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. Title II allows firms to sell securities via general solicitations to accredited investors. We find that general solicitation offerings tend to be of lower quality than other offerings. After accounting for this selection effect, these offerings are less likely to succeed, raise less capital than other offerings, 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: G18, 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

[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.

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, and brokers and dealers), 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 securities offerings: rule 506(c) and rule 506(b). Title II added the new rule 506(c) to the traditional rule 506(b).[2] 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)[3] investors, while rule 506(c) does not allow sales to any unaccredited investors.

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[2] Before Title II, rule 506(b) was simply called rule 506.

[3] 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.

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. This is the first large-scale study to analyze these issues. 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, i.e., 506(c) offerings, over 506(b) offerings. We find that firms that choose 506(c) 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. And compared to 506(b) offerings, the proportion of offerings for equity (debt) securities is lower (higher) in 506(c) offerings.

Second, we find that private placements under rule 506(c) are substantially more likely to employ a broker (23% vs. 13%) and pay larger brokerage fees than those under rule 506(b). These findings suggest that general solicitation increases payments to financial intermediaries, likely to cover the costs of verifying accredited investors and advertising. Third, 506(c) offerings have lower funding success rate (i.e., they fail to raise the target amount of capital) and raise less capital than 506(b) offerings. The net proceeds raised (= Amount sold – Sales commissions and finders' fees - Proceeds paid to insiders) are also substantially lower in 506(c) offerings than in 506(b) offerings.

If Title II of the JOBS Act is successful, then we might expect a new set of issuers to take advantage of the new 506(c) exemption to raise capital in private placements. These new issuers may differ from issuers claiming the 506(b) exemption and from issuers raising capital before the JOBS Act, which 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 claiming the 506(c) exemption 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 firm quality such as firm age, revenue, the number of investors, offering duration 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 506(c) 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 under 506(c) or 506(b). 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: 506(c) offerings have a lower financing success rate and raise less capital than 506(b) 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 legal and 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.[4] Section 201

[4] 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

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.[5]

To participate in a 506(c) 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

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relationship substantive if the issuer can evaluate whether the investor's financial circumstances qualify them as accredited investors.

[5] 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.

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 under section 506(b) vs. 506(c) can be explained as a separating equilibrium, which means that different types of firms choose different actions. For example, lower quality firms choose 506(c) and advertise to the general public, while higher quality firms choose 506(b) 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 under 506(c). 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, 506(c) 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.[6] 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.[7]

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

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

[7] 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.

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.

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 506(c) offerings, while high quality firms choose 506(b) offerings.*

H2a: *506(c) offerings have higher success in financing than 506(b) offerings.*

H2b: *506(c) offerings have lower success in financing than 506(b) 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 506(c) 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, 506(c) 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: *506(c) offerings require larger brokerage commissions than 506(b) offerings.*

H4a: *506(c) offerings that pay larger brokerage commissions have higher success rates than 506(b) offerings.*

H4b: *506(c) offerings that pay larger brokerage commissions have lower success rates than 506(b) 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.[8] 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 firms in banking, financial services and real estate, (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]

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[8] How does an issuer find investors for its 506(b) offering, which does not permit general solicitation? 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.

[9] What type of firms choose not to disclose their revenue or offering amount, choices that increase information asymmetry in the offering? In untabulated results, we find that firms that are younger and make offerings of longer duration are more likely to hide the offering amount. This can reflect overconfidence by immature managers. We also find that firms that hide their revenue are more likely mature firms with higher age, more investors, and offerings with shorter duration. Firms that do not disclose both revenue and offering amount tend to give investors the option to buy securities later, to overcome information asymmetry (see Gompers and Lerner, 2000).

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 506(c) (506(b)). 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 506(c) or 506(b). 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 506(c) offerings out of the total number of 506(c) and 506(b) offerings under Title II. Offerings under 506(c) 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 506(c) and 506(b) 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.

[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.

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 general solicitation even after that prohibition was lifted under the new rule 506(c). This may be due to 506(b) issuers wanting to signal their higher quality over 506(c) issuers.

Figure 2 shows the geographic distribution of offerings sold under 506(c) and 506(b). 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+total amount sold). We control for offering and firm characteristics motivated by the prior literature. For 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, offering duration, 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.[11] The regressions include dummy variables for industry, state of firm location, and offering year.[12]

4. Results

4.1. Determinants of general solicitation

We start by considering the possibility that firms doing general solicitation 506(c) offerings differ from those doing 506(b) offerings. For example, if rule 506(c) 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

[11] To offset higher fees, offerings under 506(c) 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.

[12] 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.

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 506(b), while low-quality firms issue under rule 506(c). 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 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. 506(c) offerings have a substantially lower mean success rate than 506(b) offerings (28.2% vs. 45.2%). The median amount raised under 506(c) is also substantially lower than that under 506(b) ($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 506(c) offerings than in 506(b) offerings (4% v. 3.6%); the presence of outliers make the mean values larger and further apart (11.2% vs. 5.4%).[13] The median net proceeds are substantially lower in 506(c) offerings than in 506(b) 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, 506(c) offerings (1) have a

[13] Appendix B shows the top 10 sales compensation recipients in 506(c) and 506(b) offerings in our sample by the total amount sold.

