

The Impact of JOBS Act on M&As

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Abstract

Do changes in the IPO regulatory environment affect private firms' exit choices, bargaining abilities, and valuations? Using the JOBS Act as an exogenous shock to the exit decisions among private firms, we observe that their valuations as M&A targets increase after the Act, negatively affecting acquirer wealth gains. These results are more prominent for VC-backed targets. We also find that stock (cash) deals decrease (increase) for private firms after the Act. Our results are robust to endogeneity concerns, sampling bias, alternative measures, placebo tests, merger waves, and various other vigorous checks.

Keywords: JOBS Act, Bargaining Power, Exit Strategy, Corporate Valuation

JEL Code: G24, G32, G34

1. Introduction

The Jumpstart Our Business Startups (JOBS) Act passed in April 2012 with the goal of reducing the cost of accessing capital markets by eliminating overly burdensome disclosure requirements for emerging growth companies (EGCs) so that they could more easily conduct initial public offerings (IPOs).¹ Accordingly, the impact of the JOBS Act on EGCs has been a focus of recent academic literature in accounting and finance. Dambra et al. (2014), for example, show that the JOBS Act leads to an increase in EGC IPOs perhaps due to reduced disclosure costs. On the other hand, Agarwal et al. (2017), Barth et al. (2017), and Chaplinsky et al. (2017) argue that although there may be some benefit to EGC IPOs, the JOBS Act increases indirect costs for some EGC IPOs due to increased information asymmetry between the firm and potential shareholders. In which case small private firms may prefer to be directly acquired in a M&A rather engage in an IPO.²

In this paper, we identify the benefits and costs to targets and acquirers in M&As after the passage of the JOBS Act and the introduction of weaker IPO disclosure requirements for EGC private targets. We find a positive spillover effect on the valuations of EGC private targets after the Act. We also find that valuation increases among private targets negatively affecting the wealth gains of acquirers. Specifically, in a difference-in-difference setting, relative to pre-JOBS Act, we find that the deal value by sales of private EGC target increased and the cumulative abnormal returns of acquirers fall significantly after the JOBS Act passed.

We reconcile these results by focusing on the exit-strategy decisions of private firms. In particular, the relative costs and benefits of going public versus being acquired. The JOBS Act aims to affect the direct costs of going public by lowering required disclosure standards

¹ The JOBS Act defines emerging growth companies (EGCs) as firms with less than \$1 billion in revenue.

² Although Chaplinsky et al. (2017) find no reduction in direct costs for EGCs in the three years after implementing the Act, that study finds some benefits to EGCs due to the Act-like cost savings from delaying SOX section 404(b) compliance and the benefits of raising more capital. Other studies, such as Barth et al. (2017) and Agarwal et al. (2017), find increases in indirect costs (such as underpricing) due to increases in information asymmetry for EGCs after the JOBS Act.

for private EGCs. This in turn improves the outside options for EGC private targets if the reduction in direct costs is higher than the increase (if any) in the indirect costs of going public. This in turn may enhance the relative bargaining position EGC private targets have during a M&A negotiation process, thereby lowering potential gains for acquirers and increasing returns for private targets.

A related explanation of this increase in valuation involves the change in the quality of the IPOs post JOBS act. As documented by Agarwal et al (2017), Chaplinski et al (2017), the JOBS act led to an increase in underpricing of EGC IPOs and hence increased the indirect costs of going public. High quality EGC private targets may choose to take the alternate exit route of going M&As to avoid this increased indirect cost. The managers of the acquirer through its due diligence process and experience, may have a better technology to evaluate the target value better. They may therefore offer a higher value for the EGC private targets leading to higher valuation.

The increased valuation of EGC targets lowers the acquirer shareholders' value, which in turn should lower the announcement abnormal return (CAR) of the acquirer. This paper documents an indirect and significant impact of a regulation aimed at IPOs on the M&A activity. We show that the alternative route of M&A as an exit strategy became more attractive post the JOBS act for EGC private firms. The spillover effect on the M&A activity and valuations perhaps muted the overall objective of the JOBS act to increase the EGC IPO activity.

The literature on exit strategies mostly focuses on firm-specific and macroeconomic determinants of private firm exit strategies (e.g., Brau et al., 2003; Poulsen and Stegemoller, 2008; Bayar and Chemmanur, 2011; Pagano, Paneta, and Zingales, 1998). Capital requirements and managerial private benefits are firm-specific determinants of IPOs relative to M&As for private firms (Zingales, 1995). In a related paper, Ewens and Farre-Mensa (2019) documented

that the National Securities Markets Improvement Act (NSMIA)³ of 1996 had increased the supply of private capital prompting firms to stay private longer rather than becoming an IPO. While their paper highlights the impact of private capital on possible delays in the going public decision of private firms, our paper focuses on the impact of the change in laws that made going IPO easier for private firms ((JOBS act, 2012) in the takeover market.

We argue that the relative roles and interplay of the IPO and M&A markets (see figures 1 and 2) help explain exit strategy choice (Aktas et al., 2017). Using the JOBS Act as a natural experiment, we identify and estimate the relative effects of these channels. Specifically, Gao, Ritter, and Zhu (2013) attribute the decline in the number of U.S. IPOs to a shift in the relative attractiveness of M&As due to global and industry competition. Doidge, Karolyi, and Stulz (2017) on the other hand, attribute the decline to a reduction in the net benefits of being publicly traded. We argue that the attractiveness of the M&A market may also dilute the impact the JOBS Act on the number of IPOs by improving EGCs' outside options and the payoffs from being acquired. We show that the JOBS Act, which aims to improve IPO activities by lowering the cost of going public also incentivizes target firms to be acquired by improving their bargaining positions in the M&A market.

[Insert Figures 1 and 2 Here]

The causal relationship between exit strategy and target firm valuation is difficult to identify due to bias induced by simultaneity and self-selection. That is, the relative valuation effect of IPOs versus M&A directly affects and endogenously determines exit decisions. This creates an endogeneity bias between a firm's exit strategy and its valuation. The JOBS Act, as

³ NSMIA is an amendment to U.S. federal securities laws in order to promote efficiency and capital formation in the financial markets; provide more effective and less burdensome regulation between state and federal level. It has facilitated the process of raising private capital (from out of state investors) for startups, changing the staying-private or going-public equilibrium (trade-offs) causing fewer public offerings as entrepreneurs can bargain better. The VC and PE funds' enhanced access to investors for late-stage startups creating more options rather than becoming a IPO candidate.

an exogenous shock to the M&A decision, helps overcome this bias, as it affects only the outside option (through the costs of going public) in the exit decisions and not valuations in the takeover market.⁴ Thus, by using the JOBS Act and a difference-in-differences technique we can identify the Act's relative effects on private EGCs' M&A valuations.

The treatment group in our analysis is private EGC targets — a group the JOBS Act directly affects. The control groups include private non-EGC targets, as well as public EGC and non-EGC targets. Since there are virtually no private non-EGC target (>\$1 billion in sales) for the period 1990-2016, in practice, the main control group is public EGC and non-EGC targets. From an acquirer perspective, the choice set involves both private and public targets. M&A negotiations therefore should also depend on the acquirers' other choices. For example, if valuations rise for all types of targets (public, private, EGCs, and non-EGCs), then ignoring public targets will create a confounding bias. Therefore, although the JOBS Act affects only private EGCs, we include all three groups as our control group.

We also keep both public and private acquirers in the sample. Although we cannot measure the wealth effect (using CAR) on private acquirers, removing them from the sample would create bias in estimating the valuation effect among private EGCs targets because a private acquirer may also acquire private EGCs. We compare the relative performance (target firm valuations and acquirer returns) of private EGC targets to the control group.

Some researchers argue that a lack of public information about private targets may enhance acquirers' bargaining positions. For instance, Draper, Paul, and Paudyal (2006) find that illiquidity and information asymmetry enhance acquirers' bargaining power in deals involving unlisted (private) targets, with acquirers getting higher announcement-period returns

⁴ Simultaneity bias comes from common variables such as demand for funds and similar others that link exit strategy and corporate valuation.

than when they acquire public targets (Jensen and Ruback, 1983; Chang, 1998; Poulsen and Stegemoller, 2008; Cooney, Moeller, and Stegemoller, 2009). However, with the exception of Greene (2017), who uses interstate bank branching deregulation to examine how slackening the financial constraints among private targets can increase their bargaining power in takeover markets, we have little knowledge about how bargaining power among private targets affects their valuations and acquirers' wealth gains. In this paper we study how the JOBS Act's changes in IPO disclosure regulations affect bargaining position and exit options for private target firms.

Using M&A data from the SDC database for 1990 to 2016, we document that after the adoption of the JOBS Act, the values of private EGC targets increase and acquirer wealth gains decrease in the M&A market.⁵ Following Greene (2017), we use the ratio of deal value to sales as a measure of target valuation and cumulative abnormal returns (CAR) from M&A announcements as a proxy for acquirer wealth. We find that following the JOBS Act, valuations of private EGCs increase by about 36% but acquirers' announcement CARs fall by 6-8 basis points around the announcement date. The 36 % increase in valuation of EGC targets provide evidence that signaling of going public is comparable to being a public firm. Masulis and Simsir (2018) show that average announcement CARs of public targets are 26.4 % around the announcement and 36.6 % including runup. This shows that increase in valuation of EGC targets due to JOBS act is similar to abnormal market reaction for public targets around announcement.

All our results are robust after controlling for industry characteristics, market timing, demand for funds, mode of payment, and whether the merger/acquisition is a leveraged buyout (LBO) or strategic acquisition. We also find that after the JOBS Act, firm valuations for venture

⁵ The results using the balanced sample (2008-2016) are also showed in Appendix B.

capitalist (VC)-backed private EGC targets increase more than for private EGC targets with no VC backing. Additionally, the JOBS Act affects the mode of payment in M&A deals. Stock deals (cash deals) for private EGC targets decrease (increase) after the JOBS Act.

To check the robustness of our results, we use falsification tests. In particular, we use international M&As as a placebo test and shift the JOBS Act passage year to 2005. Because the JOBS Act only applies to private EGCs that go public in the United States, the Act should not affect exit decisions and outcomes for international EGC targets. Thus, we should see no change in valuations for international M&A targets. We find results consistent with the argument that the JOBS Act does not affect international target valuations and related acquirer CARs.

To analyze the relative impact of bargaining power and self-selection, we perform a matching analysis. Based on observed characteristics of EGC private targets, we match the relevant counterparts from the IPO sample both before and after the JOBS Act. We observe that the relative valuation premium, measured as the log of the ratio of deal value over sales to IPO proceeds over sales, is higher in a matched sample in the post-JOBS Act period even after controlling for the cost of exit decision (IPO or M&A), and this further strengthens our hypotheses.

In addition to these, we also conduct battery of other robustness checks. We perform our analysis separately for individual deal forms such as mergers only and 100 % acquisition of shares. We also restrict the our analysis for sample around the JOBS Act (2008-2016) to mitigate the concerns due to sampling bias. We also confirmed our analysis for the sample of only EGC private targets and found similar results. We checked for serial correlation in difference-in-differences errors as suggested by Bertrand and Mullainathan (2003). Finally, we provide an additional robustness test to confirm that our results are not driven by merger waves.

The remainder of the paper is structured as follows: section 2 discusses the hypotheses and their development; section 3 explains the data collection, data filtering, and descriptive statistics; section 4 presents the regression specification and methodology; section 5 discusses the results; section 6 offers several robustness checks; and section 7 concludes.

2. Hypotheses Development

Title I of the JOBS Act was signed into law in April 2012. Its goal is to improve the ease of access to capital for smaller firms in the U.S. economy while they recover from the financial crisis of 2008-2009. Title I of the Act lowered the direct costs of going public for private EGCs by reducing costs before, during, and after an IPO. EGCs can (1) privately and confidentially file their initial registration statements, (2) “test the waters” with a limited group of potential investors without revealing information to competitors or a broader pool of available investors, and (3) waive various disclosure requirements to lower their disclosure costs. The former CFO of TrueCar, Michael Guthrie, noted the benefit of confidential filings, opining that “it was great to be able to get that document in place and start the SEC review without exposing our filing to the market, or competitors, or anyone else” (Blevins, Raggazino, and Reuer, 2017). This confidential filing provision and the “testing the water” provision reduce the reputation cost of potentially failed IPOs.

Going public can be an option for private companies that are also targets in the M&A market. Because the main objective of Title I of the JOBS Act is to lower the direct costs of going public, it is likely that going public becomes a viable option, which increases bargaining power among potential targets. In fact, this scenario is called dual-track M&A-IPO in the industry. Examples of large private companies that have successfully gone down the dual-track road include Bausch & Lomb, which was nearing the start of its IPO roadshow when Valeant bought the company in May 2013, and Biomet, which had already filed with the Securities and

Exchange Commission for an IPO when it announced its merger with Zimmer.⁶ These are not the only examples. The publicity around a potential IPO provides a deadline for potential acquirers, creating a greater sense of urgency to complete a deal before the target goes public, because it is significantly more expensive, complicated, and riskier to acquire a public company.

This may improve a private target's bargaining position with acquirers and improve its valuation during the M&A negotiation process. This can be seen in the acquisitions of Espirit Pharma Holding Inc. and Map Pharmaceuticals Inc. by Allergan Inc. in 2007 and in 2013. Both target firms have net sales of 3 million USD, both are 100 % acquisitions with 100 % cash deals, not LBO, horizontal mergers, high tech firms; but Map Pharmaceuticals Inc. get the deal value of 239.91 million USD and Espirit Pharma Holding Inc. get the deal value of 123.33 million USD. This almost 100 % increase in deal value among the similar kind of targets before and after the JOBS act cannot be fully explained by the time trend or hot market hypothesis. Another similar example can be acquisition of DME Corp. (in 2009) and PECO manufacturing Inc. (in 2013) by Astronics Corp; the PECO manufacturing Inc. get the deal value of 19.42 million USD, on the other hand, DME Corp. get the deal value of 6.32 million USD. These are just two M&A cases and there are many others which strengthen our main argument. Thus, we hypothesize that valuations of private EGCs increase in M&A markets after the JOBS Act due to increases in relative bargaining power.

