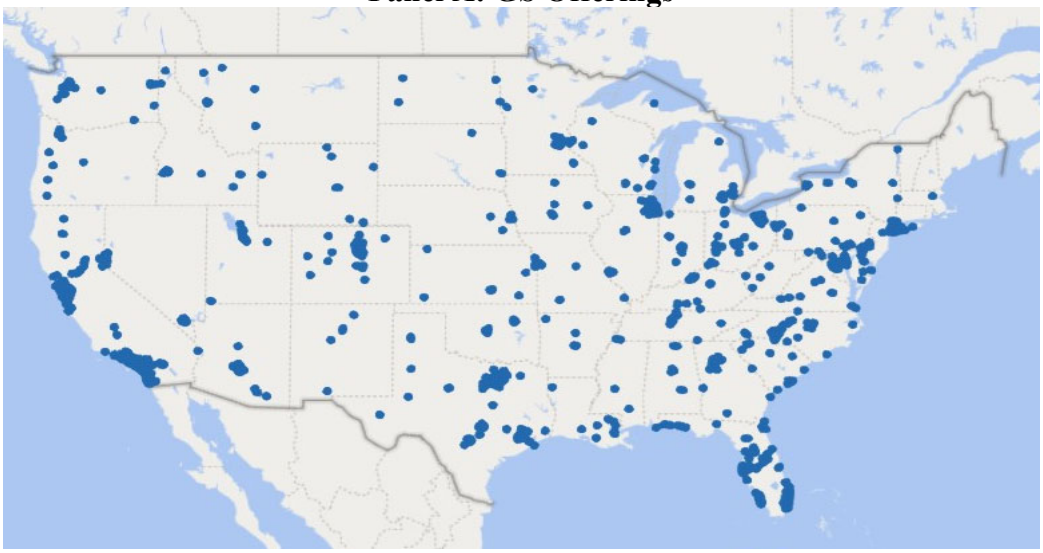


Figure 2

Geographic Distribution

The figure shows the geographic distribution of GS and non-GS private offerings during 2010-2019.

Panel A: GS Offerings



Panel B: Non-GS Offerings

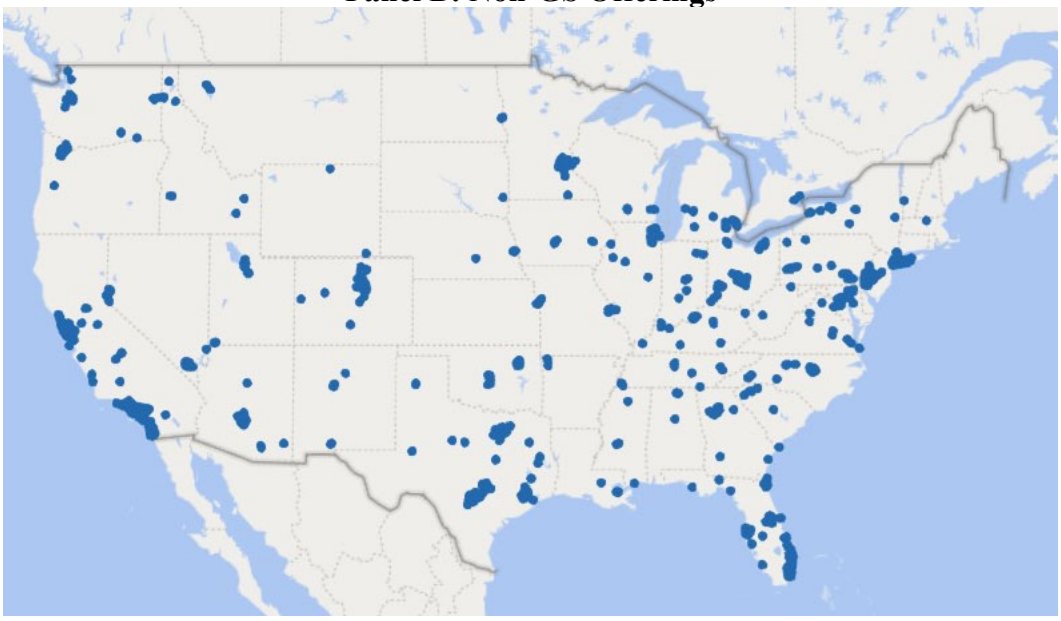


Figure 3

Time Series of Private Offerings

The figure shows the annual percentage of unsuccessful private offerings attempted under rule 506 before Title II and rules 506(c) and 506(b) after Title II (effective September 23, 2013). The percentage of unsuccessful offerings under each category is calculated as the number of Form Ds that are unsuccessful in fundraising divided by the total number of Form Ds in a given year. An offering is defined as unsuccessful if its most recent Form D or Form D/A indicates that the amount sold is less than the offering amount.