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 506(b) offerings. These results suggest that firms that offer under 506(c) 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 506(c) 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 506(c) offerings and 53% for 506(b) offerings. This finding suggests that the lower success rate of 506(c) offerings is not due to a greater proportion of new entrants than in 506(b) offerings.

The offering size of securities is larger in 506(c) offerings than in 506(b) offerings. The mean (median) dollar amount of securities offered under 506(c) is about $11.7 million ($2 million), while it is $8.8 million ($1.5 million) in 506(b) offerings. All these comparisons generally mirror those when we compare the offerings under the new rule 506(c) to offerings under rule 506 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 general solicitation, 506(c), 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 offerings under rule 506(c) (506(b)). 506(c) issuers appear to be of lower quality: they have lower revenue, have offerings of longer

duration (i.e., more likely to last for >1 year), are less likely to accept delayed investment, and are more likely to offer debt securities. 506(c) 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 506(c) 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 506(c) offerings.

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 issuers under rule 506(c) or 506(b) exemptions, 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:

$$y_{i,t} = \alpha_0 + \alpha_1 Rule506(c)_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year\ FE_t + \alpha_4 Firm\ FE_i + \alpha_5 Security\ Type\ FE_k + \varepsilon_{i,k,t}$$

The dependent variables are: (1) *I_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* = (Sales Commissions + Finders' Fees) / Total dollar offered). *Rule506(c)* equals one (zero) if firm *i* claims rule 506(c) (506(b)) exemption. *Control* is a vector

of firm *i*'s controls. 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 506(c) vs. 506(b).

Table 4 shows OLS estimates with firm fixed effects.[14] Column 1 shows that 506(c) offerings are substantially less likely to have zero fee filings (i.e., are more likely to hire a broker). Moreover, within the subsample of offerings that use a broker, 506(c) offerings have considerably larger brokerage costs and finders' fees than 506(b) offerings, in both dollar and percentage terms. In terms of economic magnitude, 506(c) 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 506(b) offerings. These findings suggest that general solicitation via 506(c) offerings incurs substantially higher brokerage costs than 506(b) 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 under rules 506(c) or 506(b), we estimate the following regression:

$$y_{i,t} = \alpha_0 + \alpha_1 Rule506(c)_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

[14] 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.

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* = (Total amount sold / Total offering amount), and *Ln(1+Sold)* = ln(1+Total amount sold).

Panel A of Table 5 presents our baseline estimates from pooled OLS regressions of small business financing. We find that 506(c) offerings, newly enabled by the law, have a 5% to 6% lower funding success rate than 506(b) offerings. Moreover, 506(c) offerings raise substantially less capital. The total amount sold is about 61% (= $e^{-0.93}$ - 1) to 66% (= $e^{-1.08}$ - 1) lower in 506(c) offerings than 506(b) offerings. These results are quite similar in Panel B of Table 5 where we replace the categorical Revenue range variable with Revenue FEs and the natural log of $Offering with indicator variables for dollar ranges. These findings are striking because rule 506(c) 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' choice of offering method (506(c) vs. 506(b)), 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 506(c) offerings. While columns (1) and (2) of Table 6 show that the success rate of financing is higher for new entrants that choose rule 506(c), columns (3) and (4) show no evidence that they raise more capital. Of course, if rule 506(c) 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 506(c) 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.[15]

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 estimate regressions of *Ln(1+Net proceeds),* defined as Ln(1+ Total amount sold – Sales commissions – Finders' fees – Proceeds paid to insiders). In columns (1) and (2) of Table 7, the net proceeds are 41% (= $e^{-0.53}$ -1) to 51% (= $e^{-0.71}$ -1) lower in 506(c) general solicitation offerings than in 506(b) offerings. Columns (3) to (6) show regressions for the subsample of offerings that hire a broker. The coefficient of %Fee is significantly negative, indicating that higher %Fee is associated with lower financing success for 506(b) offerings, but

[15] 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, 506(c) or 506(b). So, we replace the indicator for a 506(c) 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.

there is essentially no such relation for 506(c) offerings (i.e., the coefficients of %Fee and Rule506(c)×%Fee nearly offset each other).

5. Identification: Accounting for selection effects

We find that firms that choose 506(c) offerings differ from those that choose 506(b) 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 506(c) 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 claiming the 506(c) exemption and the likelihood of financing success. We mitigate these concerns in four 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, offering duration, the type of security offered, and include fixed effects for firm or industry, state of firm location and year. 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 506(c) and 506(b) in the same year. 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 506(c) before the JOBS Act if it were available, and subsequently use 506(c) under the JOBS Act. There are a few issues to consider. First, before the Act, firms have only one option for fund raising, rule 506 (which was

renamed as rule 506(b) by the Act). After the Act, firms now have two choices, rule 506(c) or the traditional rule 506(b). Second, it is impossible to know which firms would have issued under 506(c) before the JOBS Act. We address the first issue by comparing firms that issue under 506(b) pre-JOBS Act and switched to 506(c) post-JOBS Act (i.e., *Switchers*) vs. firms that issue under 506(b) pre-JOBS Act and continue to 506(b) 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 506(c) and 506(b). 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 506(c) offerings have a 12% lower financing success rate and raise less capital than similar 506(b) stayers after Title II took effect.