Hypothesis 1 (H1): *Valuations of private EGC targets increase after the JOBS Act.*

The literature widely studies acquirer wealth gains. One measure of wealth gain is the change in acquirer market values after they announce acquisitions. According to prior

⁶ For example, see <https://www.clearymawatch.com/2015/12/dual-track-maipo-gain-popularity-in-health-care-sector/> accessed on January 10, 2018.

literature, because the market expects private targets to have less bargaining power than public targets, acquirers earn higher announcement-period returns when targets are private (Jensen and Ruback, 1983; Chang, 1998; Poulsen and Stegemoller, 2008; Lys and Yehuda, 2013). The premium paid (to the target during M&A) and the target valuation can affect the acquirer's wealth gain. In particular, a relatively high offer price for a private target can reduce the potential value to acquirers and reduce shareholder value (Greene, 2017). Jindra and Moeller (2013) discuss the negative relationship between acquirer announcement returns and takeover premiums, especially in the case of limited information about targets. We believe uncertainty and information asymmetry are more severe for private targets. In turn, if after the JOBS Act acquirers pay more for private targets due to targets' higher bargaining power, this should lower acquirers' post-announcement abnormal returns. Thus, we hypothesize that acquirers' post-announcement wealth gains (CARs) decline when they buy private EGCs in the post JOBS period.

Hypothesis 2 (H2): *Acquirers' post-announcement wealth gains from private EGC targets decline after the JOBS Act.*

Venture capitalists (VCs) with prior investments in target firms and experience in the industry should affect the exit choices private targets make. VCs are not only selective about where they invest, but they also routinely evaluate firms and make follow-up investments in stages. Before each round of investing, they commonly exchange information with other VCs and check each venture's quality, progress, and prospects. As a result, they have longer relationships with target firms than investment banks do (Carter and Manaster, 1990). VCs' industry expertise can also help private firms. Indeed, researchers find that relationships with prominent VCs can enhance firms' future performance (Hsu, 2004; Hsu, 2006).⁷ The

⁷ In some cases, management alone determines the exit strategy because the VC's equity holdings in the firm are very small and the VC does not have enough power to block an entrepreneur's exit decision. When the VC does

involvement of a VC with a private target therefore acts as a signaling device of higher value and VC reputation. This in turn should increase the value of the private firm. Since the JOBS act lowers the disclosure standards of private EGCs to go public, the role of a VC as a screening device is also of higher value post JOBS act.

Poulsen and Stegemoller (2008) use firm-level data on private firm acquisitions (from 1995 to 2004) to document that firms with greater growth opportunities, more capital constraints, and VC backing are more likely to go public than be acquired (Zingales, 1995; Black and Gilson, 1998). Thus, if VC backing increases the probability that a private firm will go public, it also increases the firm's relative bargaining power in the acquisition market. Thus, we hypothesize that the valuations of VC-backed private EGC targets increase after the JOBS Act due to greater ease of going public, thereby boosting bargaining power and valuations (and acquisition premiums) in potential M&A deals.

Hypothesis 3 (H3): *After the JOBS Act, valuations of VC-backed EGC targets increase more than the valuations of EGC targets with no VC backing.*

The mode of payment is also an important characteristic of M&A. The M&A literature argues that acquirers attempt to transfer any future synergy risk to their targets through stock deals, which is not possible in cash deals (Rappaport and Sirower, 1999; Shleifer and Vishny, 2003; Martin, 1996). Thus, if private EGCs have higher negotiating power after the JOBS Act, they may prefer cash deals to stock deals. Thus, we hypothesize that stock (cash) deals between EGC targets and acquirers decrease (increase) after the JOBS Act.

Hypothesis 4 (H4): *Stock deals (cash deals) for acquisitions of private EGC targets decrease (increase) after passage of the JOBS Act.*

have veto power (a "jointly controlled firm"), the entrepreneur and the VC negotiate the exit decision, and the entrepreneur makes transfers (side payments) to the VC in case the latter disagrees with the entrepreneur's exit choice (Bayar and Chemmanur, 2011).

3. Data

U.S. M&A Sample

The data on M&As is from the Thomson Reuters Securities Data Company (SDC) Platinum database for 1990-2016. We restrict the dataset to private and public targets; we also exclude recapitalizations, repurchases, spin-offs, buybacks, and exchange offers. The stock price data for acquirers around the deal announcement date is from the CRSP database. Table I summarizes the changes the JOBS Act introduces into the IPO market and the provisions prior to the Act. As discussed, the JOBS Act's main objective is to help small private firms raise capital through the IPO process.

[Insert Table I about here]

As private targets with net sales less than \$1 billion USD (i.e., emerging growth companies) are our main focus, we exclude deals involving target firms that are missing net sales data. The details of how the number of observations changes with each filtering process are in Table II (panel A).

[Insert Table II about here]

Table II (panel B) shows the number of EGC private targets before and after the JOBS Act. There are 1,880 private EGC targets in the sample from 1990 to 2016; from these, 1,645 are from before the JOBS Act and 235 are from after the JOBS Act. Since this sample has a much larger pre JOBS act period, for robustness, we also do detail analysis using the balanced sample in pre and post JOBS act period. The results for balanced panel are in Appendix B. We also compare the distribution of main variables and the differences in co-variables between the sample from 1990-2011 and from 2008-2011. We also run difference-in-difference test by restricting the pre JOBS act period from 2008-2011. We keep the public firms in the sample for two reasons. First, because acquirers can purchase private or public targets, keeping the

public firms in the sample controls the acquirers' choices. Second, it is another control group along with private non-EGCs.

Panel C of Table II illustrates the distribution of mode of payment. Out of 12,061 total M&A deals, there are 10,181 non-EGC deals; 5,195 deals are 100% cash, and 2,530 deals are 100% stock. In addition, 856 deals use a mix of cash and stock. The remaining deals use a mix of cash, stock, "other," and "unknown" modes of payment.⁸ We mainly focus on cash-only and stock-only deals. The year and industry distribution of EGC private targets before and after the JOBS Act are in Appendix A1 and Appendix A2. As evident in these tables, the largest number of acquisitions of private EGCs are in industries such as business services, computer software, and banking. Acquisitions in these industries increase after the JOBS Act.

The main dependent variables are target valuation (*Valuation*) and the acquirer wealth (measured as cumulative abnormal return (*CAR*)). *Valuation* is defined as the ratio of deal value to sales (Bayar and Chemmanur (2012), Officer (2007), Poulsen and Stegemoller (2008), Greene (2017)). As we argue in the section describing the hypotheses development, the change in *Valuation* between the treatment group and the control group captures changes in targets' bargaining power after the JOBS Act. The proxy for acquirer's wealth gain (acquirer stock performance) is announcement-period abnormal returns using the Fama-French three-factor model. We use daily returns for 240 days before the acquisition announcement and the Fama-French factors from Kenneth French's website to estimate the model parameters using a rolling-window regression (Betton, Eckbo, and Thorburn, 2008). The abnormal return is the difference between actual returns and the predicted return from above described model. We calculate acquirer cumulative abnormal return (*CAR*) over a three-day trading (-1,1) window centered on the announcement.

⁸ The SDC database uses the term *Other* for modes of payment other than stocks and cash, and it uses *Unknown* for unknown modes of payment.

The *EGC* dummy variable for emerging growth companies (EGC) equals 1 if a firm is EGC and zero if non-EGC. Similarly, *Private* equals 1 for private firms and zero for public firms; *JOBS Act* equals 1 for the post-JOBS Act period (2012-2016) and zero for the pre-JOBS Act period (1990-2011). The interaction variable *EGC X Private X JOBSact* equals 1 if a firm is an EGC private target in the post-JOBS Act period; otherwise it is zero. As argued, we expect the JOBS Act to improve the bargaining power of EGC private targets by lowering their direct costs of going public (outside option). Hence, the treatment group of target firms includes those that are private as well as EGCs. We expect the JOBS Act to have the most pronounced impact on this group. Therefore, this interaction variable is the main variable of interest, which identifies how the JOBS Act affects EGC private targets compared to non-EGC targets.

We use a set of control variables similar to Brau et al. (2003). The two-key industry-level control variables are: *High tech* and *Leverage*. *High tech* is a dummy variable that equals 1 when the target firm operates in one of the four-digit SIC code industries identified as high-tech as in Loughran and Ritter (2004). *Leverage* is the industry-level average debt ratio. Ahern (2012) shows that in vertical mergers, the customer– supplier relations help explain the division of total merger gains and the negotiation power of target depends upon acquirer’s dependency on it. On the other hand, this negotiation or bargaining form is due to price wars or different form of industry dependence (Saloner, 1987). As way of negotiation is different in horizontal merger and vertical merger, therefore, we also control for it. *Horizontal Merger* is a dummy which takes value 1 if the acquirer and target share the same four-digit SIC code; this helps distinguish between strategic M&A and financial M&A (Martos-Vila, Rhodes-Kropf, and Harford, 2013). *LBO* equals 1 if the deal is a leveraged buyout; otherwise 0.

Mikkelsen et al. (1997) and Lowry and Schwert (2000) present evidence that one of the most important reasons for going public is to raise capital for new investments. Because

information about the demand for capital by private companies is not available, the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks (HML), and the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks (SMB) are good indicators of future investment opportunities. We use these variables as proxies for the demand for capital based on evidence in Liew and Vassalou (2000). Private EGCs can choose between M&A and IPO based on market conditions; therefore, we also control for market timing using the market rate compared to the risk-free rate (*MKT*) to mitigate such a concern. Due to concern of outliers, all continuous variables are winsorized at the 1st and 99th percentiles.

[Insert Figure 3 about here]

Addition to these variables, we also control for mode of payment (except for H4) and venture capitalist backing (except for H3). *Cash* equals 1 if the mode of payment is cash; otherwise 0. *Venture Capital dummy* equals 1 if the EGC private target firm is VC-backed; otherwise it equals 0. Furthermore, as there can be time trends in IPOs ('Hot market' or 'Cold Market' (Ritter, 1984; Gao et al. 2013)) or trend in venture capital exit (see Figure 3), we use year fixed effects.

4. Empirical Specifications

We use four empirical specifications to test the hypotheses employing a difference-in-difference-in-differences approach. The treatment group in our analysis is private EGC targets. The control group in our analysis includes private non-EGC targets as well as public EGC and non-EGC targets. From an acquirer perspective, the potential set of targets involves both private and public entities. The M&A bargaining and negotiation process therefore should also depend on the (alternative) choice set of the acquirer. Although the JOBS Act affects only private EGCs, ignoring the public targets creates an omitted-variable bias by ignoring a

relevant control group. For example, it may be possible that all target valuations rise after the JOBS Act. Ignoring public targets then creates a confounding bias. We therefore have all the three groups as a control group.⁹

On the acquirer side, we keep public acquirers and private acquirers in the sample. Although we cannot measure the wealth effect (using *CAR*) on private acquirers, removing them from the sample would create bias in estimating the valuation effect among private EGCs because private EGCs may also be acquired by private acquirers. We compare the relative performance (target valuations and acquirer returns) of the private EGC targets to the control group.

The regression specification to test hypotheses 1 and 2 is:

$$y_i = \beta_0 + \beta_1 EGC + \beta_2 Private + \beta_3 JOBSAct + \beta_4 EGCXPrivate + \beta_5 EGCXJOBS Act + \beta_6 EGCXPrivateXJOBSAct + \beta Controls_i + \lambda_{Industry} + \lambda_{year} + \varepsilon_i \quad (1)$$

where the dependent variable (y_i) is either a target's *Valuation* or the acquirer's cumulative abnormal returns (*CAR*). The coefficient on the interaction term *EGCXPrivateXJOBSAct* (β_6) captures the treatment effect of the JOBS Act on the treatment group of EGC private targets relative to the control group of primarily public EGCs and non-EGC targets¹⁰.

Specifically, the coefficient β_5 captures the difference in *Valuation* before and after the

⁹ We cannot compare EGC private targets with non-EGC private targets only because the number of non-EGC private firms (also known as Unicorn firms) has started to increase only recently and the acquisition of such firms is a rare event. In our sample, such targets are in single digit.

¹⁰ As mentioned earlier, the number of non-EGC private targets is virtually non-existent for the entire sample period (1990-2016), practically our control group consists of public EGC and non-EGC targets. In the empirical specifications, we therefore cannot include a variable *Private x Jobs act*, as that will drop out due to multi-collinearity.

JOBS Act for EGC private targets. The intuition behind this is that the JOBS Act changes the valuations of EGC private targets by influencing their exit strategies (by reducing the direct cost of their outside option to go public). *EGC* and *Private* are control factors for EGC targets and private targets. The term $\lambda_{Industry}$ and λ_{year} captures industry and year fixed effects. Robust standard errors are clustered at the industry level for all regressions (Petersen, 2009).

We use the following additional controls: high-tech indicator, industry-level leverage ratio (industry characteristics), cash dummy (deal-specific factor), return on a portfolio long on high book-to-market stocks and short on low book-to-market stocks (*HML*), and return on a portfolio long on small-capitalization stocks and short on large-capitalization stocks (*SMB*) (proxies of demand for capital). *Horizontal merger* indicates whether the target and acquirer are in the same industry. Figures 4 and 5 depict a visual inspection of the parallel trend assumption; the treatment and control groups should not be too different from each other in the pre-JOBS Act period, which is a precondition for a valid difference-in-differences specification (Bertrand, Duflo, and Mullainathan, 2004).