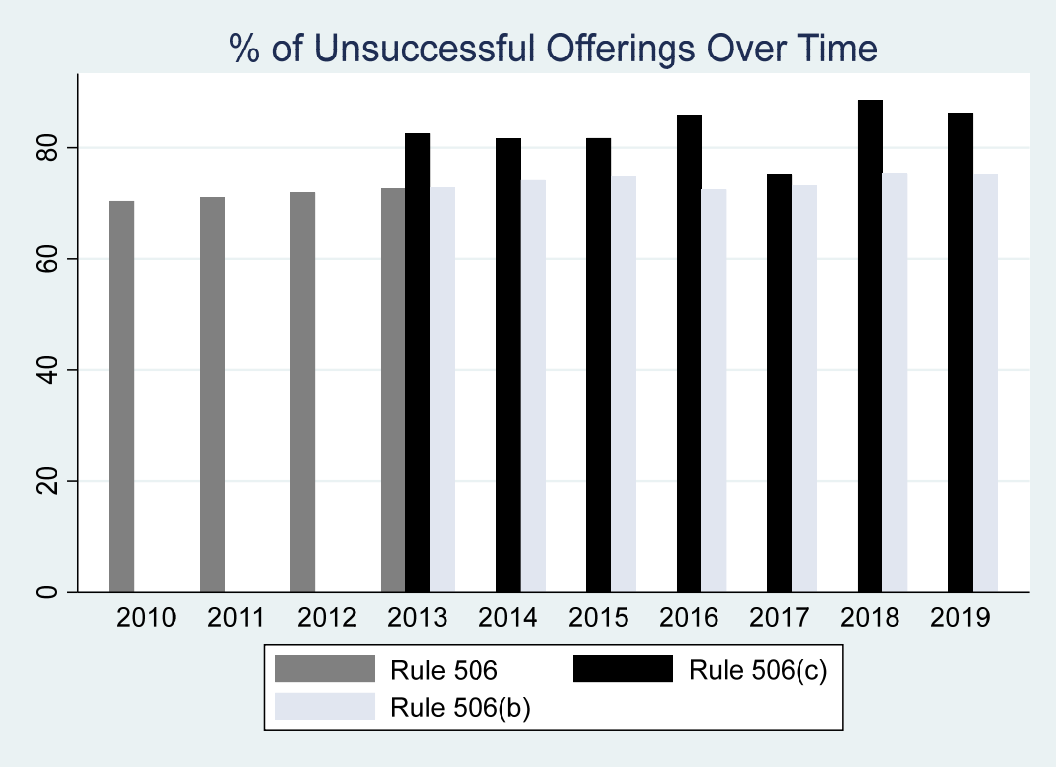


Figure 4

Timeline of the JOBS Act for Small Businesses

The figure shows the timeline of effective dates of different parts, called titles, of the JOBS Act.

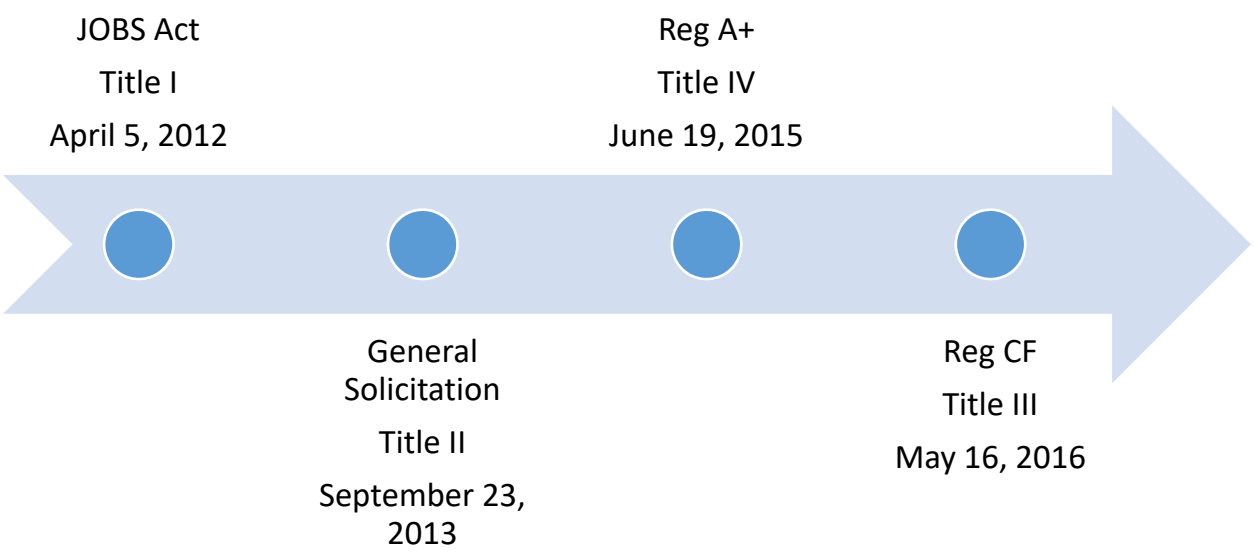


Figure 5

Learning

The figure shows the percentage of GS offerings going first by year in the subsample of firms that make both GS and non-GS offerings in the same year.