Next, in Panel B of Table 8, we match each 506(c) offering after Title II (i.e., treated offering) to a 506 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 506(c) offerings post-Act raise less capital than its matched 506 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., 506(c) offerings after Title II and their matched 506 offerings before Title II. We then match each treated offering to a control offering made under 506(b) or 506 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 506(c) 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 506(c) are worse off than 506(b) 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, 506(c) or 506(b). 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 506(c) offerings and one or more 506(b) 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 506(c) offerings still lead to a considerably lower success rate for a firm than 506(b) offerings, even after controlling for selection effects and firm characteristics. In column (3), 506(c) offerings have a 14% lower success rate than 506(b) offerings. 506(c) offerings also raise substantially less capital than 506(b) offerings. In column (4), the magnitude of this effect is as much as -83% ($= e^{-1.77} - 1$).

Is a 506(c) 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 rule 506(c) or 506(b). The success rate of the offering as well as the amount sold are consistently lower in 506(c) offerings than in 506(b) offerings in both subgroups. The magnitude of this effect is remarkably similar across the two subgroups.

Do firms make a 506(c) offering first, and if it fails to raise enough money, follow-up with a 506(b) offering? In Figure 5, the proportion of firms doing a 506(c) offering first in this subsample increases from 2014 to 2017, and declines substantially after that. Firms start out with a preference for using the new 506(c) 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.

5.3. Robustness checks

Our dataset has some limitations. Startups may violate the requirement to file a Form D due to the lack of administrative teeth.[16] Especially in Silicon Valley, increasingly the norm

[16] 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 notice on 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 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 unregistered offerings eligible for relief under Regulation D.

appears to be to delay or avoid filing Form D.[17] We check whether this possibility creates a bias in our approach. First, we include fixed effects for state of firm location in all the regressions. That should partly relieve the bias arising from some areas. Second, we include industry fixed effects. 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. Figure 3 shows the variation of unsuccessful private offerings under rule 506 during pre-Title II and rule 506(c) and 506(b) during post-Title II period. 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 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.

Next, we briefly discuss the rules under other parts of the JOBS Act and the dates they became effective. Figure 4 shows timeline of separate parts, called titles of the Jobs Act. Title I, effective April 5, 2012, provides reduced burden of disclosure rules for emerging growth companies, defined as those 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

[17] See https://techcrunch.com/2019/03/28/how-to-delay-your-form-ds/.

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 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.

Finally, we exclude firms that later file for Form D/A amendments to eliminate the potential selection issue of firms switching between the different offering methods. 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 under either exemption – the new 506(c) exemption or the old 506(b) exemption.

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 506(b) 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).

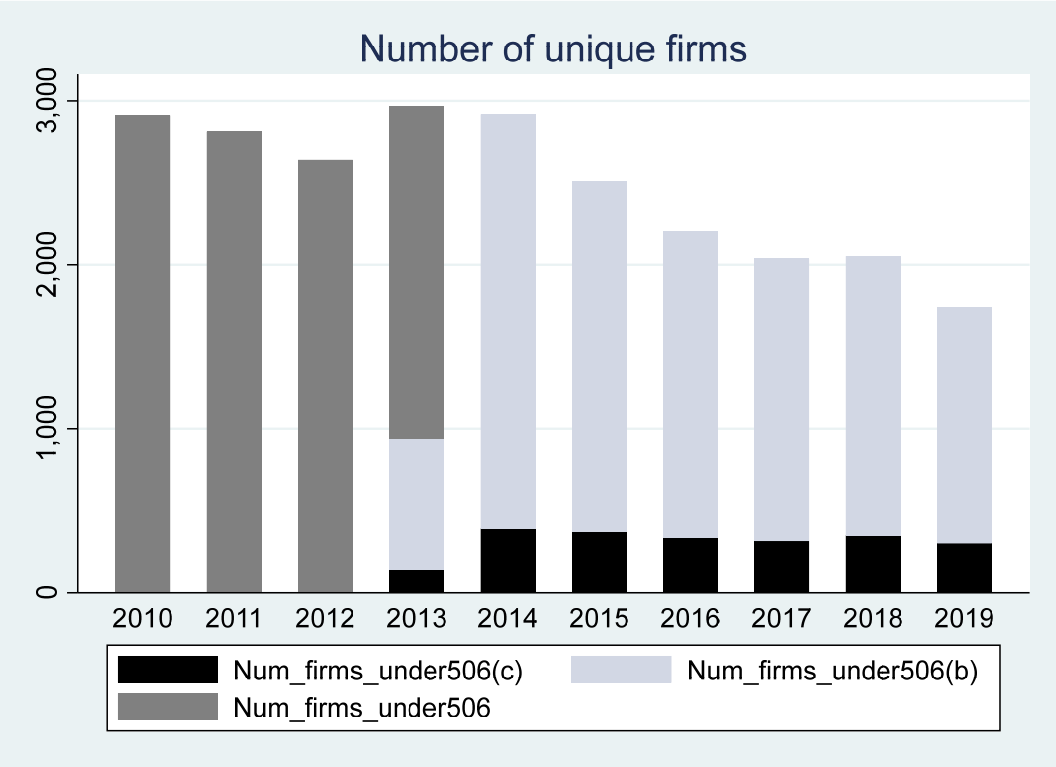

Figure 2

Geographic Distribution

The figure shows the geographic distribution of private offerings made under rules 506(c) and 506(b) during 2010-2019.