[Insert Figures 4 and 5 Here]

To test hypothesis 3, we investigate how a target's valuation changes after the JOBS Act if the target is VC-backed compared to a target that is not VC-backed. The regression specification is:

$$\begin{aligned}
 y_i = & \phi_0 + \phi_1 EGC + \phi_2 Private + \phi_3 JOBSAct + \phi_4 VC_{dummy} + \phi_5 EGCXPrivate + \\
 & \phi_6 EGCXJOBSAct + \phi_7 EGCXPrivateXVenture Capital + \\
 & \phi_8 EGCXJOBSActXVenture Capital + \phi_9 EGCXPrivateXJOBSActXVenture Capital + \\
 & \phi Controls_i + \phi_{Industry} + \phi_{year} + \varepsilon_i
 \end{aligned} \tag{2}$$

Venture Capital is a dummy which takes 1 if the EGC private target firm is VC-backed;

otherwise 0. The coefficient of *EGCXPrivateXJOBSActXVC_dummy* (ϕ_9) provides information on VC-backed EGC private target valuations following the JOBS Act. *Controls* in this regression specification are the same as in the first regression specification. The term $\phi_{Industry}$ and ϕ_{year} captures industry and year fixed effects.

Next, we examine how the mode of payment changes for EGC private targets after the JOBS Act. The logistic regression specification is:

$$\begin{aligned} \gamma_i = & \gamma_0 + \gamma_1 EGC + \gamma_2 Private + \gamma_3 JOBSAct + \gamma_4 EGCXPrivate + \\ & \gamma_5 EGCXPrivateXJOBSAct + \gamma_{Industry} + \gamma_{year} + \varepsilon_i \end{aligned} \quad (3)$$

where observation i is an acquired target. The variables $\gamma_{Industry}$ and γ_{year} capture industry and year fixed effects. We use the Fama French industry classification for the industry fixed effects. The dependent variable for this logistic regression equals 1 if the deal is 100% stock payment and zero otherwise.¹¹ The literature documents that when the target firm has a high market value relative to book value, the acquirer prefers to pay in stock (Hansen, 1987); similarly, when the target leverage ratios are high, acquirers prefer stock deals (Fischer, Heinkel, and Zechner, 1989). Because leverage ratios are unavailable for many of the private firms in our sample, we assume an equilibrium capital structure in industries and proxy for firm leverage with the industry leverage ratio.

The specification in Equation (3) explains how cash deals or stock deals change after the JOBS Act. As discussed, we analyze only deals that are 100% cash or 100% stock; therefore, the coefficient of the interaction term *EGCXPrivateXJOBSAct* (γ_5) captures the impact of the JOBS Act on all-cash or all-stock deals among EGC private targets. We expect a decrease in stock deals and an increase in cash deals for EGC private targets after the JOBS

¹¹ We also consider cash/stock a continuous, dependent variable and report the results in the appendix.

Act because the Act increases EGC targets' influence in the takeover market.

5. Exploratory Analysis and Descriptive Statistics

We explore various sample descriptive statistics to see that our main dependent variable, deal value by sales, is systematically higher in treatment group than in control group post JOBS act. We find that the difference between the deal value over sales for the treatment group of EGC private targets is higher post JOBS act relative to the pre JOBS act period with t -stats equal to 7.14. (Table III, Panel B).

Figure 6 and Figure 7 show that the distribution of cash and stock deals before and after the JOBS act. The 100 % cash deals increase from 47% in the pre-JOBS Act period to 50% in the post-JOBS Act period, and 100 % stock deals decrease from 55% to 40% for the same periods, respectively. The decrease in stock deals is significant at a t -statistic of 7.4. These results provide some evidence that the increase in the bargaining power of EGC-private targets after the JOBS act has increased their valuation and the decrease in the number of 100 % stock deals.

[Insert Figures 6 and 7 Here]

Descriptive statistics of the variables for the full sample are in panel A of Table III. In our sample, the average *Deal Value* (Target valuation) is \$ 642 million (median \$70.6 million) with a maximum of \$ 13.5 billion. However, the *Deal Value* in our sample is slightly higher than Greene (2017) but this can be due to the difference in sample. *Target net sales* for the target firms is \$67.66 million, with a maximum of \$1.3 billion. This confirms the presence of non-EGC targets in the sample. The average (maximum) target valuation (the ratio of deal value to sales), is 17.71 (81.2), respectively. Our target valuation measure is close to Greene (2017) which has 13.74 as mean of deal value by sales. The average (maximum) value of

acquirer wealth gain, measured via *CAR*, is -0.2% (25%), which is consistent with Betton, Eckbo, and Thorburn (2008). We have both positive and negative *CAR* values in the sample because of both types of targets – private and public. In our sample, 15% of observations are private EGC targets, and 10% of the sample is post-JOBS Act ($JOBSact=1$).

[Insert Table III about here]

We use a set of control variables similar to Brau et al. (2003). The two-key industry-level control variables are: *High Tech* and *Leverage*. On average, 23 % of observations in our sample are *High Tech* and the average leverage value is 0.29 (i.e. 29 %). About 50.4% of private targets in our sample is paid in cash and about 25 % is acquired in strategic merger. The 4.3 % of the deals in the sample are leveraged buyout (LBO) and about 12% are VC-backed. The definitions of all these variables are also in Appendix A1.

Table III (panel B) shows the descriptive statistics of the main variables during the pre- and post-JOBS Act periods. These tables show that mean *Valuation* for EGC private targets increases and *CAR* decreases from the pre-JOBS Act period to the post-JOBS Act period. The significant difference in these summary statistics supports hypotheses 1 and 2. Moreover, figures 5 and 6 show the trends in *CAR* and target valuations for EGC private targets and non-EGC targets. Evidently, after the JOBS act, acquirer *CAR* declines for EGC private targets compared to non-EGC targets, and valuations of EGC private targets increase compared to non-EGC targets. Table III (panel C) shows the two-sample t-test results of the dependent variables and the covariates between the treatment and the control group. The deal value by sales of treatment group is higher than the control group with t-stat equal to 8.44 and similarly, *CAR* values of treatment group is different from control group. The covariates are balanced

between treatment and control group.¹²

6.. Main Results

6.1. Change in Bargaining Power of EGC Private Targets after the JOBS Act

Table IV shows tests of hypothesis 1 by examining the impact of the JOBS Act on the valuations of EGC private targets.¹³ Column (1) shows the baseline scenario specified in equation (1) without controls. The coefficient on *EGC X Private X JOBSAct* is 7.065 (without controls) and 7.261 (with controls) and is statistically significant at the 5% level. Thus, if the pre-JOBS Act ratio of average deal value to sales is 18.9 (Table III, Panel B), then post-JOBS Act, this ratio increases to 26. This is a 36% approximate increase in average value. As these are small firms, a 36% increase in valuation is clearly economically significant. The 36 % increase in valuation of EGC targets provide evidence that signaling of going public is comparable to being a public firm. Masulis and Simsir (2018) show that average announcement CARs of public targets are 26.4 % around the announcement and 36.6 % including runup. This shows that increase in valuation of EGC targets due to JOBS act is similar to abnormal market reaction for public targets around announcement. The positive and significant coefficient of *High tech* shows that the premium for firms in the high-tech industry is greater than for low-tech firms. This may be because firms in the high-tech industry are more likely to go public as an alternative to M&A (Ritter, 1984; Ozmel, Robinson, and Stuart, 2013).¹⁴

[Insert Table IV about here]

¹² We also do the t-test of the dependent variables and the covariates between the treatment and the control group using the small pre-jobs act sample. Results are in Appendix B.

¹³ Figure 5 and 6 shows a visual inspection of the parallel trend assumption, necessary for difference-in-differences estimation, in valuation of the treatment group (EGC x Private) and the control group holds in our sample.

¹⁴ For a detailed table, see appendix B1.

6.2. Change in Acquirer Wealth Gains after the JOBS Act

Table V shows the results for tests of hypothesis 2. Column (1) shows the regression results for the baseline scenario. The coefficient of interest of the interaction term *EGC X Private X JOBSAct* is -0.054 . It implies that due to their improved bargaining power, the acquirer *CAR* falls by 5.4% after acquiring EGC private targets post JOBS act. The market may perceive that certain targets are worth more (due to their improved bargaining power) relative to similar targets in the pre-JOBS Act period. The fall in acquirer *CAR* (relative to the pre JOBS act period), reflects the market reaction to acquirer overpayments (relative to a peer group of pre-JOBS Act firms) for targets, perhaps due to an improved bargaining power of EGC private targets post JOBS act.

[Insert Table V about here]

Column (2) of Table V shows the results after controlling for observables. The coefficient of *EGC X Private X JOBSAct* is -0.076 which is consistent with hypothesis 2 that acquirer wealth gain, on an average, falls by 7.6% due to acquisitions of private EGCs after the passage of the JOBS Act. It is worth noting that, usually the acquisition of private targets by public acquirers result in positive acquirer wealth gain, while the acquisition of public targets by a public acquirer results in negative acquirer wealth gain. For example, Fuller et al. (2002) shows that, when a public acquirer acquires a public target, its *CAR* decreases by 1% (on average), and when it acquires a private target, its *CAR* increases by 2.08 % (on average). The results of Fuller et al (2002) is perhaps consistent with the intuition that a public acquirer, perhaps can acquire a private target at a bargain price and hence gets a positive market reaction. Our results that acquirer wealth gains decreased (relative to the pre-JOBS act) by 7.6%, are, in contrast to Fuller et al. (2002). Intuitively, the market perceives that the acquirer is overpaying for the EGC private targets (relative to the pre-JOBS act period), perhaps due to the enhanced bargaining power of private EGC targets from the JOBS act. Our result is consistent with Greene (2017), who also find similar results of acquirer wealth gain when financial constraints of the targets are relaxed. Furthermore, column (2) demonstrates that if a deal is in cash, the reduction in wealth gain is relatively less. The negative and significant coefficient of *Leverage*

suggests that if acquirers buy firms with high leverage ratios, they gain less wealth. These results confirm hypothesis 2 (see also appendix B2 for results with all the controls.)

6.3. Mode of Payment in M&A and the JOBS Act

Table VI (columns 1 and 2) shows the results for logistic regression specifications where the dependent variable equals 1 for all-stock deals and 0 otherwise.¹⁵ The coefficient of *EGC X Private X JOBSact* is -0.967 and is significant at the 1% level. This means the chances of 100% stock deals for EGC private targets decrease by 27% after the JOBS Act.¹⁶ This is consistent even after controlling for other factors; it is also consistent with hypothesis 4 that 100% stock deals decrease after the JOBS Act. *Horizontal merger* is positively associated with the number of 100% stock deals and statistically significant at the 1% level. Thus, the results of table 6 support hypothesis 4.¹⁷

[Insert Table VI about here]

6.4. Change in Bargaining Power of VC-Backed EGC Private Targets after the JOBS Act

Table VII shows the results for hypothesis 3. The coefficient of *VC_dummy X EGC X Private X JOBSact* is 41.8 in the baseline scenario and is statistically significant at the 1% level. This coefficient captures the difference in valuation changes due to the JOBS Act for VC-backed EGC private targets versus non-VC-backed EGC private targets. The coefficient of *VC_dummy X EGC X Private X JOBSact* is 39.93 after controlling for all observables. This result is consistent with hypothesis 3, in that if private EGC targets are VC-backed, they have more

¹⁵ We also estimate similar regressions for 100% cash deals observing insignificant outcomes.

¹⁶ We compute the probability of decrease in stock deals in following way: $\text{Log}(p/1-p) = -0.967 \Rightarrow p = 27\%$

¹⁷ As mentioned, we also conduct a test where mode of payment is mixed (cash and stock), and we run a regression of *Cash/Stock* as a continuous dependent variable. We report the results in the appendix. The sign of the coefficient is positive as expected, but it is insignificant overall. We provide those results separately in appendix A3. We do not use deals in which the mode of payment is cash and other, stock and other, cash and unknown, stock and unknown, or unknown.

bargaining power in the M&A market as a result of the JOBS Act. In turn, valuations of EGC private targets increase by 50.4% ($= 36\% + 0.4 \times 36\%$) after the JOBS Act if they are VC-backed. This demonstrates that VC expertise generates higher valuations for EGC private targets after the JOBS Act.

[Insert Table VII about here]

Table VII also shows that *High tech*, *Cash*, *EGC*, and *VC* are statistically significant for this regression specification. It demonstrates that characteristics such as industry, public-private status, and deal payment method also matter for determining bargaining power when targets are VC-backed.

7. Robustness Checks

7.1. Falsification Tests

Because we cannot empirically test the major assumption of difference-in-differences methodology (see Bertrand and Mullainathan, 2004), a standard practice is to conduct several falsification tests with alternative samples where the treatment is not conducted and show that the regressions results are not significant. We perform two such falsification tests here. The first one is on international M&As with private targets, and the second one is by shifting the JOBS Act year to a different period. We show, as reported below, that in both cases the treatment effect as estimated by the coefficient of *EGC X Private X JOBS* is not significant.

7.2. International M&A and the JOBS Act

Because the JOBS Act is for U.S. firms going public, it should not affect international targets. To check this, we conduct a placebo test and run the regressions using international targets. The results are in columns 1 and 2 of Table VIII.

[Insert Table VIII about here]

The coefficient of *EGCXPrivateXJOBS* for the valuation regression is -12.00 and insignificant. This confirms that the JOBS Act affects only U.S. EGC targets, supporting our previous results.