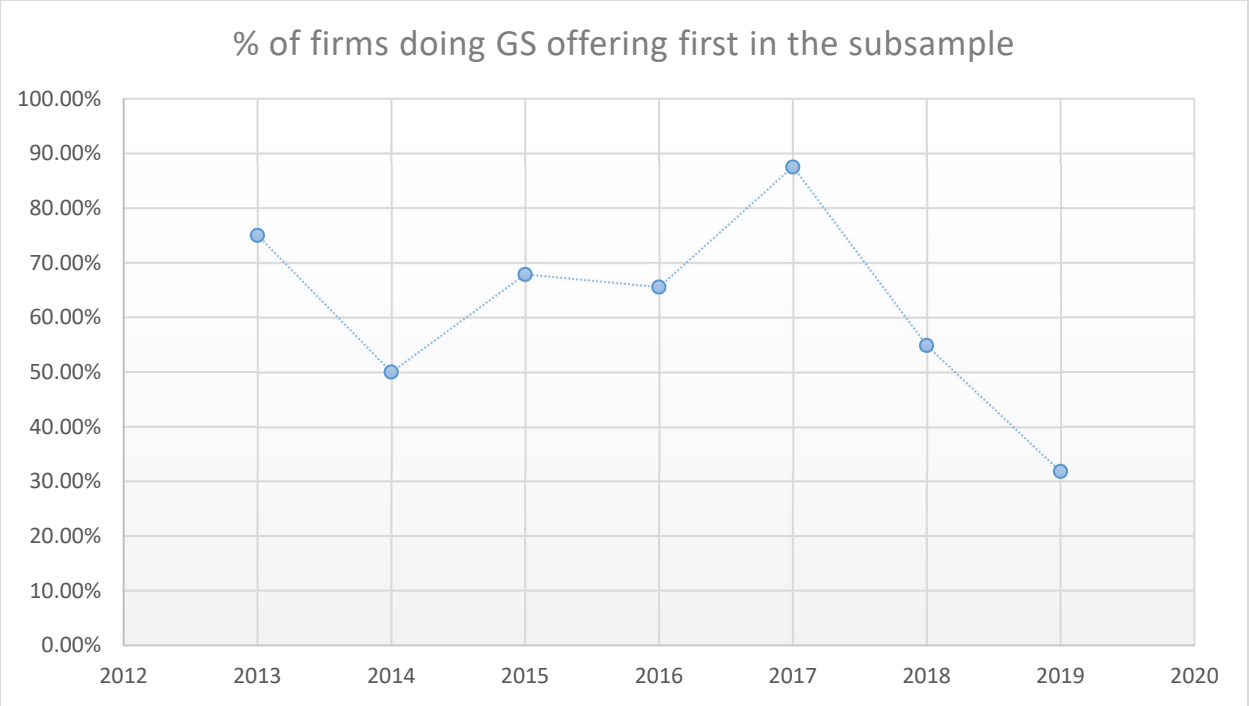


Table 1

Private Offerings Conducted under Rule 506 of Regulation D

Panel A shows the steps in our sample selection procedure. Panel B shows the annual number of GS offerings and non-GS offerings (Post- and Pre-Title II) over our 2010-2019 sample period; the last column shows the percentage of GS offerings out of all offerings. Panel C shows the number of GS and non-GS offerings under Title II by industry, as reported in Item 4 of Form D. Panel D shows the distribution of the number of separate offerings by the 18,638 unique firms that make a total of 31,900 offerings in our sample during 2010-2019 (see Panel B).

Panel A: Sample selection process

Electronic initial Form D and amended Form D/A filings under rule 506, excluding pooled investment funds over 2008-2019 (Electronic filing of Form D with SEC required since March 16, 2009)	199,628
Keep only firms located in the United States	-11,828
Drop financial firms (i.e., Banking, Financial Services and Real Estate)	-53,809
Firms listed in NYSE or Nasdaq	-4,709
Keep filings made over 2010-2019	- 8,563
Private Placement Sample	*120,719*
Drop if total offering amount is indefinite or zero	- 7,502
Drop if revenue is missing (i.e., unreported or reported as 'not applicable')	- 81,317
Final full sample	***31,900***

Panel B: Sample of offerings by year

Year	GS	Non-GS Post	Non-GS Pre	%GS
2010	0	0	3,996	
2011	0	0	3,771	
2012	0	0	3,440	
2013	155	929	2,518	14.3
2014	522	3,258	0	13.8
2015	488	2,715	0	15.2
2016	414	2,381	0	14.8
2017	374	2,183	0	14.6
2018	435	2,142	0	16.9
2019	362	1,817	0	16.6
Total	**2,750**	**15,425**	**13,725**	**15.1**
All		**18,175**	**31,900**	

Panel C: Sample distribution of GS and non-GS offerings by industry after Title II (Sep. 23, 2013 to Dec. 31, 2019)

Industry Group	Freq. GS	Freq. Non-GS
Agriculture	51	360
Airlines and Airports	14	10
Biotechnology	76	671
Business Services	138	497
Coal Mining	3	12
Computers	72	330
Electric Utilities	17	27
Energy Conservation	11	37
Environmental Services	8	79
Health Insurance	3	19
Hospitals and Physicians	16	136
Lodging and Conventions	18	140
Manufacturing	182	811
Oil and Gas	322	1534
Other	756	4352
Other Energy	86	352
Other Health Care	225	1305
Other Technology	496	3032
Other Travel	9	28
Pharmaceuticals	34	332
Restaurants	82	611
Retailing	80	492
Telecommunications	39	227
Tourism and Travel Services	12	31
Total	**2,750**	**15,425**

Panel D: Distribution of the number of separate offerings by a given sample firm during the 2010-2019 sample period

No. of offerings	No. of unique firms
1	13,245
2	2,872
3	1,117
4	513
5	295
6	183
7	121
8	79
9	40
10	36
11+	137
Total	**18,638**

Table 2

Descriptive Statistics

Panel A compares the characteristics of offerings made after Title II during September 23, 2013 to December 31, 2019 using GS and non-GS. Panel B compares the characteristics of GS offerings over this time period to non-GS offerings before Title II (during January 1, 2010 to September 22, 2013). The table reports mean and median values and *t*-statistics and *p*-value of the differences between the two groups. The *$Fee*, *%Fee* and *Regd broker* variables are computed based on the subsample of offerings where a broker is hired, i.e., where *ZeroFee*=0. The number of observations of *Minimum investment* for GS (non-GS) offerings is 2460 (12122) in Panel A and 2460 (10426) in Panel B. For dollar variables, *t*-statistics are based on the natural logarithm of one plus the dollar value. To reduce the effect of outliers, we winsorize all dollar variables at the 1st and 99th percentiles.