Panel A: Offerings under rule 506(c)

Panel B: Offerings under rule 506(b)

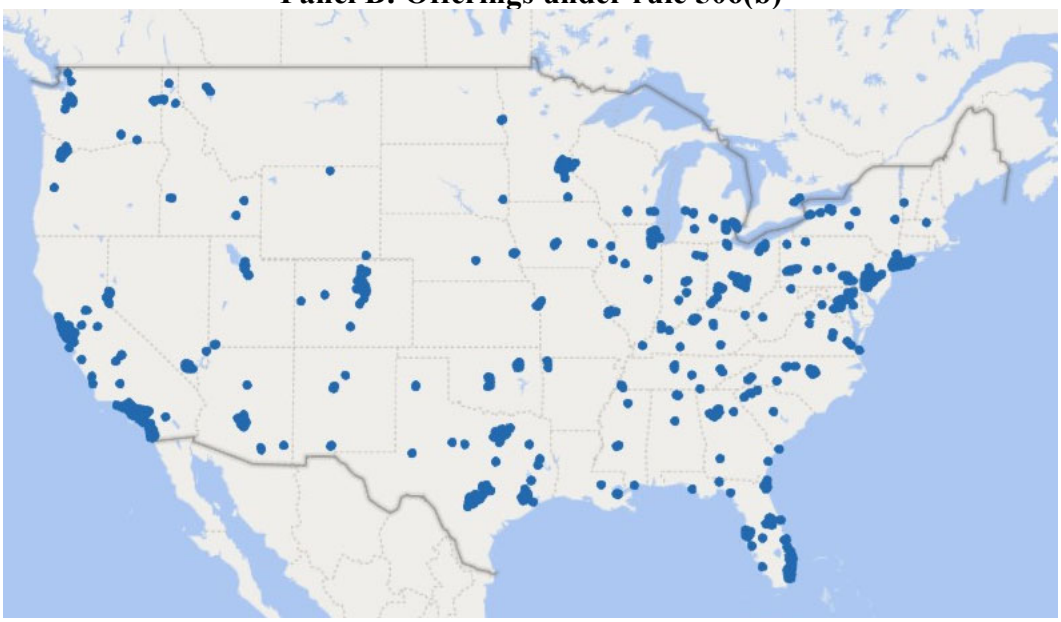

Figure 3

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.

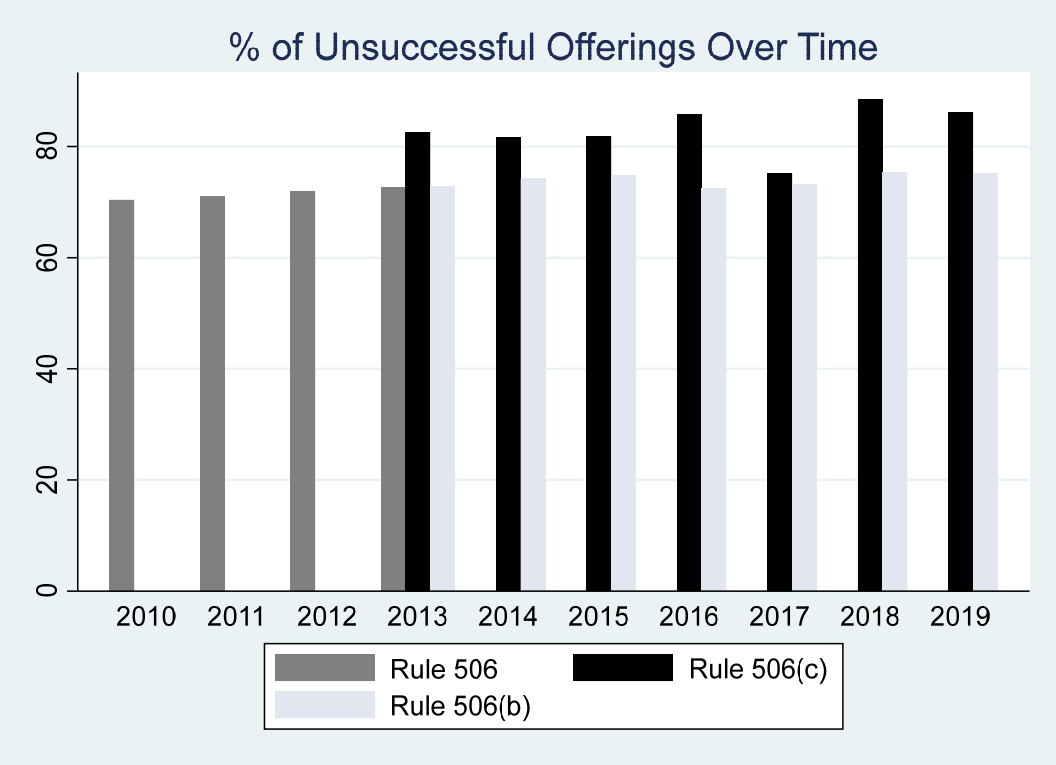

Figure 4

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.