7.3. Shifting the JOBS Act Year

We conduct a second falsification test by shifting the JOBS Act year to 2005. The actual JOBS Act was passed in 2012; by shifting the year to 2005 we expect to have insignificant impact of our difference-in-differences coefficient, as target valuation and acquirer's CAR should not change if we artificially move the JOBS act year to 2005. The results of this regression are in column 3 of Table VIII. The coefficient of *EGC X Private X JOBSAct* is insignificant for firm valuation. We conduct the same test by shifting the year to 2008; and also find insignificant results. This suggests that shifting the JOBS Act year does not drive the results.

7.4. Serial Correlation in Errors of Difference-in-Differences Regressions

Bertrand et al. (2004) raise concerns about serial correlation in errors in difference-in-differences regressions because most dependent variables are time-series variables, and autocorrelation in the errors can therefore drive the significance of the results. To mitigate this concern, we do an autocorrelation check of difference-in-differences regression errors. We find an autocorrelation of 0.03, which is low. The errors fail the Box-Pierce test of significance, confirming that autocorrelation in the error term does not contribute to the significance of our results (The results for this test are in Appendix C5 (Internet Appendix)).

7.5. Resolving Self-Selection: IPO and M&A Matching using Nearest Neighbor Algorithm

Ellingsen and Rydqvist (1997) point out that going public enables firms to signal superior quality. Accordingly, firms that believe they can compete in the market may prefer IPOs over being acquired. Bayar and Chemmanur (2011) add that the quality of firms going public versus those acquired is different, which is an issue of self-selection. To address this issue, we compare the relative valuation premiums of EGC private targets over a matched group of firms that go

public. If the JOBS Act affects the valuations of the EGC private targets, then post-JOBS Act the relative valuations of the EGC private targets should be higher relative to matched IPO peer firms that go public.

We compute the relative valuation premiums of the EGC private targets by comparing their valuations, measured as the ratio of M&A deal value to sales, with the valuations of comparable firms that went public, where IPO valuation is the ratio of IPO proceeds to sales (Bayar and Chemmanur (2012)). The valuation premium of an EGC private target is therefore:

$$\text{Valuation Premium} = \log [(Deal Value by Sales (EGC private target) / Proceeds by Sales (comparable IPO firm))]$$

We match our M&A sample with the IPO sample using the nearest neighbor algorithm based on the following dimensions: EGC, year, industry, size, leverage, and book-to-market ratio. We do exact matching based on EGC, year, and industry and we do approximate matching using size, leverage, and book-to-market ratio.

Another factor that may affect the choice between M&A and IPO is the cost of going public. One can argue that EGC private targets opt for M&A because going public is too costly. Therefore, to mitigate this concern, we calculate the direct cost and indirect cost of private EGCs that choose M&A and determine what the costs would have been if they chose an IPO instead. Hence, we use comparable IPO underwriting fees as a proxy for direct costs, and we use comparable firms' IPO underpricing as a proxy of the indirect costs of going public. We use these as part of the control variables in the valuation premium regression. We use the valuation premium as a dependent variable in a difference-in-difference setting where the coefficient of interest is the coefficient of the variable EGC X Treatment X JOBSact. The 'Treatment' dummy takes value 1 if it is a M&A otherwise 0 for the IPO. For this test, we limit our sample only to private firms, mainly, because IPO EGC firms are all private and our

main test group is also private.

The results are in panel C of Table IX. We find that valuation premiums for EGC targets increase after the JOBS Act after controlling for underpricing and underwriting costs. This is consistent with our previous results that after the JOBS Act, valuations for private EGCs increase. These results are an extension of Doidge, Karolyi, and Stulz (2016). Higher net benefits from M&A in addition to higher regulatory burdens for IPOs lead to fewer IPOs.

[Insert Table IX about here]

7.6. Reducing the Pre-JOBS Act Sample Size

We have more observations in the pre-JOBS Act period (which began in 1990) than in the post-JOBS Act period (after April 2012), and our results may be biased because we include data from a period further from the JOBS Act date. To mitigate this concern, we set the pre-JOBS Act period starting year to 2008 instead of 1990, and we conduct detail analysis from summary statistics to regressions for target valuation and acquirer wealth (CAR) using this balanced sample. Our results are consistent with the previous results that valuations for EGC private targets increase after the JOBS Act and acquirer wealth gains fall. The results for this test are in Appendix B. We also provide the results of CAR runup from 45 days lag to 45 days lead.

7.7 Impact of JOBS Act on EGC Private Targets (Treatment Group)

As JOBS act impacts EGC private targets and it is the main treatment group, therefore, it is essential to check how the JOBS act affects the valuation of this treatment group without comparing it any control group. Table B6 in Appendix B shows the regression results of this test. The coefficient of JOBS act dummy is positive and significant for valuation regressions and negative and significant for acquirer wealth gain regressions. This robustness test results strengthen our difference-in-differences results and confirms that valuation of EGC private targets increased after JOBS act and providing the premium to these targets affected the

acquirers negatively.

7.8 Joint-ownership (mergers) or 100 % acquisition of shares

Our main analysis reported above was for all types of merger activities; a partial sell off or joint ownership as well as entire sell off of a firm. The JOBS act was aimed for IPOs, which is a public offering of a firm's securities and not the entire sell-off of a firm, hence a comparison with the entire sell-off may not be fair. We therefore re do our analysis for the partial sell offs and 100% sell-offs (acquisitions of 100% shares) separately. There are 7,602 mergers (partial sell-offs or joint ownerships) in our sample and from these, 1,560 are for EGC private targets (1,408 before the JOBS Act and 152 after the JOBS Act). The difference-in-differences regression results only for mergers are provided in column (1) and column (2) of Table B7 of Appendix B. In column (1), the coefficient of EGC x Private x JOBS Act is 22.34 and it is significant at 1 % level. Column (2) provides results to compare venture capitalist targets versus others, the coefficient of EGC x Private x JOBS Act x Venture Capitalist is 38.42 and it is significant at 5 % level. The relative magnitudes of the impact of the JOBS act on valuation is also intuitive. It turns out that the JOBS act affected the VC certified joint ownerships of EGCs (the group perhaps most similar to a possible EGC IPO) more than the 100% sell -offs. Panel B of Table B7 shows the results for acquirer wealth gain. The coefficient of these interaction terms are -0.010 and -0.088 and both are statistically and economically significant.

Column (3) and Column (4) shows the results for 100 % acquisition of shares. In panel A, the coefficient of these interaction terms are 23.12 and 36.25 and these are significant at 10 % and 5 % level. It implies that the valuation of EGC private targets increased after JOBS act when there is acquisition of 100 % shares. For acquirer wealth gain , in Panel B, the coefficient of these interaction terms are -0.010 and -0.088 and these are significant at 10 % and 5 % level. It implies that wealth gain reduced for acquirers for providing premium to EGC private targets

on acquisition of 100 % shares.

In sum, this robustness test shows that our main results hold even for individual deal forms like mergers only or acquisition of 100 % shares.

7.9 Merger Waves, Target Valuation, and Acquirer Wealth Gain

There is an endogenous relation between misvaluation and merger waves, and the theories suggest that this occurs either due to errors in valuing potential takeover synergies (Rhodes-Kropf and Viswanathan , 2004) or target managers do not maximize long-term shareholder value; they instead maximize their own short-run gain (Shleifer and Vishny, 2003) or from shocks to an industry's economic, technological, or regulatory environment (Gort (1969) and Mitchell and Mulherin (1996)). Empirical evidence also supports this hypothesis that the misvaluation affects the level of merger activity, the decision to be an acquirer or target, and the transaction medium (Rhodes-Kropf, Robinson, and Viswanathan , 2005) and this can happen because merger waves occur in response to specific industry shocks that require large scale reallocation of asset (Karpoff, 2005). As two of the merger waves (Ahern and Harford, 2014) – fifth merger wave (1992-2001) and sixth merger wave (2004-2007) overlaps with our sample, therefore, there is possibility that our results also affected due to these merger waves. Hence, to mitigate this and other related concerns, we did an additional robustness check by excluding the years during which merger waves exist.

The regression table for this test is provided in Table B8 of Appendix B. In Panel A, target valuation excluding the years of merger waves, the coefficient of main interaction terms - EGC x Private x JOBS Act and EGC x Private x JOBS Act x Venture Capitalist are 7.55 and 31.86 ; both are statistically significant. The Panel B of Table B8 shows the results for acquirer wealth gain These findings confirm that our main results are not driven by the merger waves.

Other Robustness Checks

The software industry contains many EGC targets. It includes 12% to 15% of total EGC firms, and that increases to 17% after the JOBS Act. Therefore, it is interesting to find out whether EGC targets in the software industry have higher valuations compared to others after the JOBS Act. This is indeed what we find. In addition, we confirm our previous results even when excluding the software industry from the sample. The results for these tests are in Appendix C2 and Appendix C4 (Part of Internet Appendix).

8. Conclusion

This paper provides evidence that the IPO regulatory environment affects the M&A market. On April 5, 2012, the Jumpstart Our Business Startups (JOBS) Act was signed into law with the intention to increase the number of IPOs among emerging growth companies (EGC). It allowed EGC firms to file IPO documents confidentially with the SEC and talk to private players, such as institutional investors, in order to determine their market value. These provisions not only reduce the informational cost of going public, but they also increase targets' bargaining power in the M&A market.

Because the Act is an exogenous shock to exit strategy trade-offs, this study provides a setting to show a causal relationship between valuations of EGC private targets and exit strategy trade-offs. Using a difference-in-differences methodology, we find that valuations (measured as deal value as a proportion of sales) for EGC private targets increase by 36% in the takeover market after the Act. The 36 % increase in valuation of EGC targets provide evidence that signaling of going public is comparable to being a public firm. Masulis and Simsir (2018) show that average announcement CARs of public targets are 26.4 % around the announcement and 36.6 % including runup. This shows that increase in valuation of EGC targets due to JOBS act is similar to abnormal market reaction for public targets around

announcement. This increase is more prominent in VC-backed EGC private targets. We also find that acquirers' wealth gain, proxied as 3-days CAR around the announcement, fall by six to eight basis points after the Act, consistent with negative reactions from acquirer shareholders regarding merger premiums. The results also reveal that after the JOBS Act, for EGC private targets, the number of all-stock deals decreases.

As robustness checks, we perform two falsification tests and check for serial correlation in the errors. The first falsification test uses international M&As as a placebo; the second shifts the JOBS Act year to 2005. Bertrand, Duflo, and Mullainathan (2004) raise the concern that errors are serially correlated in the difference-in-differences regression; to mitigate that concern we check the autocorrelation in the errors. We find no significant results in the falsification regressions and autocorrelations-based tests. We also provide an additional robustness test to confirm that our results are not driven by merger waves.

In sum, we provide empirical evidence that valuation of private targets increase after the JOBS Act and this affected acquirer wealth gains negatively. These results are more prominent for VC-backed targets. We also find that stock (cash) deals decrease (increase) for private firms after the Act. These results are robust to endogeneity concerns, sampling bias, alternative measures, placebo tests, merger waves, and various other checks.

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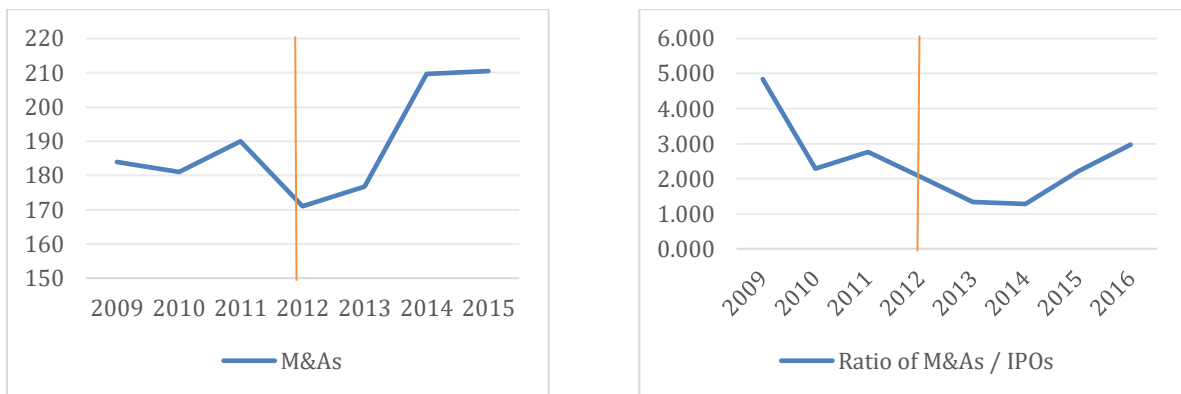
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Source: Authors' calculation (IPO data: Jay Ritter's website)