Panel A: Descriptive statistics for GS and non-GS offerings after Title II

	Mean			**Median**		**(Wilcox)**
	GS	**non-GS**	***t*-stat**	**GS**	**non-GS**	***p*-value**
%Success Rate	28.15	45.18	-19.92	2.50	33.73	0.00
$Sold (‘000)	3,407	2,875	-23.19	30	225	0.00
$Offered (‘000)	11,700	8,787	7.29	2,000	1,500	0.00
%Fee	11.22	5.37	2.27	4.00	3.60	0.06
$Fee (‘000)	411.03	871.91	-9.77	100.00	206.40	0.00
ZeroFee	0.77	0.87	-12.34	1.00	1.00	0.00
$paid to CEO/Directors/Promoters (‘000)	155	84	14.69	0.00	0.00	0.00
$Net proceeds (‘000)	3,705	2,738	2.45	0.00	180	0.00
Revenue	0.78	0.85	-3.04	1.00	1.00	0.14
#Investors	7.14	8.33	-3.67	1.00	2.00	0.00
Long offering	0.15	0.10	7.27	0.00	0.00	0.00
Security type offered (Not mutually exclusive)						
Equity	0.72	0.77	-5.97	1.00	1.00	0.00
Debt	0.24	0.19	6.42	0.00	0.00	0.00

Right to acquire security	0.15	0.16	-1.37	0.00	0.00	0.17
Other security	0.11	0.07	6.33	0.00	0.00	0.00
Offering w/ a business transaction	0.03	0.03	-0.95	0.00	0.00	0.34
First-round offering	0.45	0.61	-15.92	0.00	1.00	0.00
Firm Age (years)	2.32	2.39	-1.57	1.00	1.00	0.43
CA_NY	0.31	0.28	3.25	0.00	0.00	0.00
Entrant	0.57	0.53	3.83	1.00	1.00	0.00
Minimum investment ($ '000)	915	189	2.72	25	25	0.00
Survival (years)	0.47	0.50	-1.56	0.00	0.00	0.00
Acquired	0.02	0.02	-0.80	0.00	0.00	0.42
IPO	0.00	0.00	-1.29	0.00	0.00	0.20
Bankrupt	0.00	0.01	-2.87	0.00	0.00	0.00
Regd broker	0.36	0.71	-16.65	0.00	1.00	0.00
Registered	0.08	0.09	-2.16	0.00	0.00	0.03
Finder	0.14	0.03	22.60	0.00	0.00	0.00
Offering duration	67.12	93.58	-5.02	7.00	13.00	0.00
Number of observations	*2,750*	*15,425*				

Panel B: Descriptive Statistics for GS offerings after Title II and non-GS offerings before Title II

	Mean			**Median**		**(Wilcox)**
	GS	**Non-GS**	***t*-stat**	**GS**	**Non-GS**	***p*-value**
%Success Rate	28.15	49.30	-24.62	2.50	45.83	0.00
$Sold ('000)	3,407	4,185	-28.37	30	305	0.00
$Offered ('000)	11,700	7,978	6.82	2,000	1,500	0.00

%Fee	11.22	6.70	1.92	4.00	5.00	0.00
$Fee (‘000)	411.03	496.83	-2.49	100.00	149.66	0.00
ZeroFee	0.77	0.82	-6.08	1.00	1.00	0.00
$paid to CEO/Directors/Promoters (‘000)	155	117	10.24	0.00	0.00	0.00
$Net proceeds (‘000)	3,705	4,424	-1.42	0.00	242	0.00
Revenue	0.78	1.06	-10.85	1.00	1.00	0.00
#Investors	7.14	12.05	1.66	1.00	3.00	0.00
Long offering	0.15	0.09	9.15	0.00	0.00	0.00
Security type offered (Not mutually exclusive)						
Equity	0.72	0.74	-2.13	1.00	1.00	0.03
Debt	0.24	0.20	5.16	0.00	0.00	0.00
Right to acquire security	0.15	0.19	-5.46	0.00	0.00	0.00
Other security	0.11	0.11	0.76	0.00	0.00	0.45
Offerings w/ a business transaction	0.03	0.04	-3.44	0.00	0.00	0.00
First-round offering	0.45	0.63	-17.61	0.00	1.00	0.00
Firm Age (years)	2.32	2.72	-8.15	1.00	2.00	0.00
CA_NY	0.31	0.25	6.52	0.00	0.00	0.00
Entrant	0.57	0.61	-3.11	1.00	1.00	0.00
Minimum investment ($ ‘000)	915	19,400	-0.66	25	22	0.70
Survival (years)	0.47	0.95	-14.01	0.00	0.00	0.00
Acquired	0.02	0.04	-5.27	0.00	0.00	0.01
IPO	0.00	0.00	-2.60	0.00	0.00	0.00
Bankrupt	0.00	0.02	-6.02	0.00	0.00	0.00
Regd broker	0.36	0.68	-15.01	0.00	1.00	0.00
Registered	0.08	0.12	-5.76	0.00	0.00	0.00
Finder	0.14	0.05	16.41	0.00	0.00	0.00
Offering duration	67.12	82.30	-3.50	7.00	14.00	0.00
Number of observations	*2,750*	*13,725*				