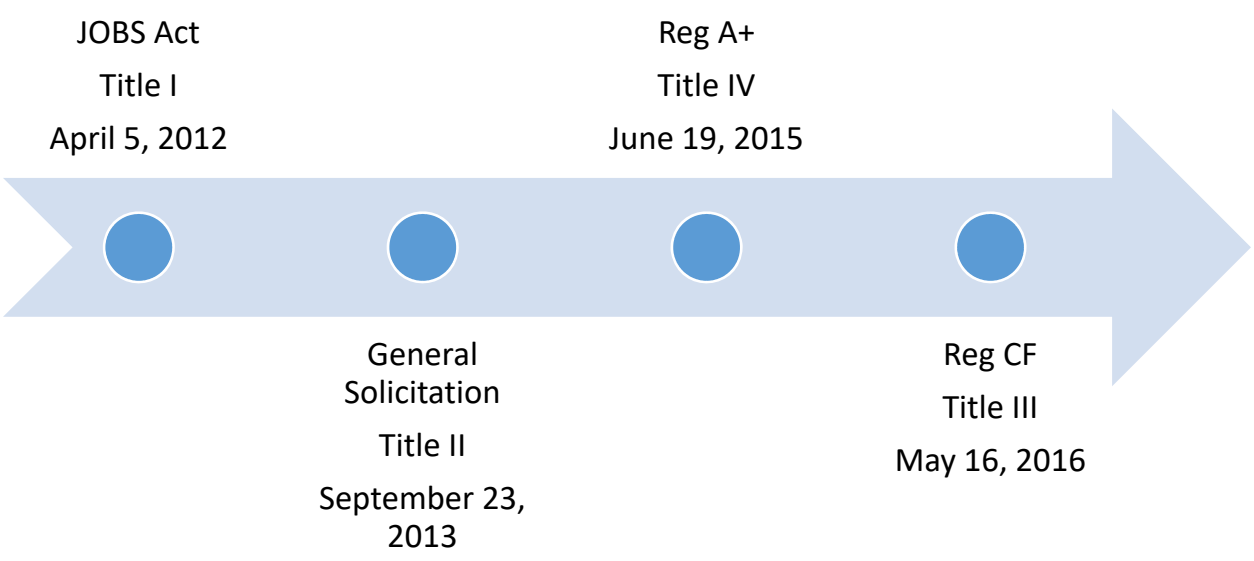

Figure 5

Learning

The figure shows the percentage of 506(c) offerings going first by year in the subsample of firms that make both offerings in the same year.

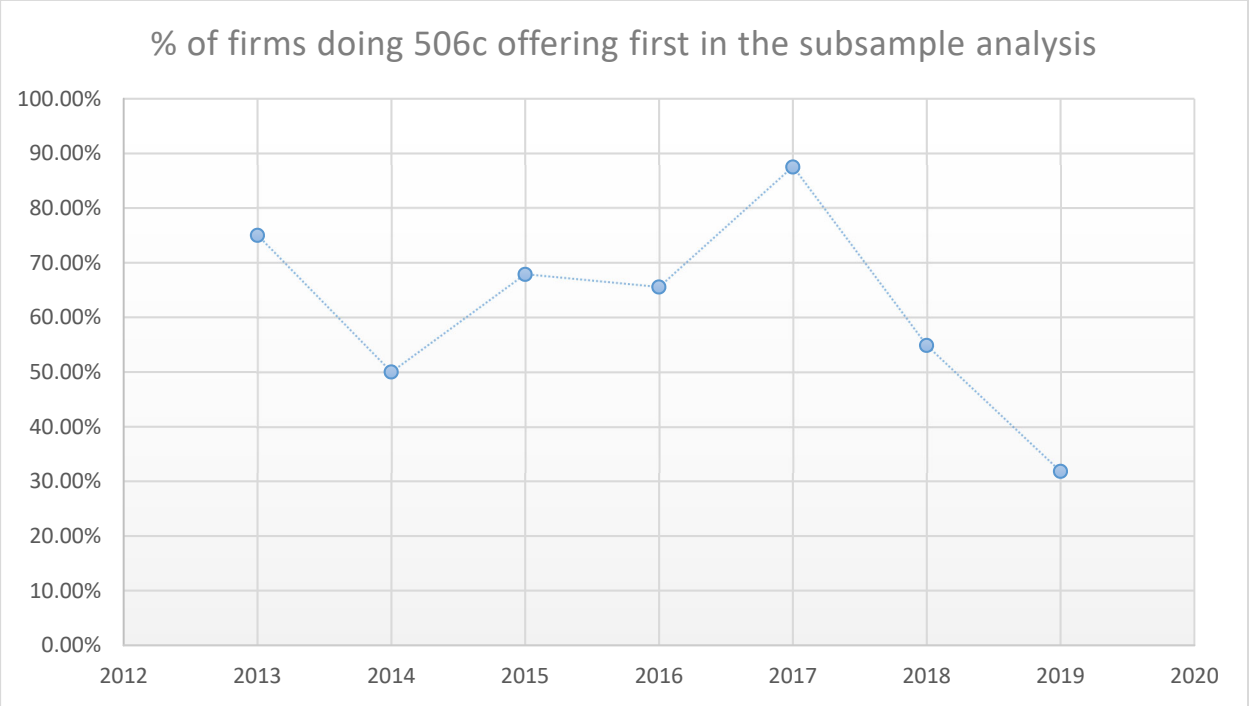

Table 1

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 offerings made under different parts of rule 506 over our 2010-2019 sample period; the last column shows the percentage of 506(c) offerings out of all 506(c) and 506(b) offerings. Panel C shows the number of 506(c) and 506(b) 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 and 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 under rule 506 by year

Year	506(c)	506(b)	506	%506(c)
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 offerings under rules 506(c) and 506(b) by industry after Title II (Sep. 23, 2013 to Dec. 31, 2019)