Figure 1: Yearly Distribution of M&As and Ratio of M&As/IPOs

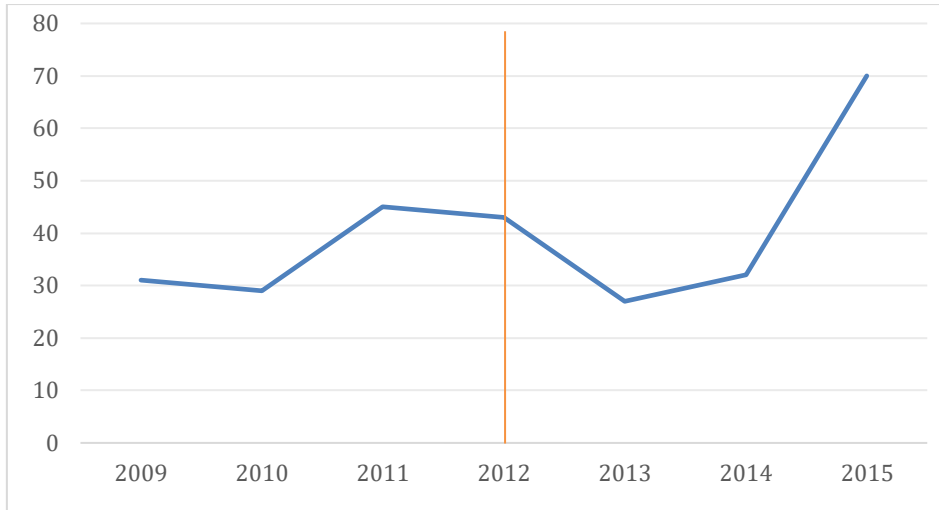
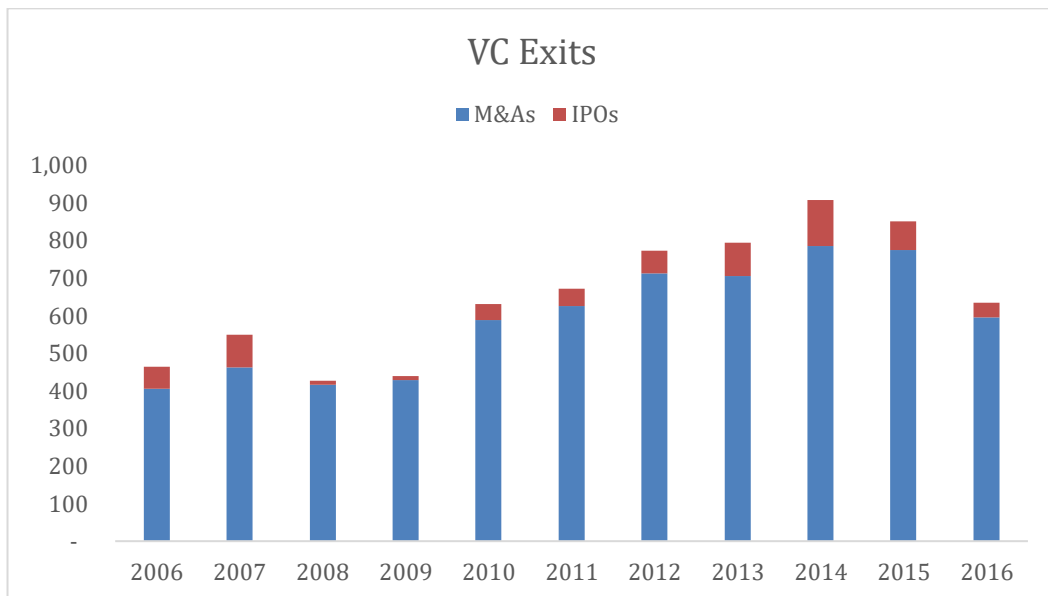


Figure 2: Yearly Distribution of EGC Private Targets



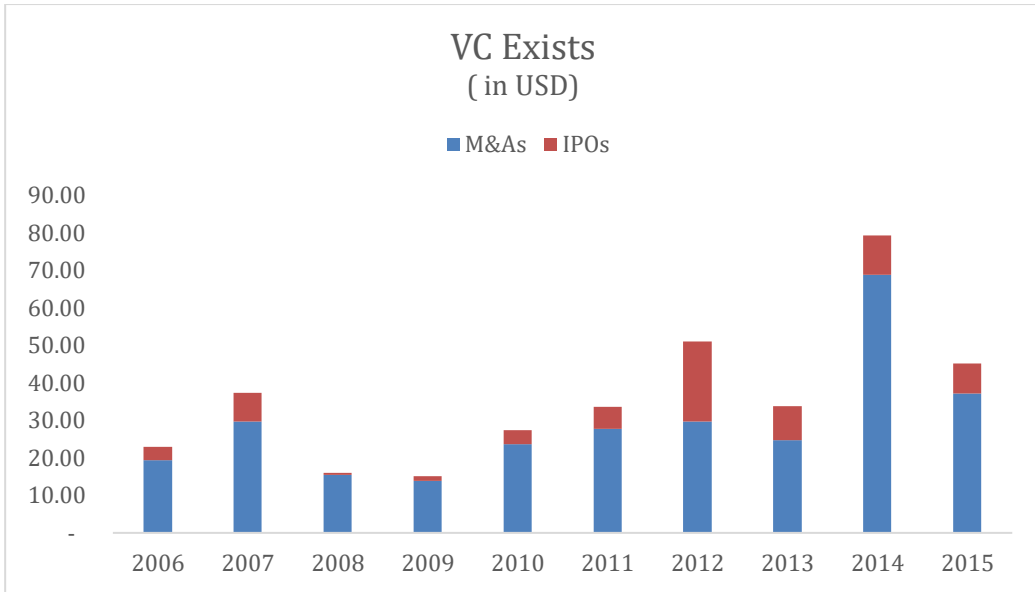


Figure 3 : Yearly Distribution of VC Exits via IPO versus M&As in Numbers and in USD

Source : Page 16 of the National Venture Capital Association 2016 Yearbook

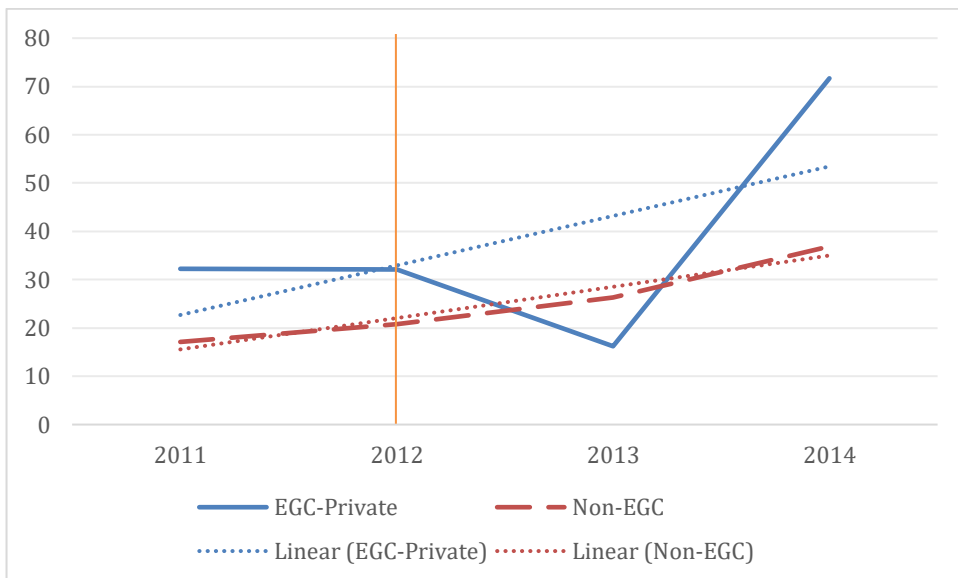


Figure 4: Yearly Distribution of Target Valuations (Deal Value by Sales)

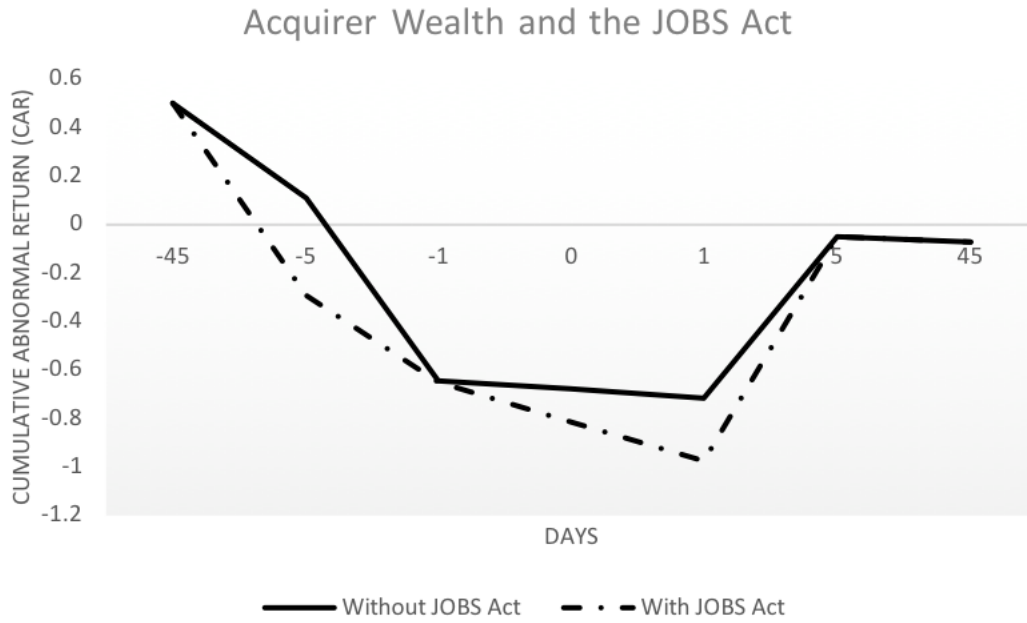


Figure 5: Distribution of Cumulative Abnormal Return (CAR) of Acquirer around M&A Announcement

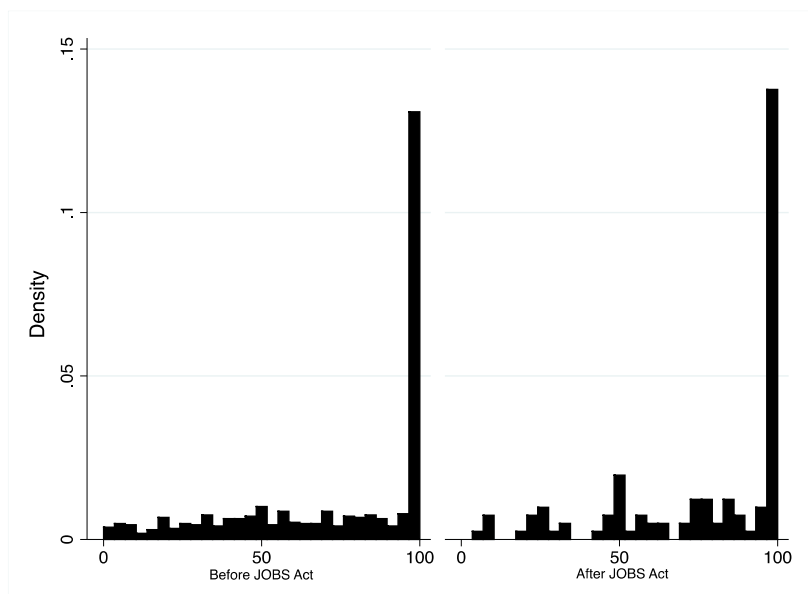


Figure 6: EGC Private Targets – Cash Deals

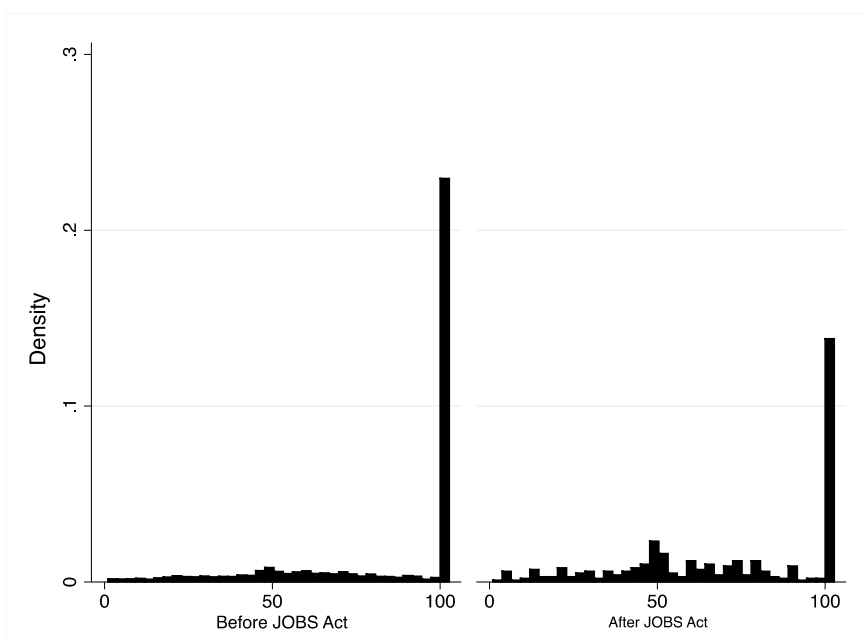


Figure 7: EGC Private Targets – Stock Deals

Table I
Provisions under JOBS Act

Provisions	Pre-JOBS Act	Post-JOBS Act
Confidential Submissions	Confidential filings not allowed.	EGCs can submit draft IPO registrations before publicly filing. The submission must be made public at least 21 days before the roadshow.
Financial Information	Three years of audited financial statements.	Two years of audited financial statements.
	Five years of selected financial data.	Two years of selected financial data.
Executive Compensation	Disclosure mandatory for CEO, CFO, and three next-highest-paid officers. All compensation tables required. Benefits upon termination reported.	Disclosure mandatory only for CEO and next two highest-paid officers. Only two tables required. No quantification of benefits upon termination required.
Accounting Standards	Internal pay comparisons expected. Firm must meet new and/or revised GAAP standards.	No pay comparisons required. Firm must comply with any new, revised financial accounting standards until such standards are required for private companies.
Auditor Report	Auditor must attest to the effectiveness of internal controls by the second annual report after the IPO.	Transition period of five years for auditors to attest to internal controls.