Table 3

Determinants of the Choice of General Solicitation Method

The table presents estimates of marginal effects from logit (in column (1)) and coefficients from OLS (in column (2)) regressions of firms' choice of the method of private offerings made after the adoption of Title II of the JOBS Act. The dependent variable equals 1 (0) for GS (non-GS) offerings. Appendix A defines the variables. Robust standard errors are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) GS offering	(2) GS offering
Revenue	-0.08***	-0.02**
	(-2.71)	(-2.33)
Ln(1+Firm Age)	0.05	-0.02
	(0.88)	(-1.63)
Ln(1+#Investors)	-0.24***	-0.01***
	(-6.37)	(-3.24)
Ln(1+$Offered)	0.12***	0.01***
	(4.33)	(3.91)
Long offering	0.20**	-0.01
	(2.16)	(-1.38)
Business transaction	-0.05	0.01
	(-0.28)	(0.40)
First-round offering	-0.42***	-0.01
	(-6.68)	(-0.70)
CA_NY	-1.02**	-0.02
	(-2.48)	(-1.17)
Equity	0.00	0.03
	(0.03)	(1.62)
Debt	0.47***	0.02
	(4.09)	(1.29)
Right to Acquire	-0.18*	-0.02*
	(-1.82)	(-1.90)
Other security	0.59*	0.00
	(1.94)	(0.04)
Year FE	Yes	Yes
Industry FE	Yes	
State FE	Yes	
Firm FE		Yes
N	18175	18175
Pseudo R^2	0.08	
R^2		0.01

Table 4

Cost of General Solicitation: Brokerage Fees

The table shows OLS estimates from the following regression of an issuer's choice to use a broker, and of brokerage commissions for offerings that use a broker:

$$y_{i,t} = \alpha_0 + \alpha_1 GS_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year\ FE_t + \alpha_4 Firm\ FE_i + \alpha_5 Security\ Type\ FE_k + \varepsilon_{i,k,t}$$

The dependent variables are: (1) *Zero Fee* equals one, if the offering has zero commissions and fees, and zero otherwise, (2) *Ln($Fee)* = Ln(Sales Commissions + Finders' Fees), and (3) %*Fee* = (Sales Commissions + Finders' Fees) / Total dollars offered. To reduce the effect of outliers, we winsorize *Ln(Fee)* and *%Fee* at the 1st and 99th percentiles. *GS* equals one (zero) for offerings that use GS (non-GS). *Security type FE* include *Equity*, *Debt, Right to Acquire*, and *Other*. Standard errors are clustered at the firm level. Appendix A defines the variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Zero Fee	(2) Ln($Fee)	(3) %Fee
GS	-0.08***	0.60***	0.01**
	(-8.69)	(3.95)	(2.22)
Revenue	-0.01***	0.10	-0.00
	(-3.26)	(0.84)	(-0.15)
Ln(1+Firm Age)	-0.02***	-0.10	-0.00
	(-5.61)	(-0.41)	(-0.55)
Ln(1+#Investors)	-0.01*	-0.08	-0.00
	(-1.95)	(-0.82)	(-0.70)
Ln(1+$Offered)	-0.03***	0.33***	-0.01*
	(-18.42)	(3.40)	(-1.93)
Long offering	0.01	0.23	-0.01
	(0.52)	(0.70)	(-1.46)
Business transaction	0.04**	-0.22	0.00
	(2.51)	(-0.38)	(0.17)
First-round offering	0.03***	-0.05	-0.00
	(6.09)	(-0.39)	(-0.51)
CA_NY	0.01	-0.27	0.00
	(1.00)	(-0.47)	(0.20)
Security type FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
N	18175	2696	2696
R^2	0.06	0.17	0.08

Table 5

Effects of the JOBS Act on Small Business Financing

The table presents estimates from pooled OLS regressions of measures of success of general solicitation offerings and the offering method. The sample includes firms doing GS and non-GS offerings. We use the following specification:

$$y_{i,t} = \alpha_0 + \alpha_1 GS_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

where the variables are for a firm i in each funding round t. The dependent variable in column (1) is *Success Rate* = (Total amount sold / Total offering amount); in column (2), *Ln(1+$Sold)* = ln(1+Total amount sold). *GS* equals one if the firm uses GS; it equals zero otherwise. *Control* is a set of control variables for offering i: issuer *Revenue, Firm Age, #Investors, $Offered, Long offering, BusinessTransaction, First Offering*, and *CA_NY*. Standard errors are clustered at the firm level. Appendix A defines the variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Success Rate	(2) Success Rate	(3) Ln(1+$Sold)	(4) Ln(1+$Sold)
GS	-0.06***	-0.05***	-1.08***	-0.93***
	(-4.43)	(-2.95)	(-8.67)	(-4.47)
Revenue	0.05***	0.02*	0.03	0.03
	(14.54)	(1.91)	(0.72)	(0.20)
Ln(1+Firm Age)	0.03***	-0.01	0.83***	1.13***
	(4.77)	(-0.92)	(15.34)	(6.06)
Ln(1+#Investors)	0.17***	0.17***	2.57***	2.56***
	(50.14)	(31.93)	(66.83)	(34.89)
Ln(1+ $Offered)	-0.06***	-0.07***	0.32***	0.46***
	(-24.15)	(-9.73)	(11.77)	(6.57)
Long offering	-0.10***	-0.03*	0.71***	0.94***
	(-10.98)	(-1.94)	(5.87)	(4.62)
BusinessTransaction	0.19***	0.16***	0.18	-0.26
	(11.40)	(4.21)	(0.94)	(-0.76)
First-round offering	0.11***	-0.01	5.22***	3.44***
	(16.73)	(-0.71)	(64.16)	(26.60)
CA_NY	0.06**	-0.02	0.58*	0.37
	(2.15)	(-0.54)	(1.95)	(1.17)
Security type FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes		Yes	
State FE	Yes		Yes	
Firm FE		Yes		Yes
N	18175	18175	18175	18175
R^2	0.46	0.35	0.70	0.56

Table 6

Do New Entrants Successfully Raise Capital Under the JOBS Act?