Industry Group	Freq. 506(c)	Freq. 506(b)
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 under rules 506(c) and 506(b). Panel B compares the characteristics of actual 506(c) offerings under Title II over this time period to 506 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 number of observations of minimum investment is 2460 (12122) [10426] for 506(c) (506(b)) [506] offerings. 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 506(c) and 506(b) offerings after Title II

	Mean			**Median**		**(Wilcox)**
	506(c)	**506(b)**	***t*-stat**	**506(c)**	**506(b)**	***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
$TotalFee (‘000)	411.03	871.91	-9.77	100.00	206.40	0.00
I_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
I_offerings last more than one year	0.15	0.10	7.27	0.00	0.00	0.00
Security type offered (Not mutually exclusive)						
I_Equity	0.72	0.77	-5.97	1.00	1.00	0.00
I_ Debt	0.24	0.19	6.42	0.00	0.00	0.00
I_ Right to Acquire (Another) Security	0.15	0.16	-1.37	0.00	0.00	0.17

I_ Other	0.11	0.07	6.33	0.00	0.00	0.00
I_offerings made with a business transaction	0.03	0.03	-0.95	0.00	0.00	0.34
I_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
I_issuer located in CA or 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
I_Acquisition	0.02	0.02	-0.80	0.00	0.00	0.42
I_IPO	0.00	0.00	-1.29	0.00	0.00	0.20
I_Bankruptcy	0.00	0.01	-2.87	0.00	0.00	0.00
Number of observations	*2,750*	*15,425*				

Panel B: Descriptive Statistics for 506(c) offerings after Title II and 506 offerings before Title II

	Mean			Median		(Wilcox)
	506(c)	**506**	***t*-stat**	**506(c)**	**506**	***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)	11,7007	7,978	6.82	2,000	1,500	0.00
%Fee	11.22	6.70	1.92	4.00	5.00	0.00
$TotalFee (‘000)	411.03	496.83	-2.49	100.00	149.66	0.00
I_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
$Net proceeds (‘000)	3,705	4,424	-1.42	0.00	242	0.00
Revenue	0.78	1.06	-10.85	1.00	1.00	0.00
#Investors	7.14	12.05	1.66	1.00	3.00	0.00
I_offerings last more than one year	0.15	0.09	9.15	0.00	0.00	0.00
Security type offered (Not mutually exclusive)						
I_Equity	0.72	0.74	-2.13	1.00	1.00	0.03
I_ Debt	0.24	0.20	5.16	0.00	0.00	0.00
I_ Right to Acquire (Another) Security	0.15	0.19	-5.46	0.00	0.00	0.00
I_ Other	0.11	0.11	0.76	0.00	0.00	0.45
I_offerings made with a business transaction	0.03	0.04	-3.44	0.00	0.00	0.00
I_First-round offering	0.45	0.63	-17.61	0.00	1.00	0.00
Firm Age (years)	2.32	2.72	-8.15	1.00	2.00	0.00
I_issuer located in CA or NY	0.31	0.25	6.52	0.00	0.00	0.00
Entrant	0.57	0.61	-3.11	1.00	1.00	0.00
Minimum Investment ($ ‘000)	915	19,400	-0.66	25	22	0.70
Survival (years)	0.47	0.95	-14.01	0.00	0.00	0.00
I_Acquisition	0.02	0.04	-5.27	0.00	0.00	0.01

I_IPO	0.00	0.00	-2.60	0.00	0.00	0.00
I_Bankruptcy	0.00	0.02	-6.02	0.00	0.00	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 offerings under rule 506(c) (506(b)). 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) Rule506(c)	(2) Rule506(c)
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+ $Offering)	0.12***	0.01***
	(4.33)	(3.91)
I_more than a year	0.20**	-0.01
	(2.16)	(-1.38)
I_ BusinessTransaction	-0.05	0.01
	(-0.28)	(0.40)
I_First-round offering	-0.42***	-0.01
	(-6.68)	(-0.70)
I_CA_NY	-1.02**	-0.02
	(-2.48)	(-1.17)
I_Equity	0.00	0.03
	(0.03)	(1.62)
I_Debt	0.47***	0.02
	(4.09)	(1.29)
I_Right to Acquire	-0.18*	-0.02*
	(-1.82)	(-1.90)
I_Other	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:

$$y_{i,t} = \alpha_0 + \alpha_1 Rule506(c)_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year\ FE_t + \alpha_4 Firm\ FE_i + \alpha_5 Security\ Type\ FE_k + \varepsilon_{i,k,t}$$