Table II
Panel A: Data Filtering

U.S. M&A Observations (No. of Observations Left after Each Filter)	
From SDC	294,518
Keeping Private and Public Target Firms	199,534
Keeping Private and Public Acquirer Firms	168,099
Drop Duplicates Target Acquirer Effective Date	54,030
Keeping Required Deal Forms	29,935
Removing Missing Values of Target Net Sales	14,179
Removing Private Acquirer Firms	12,061

Panel B
EGC Private and Non-EGC Targets before and after JOBS Act

	Before (1990-2011)	After (2012-2016)	
	JOBS Act		Total
Non-EGC	9,309	872	10,181
EGC-Private	1,645	235	1,880
Total	10,954	1,107	12,061

Panel C
Mode of Payment

Cash	Stock	Mix	Remaining	Total
5,195	2,530	856	3,480	12,061

Table III
Panel A: Summary Statistics

This table shows the summary statistics of main variables. All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *CAR* is cumulative abnormal returns of the acquirer over the (-1,1) day window around the announcement. Private target valuation (*Valuation*) is the ratio of deal value to sales. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target firm is private; otherwise, it equals 0. *High Tech* equals 1 if the target firm belongs to the high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. *Venture Capital* equals 1 if the target firm is VC-backed; otherwise it equals 0.

	Observations	Mean	Std. Dev.	Min	Max
Dependent Variables					
Deal Value by Sales (<i>Valuation</i>)	12,061	17.717	21.971	0.0913	81.200
CAR (Only for Public Acquirer)	6,116	-0.002	0.072	-0.221	0.258
Independent Variables					
EGC x Private	12,061	0.155	0.362	0	1
JOBS Act	12,061	0.091	0.288	0	1
Deal Value	12,061	642.608	1873.451	0.21	13519.67
Target Net Sales	12,061	67.662	189.251	1	1337
High Tech	12,061	0.234	0.423	0	1
Leverage	12,061	0.287	0.160	0.145	0.706
SMB	12,061	-0.000	0.596	-5.050	3.580
HML	12,061	0.008	0.588	-4.220	4.800
MKT	12,061	0.053	1.045	-8.95	11.354
LBO	12,061	0.043	0.204	0	1
Cash	12,061	0.504	0.500	0	1
Horizontal Merger	12,061	0.251	0.433	0	1
HHI	12,061	0.352	0.055	0.225	0.522
Venture Capital	12,061	0.043	0.204	0	1

Panel B: Dependent Variables before and after the JOBS Act

This table shows the change in the dependent variables before and after the JOBS Act for the EGC private targets. *EGC* private target is defined as those target firms whose net sales are less than \$1 billion USD. *CAR* is cumulative abnormal returns of the acquirer over the (-1,1) day window around the announcement. *Firm valuation* is deal value as a percentage of sales. The *t*-value is the t-statistic on comparison of the variables (*Deal values by sales*, *Acquisition premium*, and *CAR*) before and after the JOBS Act.

	Deal Value over Sales		CAR	
	Mean	Std.Dev.	Mean	Std. Dev.
Before JOBS Act	18.931	0.505	-0.002	0.001
After JOBS Act	29.775	1.91	0.006	0.003
Difference	10.844	1.518	0.008	0.003
<i>t</i> -value	7.141		2.299	

Panel C: Covariate Balance between Treatment and Control Group

This table shows the covariate balance between treatment and control group. Here treatment and control group is EGC private firms (EGC x Private) before and after the jobs act (JOBS Act). *EGC* equals 1 if the target's net sales are less than \$1 billion USD; otherwise, it equals 0. *CAR* is cumulative abnormal returns of the acquirer over the (-1,1) day window around the announcement. *Firm valuation* is deal value as a percentage of sales. *Acquisition premium* is enterprise value of the target firm (valued by the acquirer) and equity value of the target firm; *t*-value is the t-statistic on comparison of the variables (*Deal values by sales* and *CAR*) before and after the JOBS Act. *High tech* equals 1 if the target firm belongs to the high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. *VC* equals 1 if the target firm is VC-backed; otherwise it equals 0.

Variable	Treated	Control	t	p>t
Deal Value by Sales	40.38	20.61	8.44	0.00
CAR	0.03	0.00	3.69	0.00
High Tech	0.29	0.23	2.02	0.04
Leverage	0.34	0.29	4.90	0.00
CASH	0.39	0.51	-3.50	0.00
SMB	0.01	0.00	0.22	0.83
HML	-0.03	0.01	-0.87	0.38
MKT	-0.02	0.06	-1.13	0.26
LBO	0.01	0.04	-2.67	0.01
Horizontal Merger	0.26	0.25	0.44	0.66
HHI	0.41	0.35	16.46	0.00
Venture Capital	0.12	0.04	5.73	0.00

Table IV
Valuation and JOBS Act

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on target firm valuations (deal value as a percentage of sales). All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, HHI, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1) Valuation	(2) Valuation
EGC	14.273*** (1.947)	14.605*** (2.739)
Private	1.603 (2.182)	4.914 (3.110)
JOBS Act	17.359*** (3.644)	22.534*** (3.937)
EGC X Private	0.393 (3.849)	-4.736 (4.170)
EGC X JOBS Act	10.468* (4.275)	5.948 (4.050)
EGC X Private X JOBS Act	7.065* (3.068)	7.261** (2.396)
LBO		-2.956 (2.443)
High Tech		4.307** (1.173)
Horizontal Merger		9.790*** (1.622)
Constant	-10.096*** (1.398)	43.824*** (6.864)
Observations	12,061	12,061
R-squared	0.081	0.147
Year	Yes	Yes
Industry	Yes	Yes
Other Controls	Yes	Yes

Table V
Acquirer Wealth Gain and JOBS Act

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on CAR (acquirer wealth gain). All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *CAR* is the acquirer's cumulative abnormal returns over the (-1,1) day window around the announcement. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0.0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGCXPrivateXJOBSact* equals 1 if the target is EGC, private, and the sellout year is post-JOBS Act. *High tech* equals 1 if the target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target firm and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, HHI, *Leverage*, and *Cash*. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1) CAR	(2) CAR
EGC	0.003 (0.012)	-0.000 (0.012)
JOBS Act	-0.005 (0.036)	-0.015 (0.033)
EGC X Private	0.037*** (0.004)	0.038*** (0.005)
EGC X JOBS Act	-0.010 (0.032)	-0.003 (0.034)
EGC X Private X JOBS Act	-0.054*** (0.011)	-0.076*** (0.013)
LBO		-0.009 (0.014)
High Tech		-0.006** (0.002)
Horizontal Merger		0.002*** (0.000)
Constant	-0.006 (0.015)	-0.024 (0.013)
Observations	6,116	6,116
R-squared	0.044	0.059
Year	Yes	Yes
Industry	Yes	Yes
Other Controls	No	Yes

Table VI
Mode of Payment (100% Cash Payment) and the JOBS Act

We conduct a logistic regression to check the probability of all-cash deals for EGC private targets after the JOBS Act. *Stock_100* is the dependent variable that equals 1 and proxies of the demand for capital for 100% stock deals; it equals zero otherwise. EGC equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGCXPrivateXJOBSact* equals 1 if the target is EGC, private, and the sellout year is post-JOBS Act. *High tech* equals 1 if the target belongs to the high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Market/book ratio* is the market-to-book-value ratio for the target's industry. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise, it equals 0. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, HHI, *Market rate*, and *Leverage*. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1) Stock_100	(2) Stock_100
EGC	-0.451*** (0.098)	-0.431*** (0.112)
Private	-10.236*** (0.965)	-10.469*** (0.907)
JOBS Act	-0.657 (0.898)	-0.327 (0.733)
EGC X Private	10.663*** (0.970)	10.852*** (1.048)
EGC X JOBS Act	1.222*** (0.283)	0.992*** (0.280)
EGC X Private X JOBS Act	-0.967*** (0.284)	-0.975*** (0.294)
LBO		-3.935*** (0.442)
High Tech		-0.038 (0.324)
Horizontal Merger		0.611*** (0.048)
Constant	-1.999*** (0.264)	0.246 (1.459)
Observations	12,061	12,061
Year	Yes	Yes
Industry	Yes	Yes
Other Controls	No	Yes

Table VII
VC-Backed Targets and the JOBS Act

We use difference-in-difference-in-differences regression to check the impact of the JOBS Act on *Valuation* (deal value divided by sales). All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *High tech* equals 1 if the target belongs to the high-tech industry; otherwise, it equals 0. *Leverage* is the target industry's debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *Venture capitalist* equals 1 if the target firm is VC-backed; otherwise, it equals 0. *EGC X Private X Venture capitalist X JOBSact* equals 1 if the target is EGC, private, and VC-backed and the sellout year is in the post-JOBS Act period; otherwise, it equals 0. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, *HHI*, *Leverage*, and *Cash*. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Variables	(1) Valuation	(2) Valuation
EGC	13.867*** (1.863)	14.438*** (2.750)
Private	-7.781 (6.318)	-2.936 (3.527)
Venture Capitalist	9.432 (4.466)	7.643* (3.456)
JOBS Act	17.338*** (3.638)	22.530*** (4.049)
EGC X Private	7.369 (5.638)	1.022 (3.142)
EGC X JOBS Act	11.711* (4.334)	7.185 (4.099)
EGC X Private X Venture Capital	16.482* (6.729)	14.903 (8.100)
EGC X JOBS Act X Venture Capital	-14.044 (10.341)	-10.072 (8.271)
EGC X Private X Venture Capital X JOBS Act	41.832** (9.726)	39.936** (10.110)
LBO		-3.507 (2.737)
High Tech		3.341* (1.239)
Horizontal Merger		9.672*** (1.534)
Constant	-9.843*** (1.308)	43.429*** (7.013)
Observations	12,061	12,061
R-squared	0.094	0.158
Year	Yes	Yes
Industry	Yes	Yes
Other Controls	Yes	Yes

Table VIII
Placebo Tests

We conduct a placebo test to check the impact of the JOBS Act on international takeovers (U.S. acquirer and non-U.S. targets). We use a difference-in-differences regression to check the impact of the JOBS Act on *CAR* (wealth gain) and *Valuation* (deal value divided by sales). All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *CAR* is cumulative abnormal returns of the acquirer over the (-1, 1) day window around the announcement. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGCXPrivateXJOBSact* equals 1 if the target is an EGC, private, and the sellout year is post-JOBS Act; otherwise, it equals 0. Controls comprise lag values of *HML*, *SMB*, *Market rate*, *Leverage*, *Cash*, *LBO*, *High tech*, and *Horizontal merger* for 'Shifting the JOBS Act' regression. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Variables	International M&As		Shifting the JOBS Act
	CAR	Valuation	Valuation
EGC	0.002 (0.005)	15.700*** (2.129)	12.461** (3.439)
Private	0.009** (0.004)	14.740*** (5.240)	2.547 (3.311)
JOBS Act	-0.002 (0.003)	-4.868* (2.507)	23.321** (7.308)
EGC X Private	-0.004 (0.003)	-8.433 (3.708)	-2.497 (3.759)
EGC X Private X JOBS Act	0.002 (0.008)	-12.000 (7.576)	2.884 (1.671)
Constant	-0.066*** (0.011)	-2.934 (6.454)	46.078*** (6.429)
Observations	1,362	1,362	12,061
R-squared	0.178	0.025	0.147
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Controls	No	No	Yes

Table IX
Cost-Benefit Analysis of EGC Private M&As with Comparable EGC IPOs Using
Nearest Neighbor Matching

Panel A: Matching between EGC-Private M&As and Comparable IPOs

This table shows the numbers of EGC private M&As and their comparable IPOs. We conduct propensity score matching (PSM) on six dimensions: *EGC*, *Year*, *Size*, *Industry*, *Leverage*, and *Market/book ratio*.

Treatment	Freq.	Percent	Cum.
IPO (=0)	1,859	49.71	49.71
M&A (=1)	1,881	50.29	100
Total	3,740	100	

Panel B: Comparable M&A Cost — Direct (Underwriting Fees) and Indirect (Underpricing)

Panel B provides summary statistics of direct cost (underwriting fees) and indirect cost (underpricing) for M&A firms comparable to IPOs on six dimensions: *EGC*, *Year*, *Size*, *Industry*, *Leverage*, and *Market/book ratio*. The direct cost is in millions of dollars and indirect cost is in percent.