The table presents estimates from pooled OLS regressions of aspects of small business financing. The variables are measured for firm i in funding round t. The dependent variables are *Success Rate* = (Total amount sold / Total offering amount) in columns (1) and (2) and *Ln(1+$Sold)* = ln(1+Total amount sold) in columns (3) and (4). *GS* equals one if the firm uses GS; it equals zero otherwise. Standard errors are clustered at the firm level. Appendix A defines the variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Success Rate	(2) Success Rate	(3) Ln(1+$Sold)	(4) Ln(1+$Sold)
GS	-0.09***	-0.05***	-1.08***	-0.83***
	(-3.70)	(-2.80)	(-4.53)	(-3.86)
Entrant	-0.03***	-0.05***	-0.69***	-0.48***
	(-4.71)	(-6.96)	(-8.92)	(-5.60)
GS×Entrant	0.06***	0.04**	0.05	-0.20
	(2.75)	(2.44)	(0.23)	(-1.02)
Revenue	0.05***	0.02*	0.01	0.01
	(14.94)	(1.92)	(0.25)	(0.11)
Ln(1+Firm Age)	0.02***	-0.04***	0.64***	0.87***
	(3.40)	(-2.74)	(12.09)	(4.52)
Ln(1+#Investors)	0.17***	0.17***	2.57***	2.59***
	(54.10)	(35.09)	(69.28)	(36.71)
Ln(1+ $Offered)	-0.07***	-0.09***	0.29***	0.41***
	(-25.70)	(-11.39)	(9.90)	(4.84)
Long offering	-0.10***	-0.03**	0.67***	0.87***
	(-10.85)	(-2.10)	(5.60)	(4.37)
Business transaction	0.20***	0.17***	0.26	-0.30
	(12.14)	(4.76)	(1.37)	(-0.83)
First-round offering	0.11***	-0.01	5.20***	3.41***
	(16.81)	(-1.20)	(65.93)	(26.60)
CA_NY	0.05*	-0.01	0.53*	0.37
	(1.69)	(-0.34)	(1.65)	(1.11)
Security type FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes		Yes	
State FE	Yes		Yes	
Firm FE		Yes		Yes
N	18175	18175	18175	18175
R^2	0.46	0.37	0.70	0.56

Table 7

Success and Cost of General Solicitation

The table reports results on the relation between measures of success of general solicitation offerings, brokerage commissions and use of a broker or finder. The sample includes GS and non-GS offerings. We use the following specification:

$$y_{i,t} = \alpha_0 + \alpha_1 GS_{i,t} \times \%Fee_{i.t} + \alpha_2 GS_{i,t} + \alpha_3 \%Fee_{i.t} + \alpha_4 Controls_{i,t} + \alpha_5 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

The dependent variable is *Success Rate* = (Total amount sold / Total offering amount), *Ln(1+$Sold)*=ln(1+Total amount sold), or *Ln(1+Net proceeds)* = Ln(1+ Total amount sold - Sales Commissions - Finders' Fees - Proceeds paid to insiders). *GS* equals one if a firm uses GS, and zero otherwise. *Regd broker* equals one if the filing has a registered broker, zero for an unregistered broker (also known as finder). *%Fee* = (Sales Commissions + Finders' Fees) / Total offering amount. *Controls* are issuer *Revenue, Firm Age, #Investors, $Offered, Long offering, BusinessTransaction, First Offering*, and *CA_NY*. Columns (1), (4) and (5) are for the full sample of offerings, and columns (2) and (3) are for the subsample of offerings that employ a broker. Standard errors are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Ln(1+Net proceeds)	(2) Success Rate	(3) Ln(1+$Sold)	(4) Success Rate	(5) Ln(1+$Sold)
GS×%Fee		0.16***	1.69***		
		(2.84)	(2.81)		
%Fee		-0.18***	-1.28*		
		(-2.96)	(-1.86)		
GS	-0.53**	-0.07*	-1.72***	-0.05	-0.62
	(-2.27)	(-1.73)	(-3.96)	(-1.07)	(-1.32)
GS×Regd broker				-0.03	-1.73***
				(-0.57)	(-2.60)
Regd broker				-0.01	1.37***
				(-0.22)	(3.86)
Controls	Yes	Yes	Yes	Yes	Yes
Security FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
N	14937	2696	2696	2696	2696
R^2	0.46	0.41	0.63	0.40	0.63

Table 8

Difference in Differences Analysis

The table shows a set of difference in difference (DiD) analyses to examine the effect of Title II on small businesses. Panel A compares switchers (i.e., firms that issue under non-GS pre-JOBS Act and switch to GS post-JOBS Act) and their matched stayers (i.e., firms that issue under non-GS pre-JOBS Act and continue to do so post-Act). We match each switcher (i.e., treated) offering to a stayer (i.e., control) offering from the same industry and same year using the propensity score matching (PSM) method. We match switcher firms to their nearest neighbor in the sample of stayers that has the closest propensity scores obtained from logit regressions without replacement. Matching is based on the following variables: revenue, firm age, the number of current investors, offering amount, and indicators for offerings that last more than a year, offerings made as part of a business transaction, first offering, offerings by firms located in New York and California, and fixed effects for the type of security offered, year, industry, and state of firm location. Panel A shows descriptive statistics of the samples of switchers and stayers (mean values and significance level based on t-statistics of the differences) and the DiD results. In Panel B, we match each treated offering (i.e., GS offerings after Title II) to a control offering (i.e., non-GS offering before Title II) from the same industry using the PSM method described above. Then, we show the single difference estimators to compare the outcome after the Act with the outcome before the Act. After matching, control and treatment groups are the similar subjects before or after the Act. We next consider this matched sample (i.e., GS offerings after Title II and their matched non-GS offerings before Title II) as the treated sample in the second PSM procedure in Panel C, and identify its control sample using the same PSM matching procedure as in Panel B. Control firms are non-GS offerings after Title II and non-GS offerings before Title II in the same year and industry of treated firms. Panel C shows descriptive statistics of the second matched sample and the DiD results. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Descriptive statistics of switchers (i.e., treated) and matched stayers (i.e., control) and DiD results