The dependent variables are: (1) *I_Zero Fee* equals one, if the offering has zero commissions and fees, and zero otherwise, (2) *Ln(1+$Fee)* = Ln(1+Sales Commissions + Finders' Fees), and (3) %*Fee* = (Sales Commissions + Finders' Fees) / Total dollars offered. To reduce the effect of outliers, we winsorize Ln(1+Fee) and %Fee at the 1st and 99th percentiles. *Rule506(c)* equals one (zero) for firms that claim rule 506(c) (506(b)) exemption. *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) I_Zero Fee	(1) Ln(1+Fee)	(2) %Fee
Rule506(c)	-0.08***	0.57***	0.01**
	(-8.69)	(4.04)	(2.22)
Revenue	-0.01***	0.12	-0.00
	(-3.26)	(1.07)	(-0.15)
Ln(1+Firm Age)	-0.02***	-0.10	-0.00
	(-5.61)	(-0.40)	(-0.55)
Ln(1+#Investors)	-0.01*	-0.08	-0.00
	(-1.95)	(-0.81)	(-0.70)
Ln(1+ $Offering)	-0.03***	0.33***	-0.01*
	(-18.42)	(3.83)	(-1.93)
I_more than a year	0.01	0.19	-0.01
	(0.52)	(0.61)	(-1.46)
I_ BusinessTransaction	0.04**	-0.14	0.00
	(2.51)	(-0.27)	(0.17)
I_First-round offering	0.03***	-0.06	-0.00
	(6.09)	(-0.45)	(-0.51)
I_CA_NY	0.01	-0.25	0.00
	(1.00)	(-0.44)	(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 with exemption via rules 506(c) and 506(b). We use the following specification:

$$y_{i,t} = \alpha_0 + \alpha_1 Rule506(c)_{i,t} + \alpha_2 Control_{i,t} + \alpha_3 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

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). *Rule506(c)* equals one, if firm *i* claims rule 506(c) exemption; it equals zero, if claiming rule 506(b) exemption. *Control* is a set of control variables for offering i: issuer Revenue, Firm Age, #Investor, $Offering, Duration, BusinessTransaction, First Offering, and CA_NY. In panel B, we replace Revenue with Revenue FE and Ln(1+ $Offering) with $Offering FE. 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.

Panel A: Baseline results

	(1) Success Rate	(2) Success Rate	(3) Ln(1+Sold)	(4) Ln(1+Sold)
Rule506(c)	-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+ $Offering)	-0.06***	-0.07***	0.32***	0.46***
	(-24.15)	(-9.73)	(11.77)	(6.57)
I_more than a year	-0.10***	-0.03*	0.71***	0.94***
	(-10.98)	(-1.94)	(5.87)	(4.62)
I_ BusinessTransaction	0.19***	0.16***	0.18	-0.26
	(11.40)	(4.21)	(0.94)	(-0.76)
I_First-round offering	0.11***	-0.01	5.22***	3.44***
	(16.73)	(-0.71)	(64.16)	(26.60)
I_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

Panel B: Revenue and $Offering FE

	(1) Success Rate	(2) Success Rate	(3) Success Rate	(4) Ln(1+Sold)	(5) Ln(1+Sold)	(6) Ln(1+Sold)
Rule506(c)	-0.05***	-0.05***	-0.05***	-0.92***	-0.79***	-0.77***
	(-2.95)	(-2.86)	(-2.90)	(-4.40)	(-3.88)	(-3.80)
I_Revenue_1	0.02		0.02	-0.13		-0.17
	(0.85)		(1.14)	(-0.66)		(-0.90)
I_Revenue_2	0.05*		0.06**	-0.08		-0.10
	(1.91)		(2.40)	(-0.29)		(-0.33)
I_Revenue_3	0.06*		0.06*	-0.16		-0.01
	(1.70)		(1.89)	(-0.43)		(-0.04)
I_Revenue_4	0.02		0.02	0.39		0.51
	(0.30)		(0.29)	(0.51)		(0.67)
I_Revenue_5	0.12		0.08	2.18		2.47*
	(1.11)		(0.64)	(1.59)		(1.74)
I_1m.<off<5m.		-0.19***	-0.19***		0.31**	0.31**
		(-13.26)	(-13.30)		(2.10)	(2.08)
I_5m.<off<10m.		-0.30***	-0.30***		0.13	0.12
		(-13.77)	(-13.77)		(0.54)	(0.50)
I_10m.<off<50m.		-0.34***	-0.34***		0.75**	0.73**
		(-12.55)	(-12.48)		(2.36)	(2.31)
I_off>50m.		-0.36***	-0.36***		1.90**	1.63**
		(-6.31)	(-6.05)		(2.52)	(2.28)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Security type FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
N	18175	18175	18175	18175	18175	18175
R^2	0.35	0.35	0.35	0.56	0.54	0.54

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). *Rule506(c)* equals one if a firm claims exemption under rule 506(c), and zero under 506(b). 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)
Rule506(c)	-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)
Rule506(c)×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+ $Offering)	-0.07***	-0.09***	0.29***	0.41***
	(-25.70)	(-11.39)	(9.90)	(4.84)
I_more than a year	-0.10***	-0.03**	0.67***	0.87***
	(-10.85)	(-2.10)	(5.60)	(4.37)
I_ BusinessTransaction	0.20***	0.17***	0.26	-0.30
	(12.14)	(4.76)	(1.37)	(-0.83)
I_First-round offering	0.11***	-0.01	5.20***	3.41***
	(16.81)	(-1.20)	(65.93)	(26.60)
I_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

This table reports results on the relation between measures of success of general solicitation offerings and brokerage commissions. The sample includes firms with rule 506(c) exemption and firms with rule 506(b) exemption. We use the following specification:

$$y_{i,t} = \alpha_0 + \alpha_1 Rule506(c)_{i,t} \times \%Fee_{i.t} + \alpha_2 Rule506(c)_{i,t} + \alpha_3 \%Fee_{i.t} + \alpha_4 Controls_{i,t} + \alpha_5 Year_t + Fixed\ Effects_{j(i),t} + \varepsilon_{i,t}$$