IPO - Cost					
Variable	Obs	Mean	Std. Dev.	Min	Max
Underwriting Fees	1,859	0.19	0.06	0.01	0.52
Underpricing (1st day)	1,859	12.57	20.87	-11.11	68.75
M&A - Cost					
Variable	Obs	Mean	Std. Dev.	Min	Max
Underwriting Fees	1,881	0.20	0.03	0.13	0.27
Underpricing (1st day)	1,881	13.65	10.16	-4.21	55.43

Panel C: Benefit of M&As Compared to Equivalent IPOs Controlling for the Cost

This table shows the regression results of changes in valuation for matched IPO and M&A firms after the JOBS Act. $M\&A_by_IPO$ premium is log of $M\&A$ deal value by sales to IPO deal value by sales. Deal value of IPO is proceeds. EGC equals 1 if target's net sales is less than 1 billion USD; otherwise 0. $JOBS$ Act equals 1 if the takeover year is in the post- $JOBS$ Act period; otherwise, it equals 0. $Treatment$ equals 1 if it is M&A otherwise 0 for IPO . All firms are private. $EGC \times Treatment \times JOBSact$ equals 1 if the target is EGC , acquired, and the sellout year is post- $JOBS$ Act. $Venture$ Capitalist is equal to 1 if M&A or IPO is backed by venture capitalist; otherwise 0. $High\ tech$ equals 1 if the target belongs to the high-tech industry; otherwise, it equals 0. $Leverage$ is the target's industry debt ratio. $Market/book\ ratio$ is the ratio of market value to book value for the target's industry. $Treatment$ equals 1 for M&As and 0 for $IPOs$ M&As are matched with comparable $IPOs$ based on EGC , industry, year, size, leverage, and market/book ratio. Exact matching uses EGC , $High\ tech$, and $Year$, and approximate matching uses $Size$, $Leverage$, and $Market/book\ ratio$. Robust standard errors are in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Variables	(1) Valuation
EGC	-11.75* (6.686)
Treatment	-9.276*** (2.193)
JOBS Act	-0.868 (9.874)
EGC x Treatment	28.16*** (3.738)
EGC x Treatment x JOBS Act	19.86*** (5.670)
Venture Capitalist	10.64*** (2.159)
High Tech	5.801*** (1.778)
Underwriting Fees	9.820 (9.690)
Underpricing	-0.073** (0.032)
Constant	3.765 (6.843)
Observations	3,740
R-squared	0.165
Industry	Yes
Year	Yes

Variable Definitions

Variable	Definition	Data Source
EGC	Dummy variable equal to 1 if target is an emerging growth company (i.e., total sales are less than or equal to \$1 billion USD), otherwise 0.	SDC
Private	Private dummy equal to 1 if target firm is private, otherwise 0.	SDC
JOBS Act	Dummy equal to 1 if year is 2012 or later, otherwise 0.	SDC
High Tech	Dummy variable equal to 1 if firm is in a high-tech industry, otherwise 0.	SDC
Market/ Book Ratio	Industry average market-to-book ratio.	Compustat
Leverage	Industry average debt-to-assets ratio.	Compustat
Cash	Dummy equal to 1 if cash is more than 50% of deal payment, otherwise 0.	SDC
Horizontal Merger	Dummy equal to 1 if target and acquirer are in the same industry, otherwise 0.	SDC
Deal Value (in millions USD)	The value of the transaction.	SDC
Total Net Sales (in millions USD)	The total net sales of the target firm.	SDC
Leverage Buyout (LBO)	Dummy variable equal to 1 if the M&A is a leveraged buyout, otherwise 0.	SDC
Venture Capitalist	Dummy variable equal to 1 if the target is VC-backed, otherwise 0.	Venture expert
Mkt or Market Rate	Market rate.	Kenneth French's website
SMB	French-Fama factor.	Kenneth French's website
HML	French-Fama factor.	Kenneth French's website
CAR	Cumulative abnormal return (CAR) calculated using the market model.	CRSP

Appendix

A1: Yearly Distribution of Targets

Year	EGC Private	Non-EGC	Total
1990	17	323	340
1991	39	337	376
1992	70	330	400
1993	131	366	497
1994	132	626	758
1995	116	728	844
1996	63	843	906
1997	127	677	804
1998	111	719	830
1999	113	699	812
2000	87	637	724
2001	45	470	515
2002	39	289	328
2003	57	289	346
2004	71	267	338
2005	85	254	339
2006	56	262	318
2007	92	340	432
2008	89	270	359
2009	31	205	236
2010	29	207	236
2011	45	171	216
2012	43	157	200
2013	27	180	207
2014	32	141	173
2015	70	193	263
2016	63	201	264
Total	1880	10181	12061

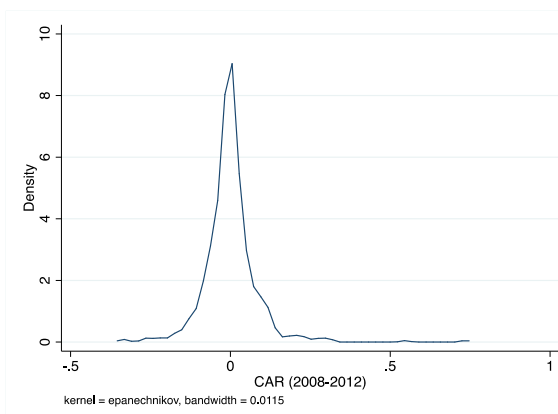
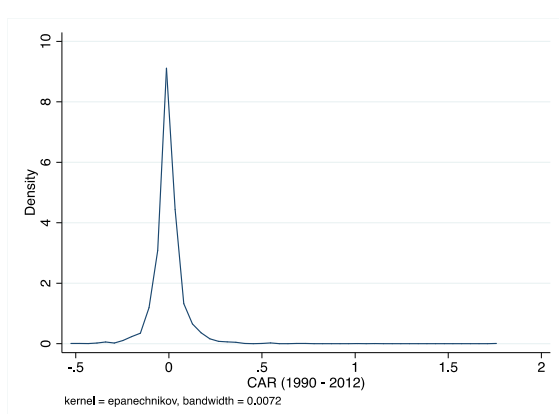
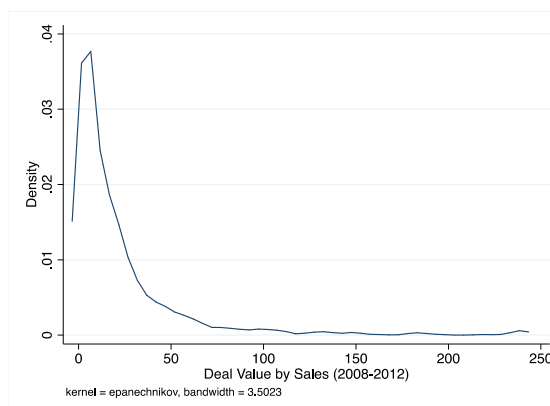
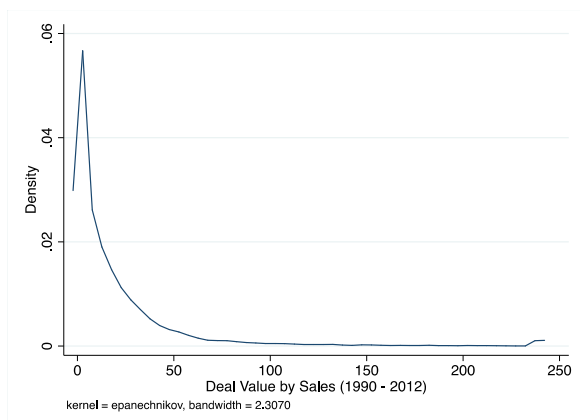
A2: Industry Distribution of Targets

This table shows the industry classification of EGC-Private targets (Treatment) and EGC public, Non-EGC public, and Non-EGC private targets (Control) before and after JOBS Act.

Industry Classification	Treatment				Control			
	Before JOBS Act		After JOBS Act		Before JOBS Act		After JOBS Act	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Consumer Durables, NonDurables, Wholesa	328	19.94	27	11.49	1,455	15.63	121	13.88
Manufacturing, Energy, and Utilities	212	12.89	29	12.34	1,401	15.05	142	16.28
Business Equipment, Telephone and Telev	434	26.38	71	30.21	2,355	25.3	216	24.77
Healthcare, Medical Equipment, and Drug	136	8.27	27	11.49	756	8.12	96	11.01
Other -- Mines, Constr, BldMt, Trans, H	535	32.52	81	34.47	3,342	35.9	297	34.06
Total	1,645	100	235	100	9,309	100	872	100

B1: Comparing Pre-JOBS Act Samples - 1990-2011 and 2008-2011

These kernel density graphs and the co-variate balance table compares the two pre-JOBS act samples. One sample is from 1990-2012 and another is from 2008-2012.



Variable	1990-2011	2008-2011	t	p>t
Deal Value by Sales	19.93	21.78	-1.79	0.07
CAR	0.00	0.00	-0.50	0.62
High Tech	0.23	0.27	-2.71	0.01
Leverage	0.28	0.27	1.42	0.16
SMB	0.00	0.04	-2.29	0.02
HML	0.01	0.00	0.79	0.43
MKT	0.05	0.01	1.44	0.15
LBO	0.04	0.07	-4.97	0.00
Cash	87.49	85.82	1.82	0.07
Horizontal Merger	0.24	0.31	-5.01	0.00
HHI	0.35	0.40	-34.86	0.00
VC	0.05	0.06	-2.00	0.05

B2: Summary Statistics of Balanced Sample

This table shows the summary statistics of main variables for balanced sample (2008-2016). All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *CAR* is cumulative abnormal returns of the acquirer over the (-1,1) day window around the announcement. Private target valuation (*Valuation*) is the ratio of deal value to sales. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target firm is private; otherwise, it equals 0. *High tech* equals 1 if the target firm belongs to the high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *Venture Capital* equals 1 if the target firm is VC-backed; otherwise it equals 0.

Variable	Obs	Mean	Std. Dev.	Min	Max
Deal Value	1,523	1536.685	3679.170	2.224	25052.410
Deal Value by Sales	1,523	31.872	40.991	0.017	239.910
CAR	1,141	0.003	0.079	-0.345	0.735
Venture Capital	1,523	0.053	0.224	0	1
Leverage	1,523	0.318	0.183	0.194	0.706
LBO	1,523	0.008	0.088	0	1
Cash Dummy	1,523	0.548	0.498	0	1
Horizontal Merger	1,523	0.404	0.491	0	1
HHI	1,523	0.404	0.055	0.261	0.523
SMB	1,523	0.020	0.573	-3.780	3.850
HML	1,523	-0.019	0.680	-4.220	4.800
MKT	1,523	0.026	1.283	-8.253	9.774
EGC X Private	1,523	0.221	0.415	0	1
JOBS Act	1,523	0.536	0.499	0	1

Panel B2

EGC Private and Non-EGC Targets before and after JOBS Act (2008-2016)

This table shows the distribution of observations of EGC-Private (Treatment) and Non-EGC (Control) before and after JOBS Act.

	JOBS Act		Total
	Before	After	
Non-EGC (Control)	533	654	1,187
EGC-Private (Treatment)	173	163	336
	706	817	1,523

B3: Target Valuation and JOBS Act

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on target firm valuations (deal value as a percentage of sales). All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if the target is an EGC firm; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *EGC x Private x VC Dummy* equals 1 if the target is an EGC, private, and backed by VC. *EGC x JOBSact x VC Dummy* if the target is an EGC, backed by VC, and the transaction year is post-JOBS Act. *EGC x Private x JOBSact x VC Dummy* equals 1 if the target is an EGC, private, VC backed, and the transaction year is post-JOBS Act. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. Other controls comprise lag values of *HML*, *SMB* and *Market rate*, *HHI*, and *Tbill rate*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0..

VARIABLES	(1) Valuation	(2) Valuation	(3) Valuation	(4) Valuation
EGC	15.968*** (0.000)	16.578*** (0.000)	15.053*** (0.000)	15.678*** (0.000)
Private	11.471** (0.012)	10.284** (0.024)	15.507*** (0.009)	14.297** (0.014)
JOBS Act	1.434 (0.777)	1.390 (0.782)	10.992 (0.124)	10.170 (0.146)
EGC x Private	-10.492* (0.055)	-14.258** (0.010)	-13.646** (0.042)	-17.312** (0.010)
EGC x JOBS Act	7.796 (0.101)	7.238 (0.132)	7.430 (0.167)	6.976 (0.196)
EGC x Private x JOBS Act	15.380*** (0.007)	12.818** (0.020)	15.055*** (0.009)	12.481** (0.023)
EGC x Private x VC Dummy		21.192*** (0.006)		20.497*** (0.006)
EGC x JOBS Act x VC Dummy		-5.776 (0.366)		-2.775 (0.681)
EGC x Private x JOBS Act x VC Dummy		33.701* (0.087)		33.268* (0.088)
LBO			-19.496*** (0.000)	-19.258*** (0.000)
Cash Dummy			6.184*** (0.001)	5.922*** (0.002)
Leverage			-2.179 (0.759)	-1.581 (0.820)
Horizontal Merger			4.833** (0.022)	5.050** (0.015)
SMB			-0.199 (0.894)	-0.512 (0.730)
HML			2.794* (0.059)	2.634* (0.067)
Market Rate			-0.743 (0.338)	-0.738 (0.332)
HHI			-31.466 (0.732)	-27.321 (0.764)
Constant	-2.185 (0.585)	-1.114 (0.782)	1.154 (0.980)	0.585 (0.990)
Observations	1,523	1,523	1,523	1,523
R-squared	0.115	0.140	0.131	0.155
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes

B4: Acquirer Wealth and JOBS Act

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on (public)acquirer's wealth (measured as cumulative abnormal returns (CAR)). All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if the target is an EGC firm; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. Other controls comprise lag values of *HML*, *SMB* and *Market rate*, *HHI*, and *Tbill rate*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0..