Mean values of	Switcher (Treated, N=781)	Stayer (Control, N=781)	Sig. level
Revenue	1.14	1.22	
Ln(1+Firm Age)	1.50	1.51	
Ln(1+Investor)	1.55	1.65	
Ln(1+Offering)	14.06	14.20	*
Long offering	0.13	0.12	
Business transaction	0.04	0.03	
First-round offering	0.60	0.58	
CA_NY	0.27	0.25	

	(1) Success Rate	(2) Ln(1+$Sold)
Treated × Post	-0.12**	-1.78***
	(-2.28)	(-2.81)
Post	0.10*	1.62**
	(1.81)	(2.25)
Treated	0.03	0.36
	(0.57)	(0.67)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	1562	1562
R^2	0.04	0.06

Panel B: Descriptive statistics of GS offerings and matched non-GS offerings and DiD results

Mean values of	GS (N=2593)	Non-GS (N=2593)	Sig. level
Revenue	0.81	0.78	
Ln(1+Firm Age)	0.96	0.95	
Ln(1+Investor)	1.12	1.11	
Ln(1+Offering)	14.40	14.37	
Long offering	0.14	0.15	
Business transaction	0.03	0.03	
First-round offering	0.47	0.47	
CA_NY	0.30	0.30	

	(1) Success Rate	(2) Ln(1+$Sold)
Post	-0.04	-1.31**
	(-0.87)	(-2.02)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	5186	5186
R^2	0.05	0.05

Panel C: Descriptive statistics of the treated (i.e., GS post-Act and matched non-GS pre-Act) and matched control (i.e., matched non-GS post-Act and matched non-GS pre-Act) and their DiD results.

Mean values of	Treated (N=4700)	Control (N=4700)	Sig. level
Revenue	0.86	0.82	
Ln(1+Firm Age)	0.99	0.96	*
Ln(1+Investor)	1.20	1.19	
Ln(1+Offering)	14.32	14.31	
Long offering	0.13	0.12	
BusinessTransaction	0.03	0.03	
First-round offering	0.49	0.51	
CA_NY	0.28	0.29	*

	Success Rate	Ln(1+$Sold)
Treated × Post	-0.03*	-0.63**
	(-1.81)	(-2.32)
Post	-0.08***	-1.56***
	(-2.64)	(-3.23)
Treated	-0.02**	-0.04
	(-1.97)	(-0.24)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	9400	9400
R^2	0.06	0.06

Table 9

Identification: Subsample Analysis

The table reports results on the relation between the success rate of private placements and the offering method for a subsample of 223 firms that do both GS and non-GS offerings in the same year, for a total of 366 and 312 offerings of the two types, respectively. The regression specification follows Table 5. Standard errors are clustered at the firm level. Panel A shows the results for the full subsample, and Panel B shows them for its partitions by whether the first offering during the year uses GS or not. Appendix A defines the variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full subsample

	(1) Success Rate	(2) Ln(1+$Sold)	(3) Success Rate	(4) Ln(1+$Sold)	(5) Success Rate	(6) Ln(1+$Sold)
GS	-0.12***	-1.36***	-0.14***	-1.77***	-0.07***	-0.75**
	(-2.81)	(-3.04)	(-4.30)	(-4.26)	(-2.68)	(-2.01)
Controls					Yes	Yes
Security FE					Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes			Yes	Yes
State FE					Yes	Yes
Firm FE			Yes	Yes		
N	678	678	678	678	678	678
R^2	0.27	0.26	0.07	0.07	0.65	0.75

Panel B: Subsample partitioned by whether the first offering uses GS or not

	First offering uses GS		First offering does not use GS	
	Success Rate	Ln(1+$Sold)	Success Rate	Ln(1+$Sold)
GS	-0.12***	-1.70***	-0.15**	-1.96***
	(-3.41)	(-3.26)	(-2.47)	(-2.69)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	397	397	261	261
R^2	0.07	0.06	0.08	0.06

Table 10

Robustness Checks

The table reports the coefficients of *GS* from several robustness tests performed on the success of general solicitation offerings. Each panel shows the results of a separate set of regressions. We mainly report the estimates of *GS* for brevity. The regression specification and the control variables are the same as in columns (2) and (4) of Table 5. Standard errors are clustered at the firm level. Panel A shows the results for the subsamples of Debt only and Equity only offerings, after omitting security-type FEs. Panel B shows results for the subsample of only the latest Form D or D/A filing for a given offering, and controls for *Offering duration* (i.e., ln(1 + the number of days between the date of first sale and filing date)). Panel C shows the results for the sample that includes firms that do not report revenue. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Subsample for Debt only and Equity only offerings

	Equity only		Debt only	
	Success Rate	Ln(1+$Sold)	Success Rate	Ln(1+$Sold)
GS	-0.05**	-1.06***	0.02	-0.07
	(-2.07)	(-3.33)	(1.11)	(-0.28)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	11127	11127	1395	1395
R^2	0.35	0.58	0.44	0.50