The dependent variable is *Success Rate* = (Total amount sold / Total offering amount), or *$Sold*=ln(1+Total amount sold), or $*Net proceed =Ln(1+Net proceeds)* = Ln(1+ Total amount sold - Sales Commissions - Finders' Fees- $proceeds paid to insiders). *Rule506(c)* equals one if a firm claims exemption under rule 506(c), and zero under 506(b). $Hire\_Broker_{i.t}$ is defined as (1 - I_ZeroFee). %*Fee* = (Sales Commissions + Finders' Fees) / Total dollars offered. *Controls* is a set of control variables for offering i: issuer Revenue, Firm Age, #Investor, $Offering, Duration, BusinessTransaction, First Offering, and CA_NY. Columns (1) and (2) are for the full sample of 18,175 offerings, and the next are for offerings with positive commission. Standard errors are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) $Net proceed	(2) $Net proceed	(3) Succ. Rate	(4) Ln(1+Sold)	(5) Succ. Rate	(6) Ln(1+Sold)
Rule506(c)× %Fee			0.16***	3.19***	0.16***	1.69***
			(4.58)	(4.28)	(2.84)	(2.81)
%Fee			-0.18***	-2.97***	-0.18***	-1.28*
			(-4.92)	(-3.90)	(-2.96)	(-1.86)
Rule506(c)	-0.71***	-0.53**	-0.11***	-1.66***	-0.07*	-1.72***
	(-5.26)	(-2.27)	(-5.95)	(-7.44)	(-1.73)	(-3.96)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Security FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes		Yes	Yes		
State FE	Yes		Yes	Yes		
Firm FE		Yes			Yes	Yes
N	14937	14937	2696	2696	2696	2696
R^2	0.64	0.46	0.56	0.75	0.41	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 through 506 pre-JOBS Act and switch to 506(c) post-JOBS Act) and their matched stayers (i.e., firms that issue through 506 pre-JOBS Act and continue to issue through 506(b) 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., 506(c) offerings after Title II) to a control offering (i.e., 506 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., 506(c) offerings after Title II and their matched 506 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 506(b) offerings after Title II and 506 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	*
I_more than a year	0.13	0.12	
I_BusinessTransaction	0.04	0.03	
I_First-round offering	0.60	0.58	
I_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 506(c) offerings and matched 506 offerings and DiD results

Mean values of	506(c) (N=2593)	Matched 506 (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	
I_more than a year	0.14	0.15	
I_BusinessTransaction	0.03	0.03	
I_First-round offering	0.47	0.47	
I_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., 506(c) post-Act and matched 506 pre-Act) and matched control (i.e., matched 506(b) post-Act and matched 506 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	
I_more than a year	0.13	0.12	
I_BusinessTransaction	0.03	0.03	
I_First-round offering	0.49	0.51	
I_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 general solicitation offerings and the offering method for a subsample of 223 firms that raise capital under both rules 506(c) and 506(b) 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 is under rule 506c or 506b. 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)
Rule506(c)	-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 is under rule 506c or 506b

	First offering is under 506c		First offering is under 506b	
	Success Rate	Ln(1+Sold)	Success Rate	Ln(1+Sold)
Rule506(c)	-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

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"
Ln(1+Offering)	Ln(1+the dollar amount of the securities being offered. Item 13, Form D)
Ln(1+ Investors)	Ln(1+the total number of investors who have already invested in the offering. Item 14, Form D)
I_more than a year	=1 if the issuer intends the offering to last more than one year, zero otherwise. Item 8, Form D
I_Equity	=1 if type(s) of securities offered is Equity, zero otherwise. Item 9, Form D
I_Debt	=1 if type(s) of securities offered is Debt, zero otherwise. Item 9, Form D
I_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.
I_Other	=1 if type(s) of securities offered is pooled investment fund interests, tenant-in-common securities, mineral property securities, or other.
Rule506(c)	=1 if an offering is under rule 506(c), zero under rule 506(b)
Post	=1 post-Title II, zero pre-Title II of the JOBS Act
I_BusinessTransaction	=1if the offering is in made in connection with a business combination transaction., zero otherwise. Item 10, Form D
I_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)

Ln(1+Sold)	Ln(1+ the dollar amount of the securities sold. Item 13, Form D)
Ln(1+Commissions)	Ln(1+the dollar amount of Sales Commission expenses, including estimates. Item 15, Form D)
Ln(1+Finders' fees)	Ln(1+the dollar amount of Finders' Fee expenses, including estimates. Item 15, Form D)
Ln(1+Fee)	Ln (1+ sales commission + finders' fees. Item 15 of Form D)
I_Zero Fee	= 1 if issuer has zero commission and fee; zero otherwise.
%Fee	(Sales Commissions + Finders' Fees) / Total dollars offered
Ln(1+Proceeds paid)	Ln(1+Proceeds paid to executive officers, directors or promoters in $. Item 16 of Form D
Ln(1+Firm Age)	Ln(1+filing year – year of incorporation)
I_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
I_Acquisition	= 1, if firm *i* is acquired after the funding round, zero otherwise
I_IPO	= 1, if firm *i* goes public after the funding round, zero otherwise
I_Bankruptcy	= 1, if firm *i* goes bankrupt after the funding round, zero otherwise
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 506(c) and 506(b) offerings in our sample by $Sold.

	506C		506B
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