VARIABLES	(1) CAR	(2) CAR
EGC	0.017 (0.018)	0.014 (0.019)
JOBS Act	0.025 (0.028)	0.018 (0.030)
EGC x Private	0.040*** (0.010)	0.040*** (0.010)
EGC x JOBS Act	-0.024 (0.027)	-0.019 (0.028)
EGC x Private x JOBS Act	-0.011*** (0.004)	0.010*** (0.004)
Leverage		0.021 (0.018)
LBO		-0.015 (0.022)
Cash Dummy		0.007 (0.005)
Horizontal Merger		0.017*** (0.005)
HHI		0.098 (0.146)
SMB		0.010*** (0.004) (0.004)
HML		0.000 (0.004)
Market Rate		0.003 (0.002)
Constant	-0.027 (0.019)	-0.095 (0.075)
Observations	1,103	1,103
R-squared	0.056	0.086
Industry	Yes	Yes
Year	Yes	Yes

B5: Acquirer Wealth and JOBS Act

We use a difference-in-differences regression to check the impact of the JOBS Act on CAR (acquirer wealth gain). All the continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. CAR is the acquirer's cumulative abnormal returns over the different intervals from (-45,45) day window around the announcement. EGC equals 1 if target's net sales is less than 1 billion USD; otherwise 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGCXPrivateXJOBSact* equals 1 if the target is EGC, private, and the sellout year is post-JOBS Act. *High tech* equals 1 if the target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target firm and the acquirer share the same four-digit SIC code; otherwise, it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. Other controls comprise lag values of *HML*, *SMB*, market rate, and Tbill rate. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) CAR (-45,-6)	(2) CAR(-5,-2)	(3) CAR (2,5)	(4) CAR (6,45)	(5) CAR (-45,-6)	(6) CAR(-5,-2)	(7) CAR (2,5)	(8) CAR (6,45)
EGC	-0.09 (0.935)	0.65 (0.249)	0.198 (0.801)	-0.843 (0.451)	-0.191 (0.874)	0.569 (0.332)	-0.009 (0.991)	-0.756 (0.516)
JOBS Act	1.768 (0.214)	1.22 (0.229)	2.887*** (0.008)	5.411*** (0.001)	3.126* (0.060)	1.384 (0.212)	2.550** (0.024)	5.691*** (0.002)
EGC x Private	0.498 (0.201)	0.109 (0.559)	-0.051 (0.827)	-0.074 (0.879)	0.584 (0.135)	0.113 (0.546)	-0.057 (0.814)	-0.064 (0.899)
EGC x JOBS Act	-0.512 (0.712)	-0.457 (0.644)	-1.498 (0.158)	-2.960* (0.070)	-0.514 (0.726)	-0.393 (0.702)	-1.068 (0.302)	-2.775* (0.089)
EGC x Private x JOBS Act	-1.017* (0.053)	-0.402 (0.110)	-0.591* (0.069)	-1.210* (0.064)	-1.094** (0.039)	-0.406 (0.115)	-0.637* (0.055)	-1.281* (0.055)
Leverage					-2.507*** (0.001)	-1.133*** (0.001)	0.245 (0.547)	-0.56 (0.539)
LBO					1.759 (0.505)	0.353 (0.691)	-0.621 (0.369)	-2.037 (0.399)
Cash Dummy					-0.025 (0.914)	0.032 (0.797)	-0.918*** (0.000)	-1.173*** (0.000)
Horizontal Merger					0.002 (0.993)	-0.076 (0.494)	0.147 (0.261)	0.129 (0.638)
HHI					-4.27 (0.568)	0.59 (0.865)	0.466 (0.911)	0.025 (0.998)
SMB					0.015 (0.936)	-0.139 (0.128)	-0.065 (0.571)	-0.258 (0.304)
HML					-0.005 (0.976)	-0.023 (0.816)	-0.049 (0.663)	-0.159 (0.499)
Market Rate					0.056 (0.558)	0.032 (0.615)	0.016 (0.794)	-0.038 (0.827)
Constant	-0.466 (0.693)	-1.182** (0.046)	0.332 (0.681)	1.799 (0.126)	1.536 (0.687)	-1.098 (0.546)	0.577 (0.792)	2.097 (0.659)
Observations	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
R-squared	0.03	0.029	0.073	0.066	0.049	0.045	0.119	0.092
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

B6: Impact of JOBS Act on EGC-Private Targets

Panel A: Impact of JOBS Act on Valuation of EGC-Private Targets

This table provides the regression results of the impact of the JOBS Act on EGC private targets valuation (deal value as a percentage of sales). All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. All the target firms net sales is less than 1 billion USD. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Venture Capitalist* is dummy variable which takes value 1 if target is venture capitalist backed; otherwise 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, HHI, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) Valuation	(2) Valuation	(3) Valuation	(4) Valuation
JOBS Act	18.214*** (2.658)	15.892*** (2.729)	17.410* (9.992)	16.783* (9.742)
Venture Capitalist		28.372*** (2.777)		23.582*** (2.801)
JOBS Act x Venture Capitalist		19.922** (7.899)		23.444*** (7.749)
LBO			1.390 (6.288)	-1.549 (6.127)
Horizontal Merger			8.344*** (1.826)	7.805*** (1.776)
High Tech			9.161** (4.294)	5.705 (4.195)
Constant	22.160*** (0.940)	18.728*** (0.966)	-2.861 (9.065)	-4.466 (8.814)
Observations	1,880	1,880	1,880	1,880
R-squared	0.024	0.095	0.139	0.187
Industry	No	No	Yes	Yes
Year	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Panel B: Impact of JOBS Act on Acquirer Wealth Gain

This table provides the regression results of the impact of the JOBS Act on wealth gain (*CAR*) of acquirers of EGC private targets. All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. All the target firms net sales is less than 1 billion USD. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Venture Capitalist* is dummy variable which takes value 1 if target is venture capitalist backed; otherwise 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, *HHI*, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) CAR	(2) CAR
JOBS Act	-0.012* (0.006)	-0.011* (0.007)
LBO		-0.061 (0.052)
Horizontal Merger		-0.002 (0.006)
High Tech		0.013 (0.022)
Constant	-0.009 (0.057)	-0.008 (0.046)
Observations	1,244	1,244
R-squared	0.051	0.052
Industry	No	Yes
Controls	Yes	Yes

B7:: Merger and 100 % acquisition of Shares
Panel A : Valuation of Target

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on target firm valuations (deal value as a percentage of sales) of mergers only or on acquisition of 100 % shares . All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. EGC equals 1 if target's net sales is less than 1 billion USD; otherwise 0.; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *Venture capitalist* equals 1 if the target firm is VC-backed; otherwise, it equals 0. *EGC X Private X Venture capitalist X JOBS Act* equals 1 if the target is EGC, private, and VC-backed and the sellout year is in the post-JOBS Act period; otherwise, it equals 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, *HHI*, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) Valuation	(2) Valuation	(3) Valuation	(4) Valuation
EGC	20.298*** (2.216)	20.198** (5.111)	19.948*** (2.147)	19.843** (4.959)
Private	9.511* (5.097)	-2.073 (3.962)	9.326** (4.699)	-2.992 (3.898)
Venture Capitalist		7.899 (4.438)		8.846 (4.546)
JOBS Act	20.045*** (5.387)	31.572** (11.263)	18.129*** (5.116)	30.478** (10.417)
EGC x Private	-15.069*** (5.229)	-6.226 (4.614)	-14.387*** (4.830)	-4.852 (4.632)
EGC x JOBS Act	2.652 (4.454)	1.556 (7.654)	2.958 (4.170)	1.540 (7.047)
EGC x Private x JOBS Act	22.345*** (5.201)	16.839** (4.437)	23.121*** (5.204)	18.221** (4.934)
EGC x Private x Venture Capitalist		13.018 (7.533)		12.900 (8.100)
EGC x JOBS Act x Venture Capitalist		-11.990 (9.286)		-12.657 (9.228)
EGC x Private x JOBS Act x Venture Capitalist		38.423** (9.867)		36.259** (10.719)
LBO	-9.467*** (1.362)	-10.034* (3.736)	-9.906*** (1.240)	-10.385** (3.674)
Horizontal Merger	5.012*** (0.995)	4.945** (1.312)	4.930*** (0.976)	4.908** (1.320)
High Tech	-5.322* (2.981)	6.751** (2.040)	-4.826* (2.823)	6.447** (2.128)
Constant	-11.892 (11.436)	57.056*** (7.679)	-15.049 (11.243)	58.198*** (8.412)
Observations	7,195	7,195	7,602	7,602
R-squared	0.137	0.136	0.138	0.137
Controls	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
100 % Acquisition of Shares	Yes	Yes	No	No
Merger only	No	No	Yes	Yes

Panel B : Acquirer's Wealth Gain

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on wealth gain (*CAR*) of acquirers for only mergers only or on acquisition of 100 % shares . All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *Venture capitalist* equals 1 if the target firm is VC-backed; otherwise, it equals 0. *EGC X Private X Venture capitalist X JOBS Act* equals 1 if the target is EGC, private, and VC-backed and the sellout year is in the post-JOBS Act period; otherwise, it equals 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, *HHI*, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) CAR	(2) CAR	(3) CAR	(4) CAR
EGC	0.018 (0.014)	0.018 (0.016)	0.019 (0.014)	0.019 (0.016)
Private	0.039*** (0.003)	0.039*** (0.003)	0.039*** (0.003)	0.039*** (0.003)
JOBS Act	0.014 (0.024)	0.014 (0.023)	0.013 (0.023)	0.014 (0.023)
Venture Capitalist		-0.016** (0.008)		-0.014** (0.007)
EGC x JOBS Act	-0.021 (0.020)	-0.021 (0.019)	-0.020 (0.019)	-0.021 (0.019)
EGC x Private x JOBS Act	-0.010* (0.005)	-0.008 (0.006)	-0.010* (0.005)	-0.007 (0.006)
EGC x Private x Venture Capitalist		0.013 (0.010)		0.011 (0.010)
EGC x JOBS Act x Venture Capitalist		0.073** (0.030)		0.073** (0.030)
EGC x Private x JOBS Act x Venture Capitalist		-0.088** (0.035)		-0.088** (0.035)
LBO	-0.010 (0.022)	-0.010 (0.012)	-0.009 (0.022)	-0.009 (0.011)
Horizontal Merger	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
High Tech	-0.006 (0.005)	-0.005 (0.006)	-0.005 (0.005)	-0.005 (0.006)
Constant	-0.045 (0.031)	-0.045 (0.030)	-0.043 (0.030)	-0.043 (0.030)
Observations	5,060	5,060	5,271	5,271
R-squared	0.087	0.089	0.085	0.086
Controls	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
100 % Acquisition of Shares	Yes	Yes	No	No
Merger only	No	No	Yes	Yes

Table B8: Role of Merger Waves
Panel A: Merger Waves and Target Valuation

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on target firm valuations (deal value as a percentage of sales) excluding the years for which merger wave exits. All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise 0; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *Venture capitalist* equals 1 if the target firm is VC-backed; otherwise, it equals 0. *EGC X Private X Venture capitalist X JOBS Act* equals 1 if the target is EGC, private, and VC-backed and the sellout year is in the post-JOBS Act period; otherwise, it equals 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. *HHI* is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, *HHI*, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) Valuation	(2) Valuation
EGC	9.958*** (1.477)	10.238** (2.369)
Private	11.745*** (3.594)	5.798* (2.699)
Venture Capitalist		2.523 (1.451)
JOBS Act	13.121*** (3.675)	21.338*** (3.063)
EGC x Private	-9.747** (3.951)	-7.234 (4.038)
EGC x JOBS Act	10.723*** (2.854)	9.441** (2.538)
EGC x Private x JOBS Act	7.557* (4.130)	5.199* (2.135)
EGC x Private x Venture Capitalist		17.754** (6.250)
EGC x JOBS Act x Venture Capitalist		-3.246 (7.111)
EGC x Private x JOBS Act x Venture Capitalist		31.861*** (6.560)
LBO	-4.135** (1.859)	-4.461 (2.580)
Horizontal Merger	8.059*** (1.425)	8.190*** (1.716)
High Tech	-2.168 (3.069)	0.271 (2.848)
Constant	-12.811 (11.488)	38.057* (13.818)
Observations	3,544	3,544
R-squared	0.174	0.178
Controls	Yes	Yes
Industry	Yes	Yes
Year	Yes	Yes

Panel A: Merger Waves and Acquirer Wealth Gain

This table provides the results of difference-in-differences regression to check the impact of the JOBS Act on wealth gain (*CAR*) of acquirers excluding the years for which merger wave exits. All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in millions. *EGC* equals 1 if target's net sales is less than 1 billion USD; otherwise, it equals 0. *JOBS Act* equals 1 if the takeover year is in the post-JOBS Act period; otherwise, it equals 0. *Private* equals 1 if the target is private; otherwise, it equals 0. *EGC X Private X JOBS Act* equals 1 if the target is an EGC, private, and the transaction year is post-JOBS Act. *Venture capitalist* equals 1 if the target firm is VC-backed; otherwise, it equals 0. *EGC X Private X Venture capitalist X JOBS Act* equals 1 if the target is EGC, private, and VC-backed and the sellout year is in the post-JOBS Act period; otherwise, it equals 0. *High tech* equals 1 if target is in a high-tech industry; otherwise, it equals 0. *Leverage* is the target's industry debt ratio. *Cash* equals 1 if the mode of payment is cash; otherwise, it equals 0. *Horizontal merger* equals 1 if the target and the acquirer share the same four-digit SIC code; otherwise it equals 0. *LBO* equals 1 if the takeover is a leveraged buyout; otherwise, it equals 0. *HML* is the return on a portfolio that is long on high book-to-market stocks and short on low book-to-market stocks. *SMB* is the return on a portfolio that is long on small-capitalization stocks and short on large-capitalization stocks. HHI is Herfindahl-Hirschman Index, proxy for industry competition. Other controls comprise lag values of *HML*, *SMB*, *Market rate*, HHI, *Leverage*, and *Cash*. Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) CAR	(2) CAR
EGC	0.028 (0.028)	0.028 (0.028)
Private	0.040*** (0.014)	0.044*** (0.014)
JOBS Act	-0.004 (0.032)	-0.004 (0.033)
Venture Capitalist		-0.010 (0.023)
EGC x JOBS Act	-0.018 (0.031)	-0.018 (0.031)
EGC x Private x JOBS Act	-0.006 (0.015)	-0.003 (0.015)
EGC x Private x Venture Capitalist		-0.018 (0.026)
EGC x JOBS Act x Venture Capitalist		0.072** (0.035)
EGC x Private x JOBS Act x Venture Capitalist		-0.070* (0.041)
LBO	-0.011 (0.016)	-0.011 (0.016)
Horizontal Merger	0.014*** (0.004)	0.014*** (0.004)
High Tech	-0.017* (0.009)	-0.016* (0.009)
Constant	-0.031 (0.029)	-0.031 (0.029)
Observations	1,696	1,696
R-squared	0.064	0.068
Controls	Yes	Yes
Industry	Yes	Yes
Year	Yes	Yes