Panel B: Subsample for the last Form D or D/A filing for a given offering

	Success Rate	Success Rate	Ln(1+$Sold)	Ln(1+$Sold)
GS	-0.04***	-0.07***	-0.68***	-0.76***
	(-4.02)	(-2.85)	(-9.28)	(-2.97)
Offering duration	0.05***	0.04***	1.39***	1.13***
	(19.42)	(10.51)	(67.36)	(25.12)
Controls	Yes	Yes	Yes	Yes
Security type FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes		Yes	
State FE	Yes		Yes	
Firm FE		Yes		Yes
N	14955	14955	14955	14955
R^2	0.49	0.31	0.81	0.61

Panel C: Sample that includes firms that do not report revenue

	Success Rate	Success Rate	Ln(1+$Sold)	Ln(1+$Sold)
GS	-0.14***	-0.09***	-1.65***	-1.07***
	(-14.74)	(-6.86)	(-16.46)	(-7.14)
Controls	Yes	Yes	Yes	Yes
Security type FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes		Yes	
State FE	Yes		Yes	
Firm FE		Yes		Yes
N	56633	56633	56633	56633
R^2	0.28	0.24	0.58	0.43

APPENDIX A

Variable Definitions

The table defines the variables used in the study. The data come from Audit Analytics Private Placement Database.

Variable	Definition
Revenue	This indicates Revenue Range disclosed Item 5, Form D = 0 if revenue range is "No Revenues" = 1 if revenue range is "$1 - $1,000,000" = 2 if revenue range is "$1,000,001 - $5,000,000" = 3 if revenue range is "$5,000,001 - $25,000,000" = 4 if revenue range is "$25,000,001 - $100,000,000" = 5 if revenue range is "Over $100,000,000"
$Offered	The dollar amount of securities being offered. Item 13, Form D
#Investors	The total number of investors who have already invested in the offering. Item 14, Form D
Long offering	=1 if the issuer intends the offering to last more than one year, zero otherwise. Item 8, Form D
Equity	=1 if type(s) of securities offered is Equity, zero otherwise. Item 9, Form D
Debt	=1 if type(s) of securities offered is Debt, zero otherwise. Item 9, Form D
Right to Acquire	=1 if type(s) of securities offered is option, warrant or other right to acquire another security or security to be acquired upon exercise of option, warrant or other right to acquire security.
Other security	=1 if type(s) of securities offered is pooled investment fund interests, tenant-in-common securities, mineral property securities, or other.
GS	=1 if an offering uses GS, zero otherwise
Post	=1 post-Title II, zero pre-Title II of the JOBS Act
Business transaction	=1if the offering is in made in connection with a business combination transaction., zero otherwise. Item 10, Form D
First-round offering	=1 if Form D is filed in the same year as the “Date of First Sale” reported in Item 7 of Form D; zero otherwise.
Entrant	=1 for the earliest Form D filing by a given firm in the database, zero otherwise.
# of Nonaccredited	the number of non-accredited investors who have already invested in the offering. Item 14, Form D
Success Rate	(Total amount sold / Total offering amount)

$Sold	The dollar amount of securities sold. Item 13, Form D
$Commissions	The dollar amount of Sales Commission expenses, including estimates. Item 15, Form D
$Finders' fees	The dollar amount of Finders' Fee expenses, including estimates. Item 15, Form D
$Fee	*$Commissions* + *$Finders' fees*. Item 15 of Form D; in the subsample of offerings that use a broker.
Zero Fee	= 1 if issuer has zero commission and fee; zero otherwise.
%Fee	*$Fee* / *$Offered;* in the subsample of offerings that use a broker.
$Proceeds paid	Proceeds paid to executive officers, directors or promoters in $. Item 16 of Form D
Firm Age	Filing year – year of incorporation
CA_NY	= 1, if issuer is located in California or New York; zero otherwise.
Minimum investment	= the minimum investment that will be accepted from outside investors. Item 11, Form D
Survival (years)	= the year in which the issuer appears last in our sample – filing year
Acquired	= 1, if firm *i* is acquired after the funding round, zero otherwise
IPO	= 1, if firm *i* goes public after the funding round, zero otherwise
Bankrupt	= 1, if firm *i* goes bankrupt after the funding round, zero otherwise
Regd broker	= 1, if the broker has a CRD number, zero otherwise (i.e., a finder or an unregistered broker); in the subsample of offerings that use a broker.
Registered	= 1, if the filing has a registered broker, zero otherwise (i.e., filing has no broker or an unregistered broker).
Finder	= 1, if the filing has an unregistered broker, zero otherwise (i.e., filing has no broker or a registered broker).
Offering duration	= the number of days between filing date and date of first sale. If date of first sale is "yet to occur", it is coded as 0.
Industry Fixed Effects	Dummy variable for industry, as disclosed in Item 4 of Form D.

APPENDIX B

Top 10 brokers

The table lists top 10 sales compensation recipient names in GS and non-GS offerings in our sample by $Sold.

	GS offerings		Non-GS offerings
1	Credit Suisse Securities (USA), LLC	**1**	Wells Fargo Securities, LLC
2	Vega Asset Partners	**2**	Kristofor D. Raudabaugh
3	OCM Exco Holdings, LLC	**3**	Internal Revenue Service/D.O.T.T.
4	Energy Strategic Advisory Services, LLC	**4**	Morgan Stanely & Co., LLC
5	Gen IV Investment Opportunities, LLC	**5**	Goldman, Sachs & Co.
6	Flex Class	**6**	Cowen And Company, LLC
7	George K. Baum & Company	**7**	Jefferies, LLC
8	BMO Capital Markets Corp.	**8**	Citigroup Global Markets Inc.
9	Citigroup Global Markets Inc.	**9**	Deutsche Bank Securities, Inc.
10	Deutsche Bank Securities Inc.	**10**	KKR Capital Markets, LLC